

# Sweers Island: changes over two hundred years since Flinders' visit

P. Saenger

Centre for Coastal Management, Southern Cross University, Lismore, NSW 2480, [psaenger@scu.edu.au](mailto:psaenger@scu.edu.au)

## Introduction

Sweers Island is situated at 17°06'S, 139°37'E in the south-eastern Gulf of Carpentaria, approximately 32 km offshore. The island consists of remnants of a lateritic pe-neplain, with recent deposition of calcareous deposits in the form of weakly cemented conglomerate and calcarenite. Most of the island is less than 13 m above high water mark, except for the small area around Inspection Hill, which attains an elevation of 32 m.

With the publication of *A Voyage to Terra Australis* by Matthew Flinders in 1814, Sweers Island with its safe anchorage, conspicuous elevation and convenient water supply, became an important staging post for numerous subsequent visits. From journals and accounts of those visits, it is possible to identify to what extent changes have occurred in the flora and fauna of the island over the intervening years; this paper is a first attempt to do so.

## The island prior to 1802

The use of Sweers Island by the Kaiadilt people (Bentinck Islanders) is well documented (Tindale 1962a; 1962b). As Tindale suggested, historical evidence indicates some occupation of Bentinck, Allen and Sweers Islands with primary use focused on Bentinck Island. The nomadic trips to Allens and Sweers Islands were largely dependent on whim, fresh-water supply and specific hunting and gathering expeditions; all were controlled largely by weather. The Kaiadilt people were basically gatherers of sea food, and the wave platform areas and associated shorelands were probably utilised on Sweers Island. Women gathered tjilangind (small rock oysters), kulpanda (mud cockles) and crabs during low tide periods, while the men explored the wider littoral areas spearing fish, turtle, sharks and dugong. On the other hand, Aboriginal fish-traps on Sweers Island suggest a more sedentary use of the island in the recent past (Saenger & Hopkins 1975).

The Aboriginal terms describing these places indicate that Bentinck Island was the 'land of all' (Dulkawalnged) while Allen,

Horseshoe and Sweers Islands were 'men absent lands' (Dangkawaridulk). These primary indicators, as well as later observations, suggest that prehistoric use was sporadic and ecologically insignificant.

Sporadic visits to the northern Australian coastline by Maccassarese–Buginese fishermen lost and/or seeking trepang and other marine biota did occur, although rarely were Sweers, Allen and Bentinck Islands included in these visits (Macknight 1976). However, some tamarind trees (*Tamarindus indicus*) on Fowler Island, recorded by Pennefather (1880), and the observations by Flinders (1814) of trees cut with axes, remains of worked timbers of teak, earthenware jugs and skeletons on Bentinck and Sweers Islands, suggest some visitation to the area. Effects of these visits on the islands' environmental resources are likely to have been short-term and minor.

## The first recorded impressions

The *Investigator* anchored off Sweers Island on 16 November 1802, and remained for 15 days. Peter Good, the gardener of the expedition, described Sweers Island as follows: 'This island appears very recently formed, chiefly of coral sand and ironstone and a mixture of sandstone and ironstone. There is no luxuriant vegetation or soil capable of producing such on the island. However, there is considerable variety of vegetables ... returned on board ... with fishing party which had been tolerable successful and had fish served out to the crew' (Edwards 1981).

The *Investigator* was anchored in Investigator Road between Bentinck and Sweers Islands in order to facilitate caulking. The crew began repairs while Flinders took boat parties to Sweers Island to take fixes from Inspection Hill and dig out a native well on the beach. The botanical gentlemen made useful excursions, which were amply rewarded. Robert Brown (n.d.) noted that 'during our stay at this anchorage I went several times on the Islands & scarce ever without finding additional plants so that

before we left it I had made out a Florule comprehending 190 species of perfect plants ... The rise of the spring tides was found to be about 11 or 12 feet & a circumstance very remarkable was that while we remained the low of floods was commenced in the morning continued for 12 hours & the ebb during an equal time in the night. During our stay the ship was supplied with fish & the Island where we watered a Bustard was shot perhaps not essentially different from Charadrius, it weighed 12½ lb & the flesh was well tasted that of the legs was much whiter than the breast ...' Collections of geological specimens were also made by Robert Brown and these were later described by Fitton (1827).

A few days into caulking, Flinders received reports of extensive repairs required due to rotting timbers, and a camp was established on Sweers Island under Lt Fowler. This group supplied fish and freshwater to the *Investigator*. Despite the parlous state of the ship, Flinders decided to complete a survey of the Gulf, hoping to be able to return to Sydney via the west and south coast in the winter, or retreat to the East Indies if required. When the repairs were completed, Flinders tried to sail out of Investigator Road against south-easterly winds but experienced difficulty getting around Locust Rock, anchoring south of Sweers Island. During this anchorage, Flinders wrote an extensive summary of the fortnight spent in the vicinity of Sweers and Bentinck Islands: 'The soil, even in the best parts, is far behind fertility; but the small trees and bushes which grow there, and the grass in some of the less covered places, save the larger islands from the reproach of being absolutely sterile. The principal woods are *Eucalyptus* and *Casuarina*, of a size too small in general, to be fit for other purposes than the fire; the *Pandanus* grows almost everywhere, but most abundantly in the sandy parts; and the botanists made out a long list of plants, several of which were quite new to them.'

Flinders (1814) named Bentinck Island after Lord William Bentinck, former Governor of Madras; Allen Island 'after the practical miner of the expedition' and Horseshoe Island 'from its form'. He named Sweers Island after Cornelius Sweers, one of the Councillors of Batavia, who had authorised Tasman's 1644 voyage.

The next glimpse of Sweers Island was provided by Stokes in the *Beagle* on her third voyage in Australian waters, charting the shores of Australia not investigated by Flinders or King. The *Beagle* sailed into Investigator Road from

the Cape Van Diemens area early in July 1841, and charted much of the Wellesley Islands. Stokes (1846) noted that 'Sweers Island appeared to be very woody, and bounded by low dark cliffs on the north-east side. We found a long extent of foul ground, with a dry reef near its outer end, extending off two miles in a S. 33°E. direction from the S.E. extreme ... A party was immediately dispatched in search of the Investigator's well.' Stokes also recorded a cloud of locusts which enveloped Sweers but which later moved to Bentinck Island, and observed that 'Investigator Road ... possesses an equal supply of wood, fish, and birds, with turtles close at hand on Bountiful Islands ... The soil is chiefly a mixture of sand and decomposed vegetable matter; but it cannot boast of fertility. The wood on the island, which consisted for the most part of gums, wattles, a few acacias, palms, and, near the beach, a straggling casuarina or two, bespoke this by its stunted appearance; but as cotton grows well at Port Essington, there can be little doubt that it will thrive here. Several of the bustards spoken of by Flinders, were noticed; but too wary to be killed. They were as large as those seen in the neighbourhood of Port Phillip, but much browner. The other birds, most common, will be found in an extract from the game book ... We saw no animals, except some large iguanas.'

The extract from the game book indicates that the island supported an abundant avifauna, with '151 quails, 87 doves, 20 pigeons, 3 pheasants, 8 white and 2 black cockatoos, 5 spur-wing plovers' being taken in the fortnight of the visit.

By June, 1856, in Sydney, there had been apprehension concerning the safety of the North Australia Expedition (NAE) under A.C. Gregory, which had left Brisbane for the Victoria River in the *Tom Tough* and *Monarch* on 12 May 1855. Lieutenant W. Chimmo, R.N. was '... sent to render assistance to the above expedition by his Excellency, the Governor General of New South Wales' (Chimmo 1856; 1857). The paddle steamer *Torch* sailed north from Newcastle on 24 June to gain news of the explorers.

The *Torch* arrived off Sweers Island in the evening of 30 July, and before dawn '... all hands were on shore looking for water ... By afternoon we had completed water (although somewhat brackish) to about five tons; and in return deposited pumpkin seeds and Indian

corn round the well, where the soil was rich' (Chimmo 1857).

The next day, the *Torch* departed Sweers Island and headed for the Albert River mouth. Lt Chimmo found no signs of the NAE, of which the main party was travelling overland to the Albert River, reaching it some two months later. As the NAE's support party had failed to rendezvous with the main party at the Albert River, Gregory departed overland for Moreton Bay. The support party had taken the *Tom Tough* to Coepang and Sourabaja, and replaced it with the *Messenger*, arriving off Sweers Island in mid-November.

Thomas Baines, the artist of the NAE, reported landing 'on the shore three quarters of a mile north of them [the wells] under a Cliff ... Captain Devine and I walked some miles to the North passing over plains with silverleaved iron bark, Eucalyptus and a long but shallow gully filled with green grass moist soil and clumps of pandanus but we could find no water though we saw several cockatoos. We returned along the beach ... We picked up a plank carved with rosettes and other devices ... We kept the long boat going between the vessel and the shore with heavy loads of wood all day' (Baines n.d.).

Once loading of wood and water had been completed, the *Messenger* prepared to depart, and Baines (1857) noted that 'I had a pair of goats which I intended to leave, but the female unfortunately died. I planted cocoa-nuts in a variety of places on Sweers Island.'

From these early accounts, it seems that the vegetation was generally stunted, dominated by *Eucalyptus* and *Casuarina*, but sufficient to meet the visitors' firewood needs. However, the shrub- and ground-layers were floristically diverse and of considerable botanical novelty. It also appears that birds and fish were remarkably abundant. Although it is unlikely that the corn and pumpkin planted by Chimmo survived, later reports of large coconut palms on the island (Pennefather 1880) suggest that Baines' coconuts may constitute the first successful plant introductions to the island.

## Early settlement 1861-1868

Leaving Melbourne on 4 August 1861, the Victorian Colonial Warship *Victoria* was despatched to the Gulf of Carpentaria, carrying the William Landsborough search party for the overdue Burke and Wills Expedition. It also

conveyed supplies for the search party led by Fred Walker, which had left overland from Rockhampton on 25 August.

Anchoring off Bountiful Island on 27 September, the crew of the *Victoria* set about catching turtle and, according to Kirby (1862), 126 turtles were caught in two days. Proceeding to Sweers Island, a depot was established, grass was cut for the horses, and a turtle pond was built (Bourne 1862), although many turtles died before the pond was completed. Early the next morning, Landsborough went ashore, describing '... fine young grass not above a few months old ... The island is of sandstone formation and the land is very sandy. The grasses on it are good. It is lightly timbered with the pandanus palm, oak trees (*casuarina*), stunted white gum, black figs, red plum and other trees. The fruit on the plum and fig trees, especially the former, are very nice ...' (Landsborough n.d.).

Others also commented on the abundance of grass: Bourne (1862) states '... landed on Sweer's Island to cut grass for the horses; took our guns; grass plentiful. Saw many birds - such as bustards, pigeons, quail, pheasants, crows, native companions.'

In his published journal (Laurie 1866), Landsborough described Sweers Island as follows: 'Bentinck Island is about thirty miles in circumference; Sweer's, only three: both are well grassed and wooded ... Further inland we found the grass of good quality, and fit for cutting ... as the sheep we had on board could now have the advantage of grazing, and my horses that of fresh fodder'. Kirby (1862) added that 'there are no large trees, those we saw being stunted in their growth, and of small size; we saw neither plants nor fruits. The soil is a dark loam of considerable depth, and, except on the beach, there is little or no sand; no animals were seen, but birds of the cockatoo, pheasant, and parrot tribe are abundant ... Fish are to be had in the greatest abundance, more especially codfish, weighing from seven to twenty pounds, and I see no good reason why a fishery of a remunerative character might not be established there.'

Early in December, Walker's relief expedition arrived at the Albert River, and after reporting to Captain Norman, he was treated to turtle soup, together with fresh cress, onions, radishes, and sprouts which had been planted on Sweers Island. Apart from his gardening and turtle pond, Captain Norman also maintained at

least 7 sheep on Sweers Island—the first agricultural pursuits on the island.

Diedrich Henne, Baron von Mueller's 26-year-old botanical assistant, was attached to the Captain Norman's expedition. He made extensive seed, wood and plant collections on Sweers Island, bringing back six cases of botanical specimens to be deposited in the Melbourne herbarium. His diary, translated by Johnston (1970), suggests that snakes were common on the island following rain: '... we have snakes in pretty large numbers, especially the harmless carpet snake: however, also one, I believe venomous species: they are short and plump, about eighteen inches long, and are brown and yellow banded, with blunt tail; also iguanos turn up.' Henne also described the first release of sheep onto the island. On preparing to leave the island on 11 February 1862, the sheep grazing on the island had become so wild that they could not be caught or shot—and were left behind to fend for themselves; the lack of surface water on the island would have ensured their demise.

With the establishment of Burketown on the Albert River during 1865, it became the shipping centre for the Gulf stations. However, in February 1866, the *Margaret-and-Mary* arrived from Bowen at the Albert River, bringing with it an epidemic known as 'Gulf Fever'—now thought to be malignant tertian malaria (Fenner 1990; Kettle 1993)—and within a few days, virtually the entire crew was dead, and soon, around 60 persons were recorded to have died in the district. When William Landsborough, the newly appointed Police Magistrate for the district arrived in April, he arranged for the removal of most residents to Sweers Island. Landsborough departed for Sweers Island in the pilot boat, accompanied by the surveyor, George Phillips, the pastoralist, John G. Macdonald, and the prospector, Ernest Henry, who was to go on to discover large copper deposits at Cloncurry in 1867.

They arrived at Sweers Island, and camped at the site of the earlier depot. On revisiting the island after five years, Landsborough (n.d.) wrote '... The country is high downs and a few fine trees with thick foliage ... The northern end as well as the southern end of Sweer's Island is rather thickly wooded. In the course of one walk we saw several pigeons, cockatoos and bustards. Although shy Mr. Henry succeeded in shooting some cockatoos and a bustard'. Henry (n.d.), in turn, described the island as '... in the centre are some nice downs

extending to the east side, but at the north and south ends there is a good deal of scrubby country...'

When the schooner *Lilly* arrived at the Albert River from Bowen in late May, Landsborough (n.d.) purchased 25 sheep, which were landed on Sweers Island, and signalled the beginning of sustained grazing on the island. Writing to Governor Sir George Ferguson Bowen, Landsborough (*Port Denison Times* 1/12/1866) claimed that 'This township on Sweers' Island is fast becoming a place of considerable importance. The harbour is found so convenient that for some time back there has been always a few vessels in it, either discharging cargo, waiting for loading from the mainland, or getting water or ballast ... This place having a good port for loading and discharging cargo, and having, I believe, the best climate in this part of the world, will, I imagine, have a good chance of becoming one of the places of the greatest importance in Australia. Coming down from my high flight of vision allow me to remark that fishing is attended with considerable success. A garden, commenced by Messrs. Ellis Read and Co., promise well. Sheep and other kinds of stock do well. There are no native dogs, and ... the island therefore may become valuable for sheep runs.'

An anonymous 'voice from Carnarvon' reported (*Port Denison Times* 18/5/1867) that '... the land sale in Burke Town passed off well; all lots were sold - consisting of 88 allotments, all that were surveyed on the Island ... Our gardens on the Island give us an over abundant supply of vegetables, and we are longing to see the *Ellesmere* so that the passengers may get a feed of them - what, I am sure, they have not seen for some time. I have seen a few gardens - but a garden on Sweers Island, formed by two gentlemen, excels anything I have ever seen; out of one small corner we gathered I should say one hundred and ninety mellons, the most of them equal in circumference to a bucket ... Bananas and pine apples are not quite so plentiful; the cherry and black currant trees have not done so well as we expected.'

By 1867, Sweers Island virtually replaced Burketown as the official government centre, with all vessels trading to the Gulf region calling at Carnarvon, which had been laid out and surveyed during mid-1866 by George Phillips. The newly laid-out town of Carnarvon consisted of 60 town and 15 suburban allotments and comprised several stores, around 15 houses, a Customs House, a lock-up and, at

least, one hotel. The names of many of the families associated with the settlement of Carnarvon are recorded on the 'Plan of Town of Carnarvon and Suburban Allotments - Sweers Island'.

Shortly after South Australia assumed administrative responsibility for the Northern Territory, Captain Francis Cadell was commissioned by the South Australian Government to explore in detail the rivers of the Gulf of Carpentaria and Arnhem Land. He departed Sydney on 2 April, 1867 in the screw steamer *Eagle*, arriving off Sweers Island on 22 August. The brothers T.A. and B.J. Gulliver, on instructions from Baron F. von Mueller, travelled aboard the *Eagle* and collected plants around Sweers Island, the Gilbert, Norman and Flinders Rivers in the Gulf of Carpentaria and at Caledon Bay. Writing to the *Queenslander* (16/11/1889), B.J. Gulliver reported that '... during the two days we stayed there I made some botanical excursions on the island, securing, amongst others, a specimen of a rare and peculiar red-flowering lily.'

By January 1868, William Landsborough and Surveyor George Phillips had surveyed a new township on the Norman River, and most of Sweers Island residents relocated to Normanton during the year to escape the isolation of island life. Perhaps as a departing gesture, a large banquet in honour of the pioneering settlers was held at the Alhambra Hotel on Sweers Island in August 1868 (*Port Denison Times* 12/9/1868), attended by such notables as the Hon. John Robertson, J.G. MacDonald and George Sandrock, the Collector of Customs.

The early attempts by Captain Norman at agriculture and mariculture in addition to the taking of wood for steamers and fires, are likely the first European resource utilisation of Sweers Island of any consequence. However, during the period of establishing Carnarvon, Sweers Island vegetation and fauna would have undergone significant changes, as all kinds of stock were introduced to the island, human habitation and stores were erected, and timber harvesting for fuel and construction purposes was widespread.

## Sweers Island as a stock run

By the end of 1868, the township on the island was virtually deserted; a few Government officials and their families remained, as did a

few other graziers. Around this time, the *Xula* loaded wool, tallow, hides and skin at Sweers Island direct for London, while Captain Till, in the *Clara*, loaded wool, tallow, hides and skin (*Port Denison Times* 10/10/1868), and it seemed that a new phase of agricultural production was imminent—intensive stocking.

In February 1869, the Chief Inspector of Sheep, P. R. Nordow (1869) wrote to the Minister for Lands that '... an outlay of £120 for fencing—in addition to wire and a few articles—is asked for in order to make the quarantine available for the reception and dressing of imported sheep ... During last year 41 imported sheep were landed at Sweers Island and should scab be introduced there the consequences in such a far off District would be disastrous'. The request was rapidly approved to safeguard this blossoming agricultural industry.

Captain Till of the *Margaret and Jane*, recently returned to Bowen from Sweers Island, reported that '... Sweer's Island is deserted by all but the officials and their families and one Chinaman. Mr. Sandrock has 150 or 200 head of cattle feeding on the island. Towns & Co. cattle are being mustered by Mr. Morrisett for transmission south' (*Port Denison Times* 4/2/1871). At this time, only about 20 people were left on the island (Amstel 1871), accompanied by numerous 'cattle, sheep, horses, goats, fowls etc' (Holder Cowl n.d.).

Thus, Sweers Island was largely deserted in favour of Normanton, and only a few families, including the Creffields, '... who keep cattle, goats and sheep on the island ...' remained until 1897 (Palmer 1903). When the publican, Donald McLennan died on 4 February 1876, his herd of cattle was removed to the mainland via the *Io* (*Port Denison Times* 20/10/1877). The customs and pilot service, however, were not relocated to Normanton until August 1880. However, a month later, when Captain C. Pennefather arrived at Sweers Island from Thursday Island aboard Q.G.S. *Pearl* to chart the waters around Point Barker, he noted that the island is '... lightly timbered; with soil of loose sandy nature. At the time of our visit it presented a very sterile appearance owing to want of rain and its being overstocked; in fact, it seemed wonderful how the quantity of stock, over 1,200 in number (cattle, sheep and goats), managed to exist.' (Pennefather 1880). He also reported that '... there are two cocoa-nut trees on the Island, thriving and doing well, also guavas, dates, tamarinds, etc., - the climate of the

place being apparently well suited to the growth of fruits of the kind’.

In 1901, the first anthropologist to visit the area was Dr. Walter E. Roth, Northern Protector of Aborigines, who was accompanied by native police from the mainland, and J.F. Bailey, Director of the Brisbane Botanic Gardens. J.F. Bailey collected 56 plant specimens from Sweers Island, 15 from Bentinck, 6 from Bountiful and 5 from Mornington Islands during that June visit, including the type specimens of *Amyema villiflorum* subsp. *tomentillum* from Sweers Island (Barlow 1984). Roth (1901) reported that ‘... a few remains of Landsborough’s cottage are still visible. The island itself is at present held under occupation license: it is well watered, carries about 700 sheep and 400 goats, and has a good anchorage.’

On a second visit to the area in June 1903, Roth was accompanied by Charles Hedley, a malacologist from the Australian Museum, Sydney. Roth (1903) mentions that ‘... Mr. Hedley has made an excellent collection of marine zoology, including about 400 species of molluscs: he is of opinion that the Gulf of Carpentaria fauna should be considered an out-lier rather of the Indian than of the Pacific Ocean. The salient characters of the region are the slight development of reef-building corals, and their associated fauna, as compared with the Torres Strait and the East Coast of Queensland. Towards the head of the Gulf, the corals entirely disappear, and the mangrove-swamp fauna is developed in great luxuriance...’

From around 1908, John MacKenzie apparently held an occupation lease over Sweers Island, keeping sheep, goats and horses. In addition, he carried out ‘lime-burning’ from a kiln constructed on the western side of Inspection Hill (Stubbs2004). This mining venture ceased sometime around 1922, but much of the stock was left on the island. Some of this stock was shot by police troopers while searching the area for those responsible for the death of the Reverend Robert Hall on Mornington Island. Others were speared by the Kiaidilt people, whose numerous folk tales surrounding the killing of the last of MacKenzie’s goats and a horse (Roughsey 1977), signalled the end of the occupation and grazing era, and a reversion of the island to its traditional owners.

This grazing phase in Sweers Island’s past must have led to severe overgrazing of the vegetation considering the stocking rate—which would have been at around one sheep, cattle or

goat per hectare. While such grazing intensity may have been sustainable during the wet season, it must have placed severe stress on the vegetation during the long dry season e.g. in September, when Pennefather (1880) noted its sterile appearance. It also seems likely that the sand blow-outs along the eastern shoreline were caused by, and are reminders of, the ~ 55 years of intensive grazing on the island.

## Recent changes on and around the island

In 1934, the island was declared a ‘reserve for the use of the Aboriginal inhabitants of the State’, exclusive of freehold allotments in the town of Carnarvon and the access roads (Reserve no. 5599, *Queensland Government Gazette* 1934.2.344). However, such traditional enjoyment of the island was not to last: as a result of a severe drought in 1946 and a cyclonic tidal surge in 1948, all Kaiadilt people were relocated to the mission on Mornington Island, where they remained. In 1960, Norman Tindale, with a party containing 20 Kaiadilt people, visited the Bentinck-Sweers Island area. Various archaeological investigations were carried out around Inscription Point and in the coastal area west of Inspection Hill (Tindale, 1962a; 1962b). Since that time, the Kaiadilt people have returned to residence on Bentinck Island, with occasional visits to Sweers Island.

In 1970, however, Southers and Dickens purchased freehold property in parts of the old township of Carnarvon, and the erection of a tourist facility was commenced by two young French adventurers (Jean-Jacques Amella, pers. comm.). Subsequently, these properties were purchased by Broken Hill South Pty Ltd, who investigated the island as a potential shipping point for Lady Annie phosphate rock, and to facilitate this development, all freehold land within the town of Carnarvon, with the exception of portions 2, 3, 8, 10, 11, 12, 13, was resumed by the Crown in March 1971 (*Queensland Government Gazette* 1971.1.846-848). This was followed by a biological survey of the island in October 1973, as part of the investigations to assess the environmental impact of the proposed port development. As a member of the survey team, the present author surveyed the mangroves and shallow water marine communities around the island. While the mangrove data were published (Saenger & Hopkins 1975), the

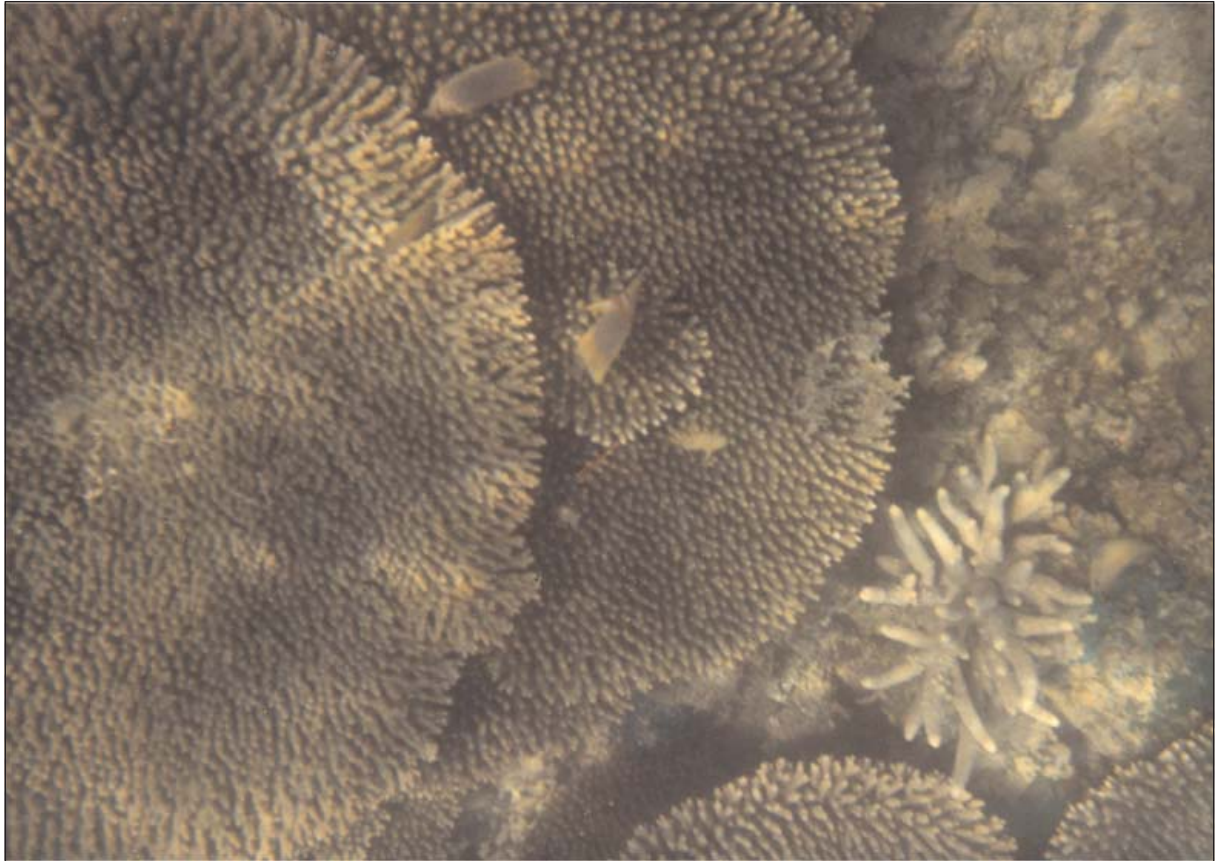


Figure 1: Plate-forming *Acropora hyacinthus* in shallow water on the southern shore of Sweers Island, October 1973.

remaining data remain unpublished, and have been summarised below.

Extensive seagrass beds occurred around the island, particularly off the south-west and western shoreline. Common species include *Halophila decipiens*, *H. spinulosa*, *Halodule uninervis*, *Cymodocea serrulata* and *Syringodium isoetifolium*. Coral fringing reefs occurred on the southern and eastern shoreline between 1-4 m depth at low water, with coral cover varying between 30% on the landward edge and to 100% on the seaward margin respectively. The dominant coral was *Acropora hyacinthus* (Figure 1, page 17), constituting up to 70% of the total coral cover. Other common genera included *Oulophyllia*, *Lobophyllia*, *Favia*, *Goniastrea*, *Favites*, *Turbinaria*, and *Montipora*. Along the northern and north-eastern shore, rocky reefs predominated, with an abundant algal cover, mostly comprised of *Cystophyllum muricatum*, *Sargassum* spp., *Laurencia* spp., *Caulerpa racemosa*, *Asparagopsis taxiformis*, *Turbinaria ornata* and *Spyridia filamentosa*.

The vegetation types were also mapped, and the map has been updated more recently, based

on a SPOT satellite image (Figure 2, page 18) from 1990. Using a structural classification based on vegetation height and percentage cover, seven communities have been recognised, and brief descriptions, based on field surveys, are given below. The extent of these communities is given in Table 1 (page 19).

### **Dense vegetation**

Two areas of dense vegetation have been mapped: one consists of tall, mid-dense stands of *Corymbia grandifolia* in the centre of the island, the other, immediately inland from the resort, consists of lower, but dense, coastal vine-thicket, with scattered *Pandanus* and *Celtis paniculata* stands.

### **Melaleuca woodlands**

Dominated by *Melaleuca viridiflora*, attaining heights of 5–10 m. These characteristic stands occur throughout the island.

### **Melaleuca shrublands**

Comprised of *Melaleuca viridiflora*, 2–5 m high. These low open stands are most common and particularly extensive to the south of the airstrip.

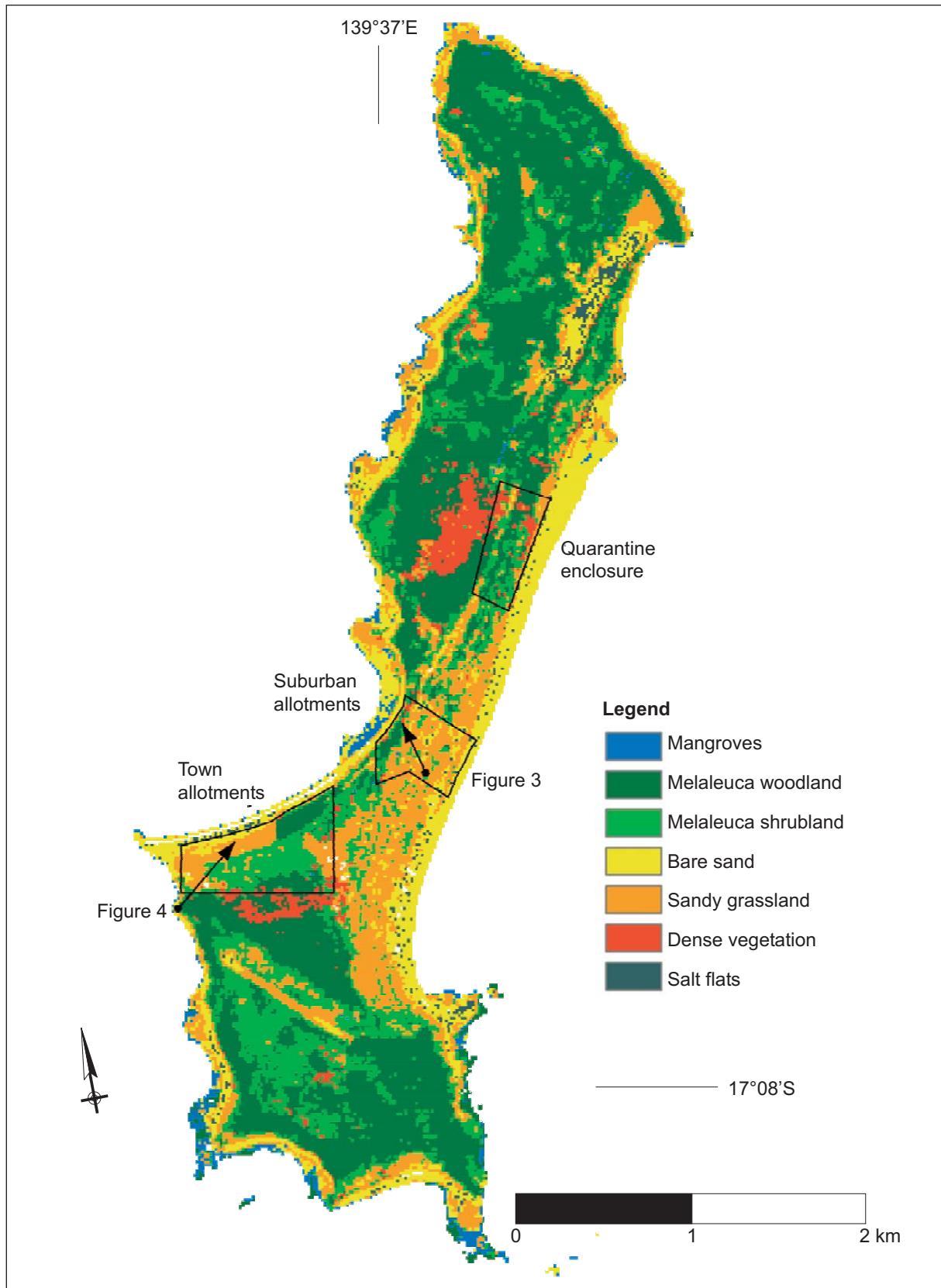


Figure 2: Vegetation of Sweers Island in September 1990, mapped from a SPOT satellite image. Note the site of the town and suburban allotments, as well as the quarantine enclosure. In addition, the locations and directions of the photographs in Figures 3 and 4 are shown.



### **Sandy grasslands**

Extensive grasslands occur in the centre of the island, particularly along the eastern shoreline. Numerous species occur, including *Spinifex longifolius*, *Heteropogon contortus*, *Xerochloa imberbis*, *Chrysopogon elongatus*, *Eragrostis concinna* and *Aristida holathera*. Scattered trees of *Casuarina equisetifolia* occur along the strandline.

### **Bare sand**

This community type includes all of the beaches, occasional bare dunes and sand blow-outs. These areas are virtually devoid of plants, or have seasonal plant cover only.

### **Mangroves**

Scattered stands of mangroves occur, in sheltered locations where silty-sandy substrates are found. *Rhizophora stylosa* and *Avicennia marina* are widespread around the island. *Aegialitis annulata* forms dense stands, approximately 1 m tall, on shingle banks along the western shoreline. *Lumnitzera racemosa* is scattered around the island, but a dense stand, apparently the remnant of a more widespread mangrove community, occurs in drainage lines of the north-western part of the island. Scattered plants of *Excoecaria ovalis* occur along the western shoreline. Since the original mangrove surveys in 1973, additional species have become established on the north-western shoreline on Sweers Island. Between 1973 and 1990, *Aegiceras corniculatum* became established (as did the cane toad), followed by *Bruguiera exaristata* between 1990 and 1994. Most recently, between 1996 and 2002, three plants of *Ceriops australis* have become established in this area. These species are common in the extensive mangroves of Bentinck Island,

Table 1: Vegetation types and areas on Sweers Island, based on remote sensing (SPOT 29/9/1990).

| Vegetation type      | Area (ha) | Island cover (%) |
|----------------------|-----------|------------------|
| Dense vegetation     | 51        | 3.8              |
| Melaleuca woodlands  | 521       | 39.2             |
| Melaleuca shrublands | 259       | 19.5             |
| Sandy grasslands     | 258       | 19.4             |
| Bare sand            | 186       | 14.0             |
| Mangroves            | 34        | 2.6              |
| Saltflats            | 20        | 1.5              |
| Total                | 1,329     | 100              |

and it seems likely that they have colonised Sweers Island from Bentinck Island.

### **Saltflats**

These are largely areas bare of vegetation, although sporadic saltmarsh species occur, including *Sarcocornia quinqueflora*, *Suaeda arbusculoides*, *Halosarcia indica* subsp. *leiostachya* and *Tecticornia australasica*. Around their margins, occasional shrubs are present, including *Excoecaria parvifolia* and *Grevillea dryandri*.

## **Aboriginal Land Tenure**

Following the abandonment of the phosphate shipping project on Sweers Island in 1977, the boundaries of the Aboriginal Reserve on the Island were redefined to exclude previously surveyed areas of crown land and the airstrip (*Queensland Government Gazette* 1989.2.2329). Two sections were established, the northern section comprising 775 ha, while the southern section was of 480 ha. These reserves, however, were repealed in 1994, when a deed of grant in trust was granted to the Kaiadilt Aboriginal Land Trust. In 1996 a native title claim by the Kaiadilt people, as part of four applicant groups, was lodged for the land and waters from the high water line on Bentinck and Sweers Island to 'as far as the eye could see', a claim recognised by the Federal Court to five nautical miles seaward (*The Lardil Peoples v State of Queensland* [2004] FCA 298).

## **A retrospective assessment**

Judging from the early accounts of the vegetation, it seems probable that few changes have occurred and/or persisted, and that recovery from felling has occurred. Grass, herb and shrub cover has also apparently recovered from intense grazing by introduced stock (Figures 3 and 4, page 20), and the absence of macropod grazers has possibly facilitated this process. The flora of the island is diverse, and few weeds have been identified (Thomas & Pedley 2004).

Few changes in the fauna appear likely; goannas and pythons remain common on the island, although one early report, apparently of abundant death adders, is intriguing as they have not been recorded since. Cane toads became established on the island between 1973–1990. Early accounts of an abundant avifauna still hold today and bustards remain common—

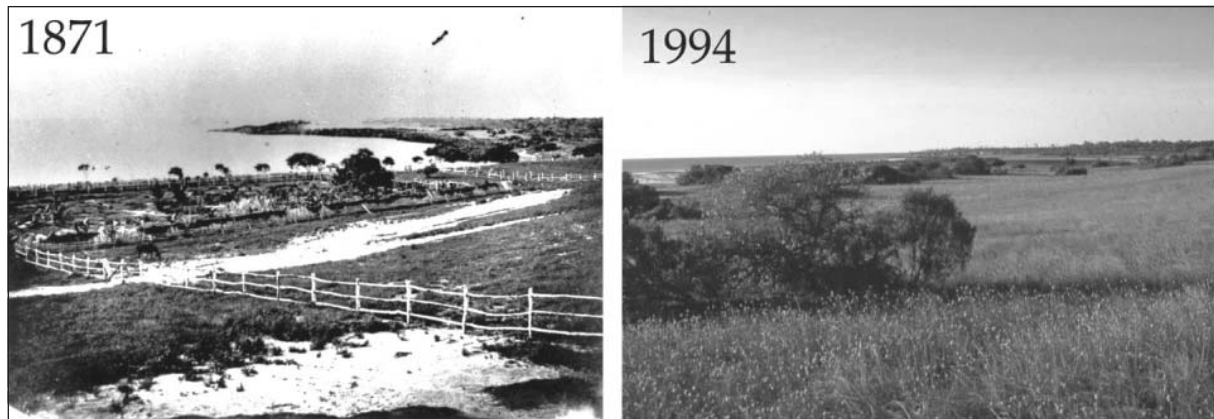


Figure 3: Identical views from one of the suburban blocks, looking north-west. Note the extensive use of *Melaleuca* saplings for fencing, the areas of overgrazed vegetation, and the large number of hides draped on the fence in the distance. (1871 photograph, Captain Sweet, courtesy of the John Oxley Library neg no. 67338; 1994 photograph, Brett Stubbs).



Figure 4. Identical views from the Customs House, looking north-east, over what George Phillips described in 1866 as 'open country'. (1871 photograph, Captain Sweet, courtesy of the John Oxley Library neg no. 67334; 1994 photograph, Brett Stubbs).

perhaps as a result of the non-introduction of rabbits, foxes, pigs or cats.

In terms of the inshore marine environment, historical accounts of good fishing success still hold—presumably underpinned by the extensive seagrass beds around the island, and the generally increasing mangrove areas. On the other hand, hard coral cover around the island appears to have declined over recent years, although no clear causes can be identified.

Overall, the flora and fauna of Sweers Island has remained remarkably intact, despite a period when use and exploitation of the island's resources was intensive.

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