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# **FORGOTTEN BUT NOT QUITE GONE: THE SANDY BAY ROCK SHELTER, KAWAU ISLAND**

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## **Introduction**

Sandy Bay is a remote beach, unnamed on maps, on the northeastern side of Kawau Island in the Hauraki Gulf (Figure 1). This part of Kawau Island lies approximately 2 km offshore from, and south of, the Tawharanui Peninsula. At the northern end of the sand beach that has inspired the name of the bay is a steep-sided sandstone headland, with a cave at its base.

At first glance this appears to be a typical sea cave with no evidence of past habitation, nor any likelihood of ever having been occupied since it is in the intertidal zone. The sea washes into the mouth of the cave at high tide, and the presence of driftwood and other flotsam at the back of the cave some 12 m beyond indicates that spring tides or storm surges regularly penetrate right to the back of the cave. The cave has, however, been recorded as an archaeological site (R09/25), and there is clear evidence from archival sources that it has been extensively used in the past as a rock shelter by Māori.

## **Description**

The Sandy Bay cave is located at the base of a headland with near vertical sides around 25 m high. The entrance to the cave faces southeast and is partially protected by several large boulders up to 2.5 m in diameter. The cave is about 7 m high at the entrance, 13 m deep and 10 m wide but with a large rock outcrop partially intruding about 5 m into it (Figure 2). A secondary fissure about 12 m long extends to the north/right (looking in) at the back of the cave (Figure 3). This fissure can only be entered by crawling. There is an extensive wave cut platform and intertidal reef and a small island (Slip Island) adjacent to the cave at the end of the headland, with sand beaches to the northwest and southeast of the headland. Sandy Bay is protected from the predominant southwesterly weather but is exposed to wave energy from a northeasterly direction. The bay

is readily accessible overland from the protected inlet of North Cove, which lies about 2 km to the southwest (although it should be noted that the landowner does not currently permit public access across his property).

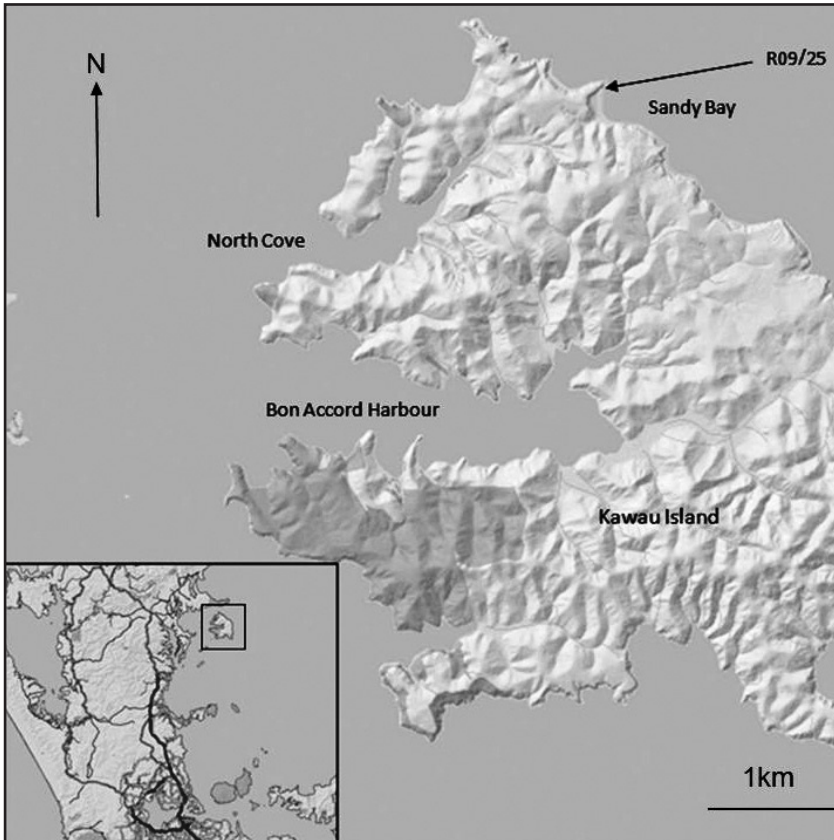


Figure 1. Location map.

### Historical background

It is not clear when the Sandy Bay cave first attracted attention as an archaeological site. It is likely, however, that the site was visited by Europeans, and fossicked, during the 19th century. Kawau Island was owned by Sir George Grey between 1862 and 1888. Grey had a strong interest in past evidence of Māori habitation on Kawau, and shared his knowledge with his employees and with visitors to the island (Brassey 2003). Grey's interest in archaeology and

collecting appears to have generated an interest in fossicking on Kawau, and employees of Grey and members of their families made forays over the island in search of curios as a recreational activity. Occasional references to places visited during such expeditions appear in diaries that have survived, but the names of many locations have changed over time, making it difficult to identify the sites involved. Here is an example:

Mr George and J Smith and I were at the North end of the Island today which is called Pumkin Bay we were looking for Curioes there but could not find any think but a few bones of fish and human bones.

Harris diary 13 March 1879



*Figure 2. Contemporary photograph of the Sandy Bay rock shelter. The cave extends to the right of the picture and Figure 3 (below) is taken within the cave and at right angles to this photo.*

The earliest clearly identifiable references to the Sandy Bay rock shelter are in the form of artefact accession records held at Auckland Museum. These records (Reg. nos. 25414.1-2; 25415), date from 1940. They indicate that four broken, and one partially manufactured, shell fish hook points were recovered from the site by Messrs [G.] Archey, [A. T.] Pycroft, [A. W. D.] Powell and [V. F.] Fisher, presumably on a sponsored field trip. The points, made of *Cookia* shell, were recorded as having been found at a depth of 6 feet (1.83 m). Vic Fisher

was the Auckland Museum ethnologist and later became a founding member of the New Zealand Archaeological Association. His presence, together with the recorded context of the artefacts, suggests that a small scale excavation may have been undertaken during the visit.

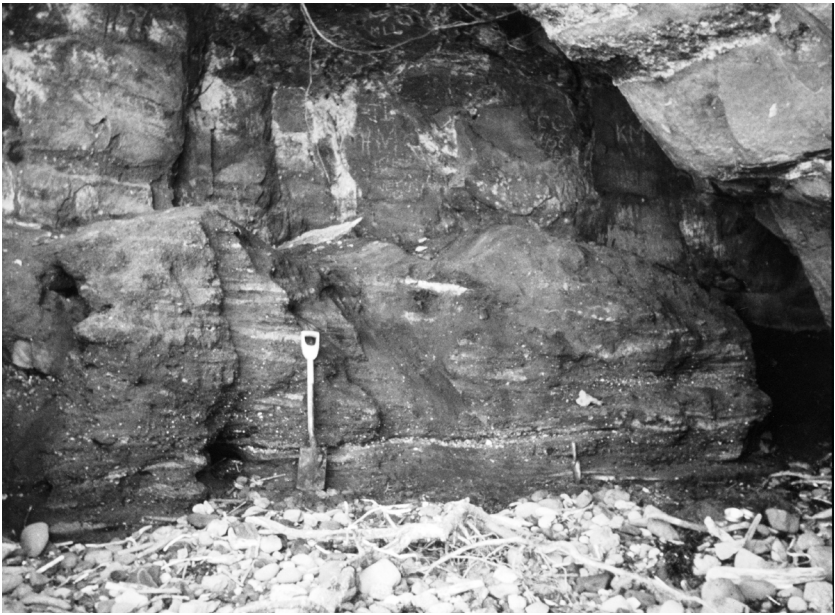


*Figure 3. James Robinson emerges from the rear chamber of the rock shelter during a 2009 ARC survey of the northern coastline of Kawau. Note the extensive build up of flotsam.*

In 1965 Sandy Bay was visited by another party from the museum. The rock shelter was photographed and reported to filekeeper Janet Davidson, who filed a record for the site. The photographs, taken by Humphrey Blake-Palmer, confirm that a deep stratified cultural deposit was once present at the mouth of the cave. They also show that by 1965 much of the deposit had already been lost to erosion, perhaps exacerbated by digging leaving the stratigraphy exposed in section (Figure 4).

Site surveys were undertaken on Kawau in 1979 and 1983 (Bates 1980, Rickard 1983), but Sandy Bay is a remote part of the island in private ownership with no formal public access and the rock shelter was not revisited during

either survey. It was not until the 1990s that the site is next known to have been revisited. In 1994 I called in briefly by boat to look at the cave whilst inspecting nearby Slip Island for the Department of Conservation. I found that, although the cave itself appeared to have changed little from the 1965 photographs, there was nothing left of the extensive cultural deposit that had once existed at its mouth. There were, however, traces of shell amongst the sand and flotsam on the cave floor in a narrow chamber towards the back of the cave. At this point, some 12 m beyond the entrance chamber, there is almost no natural light, and it was not possible to establish if any of this shell was midden and if so whether it was in situ, or alternatively deflated/wave sorted material. Waves had obviously been reaching the back of the cave, and it seemed likely that if indeed there were any traces left of the site, they would have a short life expectancy.



*Figure 4. The Sandy Bay rock shelter in 1965, showing the eroded remnant of the cultural deposits at the entrance to the cave. Photograph: H. Blake-Palmer.*

### **Assessment undertaken in 2000**

In September 2000 an opportunity arose to call in and revisit the rock shelter as part of a programme of recording and assessment of heritage sites in



the coastal marine area being undertaken by the Auckland Regional Council (ARC). The purpose of the visit, which was undertaken by (then) ARC archaeologists Ian Lawlor, Sarah Ross, and myself, was to determine if any of the shell observed in 1994 was still present, if the shell was midden, and if so, if any of the deposit was intact. We cleared surface flotsam (and a desiccated rat) from the floor near the back of the cave, and excavated a small (350 mm square) test pit where the shell was exposed at the surface. At this point the cave is only about 1 m wide at floor level and the walls taper in so that it is possible to sit or kneel but not stand, and the enclosed space feels somewhat claustrophobic. Our source of light failed during the process of digging the test pit, and it became necessary to complete the work using burning plastic bottles for illumination, a practice that is definitely not recommended, especially in a confined space with limited ventilation.

## Results

Excavation revealed the top 50 mm or so of the deposit to be a mixture of recent flotsam, boulders, possible shell midden and sand, as might be expected in a situation where occasional wave surges have washed through a midden deposit with a loose sand matrix. Below this was a variable depth of unstratified deposit up to 200 mm thick. Upon examination in better light conditions this deposit was found to contain rock fragments and pebbles, abundant pumice lapilli, shell, charcoal fragments and fishbone in a charcoal-stained sand matrix. The rock fragments comprised sandstone roof fall and fire-fractured ovenstone material, predominantly greywacke. This midden appeared to be undisturbed.

Below the midden was sand with occasional charcoal pieces present for a further 100 mm or so. The charcoal-bearing sand in turn overlay a considerable depth of natural beach sand deposits. Probing suggested that no further cultural material is present in or beneath this sand.

## Analysis

The midden removed from the test pit was sieved on site to remove the sand fraction and analysed later. The midden was found to contain a considerable amount of fish bone in addition to shell. It is exceptionally well preserved, with plant matter (flax fibres) and very fragile small objects such as crab remains present, and many of the shells retaining their original colouration and/or periostracum. A small proportion of the shell and bone is burnt.

Analysis of the bone fraction of the midden was undertaken by Sheryl McPherson of Faunal Solutions Ltd. Identifications were made using the University of Otago Reference Collection. The methods used in the processing the

faunal material are based on standard Otago Archaeology Laboratory (OAL) protocols. The bones were sorted into primary anatomical units and identified to the lowest taxonomic level.

Approximately 1300 fish bones or bone fragments are present in the sample, but 90% of this could not be identified to family or species level. A minimum of 20 individual fish are represented. Snapper (6) and leatherjackets (7) dominate the identified fish bone, with one or two individuals each of four or five other species present (Table 1). The individual fish in the midden range in size from a very large snapper estimated (using the methodology of Leach and Boocock 1995) to have weighed in excess of 10kg, to tiny spotty and blue cod specimens.

Eight bird bones representing at least three individuals are present in the assemblage. Two of these are passerines. One is a small bird comparable in size to a tomtit or fantail, while the morphology and size of the other bone (sacrum) suggests a slightly larger passerine within the group of tui, bellbird, thrush or starling. The third individual represented is a little blue penguin. One of the passerine bones is burnt. Mammals are represented by a minimum of four kiore (Pacific rats), a sub-adult dog and one or possibly two possum bones. Some of the kiore bone is unfused indicating breeding in or adjacent to the cave. A single tuatara vertebra is present in the assemblage.

The shellfish in the sample include rocky, sandy shore and estuarine species. The latter are unlikely to have been available in the local environment (i.e. the northeastern side of Kawau). The size of individual shellfish has not been quantified. In general most of the shellfish would be considered to be medium-sized, but there are a number of very small specimens and occasional very large examples of some species (e.g. cat's eye).

Overall, the midden contains a diverse range of species considering the small volume (0.0245 m<sup>2</sup>) removed from the site. Minimum numbers of all classes are over-estimated based on NISP values due to the small sample size and excellent preservation.

### **Artefact/ovenstones**

A single sandstone abradar/file measuring ca. 70 x 30 mm was recovered from the midden sample. It is an unmodified elongated water-rolled pebble of locally available Waitemata sandstone, showing evidence of use wear. The fire-fractured ovenstone fragments are predominantly parts of water-rolled greywacke cobbles, which are readily available on Kawau. A coarsely crystalline igneous rock is also represented amongst the ovenstone fragments. The source of this material has not been investigated but it may occur as clasts within the Waitemata Group on the island.



Class	Common name	Taxonomic name	NISP	MNI
Molluscs (shellfish)	Cat's eye	<i>Turbo smaragdus</i>	50	
	Cockle	<i>Austrovenus stutchburyi</i>	28	
	Radiate limpet	<i>Cellana radians</i>	19	
	Tuatua	<i>Paphies subtriangulata</i>	15	
	Pipi	<i>Pahies australis</i>	4	
	Cook's turban	<i>Cookia sulcata</i>	1	
	Pāua	<i>Haliotis iris</i>	1	
	Black nerita	<i>Nerita atramentosa</i>	3	
	Dark rock shell	<i>Haustrum haustorium</i>	3	
	Green-lipped mussel	<i>Perna canaliculus</i>	1	
	White rock shell	<i>Dicathais orbita</i>	1	
	Snakeskin chiton	<i>Sypharochiton pelliserpentis</i>	1	
	Turret shell	<i>Maoricolpus roseus</i>	1	
Echinoderms	Kina/sea urchin	<i>Evechinus chloroticus</i>	1	
Crustaceans	Crab (probably purple shore crab)	<i>(?Leptograpsus variegatus)</i>	1	
Fish	Leatherjacket	<i>Parika scaber</i>	21	7
	Snapper	<i>Pagrus auratus</i>	39	6
	Blue cod	<i>Parapercis colias</i>	7	2
	Trevally	<i>Pseudocarrax dentex</i>	5	2
	Spotty	<i>Notolabrus celidotus</i>	4	1
	Shark/ray		2	1
	?Conger eel	<i>Conger verreauxi.</i>	1	1
Birds	Unidentified (small passerine)		1	1
	Unidentified (passerine)		1	1
	Little blue penguin	<i>Eudyptula minor</i>	2	1
Mammals	Kiore, Pacific rat	<i>Rattus exulans</i>	1 (+?1)	4
	Dog	<i>Canis familiaris</i>	1	1
	Brush-tailed possum	<i>Trichosurus vulpecula</i>	1(+?1)	1
Reptiles	Tuatara	<i>Sphenodon sp.</i>	1	1

Table 1. Faunal identifications from the Sandy Bay rock shelter midden sample.

## Age

A sample of estuarine shell (cockle) from the midden was submitted to the University of Waikato Radiocarbon Dating Laboratory (WK8746). This produced a conventional age of 630 $\pm$ 50 BP. The calibrated age is 1580-1700 AD (1SD) and at 2SD 1520-1760 (93.9%) and 1780-1810 (1.5%). This suggests that the midden in this part of the cave was deposited in or around the 17th century.

## Discussion

The Sandy Bay rock shelter is a sea cave, created by wave action along a joint system in the Waitemata series sandstone. There are a number of such sea caves along the exposed eastern side of Kawau Island.

At some point in time the sea has become excluded from the cave. This probably occurred as a result of a build up of sand, possibly against rock falls in front of the entrance. This allowed the cave to be used by Māori as a rock shelter, perhaps during seasonal fishing expeditions. Through time this occupation generated a substantial build up of cultural deposits. More recently, the sea has again gained access, completely eroding away the deep stratified deposits at the mouth of the cave, but leaving a remnant in the chamber at the back of the cave. Erosion of many beaches on Hauraki Gulf islands has been accelerated by the removal of sand and gravel for construction materials, a practice that commenced on Kawau Island during the 19th century.

It is not clear how the midden deposit ended up in the dark, confined area at the very back of the rock shelter. It would appear that there was a change in disposal practices resulting in food refuse being carried and dumped in the uninhabitable area at the rear of the cave instead of being left on the floor of the main chamber or deposited at the cave mouth.

Whatever the mechanism, it is apparent that the midden at the back of the cave has been deposited on and incorporates a matrix of beach sand and gravel that formed the original floor of the cave. This matrix also includes lightweight/buoyant materials that might have been carried in as flotsam by wave surges and stranded, or blown into the rear of the cave from strandlines on the beach by the wind. These materials include numerous pumice lapilli, together with *Spirula* shells, and occasional small pieces of water-rolled twigs and marine algae (seaweed). Wind deposition is favoured as the primary mechanism, because no larger pieces of flotsam (i.e. pieces too large to be wind-blown) were found beneath the mixed surface layer. The pumice is presumably sea-rafterd Loisells pumice.

There is a small quantity of flax fibre amongst the midden. While it is possible that this fibre is associated with prehistoric occupation (e.g. a raw

material for cordage manufacture), there is no direct evidence that this is the case. Flax, because of its relative durability, is a common component of beach flotsam, especially after storms. The possibility that some of the faunal remains represented in the deposit and assumed to be food refuse (e.g. crab, kina, small fish) may also have been carried in by the sea cannot presently be excluded, at least without better stratigraphic control. The general impression gained during excavation and subsequent examination of the deposit, however, is that the overwhelming majority of the fish and shellfish remains are food refuse.

The range of species and size classes present in the midden indicate that the inhabitants of the site were foraging and fishing the local rocky and sand shore environments and inshore coastal waters intensively and apparently non-selectively for seafood. Some shellfish (cockle, pipi) appear to have been imported to the site from an estuarine environment, perhaps from nearby North Cove, Bon Accord Harbour (Figure 1) or from one of the harbours on the western side of Kawau Bay. Comparison of the range and relative abundance of shellfish species in the midden with the results of a recent population survey in the vicinity of the site (Bioreserches 1995) indicates that there is a reasonably close alignment, apart from a lack of rock oysters (*Crassostrea glomerata*) and a relatively low abundance of dark and white rock shells in the midden. Rock shells are particularly vulnerable to overexploitation, while oysters may well have been eaten at the point of harvest rather than brought back to the shelter since they are difficult to break off intact.

The presence of the small blue cod and spotty together with the leatherjackets (which have very small mouths) suggest that nets or traps were being used to catch fish, perhaps in conjunction with line fishing. The choice of fishing techniques may have been a contributing factor to the unusually high proportion of fish other than snapper. Snapper are typically overwhelmingly dominant in archaeological fishbone assemblages from northern New Zealand (see Leach 2006: 78-9). Another possibility is that the site was being occupied during the colder parts of the year, when snapper are less abundant in inshore waters.

Terrestrial birds and a sub-adult dog also appear to have been food items. Dog remains have been found in a number of other Hauraki Gulf sites interpreted as fishing camps, in some cases in conjunction with dog-gnawed food refuse (e.g. site R9/279 on Tiritiri Matangi Island). They were presumably eaten to add variety to the diet or as a reserve food source when fishing was impossible or unsuccessful.

The possum bone is clearly intrusive. Possums are unlikely to have been present on Kawau before they were introduced to the island by Sir George Grey during the period 1862-88 (see Brassey 1998). The bone probably represents an animal that has inhabited or at least entered and died in the back of the cave. The

presence of this species in the assemblage indicates that the analysed sample included some mixed (upper layer) material.

The status of the tuatara, little blue penguin and rat bone is uncertain. These are species that could potentially have been killed and eaten by people using the rock shelter, or even imported from another location as food items. But they are also species that enter and/or occupy caves and may have been naturally present during, before, or after the period during which the Sandy Bay cave was used by Māori. The presence of sub-adult kiore supports the suggestion that kiore once inhabited the cave. Neither tuatara nor kiore have previously been recorded on Kawau, either as living specimens or faunal remains, although evidence for their former presence would hardly be surprising. On other Hauraki Gulf islands without recorded tuatara populations (e.g. Motutapu and Tiritiri Matangi) the species is present in early archaeological sites or Holocene fossil deposits (pers. obs.).

It is likely that tuatara were present on many of the Gulf islands when Māori ancestors first arrived. Tuatara would have been easy prey for Māori and in particular their dogs, and this predation may well have contributed to the decline of tuatara populations in locations frequented by humans. The introduction of kiore, however, is considered to have been the principal factor in the decline and extinction of tuatara populations, since tuatara are unable to persist in the presence of kiore (Crook 1973). It is likely, in view of the known past and present distribution of kiore, that this species was introduced to Kawau by Māori and has since become extinct. The absence of kiore on offshore islands is strongly linked to the presence of the ship rat (*Rattus rattus*; Russell & Clout 2004). Ship rats are currently present on Kawau (a desiccated example of this species was found in the back of the cave) and could potentially have been there since Europeans first visited the island in or prior to the early 1830s.

Interestingly tuatara may well have been reintroduced to Kawau by Sir George Grey. Grey was an enthusiastic collector responsible for the introduction of a wide variety of plants and animals to Kawau, including kiwi, which are still present. On 27 December 1878 a 'box of lizards' was delivered to Kawau by the Government service steamer *Hinemoa* (Harris diary). Grey had previously donated tuatara to the Colonial Museum and to the Zoological Gardens in London, and reputedly had a mounted specimen in his house on Kawau.

Few conclusions can be reached regarding the time span of occupation at the Sandy Bay rock shelter. If the archival record and 1965 photograph are indicative of the original depth of cultural deposit throughout the main chamber of the rock shelter (as seems likely), this would represent a huge volume of material and is suggestive of a considerable time depth of occupation. While the ca. mid 17th century radiocarbon date obtained from the midden is not

particularly early, this sample dates the disposal of the midden at the very back of the cave. In isolation, it tells us little except that the rock shelter was in use by that period.

## Conclusions

It is hard to imagine that any archaeologist undertaking a field survey of Kawau Island today would bother looking twice at the sea cave at Sandy Bay, had it not been recorded as an archaeological site in the 1960s. The near complete loss of this deeply stratified and potentially early site demonstrates just how much our coastlines have changed through time and is a reminder of how many coastal sites must have disappeared or been extensively eroded before being recorded. On the other hand the survival of an extremely well preserved archaeological deposit in an active sea cave demonstrates that caution is required in making the judgement that a site has been completely destroyed.

The tiny sample analysed contains a diverse faunal assemblage, including new records of two species that appear to have once been present on Kawau Island but are now locally extinct. The balance of the midden in the back of the rock shelter has the potential to provide answers a range of research questions. It is only a matter of time before this site remnant is lost to the sea, and it would be unfortunate if it was left to be destroyed by coastal erosion without being further investigated.

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