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Kangaroo Island shipwreck shelter huts

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Figure 1. Map of Kangaroo Island (J. McKinnon)

Introduction

During the 19th century maritime trade and traffic was expanding rapidly along South Australia's coastline (Parsons, 1983: 5; Griffin & McCaskill, 1986: 20; Jeffery, 1989: 52; Coroneos, 1997: 19). These increases in shipping in combination with the rugged and relatively sparsely populated coastline led to an increase in shipwrecks, cargo loss, and loss of life. As a result, lifesaving stations and shipwreck shelter huts were erected along the coast and on Kangaroo Island in an effort to decrease the effects of these maritime disasters, aid in the recovery of shipwreck survivors and cargo, and prevent further deaths from occurring once individuals made it ashore.

Records indicate that as early as 1905, and probably earlier, shipwreck shelter huts were erected on the western end of Kangaroo Island (Thorpe, 1905; Admiralty Chart, 1913; Clare, n.d.; Rocky River Flinders Chase National Park Visitor Centre, n.d.; Hope Cottage National Trust Museum in Kingscote, n.d.). These stations were simply huts built of corrugated metal, wood and stone. There were no individuals stationed at the huts to provide assistance, but they contained enough supplies to sustain shipwreck survivors until further help arrived or until such time as they were well enough to walk for help. Items such as bread, meat, water, blankets and rockets were stored inside. A notice board was posted outside declaring that the supplies were only to be used by shipwreck survivors, indicating the location of the nearest settlement, and providing instructions for opening the stores and for firing rockets. It is uncertain if any shipwrecked people ever used these shelter huts; however, they remain an interesting and integral part of the maritime history of South Australia and Kangaroo Island.

This article is the result of a project designed to locate and document the archaeological remains of two early shipwreck shelter huts located at Cape du Couedic and West Bay on Kangaroo Island. The documentation of these shipwreck shelter huts is the beginning of a needed investigation of shore-based lifesaving and shelter hut stations. Much like shipwreck survivor camps (Gibbs, 2003: 128–129), maritime archaeologists have paid little attention to these sites as they are located onshore and are separate from shipwreck events. When these sites have been addressed, they are treated subsidiary to the particular details of a single shipwreck event (Society for Underwater Historical Research [SUHR], 1977; Smith, *et al.*, 2005). Although preliminary, this paper will outline an archaeological survey programme for two shipwreck shelter huts in an effort to establish these as a site type and place them within a larger comparative framework of maritime archaeological sites, including shipwrecks, and other maritime infrastructure.

Brief history of Kangaroo Island

Kangaroo Island, Australia's second largest island, is located in the south-east of South Australia at the southern tip of the Fleurieu Peninsula (Fig. 1). It is separated from the mainland by Backstairs Passage, an historic shipping channel renowned for its strong currents, waves and weather. The island itself is 150 km long and 55 km wide and has a population of just over 4000 persons. Access to the island is available only by air or sea and there is a ferry that offers service to and from the mainland via Cape Jervis and Penneshaw.

Despite the absence of an Indigenous population upon European arrival, there is material evidence that suggests the island was inhabited by Indigenous peoples. Kangaroo Island became known to Europeans in March 1802 when Matthew Flinders anchored in Nepean Bay (Ruediger, 1980: 10). His first impressions of the island were recorded in his diary:

> There was little doubt, that this extensive piece of land was separated from the continent; for the extraordinary tameness of the kangaroos and the presence of seals upon

Figure 2. West Bay shelter hut, 1906 (author unknown – Photograph courtesy of the State Library of South Australia – PGR 280/1/4/129).

> the shore, concurred with the absence of all traces of man to show that it was not inhabited (Flinders quoted in Cumpston, 1986: 9).

At the same time, Nicolas Baudin, a Frenchman, was exploring the waters of South Australia when he happened upon Flinders' expedition. Flinders described Kangaroo Island to Baudin as a place that offered fresh meat and water; however, Baudin did not act on his advice until January 1803 when he returned to Kangaroo Island and charted the southern and western portions of the island unexplored by Flinders (Fornasiero, *et al.*, 2004: 230). Some of the place names today have retained their French names including Cape Borda, Cape du Couedic, Cape Gantheaume and D'Estrees Bay.

From 1803 to 1830 sealing and whaling operations brought crews of men to Kangaroo Island for seasonal work. These men spent their time procuring oil, meat and kangaroo skins for the international market, and a few even stayed and set up homesteads in the 1820s. It was then that a substantial settlement developed near Three Wells River including 30 men with Indigenous wives and children (Taylor, 2002: 25). These Indigenous women utilized their adaptive hunting and gathering skills to help their families survive the difficult environment on Kangaroo Island (Clarke, 1966: 51–81).

Sealing, whaling and hunting continued for some time until the arrival of the first government sanctioned South Australian settlement at Nepean Bay. This settlement began when the South Australia Company was granted rights to establish a town site and arrived on 27 August 1836 at Kingscote. Initially it was assumed that this area would be satisfactory; however, the lack of local water forced plans to move the settlement (Parsons, 1986: 17). Within months, most of the population had relocated to present-day Adelaide and just a few settlers remained. From the late 1830s to the end of the 19th century the population of Kangaroo Island remained stagnant. It was not until 1890 that Kangaroo Island's trade and agriculture picked up again. From the early 1900s a considerable amount of development took place and increasing numbers of families moved to Kangaroo Island to settle and make a living. Today, there are four main centres of population: Kingscote, Penneshaw, American River and Parndana.

Previous archaeological investigations of Kangaroo Island

Until recently, there have only been a small number of archaeological investigations on the island mostly related to Indigenous sites. In 1977 the Society for Underwater Historical Research conducted an archaeological survey on the wreck of *Loch Vennachar* (SUHR, 1977; Jeffery 1980). Ronald Lampart (1981) conducted a detailed survey of the island's Indigenous populations as a part of his doctoral research. In 1991, Robert McKinnon conducted a survey of the shipwrecks that have occurred along Kangaroo Island's coastline, highlighting their cultural heritage significance (McKinnon, 1991). Later, the South Australia Department of Environment and Planning established an interpretive Maritime Heritage Trail on the island that focused on identifying and interpreting the location of these wrecks (Department of Environment and Planning, 1991). Also in 1991, Parry Kostoglou and Justin McCarthy conducted an archaeological survey of whaling and sealing sites in South Australia, five of which are located on Kangaroo Island (Kostoglou & McCarthy, 1991). These settlements were ephemeral in nature and left little material culture behind. An archaeological survey has been conducted on Kangaroo Island's lighthouses as a Masters thesis (Lyons, 2005) and another Masters thesis was completed on several of the historic jetties (Khan, 2006). In 2006, Andrea Smith, co-author of this paper, conducted a maritime cultural landscape study of Kingscote and West Bay as a part of her Honours thesis research (Smith, 2006). Considering how 'untouched' and 'underdeveloped' the island actually is, there is great potential for archaeological investigations, particularly of maritime heritage.

Shipwreck shelter huts on Kangaroo Island

> The shipwreck survivor has been a recurrent theme in our literary heritage and iconography for more than 3,000 years from *The Odyssey* and *The Tempest*, to *Robinson Crusoe*, *Swiss Family Robinson*, *Lord of the Flies*, and even parodies such as *Gilligan's Island* (Gibbs, 2003: 128).

The unfortunate story of David Kilpatrick might have spurred the government to install shipwreck shelter huts along the coast of Kangaroo Island. David was 25 years of age when he was wrecked on *Loch Sloy* off Kangaroo Island in 1899. Only four of the 36 crew survived and managed to swim ashore. One man set south and found help after two weeks in the bush exhausted and dehydrated. The other three travelled north, but Kilpatrick became delirious and was left with two bottles of whisky and some shellfish. A rescue party eventually found the two men, but Kilpatrick's body was found later on a stony hill and was buried there (Chapman, 1972: 38–39).

Marine Board Minutes from 1899 demonstrate the government's interest in preventing the shipwreck events

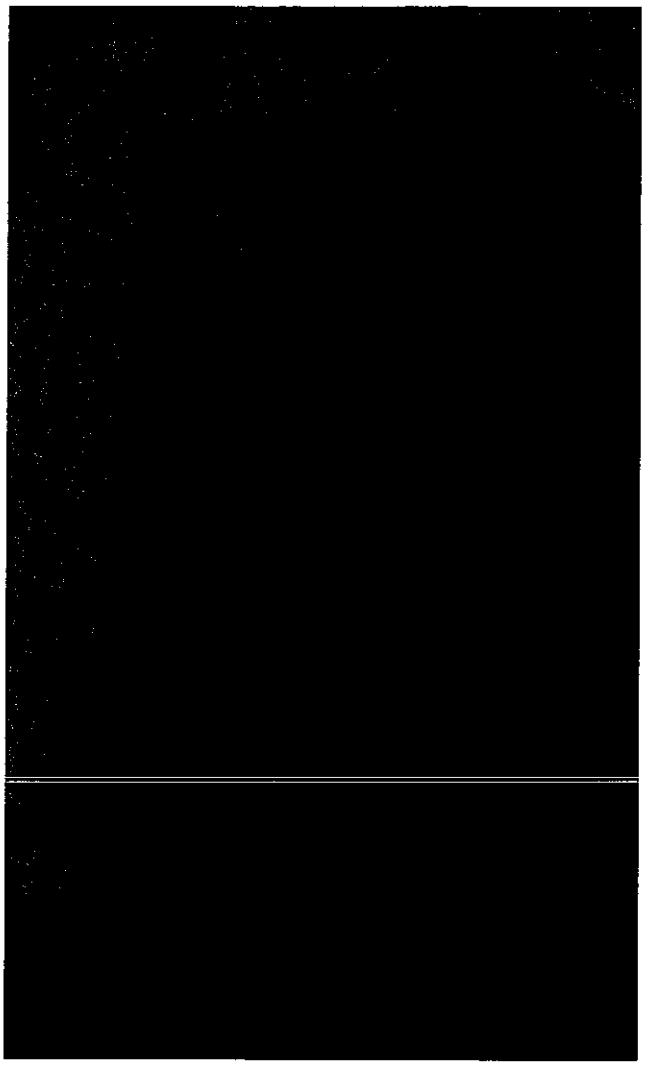

Figure 3. Shipwreck shelter hut door, location and date unknown (author unknown—courtesy of the Flinders Chase National Park Visitor Centre. Photograph: J. McKinnon).

occurring on the western and southern end of Kangaroo Island.

> The Honorable The Treasurer forwarded a request from the Chairman of Commerce with reference to the placing of a light on the South Neptune Island, and asked that the Marine Board might report thereon. He also asked that a return might be prepared showing what wrecks had occurred during the last 30 years on or near Cape du Couedic. The President suggested and the Board agreed that a circular be issued with a view of ascertaining the opinions of practical shipmasters as to the advisability of establishing a light (a) on one of the Neptune Islands, or (b) on Cape du Couedic.
>
> Also as to whether one would be sufficient, and if so, which one, or whether an additional light in the vicinity was necessary at all (Minutes of the Marine Board of South Australia, 15 June 1899: 193–194; ref: T.O. 369/99: 1).

In response to the numerous shipwrecks that occurred during the late 19th century on the southern and

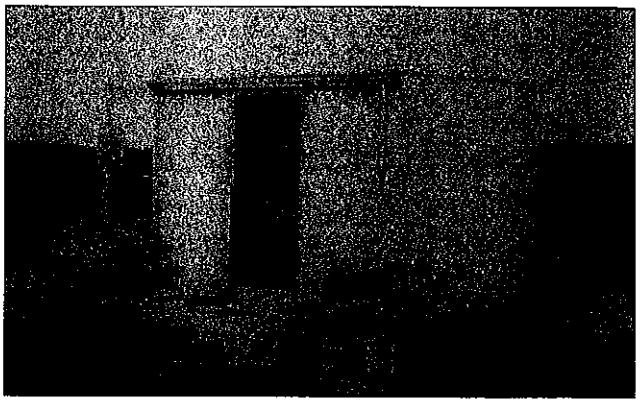

Figure 4. Shipwreck shelter hut with signpost, location and date unknown (author unknown–courtesy Hope Cottage National Trust Museum. Photograph: J. McKinnon).

western coastlines of Kangaroo Island, the Government of South Australia decided to build shipwreck shelter huts for sailors who survived the wrecks and swam to shore (Chapman, 1972: 1; Hope Cottage National Trust Museum in Kingscote, n.d.; Rocky River Flinders Chase National Park Visitor Centre, n.d.). These huts provided more than just shelter, containing food, blankets, rockets, medical supplies, water and directions to the nearest homestead.

Shipwreck shelter huts would have been quite unassuming but easily identified from the water as a structure (Fig. 2). A review of the historic photographs of the West Bay hut indicates that it was probably constructed of a wood frame with corrugated metal sheeting for walls and a flat roof (perhaps metal as well). Another historic photograph of a different shelter hut indicates the roofs of huts could also be pitched (Fig. 3). The hut at West Bay most likely had only one entry, a door that faced south. The structure is approximately 2 m wide by 2–2.5 m high (using men in photograph for scale). The hut may have been painted white or light-coloured so as to stand out among the bush.

In yet another historic photograph of a different hut (location unknown), the shelter is shown supported by carefully stacked rocks on each corner of the foundation and a path is cleared to the door (Fig. 4). Variations such as this suggest that the construction of these huts was carried out in a pragmatic fashion governed by available materials and the specific needs of the particular environments.

Also visible in this photograph is a signpost with a message to shipwrecked sailors and others. One signpost notice has survived and the original is located in the Rocky River Flinders Chase National Park Visitor Centre. The notice is written in three languages (English, German and French) and signed by C.J. Clare, Superintendent of the Life Saving Service.

> The provisions, water, and blankets in this house are for the use of shipwrecks people only; and persons, who shall use or remove such goods or who shall in any way destroy or injure anything within the house, or the house itself, will be prosecuted with the utmost rigor of the law. But it

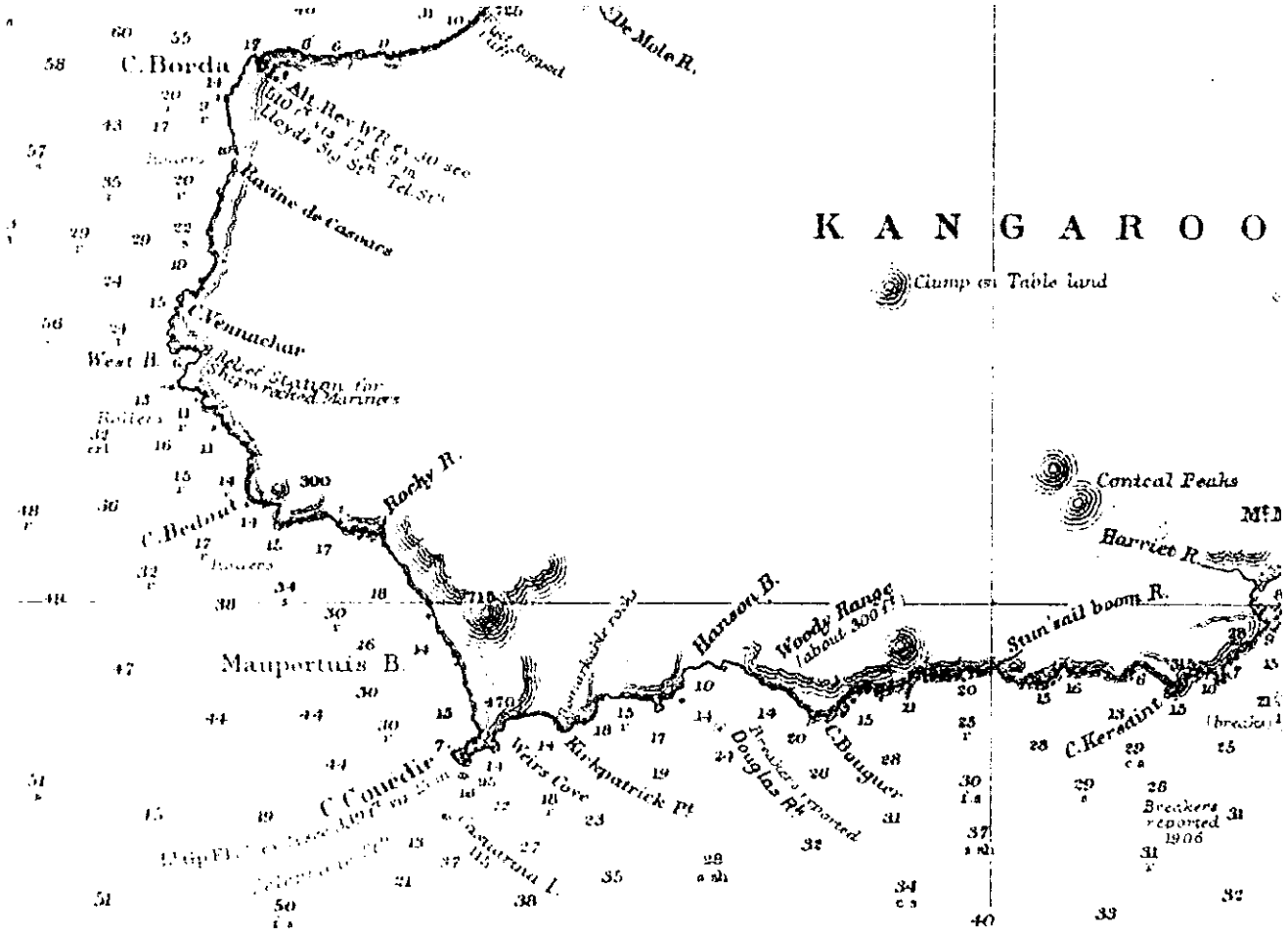

Figure 5. Detail of 1913 Admiralty Chart showing 'Relief Station for Shipwrecked Mariners' at West Bay, Kangaroo Island, South Australia, Spencer and St Vincent Gulfs, Admiralty Chart 1913 by Hutchinson, J. and Howard, F. (Courtesy of the State Library of South Australia).

> is hoped that all the inhabitants of this district will do their best to keep the house in proper repair, and report to the Police-trooper at Kingscote if anything is found out of order (Clare, n.d.).

Also included in the instructions were directions and distance to the nearest settlement and instructions for opening the stores and firing rockets.

Site histories

West Bay

West Bay is situated within Flinders Chase National Park on the western coastline of Kangaroo Island (Fig. 5). Flinders Chase is approx 32 600 ha and is comprised of three separate parks including Rocky River in the south-west corner of the island, Cape Borda in the north-west and the Gosse Lands in the north-east. These three park sections surround the Ravine des Casoars Wilderness Protection Area that forms the northern boundary of the West Bay region and totals 41 320 ha. Together, Flinders Chase and Ravine des Casoars make up 10% of Kangaroo Island.

The European history of West Bay is quite limited as no European settlers inhabited this area and the nearest settlement was at Rocky River approximately 22 km east. According to the Department for Administrative and Information Services Lands Titles Office, West Bay has never been surveyed or subdivided into pastoral leases but has always been Crown land. When Cape Borda Lighthouse in the north was built in 1858 (Barker & McCaskill, 1999: 38) the entire western shoreline including West Bay was named as a part of the Lighthouse Reserve (South Australian Government Gazette [SAGG], 19 July 1900 and 29 April 1909) which was then transferred to Flinders Chase Park under the Fauna and Flora Reserve Act in 1919 (SAGG, 20 September 1923). Thus West Bay has changed very little since Kangaroo Island was settled. In recent years the park has added a remote campground, toilet block, rainwater tank, car park, picnic tables and boardwalk for recreation purposes; however, the bay itself and the terrain have retained their natural landscape.

Historical photographs and records indicate that a small shipwreck shelter hut was constructed at West Bay. It is not known conclusively when the shelter hut was constructed, although it does appear on a 1913 Admiralty Chart as a 'Relief Station for Shipwreck Mariners'. According to display boards at the Hope Cottage National Trust Museum in Kingscote (n.d.) and the Rocky River Flinders Chase National Park Visitor Centre (n.d.) the

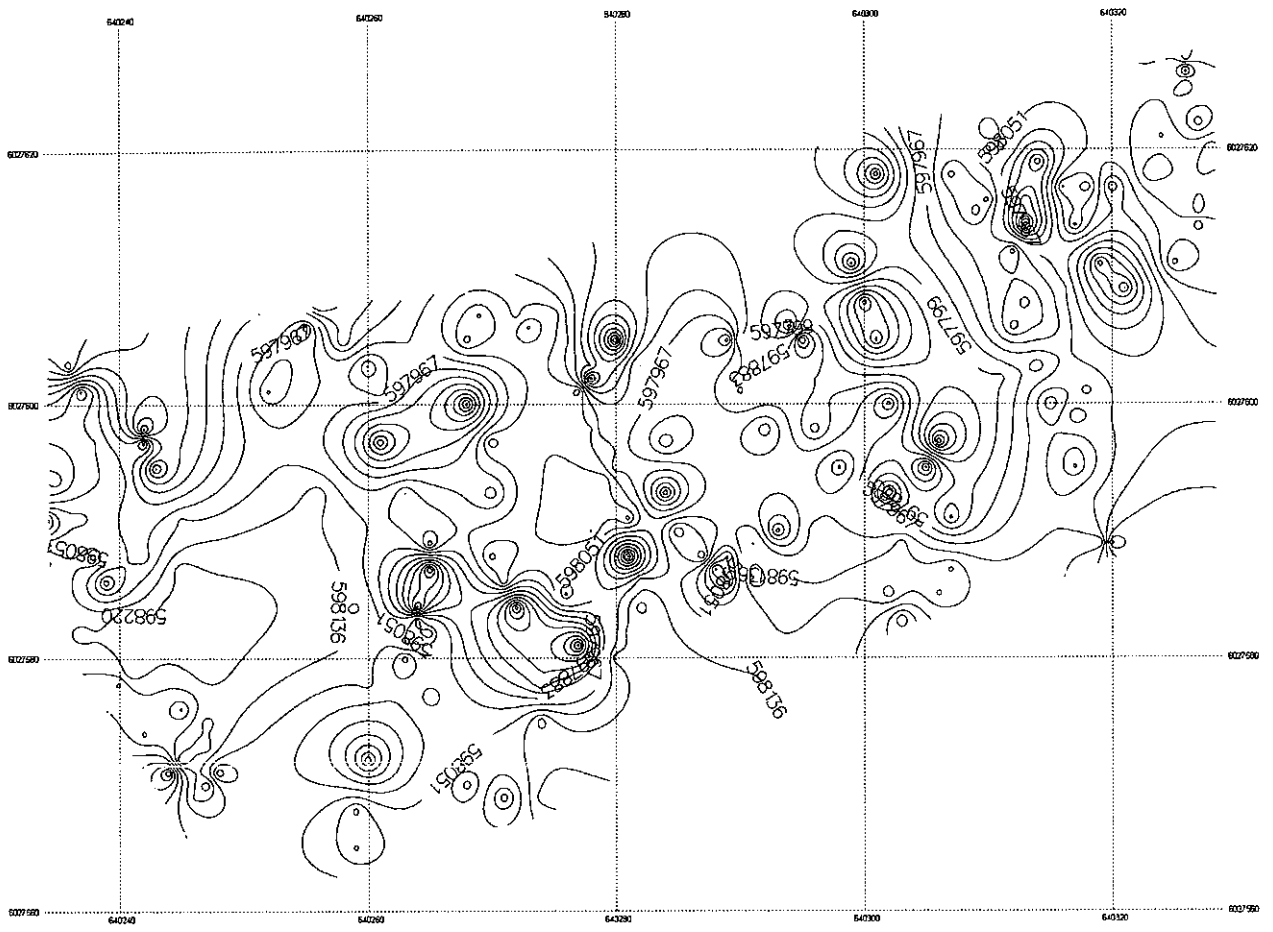

Figure 6. West Bay magnetometer results (Image: I. Moffat).

shelter hut was erected in 1899 (see also Chapman, 1972: 2) and dismantled in 1934. There is no historical evidence to suggest that any shipwrecked sailors found the West Bay hut and used the supplies, but there are stories of locals who raided the supplies (Chapman, 1972: 2).

The closest this hut may have come to service occurred in 1905 with the wrecking of *Loch Vennachar*, a three-masted fully-rigged iron ship built in Glasgow in 1875. When the ship failed to arrive at port on 6 September suspicions of its sinking were raised. Conclusive evidence of the disaster came when a reel of blue printing paper identified as being on the ship's bills of lading was found floating in St Vincent Gulf. Wreckage washed up all along the western and southern shores of Kangaroo Island for months after the wrecking. Search parties were launched including one aboard the Marine Board ship *Governor Musgrave* (Chapman, 1972: 46).

It was not until Trooper R.C. Thorpe and Mr Charles May, who were inspecting shelter huts on the southern coast of Kangaroo Island and found huge quantities of wreckage in West Bay, that the shipwreck site could be narrowed down to a specific location. On 26 November 1905 Thorpe and May found a badly decomposed body and a beach strewn with wreckage including spars, ship buckets with the name on it, the stern section of a boat, brass fittings, reels and bales of paper, and about 40 hogsheads and half hogsheads of whisky (Chapman, 1972: 48; Loney, 1993: 33). Some of the casks of whisky had been washed over a quarter of a mile up the West Bay Creek. The body was buried in the dunes and a cross was erected from the wreckage. Vandals later removed this cross but a replacement stands near the spot of the original gravesite today. The body and the wreckage pointed to the fact that the shipwreck must be somewhere nearby. As mentioned previously, the location of *Loch Vennachar* was discovered by the SUHR at West Bay in 1977. SUHR divers recovered the ship's anchor that now sits in the car park at West Bay.

Trooper Thorpe was quickly named 'Keeper of Wrecks' and ordered by his superiors to remain in the area and conduct a salvage of the ship's cargo that washed ashore at West Bay (Loney, 1993: 32). Thorpe and May made camp up the creek and set out to collect the salvageable cargo. While they waited for the government vessel to return to West Bay and pick up the casks of whisky, Thorpe (1905) wrote a letter from 'Torture Camp' to a friend describing the remoteness of the area and complaining about how unpleasant it was to be forced to stay there for an extended period of time. The letter read:

> Doubtless you have seen in the papers the result of my visit of inspection to the Shipwreck Shelter Hut at this bay, and the sad discovery we made—I had a man named May with me for company, as it is both a rough, scrubby and dangerous

place to come to alone. We first visited the Cape du Couedic shelter shed two days previous to this one and found all the stores, etc. intact.

Thorpe continues to describe the wreckage and personal items they found when they arrived at the bay:

> I can quite understand why it is none of the poor fellows reached shore alive. The rocks would chop them to pieces, so sharp and hard are they, besides this coast is teaming with sharks, and the sea that must have been running then, why nothing could live in it. The island is one continuous formation of high rugged cliffs over 350 feet [106.68 m] in many places and a straight drop into the seething waters (Thorpe, 1905).

He then goes on to discuss finding the body of the youth on the beach before he breaks into another bout of anguish saying:

> It is a dreadfully lonely place, high towering sand hummocks, and cliff, and dense scrub, which made our sad task ever so much harder. The place, save for the roaring waves, is as still as death...I must remain in this terribly lonely camp for God knows how long; anyway until a vessel can get in the bay to take it [whisky] away... Yours Faithfully, R.C. Thorpe, Mounted Constable.

The secretary of the Marine Board received a telegram from Thorpe on 1 December asking when the whisky would be taken away as it would require two days notice to have the horse bring the casks closer to the water's edge. One wonders if they needed the two days to get the horse motivated or themselves after maintaining custody over the casks of whisky. On 6 December *Governor Musgrave* departed Port Adelaide for West Bay to pick up the whisky and other salvageable goods. The ship arrived and the casks were loaded and shipped from West Bay (Chapman, 1972: 48).

Cape du Couedic

Cape du Couedic is also located in Flinders Chase National Park at the very south-western tip of the park and island. It is an area of historical, cultural and biological significance for a number of reasons. Located on the Cape are an historic lighthouse and associated buildings, the remains of a jetty and flying fox, Admiral's Arch (a geological site attracting thousands of visitors), a colony of New Zealand Fur Seals and the nearby Remarkable Rocks (another geological site).

Cape du Couedic's European history involves its designation as one of the early tourist destinations on Kangaroo Island including stops at Remarkable Rocks and Admiral's Arch and the construction of the lighthouse. The circular, masonry lighthouse at Cape du Couedic was built between 1906 and 1909 from locally quarried stone, as were the lighthouse keepers' cottages (Department for Environment, Heritage and Aboriginal Affairs [DEHAA], 1999: 39). The location for this lighthouse was chosen because of dangerous ship traps nearby including Lipson Reef, which is partially submerged just off the Cape and the Casuarinas (The Brothers), two islands just south of the Cape. Before its construction several vessels including Mars, Emily Smith, *Loch Sloy, Loch Vennachar* and Montebello had wrecked in the vicinity (Chapman, 1972).

Less than a kilometre away, at Weirs Cove, are the remains of a jetty, and the remnants of a flying fox and storehouse where supplies were loaded and unloaded for the lighthouse. The engineering achievements of the incredibly steep flying fox truly represent the remote and harsh nature of the south-west coastline of Kangaroo Island and the lengths to which the inhabitants had to go to in order to supply the lighthouse. Supplies for the lighthouse arrived every three months to this location and were kept in the storehouses adjacent to the jetty. The flying fox was also used to transport the keepers and their families on and off the Cape (DEHAA, 1999: 39). Mail was delivered by horseback fortnightly to Rocky River about 15 km away, and the first vehicle to visit the lighthouse did not arrive until 1940. The lighthouse was supplied with a full set of rocket apparatus and rope ladders for scaling the cliffs in the event that a ship should wreck. In the late 1950s the Cape du Couedic lighthouse was automated to service the local sea trade (DEHAA, 1999: 39). The lighthouse cottages are now used for visitor accommodation.

We know from Trooper Thorpe's letter that a shipwreck shelter hut was located at Cape du Couedic, but no definitive evidence exists such as the historical photographs located for West Bay. However, when all of the known historic photographs are considered, three different shelter huts appear to be represented. One particular photograph may have been taken of a hut located at Cape du Couedic based on the terrain and the object in the background which possibly could be the lighthouse (see Fig. 4). The shipwreck shelter hut at Cape du Couedic was likely established several years prior to the construction of the lighthouse around the time of the West Bay hut. This photograph of the shelter hut may have been taken during the lighthouse construction process. It is likely that once the lighthouse was constructed, the shelter hut was either dismantled and used for materials or discarded or used as a storage shed or outbuilding of the complex. There would have been little need for a shelter hut once the keepers' cottages were established and could provide housing for shipwrecked sailors. This possible sequence of events may indicate that the shipwreck shelter hut was a precursor to the lighthouse operations.

Survey project

This project was funded through a Flinders Faculty Research Maintenance Grant. The project team included Jennifer McKinnon, Jason Raupp, Claire Dappert, Ian Moffat and Andrea Smith and took place over six full days. On 7 April 2006 the team arrived at Kangaroo Island and set up headquarters at the Flinders–Baudin

Research Centre at Rocky River (Flinders Chase National Park). The project goals were to assess the natural and cultural features of the areas and possibly identify the locations of the shelter huts (although the probability was acknowledged as low due to the ephemeral nature of the buildings). In all, the team spent two and a half days conducting pedestrian surveys, one day conducting magnetometer surveys, and the remainder of the time in local museums and scouting other sites for future research. The following is a description of this work and the results of the survey.

West Bay Survey

LANDSCAPE

The West Bay environment and vegetation fall within the Gantheaume Environmental Association (Laut, *et al.*, 1977). The survey area is made principally of Holocene sand thought to be sourced from the adjacent river and then reworked and mounded against a cliff of lithified Pleistocene Aeolian limestone surrounding the survey area.

The survey of West Bay posed more challenges than expected as it is composed of quite steep sand dunes and dense vegetation. The survey began by using the historic photographs on hand and trekking across the sand dunes, lining up prominent features of the bay with the photographs. Because the topography of West Bay is quite dramatic, the team was unable to maintain systematic survey lines; rather the photographs were used as a guide. It was clear from the photographs that the shelter hut was located in the central area of the bay in the higher set of dunes. These dunes were less susceptible to erosion as was evident by the dense vegetation, and also provided a better view of the surrounding waters due to the elevation. On either side of the bay there are steep, rocky cliffs that would be difficult to climb making the dunes a more appealing location for tired and possibly injured shipwrecked sailors. Just to the south of the central dune area is a seasonal creek. During heavy storms the creek flows but for the majority of the year it is dry. Upon speaking with a park ranger a freshwater spring was located on the south edge of the beach where the rock cliffs meet the sand.

SELECTION OF SURVEY AREA

After the initial pedestrian survey a flat area of sand dune near the creek bed was identified as an area for further investigation. There were no signs of material evidence at this location or at any other location during the survey, but the team operated on the assumption that lining up the prominent features in the historic photographs would put the survey area in the correct location. The area chosen provides a flat platform for a structure, a decent view of the water and vice versa, a nearby creek and is sheltered from winds by larger dunes to the north and east. After conducting a refined pedestrian survey of the area, a small area on the dune (approximately 60 m x 80 m in size) was chosen to conduct a magnetometer survey.

GEOPHYSICAL SURVEY

A magnetometer was selected as the most appropriate tool for the intended target with reference to the American Society of Testing and Materials standard D6329-99 (American Society of Testing and Materials, 1999: 2). The use of magnetometers to detect direct ferrous evidence of cultural material (for example Black & Johnston, 1962), evidence of burning (Abbot & Frederick, 1990; Frederick & Abbot, 1992), or disturbance in soil stratigraphy (Field, *et al.*, 2001; Nobes, 2006) has a long and established history.

Magnetometer data was collected using a Geometrics G-856 proton precession magnetometer collecting data at five second intervals. During data acquisition the sensor was kept at a constant height of 2 m and orientated towards north at all times. Positioning data was collected with a Garmin 12XL Global Positioning System (GPS) as a track point at five second intervals.

The survey tracks were placed opportunistically based on breaks in the vegetation and the elevation of the sand dune rather than on a set survey pattern. Survey of this type, although spatially less accurate than gridding (estimated to be ± 5 m based on the use of a navigational GPS), allows the rapid collection of reconnaissance data which permits the operator to determine whether the presence of anomalies call for more detailed and spatially accurate survey (Moffat & Wallis, 2005).

A total of 206 data points were collected with data quality assessed as poor (Fig. 6). The data shows a skewed distribution of data points suggesting significant interference from localized variations in the Earth's magnetic field, most likely a result of magnetic storms. As a second magnetometer was not used during this survey as a base station, a diurnal correction was unable to be performed (as done for example by Scollar, 1963). As a result, definitive analysis of the data is problematic; however, no evidence for discrete anomalies of a type and magnitude considered consistent with the generally ephemeral nature of the building were discovered. This suggests that, should the analysis of the likely position of the shelter hut be correct (see above for discussion), no ferrous material culture or other occupational evidence detectable by a magnetometer remains on the site. This is not a surprise as records at the Hope Cottage National Trust Museum indicate that the structure was sold and dismantled in 1934, just 45 years after it was built.

Cape du Couedic Survey

LANDSCAPE

Cape du Couedic also falls under the Gantheaume Environmental Association (Laut, *et al.*, 1977). The survey area contains lithified Pleistocene dune limestone sporadically overlain by a poorly developed soil. Palaeozoic granite outcrops are located around the survey area (including notably at the tourist location of Remarkable Rocks), and while it does not outcrop in the survey area, it is expected to occur at relatively shallow depths. The terrain posed a challenge because it is quite vegetated and rocky. This area is swept by high winds that have

vegetation. In many areas the bedrock is exposed and heavily eroded causing large, deep holes.

Selection of Survey Area

No definitive historical photographs of the shelter hut at Cape du Couedic exist and the historical records are somewhat conflicting. Trooper Thorpe's letter indicates there was a shelter hut at Cape du Couedic, but there is also historical mention of the shelter hut being located at Remarkable Rocks (Loney, 1993: 33). Early sailors recognized these rocks as a prominent navigational feature on the landscape and this would have been a likely spot to place the hut. Remarkable Rocks are approximately 4–4.5 km from the current lighthouse location and between the Cape and Rocks are two bays, neither of which have an accessible coastline. The section of coastline near Remarkable Rocks is incredibly steep making it nearly impossible to climb the rocks if someone was shipwrecked, tired and injured. On Cape du Couedic proper where the lighthouse is located, the slope to the water is less steep; however, it would still be a challenge to climb the area to safety. Of the coastline between the Cape and Remarkable Rocks, the area in front of the lighthouse provides the least challenging slope for a shipwrecked sailor. Additionally, this area provides a wider view of the surrounding waters including Lipson Reef and the Casuarinas Islands. Based on the physical characteristics of the shoreline, the viewshed and the probable history of placing structures nearby existing structures (i.e. lighthouse near hut location) the survey for the shelter hut would involve the immediate area surrounding the lighthouse.

The lighthouse complex involves a series of support structures that were built when the lighthouse was constructed. These include three keepers' cottages, a fuel shed, a stable and work shed, a well, a flagpole and weather station. These structures were identified and photographed and a general pedestrian survey was conducted to assess the natural and cultural features of the area. A large borrow pit was discovered just south-east of the lighthouse complex where rock and sand was excavated for the construction of the lighthouse (this pit is so large it can be seen on aerial photographs). The borrow pit was subsequently used as a refuse pit by the lighthouse occupants evident by the exceptionally large sheet midden of glass, ceramic, bone, and metal.

After inspecting the survey area two systematic pedestrian surveys were conducted in the areas identified as having high probability. These high probability areas were based on possible viewsheds of shipwrecked sailors, elevation, shoreline characteristics and historic photographs. The surveys were conducted south and west of the lighthouse and keepers' cottages and south and east of the lighthouse. Using the road and cliff edges as survey boundaries, 10 m line spacing pedestrian surveys were conducted using a compass and GPS to track the lines.

Figure 7. Square pit cut into limestone bedrock. Photograph taken facing west. (Photo: J. McKinnon).

Two promising areas were identified during the north-western survey, the first being a well associated with the construction of the lighthouse in 1899. The well has been excavated and the top edges are reinforced with concrete. Adjacent to the well on either side are two rows of stacked limestone rock radiating out for approximately 5 m. Otherwise the surface area adjacent to the well is cleared of all brush and rock. It is not known whether this was a naturally occurring well that existed prior to the lighthouse construction or if the builders purposely dug it. If it was natural, it is likely that a shipwreck shelter would have been constructed nearby in order to provide survivors with fresh water. There are signs that it was modified and used for a period of time, but there are no visible signs of a nearby shelter hut location.

The second area of probability included a square pit cut into the limestone bedrock (Fig. 7). This feature was of interest due to the regularity of the square shape and the cut walls, and was unlike any other natural feature in the bedrock. Additionally, the approximate size of 2 m by 2 m by 35 cm deep is similar to the estimated size of the shelter huts in historic photographs. A small cleared path leads from a maintained park trail up to the square pit, and the area at the path/pit interface appears as if it might have been maintained in the past as a doorstep or entrance area to a structure. If the location of the square pit is aligned with the historic photograph of the possible Cape shelter hut, the lighthouse, environment and path or doorway fall in line with the photograph (see Fig. 4). Additionally, if the photograph is of the Cape shelter hut, the construction techniques also correspond. As mentioned previously, this area is swept by strong winds and any structure built would need to have a substantial foundation and support. The structure could have been set in the ground and rocks stacked around the exterior for further support as shown in the photograph. As the expedition was intended as a reconnaissance only, this project did not include permits to disturb or remove the vegetation within and around the pit to locate postholes or construction techniques. Further investigations could reveal possible construction techniques.

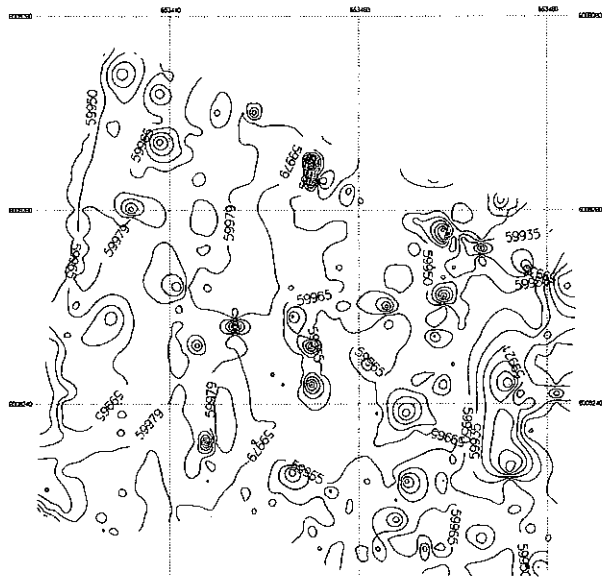

Figure 8. Cape du Couedic magnetometer results (Image: I. Moffat).

It is entirely possible that this limestone pit could have been a stone borrow pit for the construction of the lighthouse; however, it is considerably smaller than the borrow pits to the south-east and no other borrow pits are located nearby. Another question remains as to how the structure would have remained dry if set into the limestone. Suggestions for it having a raised floor to collect rainwater beneath for drinking may solve this problem. Nevertheless, much remains to be answered as to how these structures were constructed.

The second pedestrian survey was conducted south and east of the lighthouse. Several cultural features associated with the lighthouse were located including a number of limestone and sand borrow pits and sheet middens. One possible shipwreck shelter location included a deposit of degraded corrugated sheet metal scattered across an area of approximately 6.5 m by 6.5 m. According to historic photographs, corrugated metal sheeting was used in the construction of these shipwreck shelter huts. Although, given this area's proximity to the sheet middens nearby, it is likely that this was the location of another dump site as other bits of metal were located including links of chain and nails.

Based on the results of the pedestrian surveys a magnetometer survey was conducted adjacent to the square cut limestone feature. Both the well site and the sheet metal scatter area were excluded from magnetometer surveys due to the obvious presence of cultural material and disturbance.

Geophysical survey

The same magnetometer settings and survey methods were used for the Cape du Couedic area (Fig. 8). The survey area was approximately 60 m x 45 m in size and 952 data points were collected. The results of this magnetometer survey identified three significant anomalies at locations near the pit. These anomalies should be tested and further mapping should be conducted at this site to investigate the possibility that this is a location of one of Kangaroo Island's early shipwreck shelter huts.

Conclusion

In conclusion, the project was successful in assessing the potential for locating shipwreck shelter huts. Unfortunately, the potential for locating these early shelter huts is quite low unless historical records, maps or photographs indicate their exact location. Even then, these archaeological sites are difficult to identify because the structures were lightly constructed, were not involved in any known shipwreck events, and were dismantled and removed after a short period of time.

Admittedly, the prospect of locating archaeological remains of these shelter huts was considered unlikely from the beginning. However, it was hoped that a pre-disturbance survey of these shipwreck shelter huts would establish them as viable maritime archaeological sites, and begin to place them within a broader context. With further research, questions may be answered such as: How were these huts constructed? Who maintained them? Why this particular location(s) for a hut? Why was nobody stationed at the huts to assist sailors? What affected the decisions to place a hut rather than a life-saving station or lighthouse? What was the local involvement with these huts? Were they ever used or successful? Did it matter if they were used or successful? Were these placed to satisfy a local need or to demonstrate a political effort or presence? When and why were the huts removed? This and future research seeks to provide a better understanding of the severities of life and shipping along the isolated, rocky coastline of Kangaroo Island, particularly the local need for shipwreck shelter huts and lifesaving stations and the political and economic drive behind placing these shelters in these locations.

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