

THE SEA PEOPLE

Late Holocene maritime specialisation in
the Whitsunday Islands, central Queensland

Bryce Barker

Editorial team: Jack Golson and Sue O'Connor

PANDANUS BOOKS
Research School of Pacific and Asian Studies
THE AUSTRALIAN NATIONAL UNIVERSITY

The Archaeology: A Synthesis

Timing of Occupation

The earliest evidence of occupation in the Whitsunday Islands dates to before 9000 BP at Nara Inlet 1. At this time the site would have been close to the sea but part of the mainland coast. Hook and Whitsunday Islands were the eastern arm of a large peninsula extending as far south as Cape Conway, the headland of which was formed by the northern ends of Hook and Hayman Islands (see Fig. 4.2). The islands of today were rugged mountain tops rising up from broad and relatively extensive plains. Nara Inlet was a river valley, with the western coast of the peninsula some 1.5km away from the Nara Inlet 1 site. Human occupation of sites such as this prior to the arrival of the coastline was unlikely, or remote, given the settlement options available on the adjacent extensive plains. I would argue that Nara Inlet 1, and perhaps the region as a whole, was a focus of occupation by coastal peoples who were following the coast as sea level rose, utilising shelters as the sea came into close proximity to them (see Bowdler 1977; McNiven 1991).

South Molle Island also probably demonstrates use dating back to 9000 BP, as attested by the presence of South Molle artefacts at Nara Inlet 1. South Molle at this time was on the opposite side of the large inlet, forming part of its eastern coast. Although located to the east of Hook Island and therefore closer to an earlier coastline, Border Island 1 was not occupied until about 7000 BP, when it was probably already an island. This is not surprising given that even today the Border Island 1 rock shelter is some 40m above high-water mark in a near-sheer cliff face and was unlikely to have been an option for habitation before rising sea level enabled easier access.

The two other sites investigated, Hill Inlet Rock Shelter 1 and Nara Inlet Art Site, were occupied only in the late Holocene, at 2770 BP and 2350 BP respectively. When Nara Inlet 1 was initially occupied (by 9000 BP), Hill Inlet 1 was still some 10km from the coast, well up a long river valley and facing a broad coastal plain. Nara Inlet Art Site, only a few hundred metres from Nara Inlet 1 but at a much higher elevation, was, as has already been stated, less than 2km from the sea.

The earliest evidence for occupation of the region thus coincides with the initial arrival of the sea. This comes from the sea-level data and the fact that there is no pre-marine element in any of the archaeological assemblages. It seems likely that people were at this time, as is the case today, largely occupying the low coastal plains and coastal fringe and that the bulk of the evidence for their occupation is now under water. Whether there was a resident population in the region prior to 9000 BP is debatable and the question is unlikely to be resolved until sites on the mainland to the west of the current coastline are investigated. Although it might be expected that the newly arrived coastal peoples utilised the hinterland from the start, it is interesting to note that the only sites excavated on the mainland from Townsville south to the Whitsunday region all record late-Holocene dates (Table 11.1). Although some of these dates are not basal, the sites are all considered to have been first occupied sometime during the late Holocene (Brayshaw 1990:210). I feel, however, that no clear statement about hinterland use can be made until further research is carried out on the mainland, except to repeat that as sea levels rose, drowning the flat plains to the east of the current coast, it should be expected that greater use was made of the area to the west of it. The fact that only late-Holocene sites have been identified there could be due to the greater archaeological visibility of such sites and/or a product of sample size.

Table 11.1 Occupation dates for hinterland sites Townsville to Cape Upstart

	LOCATION	DISTANCE TO COAST	RADIOCARBON YEARS bp
Kennedy A	Mt Creagh	18km	685±105
Jourama	Paluma Range	15km	1450±110
Herveys Range	Herveys Range	26km	1455±140
Mt Roundback	Cape Upstart	8km	1650±120

None of the sites I investigated in the islands shows any pattern of change coinciding with the mid-Holocene stabilisation of sea level around 7000 years ago. The changes represented by the contrast between Phases 1 and 2 at Nara Inlet 1 and Border Island 1 are late Holocene in date, 3000 BP and later. They are shared by the two sites whose utilisation postdates 3000 BP, Hill Inlet Rock Shelter 1 beginning at 2770 BP and Nara Inlet Art Site beginning at 2350 BP.

Subsistence and Economy

Marine resources predominate in all the sites as yet excavated in the Whitsunday Islands. Although this should not be surprising given that they are all coastal sites, it is clear that the pattern of occupation and settlement is an accurate reflection of a broader, essentially coastal system, as discussed below.

The relative importance of dietary resources

Although the bulk of the cultural material in all the sites is shellfish, these comprised only a small proportion of the overall diet. Fish and turtle were the two most important animal foods throughout. Together they contributed 86.4% of meat weights at Nara Inlet 1, 82.3% at Nara Inlet Art Site, 81.1% at Hill Inlet Rock Shelter 1 and 96.7% at Border Island 1 (Table 11.2). In contrast, terrestrial fauna never contributed more than 6.3% of total meat weights and shellfish contributed a maximum of only 15.6%. Overall, fish comprised 46.2% of the total meat in all the sites, turtle comprised 39.2%, shellfish comprised 10.0% and terrestrial fauna comprised a minimum of 4.6%.

Table 11.2 The relative importance of dietary resources at the investigated sites

	NI1		NIAS		BI1		HIRS1	
	kg	%	kg	%	kg	%	kg	%
Shellfish	1007.5	7.4	714.3	12.8	115.6	3.3	1189.6	15.6
Fish	7999.2	58.5	392.0	7.0	1280.0	36.6	4368.0	57.4
Turtle	3814.8	27.9	4200.0	75.3	2100.0	60.1	1800.0	23.7
Terrestrial	858.0	6.3	274.4	4.9	—	—	252.0	3.3
TOTALS	13679.5		5580.7		3495.6		7609.6	

The very small quantities of bone recovered from the larger marine animals such as turtle suggest a butchering pattern that precludes rock-shelter deposition of skeletal material from these species. For example, the weight of turtle bone and turtle shell for a minimum number of four at Nara Inlet 1 totals a mere 6.2g. The evidence for dugong exploitation is even more problematic, being a single tentative identification at Hill Inlet 1. The presence of whale bone has likewise been identified at Nara Inlet 1 from just seven teeth. Clearly, the bulk of the skeletal remains of these large animals is either not being brought into the site or is being removed from the site after consumption. Nonetheless, turtle bone and turtle shell are present in all the sites analysed. At Nara Inlet Art Site and Border Island 1, turtle makes up the majority of the meat weights represented in the faunal assemblage (Table 11.2).

Because of the difficulty in assessing MNI and meat weights, a resource that is probably significantly underestimated is the crustaceans, principally the mud crab, *Scylla serrata*. This species appears in all of the sites except Border Island 1 and is present in considerable quantities in Hill Inlet Rock Shelter 1. As well, being a mud-dwelling species dependent on macrophytic communities, its presence in the early phase of occupation at Nara Inlet 1 clearly establishes the presence of tropical mangrove communities in the region throughout the Holocene, including the period of sea-level rise in the early Holocene.

Although the terrestrial component of the subsistence base is small in all of the sites analysed, there is nonetheless a relatively extensive faunal suite, with at least 13 individual species present. This demonstrates that a fairly large and diverse terrestrial component was available, including relatively big mammals such as the macropod, *Petrogale inornata*, and the possum, *Trichosurus vulpecula*.

Plant remains, well represented in all the sites except Border Island 1, are considered to have been an important component of the diet. The species present are all tropical and there is an increase in their number over time, with the poisonous *Cycas media* and *Bruguiera gymnorhiza*, which require intensive processing before consumption, appearing only after 524 BP in Nara Inlet 1 and in the upper XU of Nara Inlet Art Site and Hill Inlet Rock Shelter 1. This would appear to result not from differential preservation, since plant material was present throughout the sites and especially at Nara Inlet 1, with sticks, grass, leaves, bark (including paperbark) and seeds being retrieved from the lowest XU.

Plant remains also provide some evidence for seasonality of site use in the form of the three summer (wet season) fruiting species: the Burdekin plum (*Pleiogynium timorense*), the cocky apple (*Planchonia careya*) and the screw palm (*Pandanus spiralis*), all of which have ripe fruit between September and October. These three species are represented in a number of sites by their fruit seeds. Similarly, plant remains that are described in the ethnohistorical and ethnographic records as being highly toxic, laborious to prepare and very much a secondary food, such as the hypocotyl of the orange mangrove *Bruguiera gymnorhiza*, may also point to summer occupation. Thus Moore (1979:275) has said of Torres Strait that:

[t]he food situation during the months of the northwest monsoon ... was much less favourable. The main support during the wet season was a grey paste made from the pith of sprouts of a particular type of edible mangrove known as *biyu*. This has been tentatively identified by Harris (1976:104-5) as *Bruguiera gymnorhiza*.

The differences in the faunal assemblages of the four excavated sites can be explained largely by differences in local environments. For example, Hill Inlet is a large, shallow and heavily mangroved inlet with large sandy patches and few rock platforms or fringing reefs. Appropriately, there is a predominance of bivalves over gastropods, significant numbers of the mud-dwelling crustacean, *Scylla serrata*, and sandy-bottom fish such as the northern whiting (*Sillago sihama*) and yellow sweetlip (*Lethrinus nebulosus*). In contrast, Nara Inlet 1 is depauperate in mangroves, has an extensive rock-platform shoreline and a large fringing reef. Consequently, rock-platform gastropods and fringing-reef fish species predominate in the archaeological sites. This picture is repeated at Border Island, a small, relatively isolated island with few mangroves, no known large terrestrial fauna and a large fringing reef. The excavations at Border Island 1 revealed no terrestrial component in the subsistence base and a prominence of turtle.

Another factor which may account for the differences in subsistence items in the various assemblages is the intensity and duration of occupation of the various islands and sites. Thus Border Island 1 contains a much reduced range of fauna, as well as relatively low discard rates of cultural materials. Unlike the other sites, plant remains are absent, perhaps suggesting sporadic visitation of short duration in which a broad range of subsistence activities like those apparent at Nara Inlet 1 were not carried out. In this context, differences are also apparent between the two contemporaneous assemblages at Nara Inlet 1 and Nara Inlet Art Site, separated by just 400m of water. In particular, the macropod, *Petrogale inornata*, is considerably more important at the art site than at Nara Inlet 1. This introduces an archaeological problem of scale and sampling: when are two components to be considered distinctive or unrelated, given that any given system will be made up of different yet articulating components? This issue becomes even more evident at Nara Inlet when we consider that the Nara Inlet Art Site has an extensive body of rock art and a reported stone arrangement in front of it, whereas Nara Inlet 1 has no art and no evidence of ceremonial activity.

The shellfish assemblages are dominated by small gastropod species such as *Nerita undata* and *Lunella cinerea*, which provide very little in terms of meat. The single most important shellfish in terms of meat is the chiton, *Acanthopleura gemmata*, which is dominant in all sites except Hill Inlet 1. This is probably due to the fact that the latter is situated in a sandy/muddy estuarine system in which chitons are rare.

Although it is clear that large mud-dwelling bivalves such as *Gelonia coaxans* were available, it appears that little effort was expended in obtaining them. Selectivity in species procurement tends to show that those species which were most easily obtained, requiring little extractive effort or travel, were favoured over those whose procurement was less accessible and more labour-intensive, even if they were of considerable size. At Nara Inlet 1, mud-dwelling bivalves such as *G. coaxans*, *Pinctada fucata* and *Asaphis deflorata* occur only in Phase 2. This may indicate a minor increase in local sedimentation and an expansion of macrophytic communities in Nara Inlet or nearby after this time or reflect changes in procurement choice relating to shellfish.

Changes in subsistence

Changes in the subsistence base are reflected mainly in increased densities of previously exploited species over time (Figs 6.5, 6.6, 6.8–19 at Nara Inlet 1) and the broadening of the resource base in Phase 2, with the addition of a small number of new species (see the mention of *Geloina*, *Pinctada* and *Asaphis* in the previous paragraph). Human-induced modifications to the resource base include change in the available age structure (and thus size) of some shellfish species, in particular a reduction in the sizes of *Saccostrea cucullata* at Hill Inlet 1 (Fig. 9.5) and of *Nerita undata* at Nara Inlet 1 (Fig. 6.7).

One of the features of the subsistence base at Nara Inlet 1 and Border Island 1 is that the species exploited from the time of initial occupation are extant today and were continuously exploited throughout the Holocene. There is evidence from the presence of tropical species of fish, crustaceans and shellfish in the Nara Inlet 1 assemblage from 9000 BP to suggest that the broad climatic pattern of today was largely in place by the time of initial occupation in the early Holocene. It is also clear that macrophytic communities were in place throughout the period of occupation, suggesting that the species that appear only in the archaeological record in Phase 2 were nonetheless available well before that time. I would argue that their exploitation (albeit limited) in Phase 2 reflects procurement choice rather than gross availability.

Conclusion

Although it can be said that a wide variety of marine and terrestrial foods made up the subsistence base of the Whitsunday Islanders, it is clear that the major subsistence items were marine in origin, including plant species such as the orange mangrove, *Bruguiera gymnorrhiza*. The Ngaro and their ancestors can thus be characterised as operating a marine economy.

Settlement Pattern

One of the obvious difficulties in discussing a settlement pattern for the Whitsunday region is the lack of previous research in the region, specifically on the mainland hinterland directly to the west of the northern Cumberland Islands. Of the 61 sites known for the region, 56 are either on the islands or on the adjacent mainland coast, the areas extensively surveyed during the course of this research. The area west of the coastal range has had considerably less attention and remains largely unknown archaeologically (but see Brayshaw 1990). This said, there are a number of archaeological factors, as well as strong ethnohistorical evidence, indicating that, at least in the late Holocene, the Whitsunday system was restricted largely to the islands and the coast, failing to extend significantly into the mainland interior (see Chapter 12).

The strongest archaeological indicator of the position of the hinterland in the broader picture comes from the distribution of the stone artefacts likely to be made from the material of the South Molle Island quarry (Barker and Schon 1994). As shown in Figure 10.3, their distribution extends south down the mainland coast from Bowen to Cape Conway and includes 12 islands from Hayman Island as far south as the Repulse Islands. They are not found, however, in sites on the mainland to the west and south of Cape Conway nor on the western side of the coastal range in the Proserpine region. As discussed elsewhere (Chapter 10), this pattern of distribution closely resembles the ethnohistorically described boundaries for the island peoples of the northern Cumberlands and thus may be a late-Holocene phenomenon.

Table 11.3 The geographical location of sites in the Whitsunday region by site type

SITE TYPE	ISLANDS	MAINLAND COAST	TOTAL
Rock shelter	18	1	19
Surface scatter	5	3	8
Middens	5	4	9
Isolated finds	6	9	15
Fish trap	1	1	2
Burial		1	1
Stone arrangement		1	1
Quarry	1		1
TOTALS	36	20	56

Of the 56 sites in the study region, 36 are on islands (64.2%) and 20 on the mainland coast (35.7%). Most of the sites on the mainland coast have artefacts of black tuff of South Molle Island type, demonstrating that they were an integral part of the island system, though not, as argued below, a major factor in it. As can be seen from Table 11.3, the site types found on the mainland coast tend to differ from those on the islands, although in many cases the environmental context of inlets and bays may not be significantly different. The sites on the mainland have a number of factors in common that distinguish them from island sites: they are nearly all open sites (95%), most of them unstratified exposures (75%); the majority are isolated finds of stone artefacts (made mostly from the black tuff of South Molle Island type) or extremely low-density scatters of shell (60%). In other words, they indicate a very low level of activity, perhaps camps of short duration. Although it has been argued that extraneous factors may have destroyed or disturbed many tropical open coastal sites (Bird 1992; Rowland 1992), the relatively ephemeral nature of the archaeological evidence along the mainland coast may well be a true reflection of its prehistoric status. The mainland open sites show no evidence of having been dense shell accumulations or the location of high discard rates of stone artefacts, as would be expected from intensive resource use of the area.

The same pattern is reflected in the single known mainland coastal rock shelter, in Pioneer Bay, directly east of Proserpine, which is well protected from the elements in a resource-rich embayment. Although utilised in prehistory, the site provides evidence of no more than extremely ephemeral visitation (see Barker 1992c). I consider it likely that the hinterland immediately to the west of the present coast will in general provide signs of similarly ephemeral visitation, with poor archaeological visibility. We have seen that current evidence from further north, between Cape Upstart and Townsville, for hinterland visitation by people with coastal connections, in the form of marine shell, dates to the late Holocene (Table 11.1). It is to be expected that there will be mainland sites of this kind in the Whitsunday region going back to the time when it took on something like its present coastal character about 9000 years ago.

It is clear that the highest densities of sites and of cultural materials occur in the islands, specifically on the two largest, Hook Island and Whitsunday Island (Fig. 1.1). The large inlets such as Nara Inlet, Macona Inlet, Gulnare Inlet and Hill Inlet provide the greatest evidence for prolonged and frequent occupation. Hook Island, for example, has a total of 10 sites, eight of which are found in the two southern inlets of Nara and Macona. All of these are rock shelters, most of them with deep stratified cultural deposits. Although there is evidence for prehistoric use of most of the smaller islands clustered around Hook and Whitsunday, including Hayman, Border, North Molle, Daydream, Shute, Long, Cid, Dent, Lindeman and South Repulse Islands, archaeological materials present show similar characteristics to those of the adjacent mainland coast. In particular, isolated finds of black tuff artefacts predominate, together with thin, non-stratified shell scatters. In the case of rock shelters as found on Border

Island, there is evidence of infrequent or small-scale, short-term use. It could be said, then, that by the late Holocene the islands of Hook and Whitsunday formed the core areas of occupation for the island inhabitants, with South Molle Island likely to have held a special position in the social landscape as a specialised source of raw material. South Molle Island is the only small island with any evidence of prolonged and intensive prehistoric activity in the region.

As stated previously (Chapter 5, the section on the survey strategy), the higher the number of resource zones found in any one area, the greater the likelihood of prehistoric human exploitation. The high proportion of sites found in inlets and bays may be due to the fact that they provide shelter and protection from the elements, as well as a wide variety of different resources in an extremely rich ecosystem. This may have been important for a marine-based people whose mobility was often affected by such potentially random factors as adverse weather conditions. It is in these environments that people could base themselves for fairly long periods of time, moving out to other, less resource-rich zones when conditions permitted.

Technology

Technologically, all of the archaeological sequences are dominated by stone artefact assemblages, more than 80% of which are black tuff of South Molle Island type. There is a similar pattern of discard in the four excavated shelter sites, with a significant decrease in discard rates after 3000 BP in the two sites occupied from before that date, Nara Inlet 1 (Fig. 6.20) and Border Island 1 (Fig. 8.11), and a comparably low rate of discard in the two sites occupied after it, Nara Inlet Art Site (Table 7.11) and Hill Inlet Rock Shelter 1 (Table 9.15). Preliminary technological investigations of the stone assemblages indicate a similar pattern in the four sites: a lack of formal types, a lack of cores, small average size, a high proportion of tertiary decortication and a high proportion of flakes with feather terminations. Apart from the decreases in discard rates, no technological differences between the pre-3000 BP (Phase 1) and post-3000 BP (Phase 2) assemblages have been established, due perhaps to small sample sizes in the later phase. What is now needed is a technological analysis of the relatively large post-3000 BP Nara Inlet Art Site assemblage and research at the quarry itself.

Although my own technological analyses were limited and must be considered as preliminary in nature, it would be reasonable to state that the stone assemblages from the stratified sites indicate a largely curative technology. In contrast, the artefacts at the South Molle Island quarry and the beach immediately below include a huge number of very large flakes, cores and hammerstones, with some formal artefact types in the form of large asymmetrical backed blades (Juan knives). It would appear that initial and later stages of artefact manufacture took place at the quarry itself or on the beach below rather than elsewhere. This is supported by the sheer quantity of artefactual material on South Molle Island relative to that found in the stratified sites on the other islands.

Another important aspect of the technology as reflected in the archaeological sites is the relatively large number of non-lithic artefacts found in post-3000 BP contexts. This constitutes an important change and it coincides with a decrease in stone artefact discard rates: at Nara Inlet 1 all 13 non-lithic artefacts are from the two upper SU that constitute Phase 2 (cf. Table 6.14) and described as being used for marine procurement. They include a possible net, a wooden harpoon barb, a relatively large number of bone points (7) and 15 shell and turtle shell artefacts. Although no fish-hooks were found, the two square pieces of cut turtle-shell and the shell 'blank' from Nara Inlet 1, together with the coral 'file' from Border Island 1, are suggestive of their presence.

In the Whitsunday Islands there is clear evidence that watercraft of some type were being used from at least 7500 BP and probably for a considerable time before. Stone artefacts of black tuff reasonably attributed to the South Molle Island quarry are found continuously throughout Nara Inlet 1 and Border Island 1 from the time of initial occupation before 9000 BP and around 7000 BP respectively. At 9000 BP, the quarry was on a low ridge forming part of a large hill on a coastal plain. By at least 7500 BP, this hill had become an island separated from the mainland, Nara Inlet and Border Island by 4km, 15km and 30km of open sea respectively. Despite this, the stone thought to be from the South Molle source continued to be used without apparent interruption, clearly demonstrating the use of watercraft.

Overall, the continuous use of the coast and offshore islands for 9000 years by people in the Whitsunday region provides clear evidence that coastal and island occupation did not necessarily have to await specialised technology. I argue that such specialised marine technology as harpoons, outrigger canoes and fish-hooks is present only after 3000 BP, some 4000–5000 years after the islands were formed, or perhaps even later, after 520 BP.

Conclusion

The archaeological data have established a number of important trends relating to the aims of this research. These can be summarised as follows:

- 1) that marine resources were more or less continuously available throughout the Holocene and, in a general sense, were largely unaffected by documented environmental changes such as the post-glacial marine transgression;
- 2) that people lived continuously on the coast throughout the Holocene (and, by inference, the Pleistocene as well), moving with the changing coastline;
- 3) that changes in settlement, subsistence and technology occurred after ca. 3000 BP, as discussed in previous sections of the chapter and seen in particular over the long sequence of occupation at Nara Inlet 1. These include:
 - a) a decrease in discard of stone artefacts;
 - b) the corresponding appearance of a range of non-lithic artefacts technologically linked to marine resource procurement and/or made from marine products;
 - c) significant increases in rates of discard of cultural materials except for stone artefacts but including shell, bone and charcoal;
 - d) the appearance of some new marine resources, in the form of three shellfish species (*Gelonia coaxans*, *Pinctada fucata* and *Asaphis deflorata*) at Nara Inlet 1;
 - e) the establishment of new sites, in the islands (Nara Inlet Art Site and Hill Inlet Rock Shelter 1) and on the mainland (Table 11.1);
 - f) evidence of predation pressure on some shellfish species, *Nerita undata* (at Nara Inlet 1) and *Saccostrea cucullata* (at Hill Inlet Rock Shelter 1); and
 - g) the introduction of labour-intensive preparation of poisonous plants as food (*Cycas media* and *Bruguiera gymnorhiza*) after 520 BP.