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# Tuhinga: Records of the Museum of New Zealand Te Papa Tongarewa

Number 24, 2013

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# Obituary: John Munne Moreland (1921–2012)

Alan N. Baker\* and Jack A.F. Garrick\*\*

\* 8 Waters Lane, Kerikeri, Bay of Islands, New Zealand (tasmacetus@hotmail.com)

\*\* 50 McFall Road, RD 3, Ohaupo, New Zealand

John (Jock) Moreland was born in Wanganui in 1921, where he grew up and attended school. In 1950, after serving with the 3rd New Zealand Division in the Pacific and the 2nd Division in Italy during the Second World War, Jock joined the staff of the Dominion Museum (now the Museum of New Zealand Te Papa Tongarewa). While in Egypt on R & R in 1945, Jock developed an interest in Egyptology during a visit to the tomb of Tutankhamun, and his family suggests this may have been the spark that lit his later museum career. He completed a Bachelor's degree in zoology in 1958 at Victoria University of Wellington. The Dominion Museum was, at the time, rebuilding its staff and displays, following its closure during and immediately after the war, when it was occupied by Allied forces. Its director at the time, Dr (later Sir) Robert Falla, was a household name as a result of his weekly radio broadcasts on natural history. Many queries poured into the museum, and Falla rightly decided that specialised staff were needed to deal with the increasing public interest in natural history, to undertake research into New Zealand's biota, and to build a national reference collection of animals and plants.

Jock was therefore appointed as Assistant Zoologist working under Charles McCann, the museum's only Vertebrate Zoologist. McCann, who was most interested in marine mammals, gave Jock the task of looking after and developing the museum's seabird collection. This resulted in his taking over the New Zealand Bird Banding Scheme, which was a part of the museum's brief at that time. In 1957, Jock published 'A guide to the larger oceanic birds (albatrosses and giant petrel) of New Zealand waters'. During that decade, he also began his fish studies.

Jock eventually became the first true Curator of Fishes for the museum. As such, he was given the task of building up the national collections and answering the many enquiries from the public about fishes and their habits. He became



Fig. 1 Jock Moreland in his office at the Dominion Museum, early 1960s.

very well known throughout New Zealand as an authority on fishes, and during his career published a number of research papers and several books (see Appendix 1), including the iconic *New Zealand sea anglers' guide* with co-author Ray Doogue and artist Eric Heath, which went to nine editions. He described new genera and species of fish from New Zealand, including the alert pigfish, *Alertichthys blacki*, named after Captain Alex Black and his ship the MV *Alert*, an ex-Navy Harbour Defence Motor Launch. Jock was also a keen field worker and went on a number of expeditions to further the museum's collections. He was on the Chatham Islands Expedition in 1954 onboard the *Alert* and also made trips on the *Admiral* and *Tirohia* with Victoria University staff members Jack Garrick and Peter Castle to sample the deep waters of Cook Strait. In the 1970s, Jock made a number of collecting trips, including to the Subantarctic Islands, on Alex Black's new research vessel, *Acheron*. In the mid- to late 1970s, Jock and staff colleague Alan Baker (later Director of the National Museum) made a series of visits to Northland at the invitation of Museum Associate

Bill Higgins, who made available a launch for the two museum researchers to sample the northeastern coast. Many beam-trawl and dredge samples were obtained from the previously understudied Bay of Islands.

Jock had a great sense of humour, as evidenced by the following anecdote provided by Elliot Dawson, formerly of the New Zealand Oceanographic Institute:

I recall sending him some regurgitated fish samples from black-billed gulls, asking him what sort of fish they were. I also sent samples of earthworms to Ken Lee at the Department of Scientific and Industrial Research asking him, of course, what kind of worms they were, only I sent the wrong specimens to each person! Eventually I got a reply back from Jock saying the worms were a new species of fish which he had pleasure in naming after me as *Clotus imbicilicus*!

As Jock was a keen fisherman, being a marine biologist had its advantages – he was able to catch fish on rod and line in a number of exotic locations around New Zealand, and his summer research trips to the Bay of Islands often resulted in smoked marlin and kingfish being returned to Wellington. On one occasion, while fishing with Alan Baker on his launch *Petrel* in Cook Strait, a sperm whale breached very close to the boat and sent a huge wave towards the fishermen. Jock turned to a wide-eyed Alan, who was desperately trying to turn the vessel bow-on to the on-coming wave, and said, ‘Quick, where’s your surfboard?!’ He had a taste for muttonbirds, and in the season would arrange for large tins (the old kerosene type) of smoked and salted birds to be sent up from Stewart Island/Rakiura, and would then distribute some to keen museum staff. Jock also enjoyed hunting trips with the Garrick family – initially deer hunting in Hawke’s Bay, followed by duck hunting in other North Island locations.

As the Dominion and, later, National Museum staff grew during the 1960s and 1970s under Director Richard Dell’s management, Jock became the staff’s ‘elder statesman’; he was very supportive of new appointees and was always available for advice or assistance. He had an observant eye and wide interest in New Zealand’s flora and fauna, and he was keen on popularising science and passing his knowledge on to young naturalists. He was also a foundation member of the Wellington branch of the New Zealand Weights and Measures Club, which met every Friday night at a well-known city hotel. Other members were from the Wildlife Service and Victoria University zoology, geography and economics departments, and there were occasional visiting

scientists from out of town or overseas (e.g. the Smithsonian Institution). Many good plans for research projects and exotic field excursions were developed at such gatherings!

Jock retired in 1981 and lived with his wife Mary – a former much-loved National Museum education officer – in Hataitai, Wellington. He developed a very productive vegetable garden and continued to enjoy hunting and fishing with his old friends and colleagues to a ripe old age. He died in June 2012.

## Acknowledgements

The authors thank Christina Moreland (Jock Moreland’s sister) and her family for personal information, and Clive Roberts and Martin Lewis (Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand) for the list of Jock’s publications.

## Appendix 1: List of publications

### Research papers

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- Moreland, J.M.** (1959). The composition, distribution and origins of the New Zealand fish fauna. *Proceedings of the New Zealand Ecological Society* 6: 28–30.
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- Doogue, R.B. and **Moreland, J.M.** (1978). *New Zealand sea anglers' guide*. 8th edn. Wellington: A.H. & A.W. Reed. 313 pp.
- Doogue, R.B., **Moreland, J.M.** and Heath, E. (1982). *New Zealand sea anglers' guide*. 9th edn. Wellington: A.H. & A.W. Reed. 320 pp.
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### Appendix 2: New fish taxa described by Jock Moreland

- Family Congiopodidae  
*Alertichthys* Moreland, 1960  
*Alertichthys blacki* Moreland, 1960  
*Congiopodus coriaceus* Paulin & Moreland, 1979

### Appendix 3: Animal taxa named after Jock Moreland

- Fishes  
 Family Gobiesocidae  
*Dellichthys morelandi* Briggs, 1955  
 Family Percophidae  
*Bembrops morelandi* Nelson, 1978  
*Hemerocoetes morelandi* Nelson, 1979

### Crustaceans

Family Lernanthropidae

*Aethon morelandi* Hewitt, 1968

Family Hippolytidae

*Lysmata morelandi* (Yaldwyn, 1971)

(described as *Hippolysmata* (*Hippolysmata*) *morelandi*  
Yaldwyn, 1971)

### Mollusc

Family Cuspidariidae

*Cuspidaria morelandi* Dell, 1956

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# Archaeological excavations at the Station Bay pā, Motutapu Island, inner Hauraki Gulf, New Zealand

Janet Davidson

Honorary Research Associate, Museum of New Zealand Te Papa Tongarewa  
2324 Queen Charlotte Drive, RD1 Picton, New Zealand  
(janet.davidson@university-of-ngakuta.ac.nz)

**ABSTRACT:** Excavations at the Station Bay pā on Motutapu in 1970–71 revealed a complex sequence, from a relatively extensive open settlement to a more compact fortification between about AD 1500 and 1800. Charcoal analysis portrays a largely scrub-covered landscape with only a few trees. Food-storage pits and faunal remains reflect a subsistence economy based on kūmara (sweet potato) cultivation and the harvesting of marine resources: shellfish from the adjacent rocky shore and both protected and exposed sandy beaches, and fish, predominantly snapper, from fishing grounds nearby. The few items of material culture are typical of Māori assemblages of the time.

Results of two previous excavations of undefended settlements in the immediate vicinity help to expand a picture of a relatively stable and peaceful way of life, punctuated by periodic episodes of stress when the fortifications were built and rebuilt. External contacts are indicated by imported obsidian, mostly from nearby Great Barrier Island (Aotea Island).

The Station Bay excavations are discussed in the context of more than 50 years of archaeological research on Motutapu, which has a largely intact pre-European cultural landscape in close proximity to the large Auckland urban area, where many pre-European sites have been lost.

**KEYWORDS:** Motutapu Island, Station Bay, pā, settlement pattern, faunal analysis.

## Introduction

Excavations were carried out at the pā at Station Bay in the northeast part of Motutapu Island in the summer of 1970–71. The results were briefly summarised shortly afterwards (Davidson 1972). A full report is presented here.

## The site and its setting

Motutapu is a fertile, undulating island, about 1500 ha in area, lying just to the northeast of Auckland's youngest volcano, Rangitoto, in the inner Hauraki Gulf (Fig. 1). Its highest point is 121 m above sea-level, and much of the central part is above 90 m. The island is made up of two different geological formations. The northern and eastern

parts, where Station Bay is situated, are formed of ancient greywacke of the Waipapa Formation; the west and south consist of the Lower Miocene Waitemata series (Mayer 1968). Almost the entire island was blanketed by volcanic ash erupted from Rangitoto at an early point in the Māori occupation of the Auckland region.

The island's geology made it attractive for Māori. The Waipapa greywacke and chert were important resources for tool manufacture for much of the period the island was occupied by Māori. In addition, soils developed on the Rangitoto ash seem to have been well suited to Māori horticulture.

Surprisingly, the vegetation history of the island is not well documented, although Esler (1980) provided a detailed description of the state of vegetation after more than a

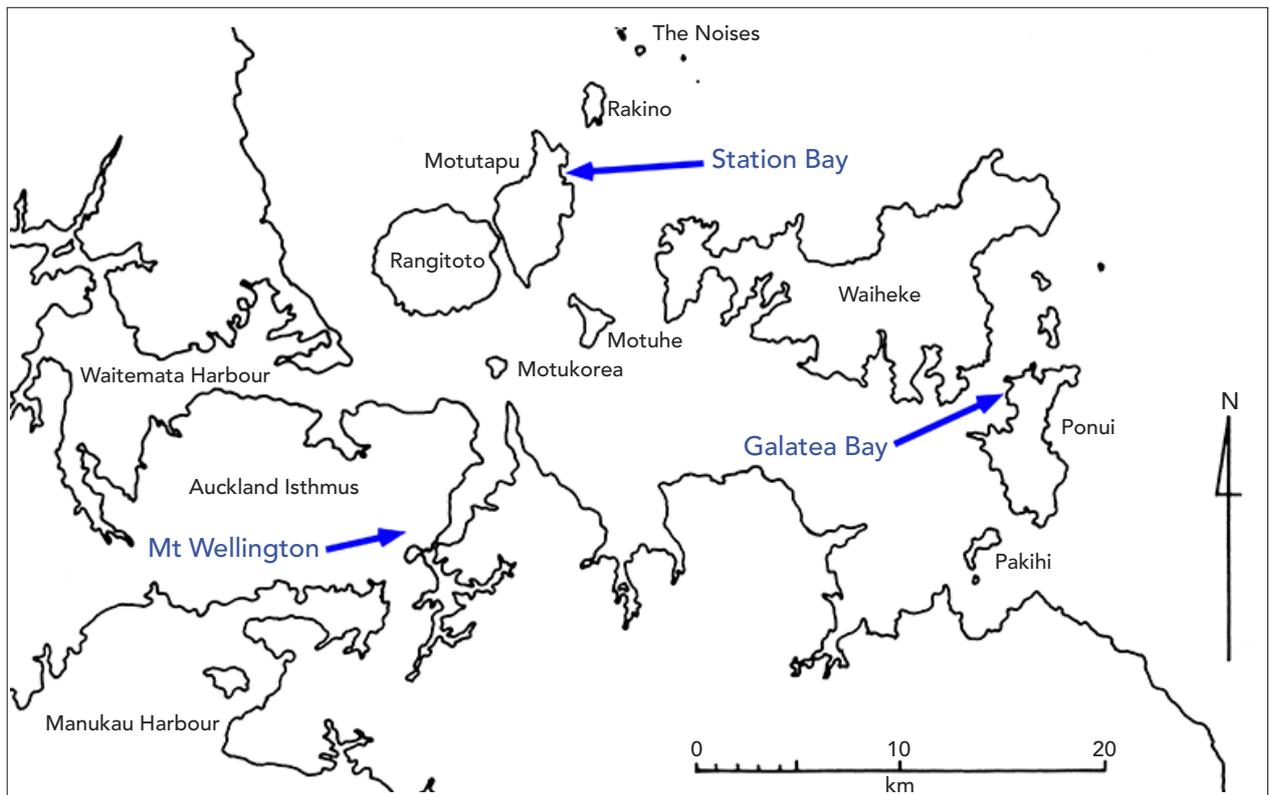


Fig. 1 The position of Motutapu in the inner Hauraki Gulf near Auckland. Sites in the area beyond the island, referred to in the text, are also shown.

century of farming, finding 139 native species compared with 207 exotics. Miller *et al.* (1994: 68) cited unpublished palynological data indicating that the island was once covered in mixed broadleaf/podocarp forest. Leaves of pōhutukawa (*Metrosideros excelsa*), karaka (*Corynocarpus laevigatus*) and kawakawa (*Macropiper excelsum*), common in northern coastal forests, were found preserved at the base of the Rangitoto ash at the Sunde archaeological site on the island (Cooper 1970).

An unpublished pollen study based on a core from near Billy Goat Point at the northern tip of the island found that the post-eruptive sequence was dominated by bracken (*Pteridium esculentum*) and mānuka (*Leptospermum ericoides* [now *scoparium*]) (Elliott & Neall 1995; V. Neall, pers. comm., 2011). This was interpreted as evidence that Māori gardening was preventing forest regeneration. In early European times, the island appears to have been largely covered in light scrub and native grasses, with small remnants of coastal forest, particularly on south-facing slopes in the east of the island. One early plan (Land Information New Zealand n.d.) indicates numerous dead trees in the gullies. Miller *et al.* (1994: 68) appear to have

misinterpreted Smith's (1909) translation of D'Urville's account of his visit to the area in 1827. In both Smith's and Wright's (1950: 153) translations, it was Rangitoto rather than Motutapu that was covered in flourishing vegetation, in contrast to the 'bare land' on the mainland opposite.

The Station Bay pā (formerly N38/25, now R10/26) occupies a narrow, steep-sided peninsula on the east side of Station Bay (Figs 2, 3). Murdoch (1991: 6; pers. comm., 7 July 2011) gives its name as Ororopupu, meaning 'crushed brains', which he interprets as an attempt to deter enemies. Transverse ditches defend the central high point and surrounding flat area and terraces. A long, narrow tail with smaller flat areas and terraces tapers to the south. Three large visible pits lie just outside the defences to the north; the largest was investigated by Sullivan (1972) concurrently with the excavations reported here. In 1971, the main (northern) ditch still had vertical walls for part of its length (Fig. 4).

Motutapu and Rangitoto are closely intertwined in Māori history. Both have strong associations with the migratory canoes *Te Arawa* and *Tainui*, particularly the latter. These traditions are summarised by Murdoch (1991). Motutapu was named by Taikehu, a tohunga (priestly expert) on *Tainui*,

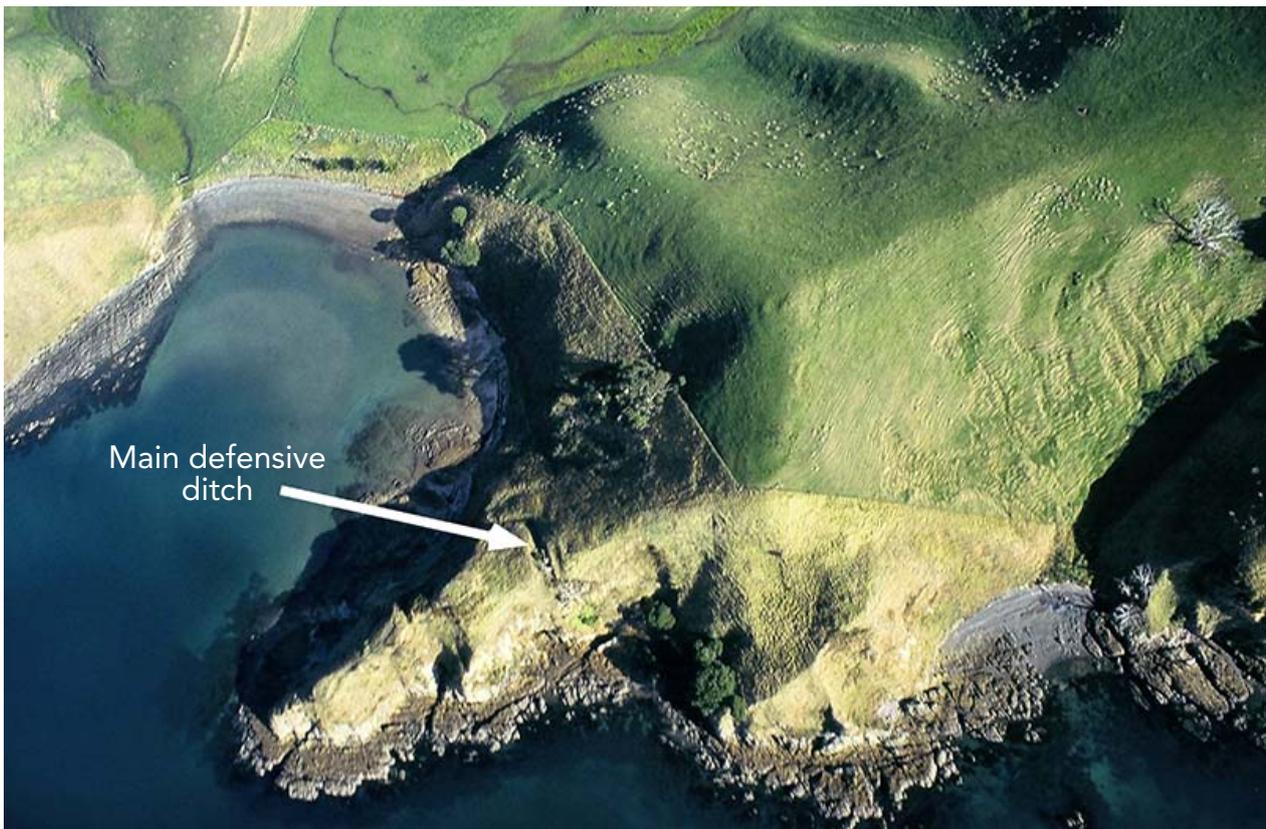


Fig. 2 Recent aerial view of the Station Bay pā. Note the rocky shore surrounding the site and the small shingle beach (photo: Kevin Jones).



Fig. 3 The Station Bay pā from the northwest in 1967, showing the principal defensive ditch, the tihi and the sheltered intertidal platform within the bay at the base of the pā (photo: Janet Davidson).



Fig. 4 The principal defensive ditch looking east in 1967. The sheer right-hand wall is immediately adjacent to Area B of the excavation (photo: Janet Davidson).

after a place in the homeland of Hawaiki, and was known to his descendants as Te Motu Tapu a Taikehu. It was occupied until the early nineteenth century by Ngāti Tai, whose name links back to various ancestors whose names could be shortened to Tai. The lives of the Ngāti Tai on Motutapu and elsewhere in the vicinity were seriously disrupted by incursions by Ngā Puhī war parties armed with muskets from 1821 onwards, although they were able to return to their lands by 1836. They then came under increasing pressure to sell land to Europeans.

In 1840, most of Motutapu was sold by Ngāti Tai leader Tara Te Irirangi and others to his son-in-law Thomas Maxwell. It was farmed privately, by several successive owners, until the Second World War, when it was acquired by the Crown. At the time of the Auckland Museum research on the island, it was a Lands and Survey Department farm. It became part of the Hauraki Gulf Maritime Park when that was established in 1967 and is now administered by the Department of Conservation.

## Archaeological research on Motutapu

Motutapu has been the scene of considerable archaeological research for more than 50 years. This began with two seasons of excavation at the stratified beach site at Pig Bay (formerly N38/21, now R10/22) in 1958 and 1959 (Brothers & Golson 1959; Golson & Brothers 1959), and was followed by excavation of another stratified coastal site, the Sunde site (N38/24, now R10/25), in 1963 (Scott 1970) (see Fig. 28 for locations). In both of these excavations, the volcanic ash erupted from nearby Rangitoto was an important stratigraphic marker. An initial survey of the island was carried out by the Auckland University Archaeological Society early in 1963, resulting in what appeared to be a large number (~70) of sites (Davidson 1970a).

The Auckland Institute and Museum (Auckland Museum) research programme on Motutapu began in the summer of 1967–68 with the excavation of two ‘undefended sites’ at Station Bay: the Davidson undefended site (N38/37, now R10/38; Davidson 1970b) and the Leahy undefended site (N38/30, now R10/31; Leahy 1970). These excavations were designed to investigate the nature of the subsurface features that gave rise to the surface evidence found during the site survey and, indeed, to test whether some of the more amorphous surface evidence did actually represent archaeological features. The next stage of the research was the excavation of the Station Bay pā and a group of pits outside its defences (Davidson 1972; Sullivan 1972), and further excavation at the Leahy site (Leahy 1972). The results were reviewed in a short paper (Davidson 1978c) and incorporated in a broader review of the wider Auckland region (Davidson 1978b). The locations of the three excavated sites are shown in Fig. 5.

The aims of these excavations were to investigate the similarities and differences between the pā and the undefended sites, explore the nature of the defences, and obtain information about the layout of the site and its structures, samples of midden and an artefactual assemblage (Davidson 1972: 2).

In the course of the two excavation seasons it became apparent that there were still a lot of unrecorded sites on the island. An intensive resurvey was therefore begun in the summer of 1972–73 and finished in 1977 (Davidson 1987). At the same time, an apparent terrace on an undefended site at Pig Bay on the island’s northwest coast (N38/140, now R10/137) was excavated (Leahy 1986). This marked the end of the Auckland Museum programme on Motutapu.

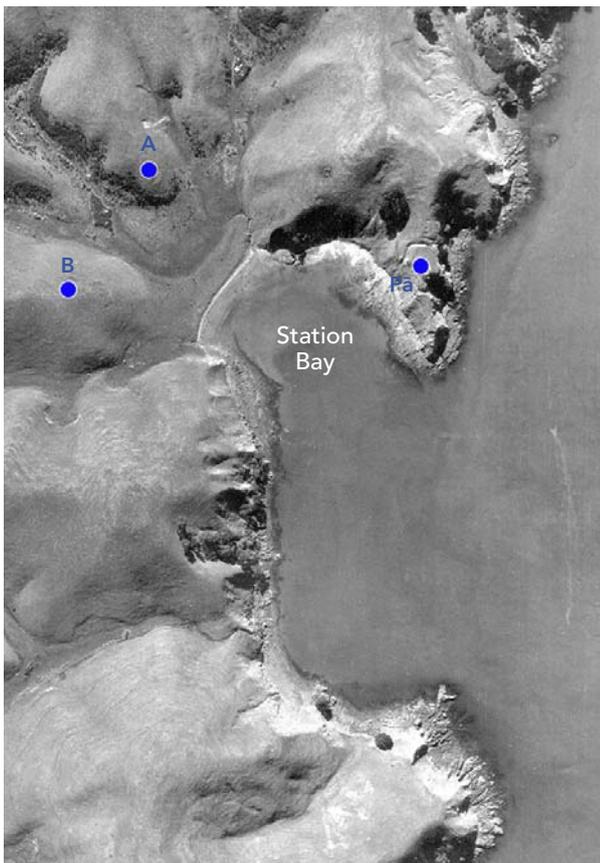


Fig. 5 Aerial view of Station Bay in 1963, showing the pā and the two previously excavated sites: A, Leahy undefended site, N38/30; B, Davidson undefended site, N38/37. Note the extent of the intertidal rocky shore in the vicinity of the bay (photo: New Zealand Aerial Mapping).

There has been considerable further research on the island since 1977. In 1981–82, Nichol (1988) carried out extensive work at the Sunde site. In 1994, Irwin, on behalf of the Anthropology Department, University of Auckland, contracted with the Department of Conservation to provide a greatly improved database, using geographic information systems (GIS) at a feature level to inform conservation management during the implementation of the Motutapu Restoration Plan (Irwin *et al.* 1996). This led to exploration of important issues such as site definition and the effects of splitting and lumping (Doherty 1996). During the course of the Auckland University programme, six undefended sites were investigated and Turner undertook limited further investigations at Pig Bay (Irwin *et al.* 1996; Szabó 1999; Watson 2004; Ladefoged & Wallace 2010; G.J. Irwin, pers. comm., 24 August 2012; M.T. Turner, pers. comm., 1995). Some aspects of this research are discussed below.

## The excavation

The excavation at the Station Bay pā took place between 19 December 1970 and 26 January 1971. A varying number of volunteers participated. A baseline was laid out along the site and excavation units were aligned to it. One square was excavated on the highest point (the tihi, A on Fig. 6) and four on the relatively large flat immediately inside the northern defensive ditch (the central flat, B). Trenches were opened on the western end of a terrace between the tihi and the central flat (the internal terrace, C) and between the northern ditch and the large pit excavated by Sullivan (the external terrace, D) (Fig. 7).

Excavation was by hand trowel, following natural layers. Initially, the upper deposits on the main flat, which contained midden shell and bone, were excavated in blocks of 1 m<sup>2</sup> and sieved through 6.35 mm mesh. However, this proved difficult to manage and the deposits were later bagged variously according to 3 m squares, or specific features and patches within the squares. Sieving was limited to parts of the midden-bearing Layer 2. Shell and bone was retained from the sieving and hand-picked from other deposits. Because of the diffuse nature of the midden and the large amount of fire-cracked stone, only one large bulk sample was taken. This was a sieved sample from a patch of denser compacted midden at the base of Layer 2 in F4, Area A, which weighed a little over 6 kg. Unworked stone was weighed according to square and layer, and then discarded. These procedures were not unusual at the time, particularly where faunal analysis was not the primary objective.

The bedrock was hard clay that had developed on the underlying greywacke. Cultural layers included redeposited material from the digging of pits and other features into the underlying natural, and dark ashy soil and midden resulting from occupation.

### Area A: the tihi

Four 2.5 m squares separated by 1 m baulks were set out on the tihi area, but only one (L4) could be excavated in the time available (Fig. 8). This square had no surface features apart from a slight depression towards the south side. Beneath the turf was a fairly thick soil layer (up to 25 cm deep) containing pebbles, other stones, charcoal fragments, minimal amounts of faunal material (including rat bone) and numerous small pieces of obsidian. Below this was a hard surface, which was at first thought to be natural, but was discovered to be the compacted surface of the fills of three pits that lay only partly within the square.

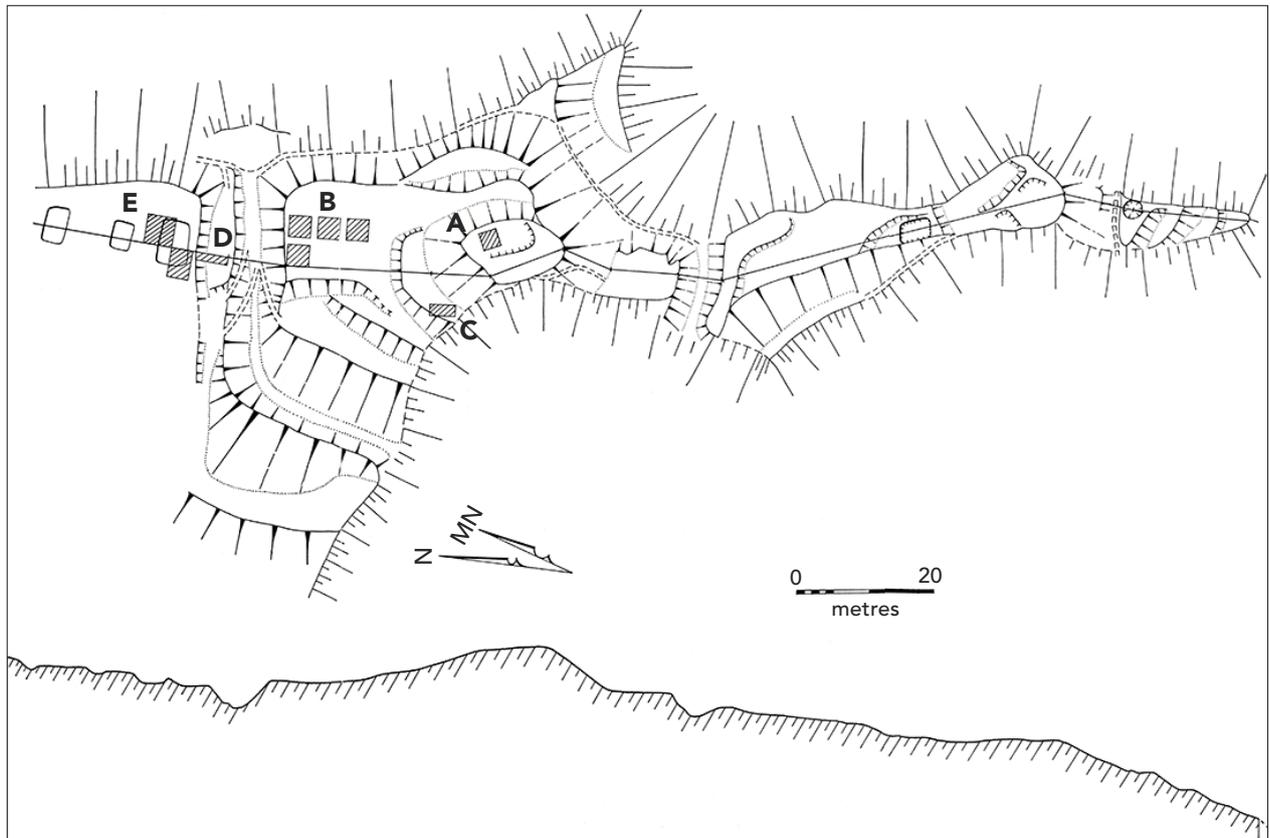


Fig. 6 Plan of the Station Bay pā, showing the excavated areas. A–D are described in this paper; E is the group of external pits, the largest of which was excavated by Sullivan in 1972.

Pit 1 on the northern side of the square measured more than 230 × 110 cm in area, with a maximum depth below surface at its western end of 60 cm. The probable orientation was east–west. Its western end abutted a shallower feature, which was either a step down into the pit, or an earlier truncated feature. The surface of the pit fill included compacted clay lumps to the west and a scatter of pebbles, almost like a paving, to the east. The fill was undifferentiated redeposited clay except for a thick burnt layer almost on the bottom, which petered out over some clay lumps in the west. Charcoal from the burnt layer was identified by Jean Goulding of the Auckland Museum (pers. comm., 10 August 1971) as consisting entirely of bracken fronds – pieces of stalk (stipes), the midrib of leaflets (rachis) and leaflets (pinnae). Some of this material was used for a radiocarbon sample (NZ4349).

Pit 2, of which only a small part was exposed in the south-west corner of the square, had been truncated by a later pit (3). The fill of Pit 2 consisted of an upper layer of clay lumps,



Fig. 7 View from the tihi (Area A) of excavations in progress in Area B in January 1971, with Sullivan's excavation of a large external pit in the background beyond the defensive ditch. Square G4 is in the foreground, with F4 beyond it and E4 and E5 nearer the pōhutukawa trees growing in the defensive ditch (photo: Janet Davidson).

overlying a softer fill, which contained a thin burnt lens towards the bottom. Pit 3, which was of a similar depth to Pit 2, had an undifferentiated mixed fill. There was a buttress, asymmetrically placed in the northern wall, closer to the western than the eastern corner. Between the western corner



Fig. 8 Square L4 in Area A, looking east. Pit 1 is on the left, pit 3 on the right, and the vestige of Pit 2 in the bottom right-hand corner (photo: Janet Davidson).

and the buttress was a scooped area of charcoal, apparently a fire feature of some kind. Two human bodies had been placed together on the floor of the pit, face to face and with their heads towards the buttress; only the heads, arms and most of the torsos lay within the area of the excavation.

In view of their similar alignment and the presence of burnt bracken near the base of both their fills, pits 1 and 2 were probably contemporary. They were abandoned long enough for a little fill to accumulate naturally and bracken to grow, before being deliberately filled to ground level immediately after the bracken was burnt. Pit 3 was constructed on a slightly different alignment. The bodies were placed on the floor of the pit, which was then filled to the same level as pits 1 and 2. Pebbles were deliberately laid on the surface but there appear to have been no structures substantial enough for posts or stakes to penetrate the pit fills or the remains of the natural surface between the pits. Activities at this time involved the use and discard of obsidian.

It is unlikely that Pit 3 was dug as a burial pit. There was no indication during excavation or in the south section of the square that a grave had been dug through the pit fill. It appeared that the bodies were placed on the clean floor of the pit before any natural fill had accumulated following abandonment. The pit was then deliberately filled. Such a burial is most unusual, and is further discussed below.

The two individuals buried in Area A were studied by Houghton (1977), together with two single burials from the two undefended sites in Station Bay. He identified the two from the pā as a male of estimated age 30–35 and height 5 ft 6.6 in (1693 mm) and a female of estimated age 28 and height 5 ft 2 in (1576 mm). Cause of death was not apparent and neither individual showed signs of pathology

or arthrosis. No Harris lines were present. Both showed evidence of tooth wear, including ‘fern root planes’, periapical abscesses and pre-mortem loss of some molars. There was no evidence of violence or trauma in the parts of the skeletons exposed.

## Area B: the central flat

The flat area immediately inside the northern defensive ditch proved to have been used intensively, initially probably only for pit construction, and later for surface structures and defensive features. At some point between our first season at Station Bay in the summer of 1967–68 and the end of 1969, someone, presumably looking for artefacts, dug a trench across this area. Fortunately, this was shallow (and presumably unproductive). It is shown as ‘recent disturbance’ in the sections of F4 in Fig. 9.

Three main layers were identified in the four squares excavated in this area (Fig. 9):

*Layer 1* Topsoil.

*Layer 2* Dark, often ashy soil containing fire-cracked stone and faunal material, associated with, and often filling, a large number of postholes of varying sizes.

*Layer 3* A yellower, more clay-like layer containing small amounts of faunal material and occasional burnt or ashy lenses, associated with, and filling, a number of pits and postholes.

Both Layer 2 and Layer 3 clearly reflected repeated activities, resulting in intercutting and residual features. Although there were variations in the texture of Layer 3, from finer, softer material to hard clay lumps, these did not correspond to different feature fills and it was usually difficult or impossible to trace the edges and floors of intercutting features.

### Layer 2 features

(Fig. 10)

Although cooking was apparently a major activity during the Layer 2 occupation, reflected by large amounts of charcoal and fire-cracked stone, only one definite cooking feature was identified: a small, shallow oval hollow in the surface of Layer 3 in G4, lined with small stones and covered with charcoal. Ashy patches and lenses were common in E4 and E5; some of the better defined examples are shown in Fig. 10.

Unworked stone in Layer 2, assumed to be debris from cooking, was weighed according to square as follows: E5, 96 kg; E4, 68 kg; F4, 70 kg; G4, 10 kg.

The principal features associated with Layer 2 were postholes, ranging from very large holes (assumed to be for

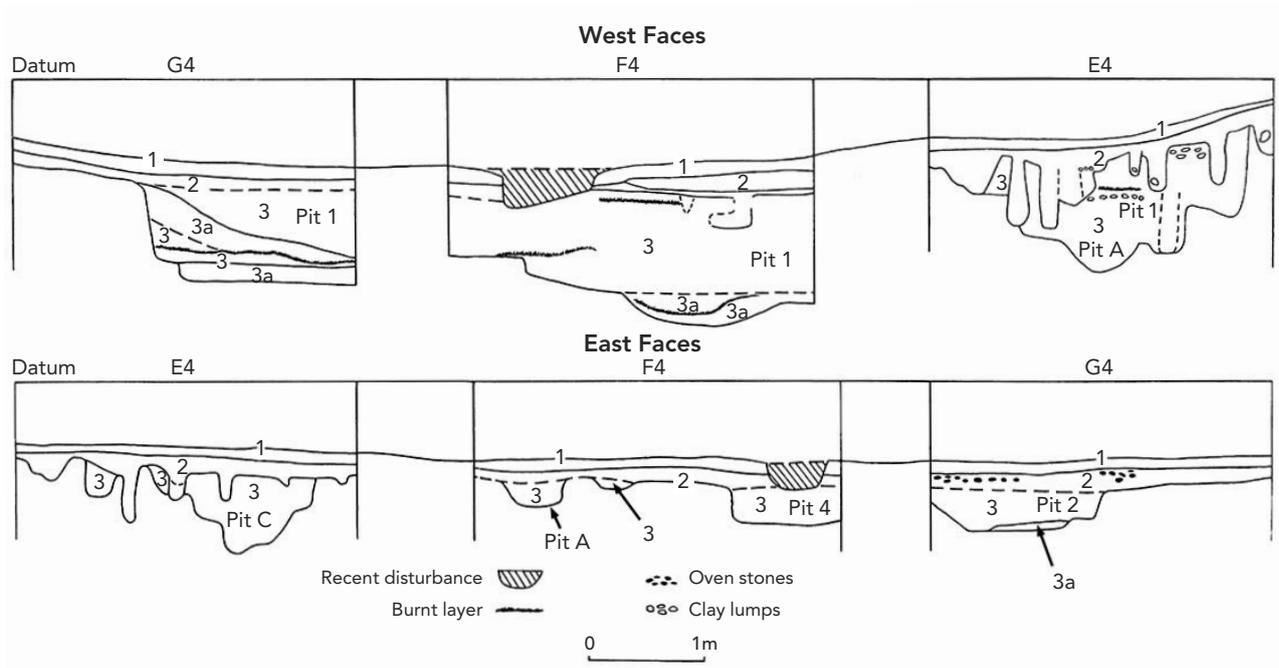


Fig. 9 East and west sections of squares E4, F4 and G4 in Area B.

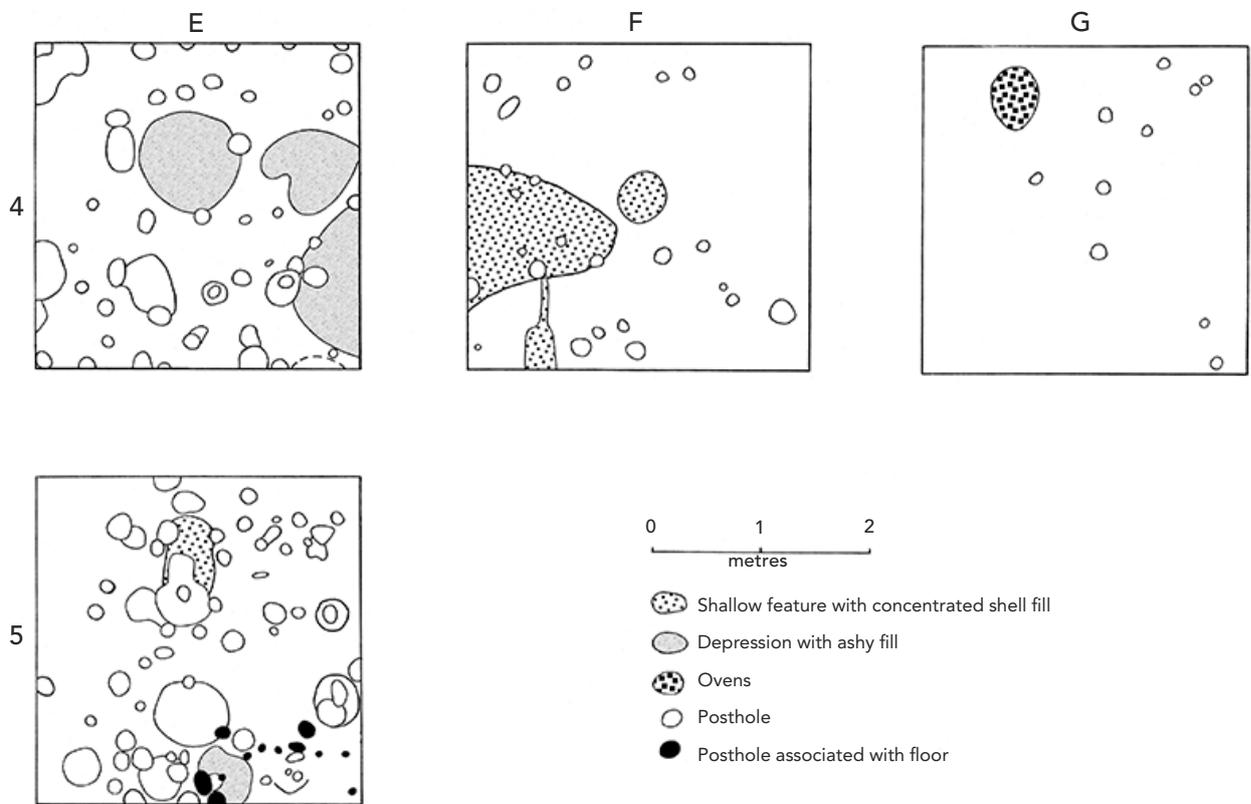


Fig. 10 Layer 2 features in Area B.

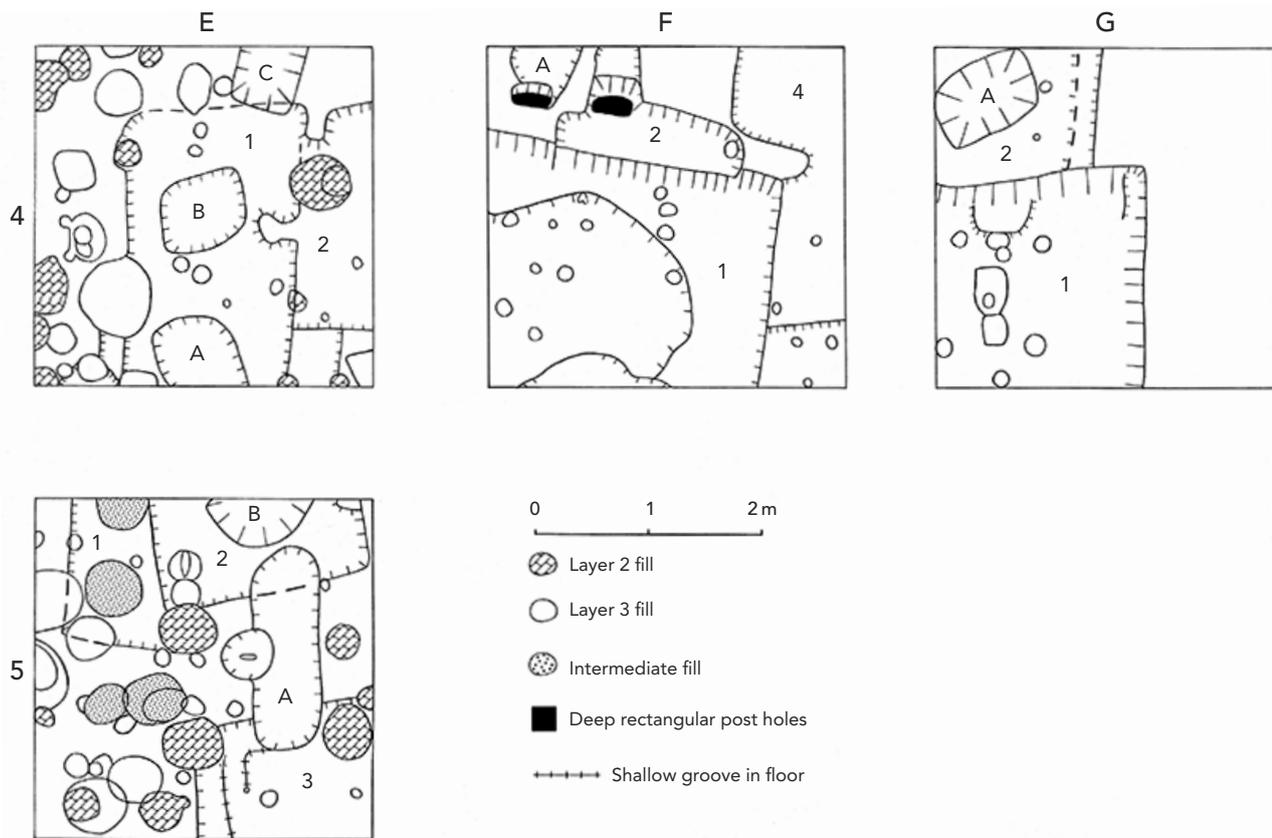


Fig. 11 Layer 3 features in Area B. In each square, the larger rectangular pits are numbered according to the apparent sequence from bottom to top, and the smaller pits similarly listed by letter.

palisade posts) in E4 and E5, to tiny stake-holes in all four squares. Recognising and defining the smaller holes was difficult, and there were probably many more than are illustrated. They were identified at different levels within the layer and some were capped with clay over a Layer 2 fill. One trampled surface associated with several small post- and stake-holes was identified in the southwest corner of E5. Large postholes with Layer 2 fill, which penetrated deep into the natural clay, were interpreted as palisade holes. They are clearly marked on Fig. 11, as they were not all identified during the excavation of Layer 2.

The large holes appear to represent defensive structures set slightly back from the edge of the ditch. Contrary to expectations, the slope upwards towards the ditch in E4 and E5 was found to be the natural slope through which the ditch had been dug and not a low inner bank. The large postholes ranged in depth below surface from about 135 cm to 200 cm.

Trotter (2009) has recently presented several examples from South Island pā in which palisade posts were set not on the top of the defensive inner bank or the immediately

inner edge of ditch, but back behind the bank. Although the Station Bay situation is different in that there is no artificial bank, only a slight natural slope up to the edge of the vertically sheer ditch, the position of at least some of the presumed palisade posts is not unlike the examples illustrated by Trotter. These South Island examples all date to the nineteenth century and the period of musket warfare. No items of European material culture have been found at the Station Bay pā, but an early nineteenth-century age for the final occupation is not impossible.

#### Layer 3 features

(Fig. 11)

The majority of features associated with Layer 3 were rectangular pits; there were also smaller, usually deep, basin-like pits and, in E4 and E5, large postholes that again were assumed to be for defensive structures. The rectangular pits are numbered in each square from earliest to latest, except that E5/2 and E5/3 share the same alignment and were probably contemporary. Examples of the complex structures uncovered are illustrated in Figs 12–15.



Fig. 12



Fig. 13



Fig. 14



Fig. 15

Fig. 12 Square E5 looking north. Pits A and B are towards the front. The ranging pole marks a large Layer 3 posthole exposed in section (photo: Janet Davidson).

Fig. 13 Square E4 looking north. Pits A and B are in the foreground left and centre (photo: Janet Davidson).

Fig. 14 Square F4 looking north. The distinction between Layer 2 and Layer 3 is very clear. Part of one of two large rectangular postholes is at centre right (see also Fig. 29) (photo: Janet Davidson).

Fig. 15 Square G4 looking north. Part of the very hard fill of Pit A, centre right, remains unexcavated (photo: Janet Davidson).

No rectangular pits were completely exposed. They varied slightly in orientation and considerably in depth. A few had buttresses; none had floor drains or sumps, despite the impermeable nature of the bedrock. Both single and paired alignments of postholes were identified. Most pits had straight sides, but Pit 2 in G4 had sloping sides, and may have been functionally different from the others. The marks of digging sticks were visible in the walls of some of the earlier, deeper pits, particularly G4/1. The approximate depths below surface of pits not shown in Fig. 9 were as follows: E5/1, 60 cm; E5/2, 80 cm; E5/3, 80 cm; E4/2 60 cm.

The curious oval pit E5/A and the small, deep, rounded rectangular pits E4/A–C and E5/B (Fig. 11) were thought during excavation to be the earliest features in these squares. The oval pit was apparently abandoned unfinished. Although the others bear some resemblance to the bin pits

found by Sullivan in the floor of her large pit to the north of the ditch (Sullivan 1972: 32, 40–43), they are deeper and more rounded. G4/A was not fully excavated. It had an extremely hard fill, similar to that in part of E5/A.

The two largest pits, F4/1 and G4/1, both had multiple floors; there also appeared to be a third smaller pit within F4/1, visible in the north section, although not detected during excavation of the Layer 3 fill.

Postholes with Layer 3 fill were mostly either in the floors of pits or very large holes in E4 and E5, and likely to be for palisade posts. However, two deep rectangular holes in the northeast of F4 (Fig. 29) appeared to represent a quite different kind of structure, perhaps of vertical slabs, of which no further traces were found. This is the only evidence in the excavated area of what might have been a significant surface building.

There was some cooking stone in patches in Layer 3. Stone from Layer 3 in F4 amounted to 37 kg. Stone from Layer 3 in the other squares was not weighed.

### Area C: internal terrace

The internal terrace at the base of the northern slope of the tihi area overlooks the main flat and the larger terraces above and below the western arm of the main defensive ditch. No surface features were apparent. A 3.5 × 2 m trench (J7)<sup>1</sup> was excavated at its western end. It was hoped that the terrace might prove to have been the site of a house.

The trench revealed part of a well-preserved rectangular pit (J7/1) aligned along the terrace. It was 180 cm wide by more than 220 cm long and 70 cm deep, with an end buttress and a single central posthole in the area exposed. It appeared to have been cut through a grey and, in places, ashy soil overlying hard clay bedrock. The grey soil itself was overlain by a yellower clayey deposit that was probably derived partly from construction on the terrace and partly from activities on the tihi above. This in turn was covered by thin topsoil.

The pit fill consisted of a hard layer of flecked clay at the bottom, an ashy central layer and an upper layer of hard clay lumps. The top of this upper fill was level with the point at which the pit had been cut into the bedrock and had obviously been open to the air for a while, as there were patches of dark soil and a slight hollow containing burnt material in its surface. Above this surface was a thick layer of soil, flecked with clay in its lower part, presumably partly derived from activities on Area A above. Eleven small pieces of obsidian and one identifiable fish bone (a snapper maxilla) were found in this area.

### Area D: external terrace

A 4.8 × 1 m trench was excavated along the baseline between the large external pit investigated by Sullivan and the top of the transverse ditch to the north of the central flat, to see whether this apparent terrace represented an earlier defensive ditch (Fig. 16). From the northern edge, the trench followed what appeared to be a natural downward slope for a short distance. There was then a clearly artificial scarp of about 60 cm leading down to a slightly dished flat about 2 m wide. The natural surface then rose gradually again. A lumpy clay fill, thickest at the edge of the scarp, extended across the flat and merged into a thinner clay layer capped with lumps. These clay layers were overlain by a thick soil deposit against



Fig. 16 The external trench in Area D, looking north towards the scarp leading up to the large external pit. The rectangular hole at centre right is a test pit (photo: Janet Davidson).

the artificial scarp, which, like the underlying clay layers, thinned towards the south. No cultural material was found in this trench apart from a cluster of fire-cracked stones equivalent to a basketful, dumped in the fill against the northern scarp.

The purpose of the scarp and dished flat was not clear. If they were the remains of an earlier ditch it would have been wide and shallow, symbolic rather than an effective defence.

## The occupation sequence

The most intensively occupied area uncovered by the excavations was Area B. A sequence from undefended pits through defended pits to a final dense occupation deposit without pits inside renewed defences was long ago argued for sites such as Ongari Point (particularly the eastern and central areas) in the Bay of Plenty (Shawcross 1964, 1966) and Waioneke on the southwest of the Kaipara Harbour

(McKinlay 1971), and more recently for Anitere in the Bay of Plenty (Phillips & Allen 1996). The central flat of the Station Bay pā repeats this sequence.

The Layer 3 features clearly include several different episodes of pit construction. Patches of burning within the layer appear to indicate periods of at least brief abandonment, for example the burning of vegetation that had grown in pits abandoned long enough for some fill to accumulate, or on surfaces that were subsequently covered with spoil from renewed pit digging activity. Several such lenses can be seen in the west faces of the Area B squares (Fig. 9).

The abundance of small postholes associated with Layer 2 suggests a number of relatively flimsy buildings and/or racks, again constructed on a number of occasions, but there is no evidence of substantial buildings other than the two large rectangular postholes in F4 (Figs 14 and 29). The main large structures appear to be defences. Repeated brief occupations, rather than any sustained or permanent occupation, are indicated.

As some of the large postholes in the central area have Layer 3 or 'intermediate' fills, it seems likely that the later, mostly smaller, rectangular pits in the central area were constructed inside what had now become a defended site. The large postholes in E4 and E5 appear to represent several phases of construction of a palisade and perhaps (in E5) a fighting stage.

It is impossible to estimate the number of separate construction episodes. Some may have been minor and local. For example, pits E5/2 and E5/3 are on a similar alignment and may therefore have been constructed at the same time, but whereas E5/2 was apparently deliberately filled immediately after use, E5/3 had a very weathered floor, which must have been left open to the elements after the superstructure was demolished or removed.

By contrast, there appear to have been only three stages of occupation of Area A: two phases of pit-building and a final occupation without pits, midden or, in the single square excavated, structures. Area C had only two clear stages: terrace and pit construction, followed by pit-filling and transient use of the new surface.

It is not easy to correlate the three areas excavated inside the pā. Area A can be argued to share at least part of the sequence in Area B, with two phases of pit construction followed by a flat working area of some kind with no pits. Area C, with one pit, very limited signs of later occupation in the excavated area and later slope debris derived from activities further up could be a still paler reflection of part of this sequence, but equally could stand alone, relating to

any point in the sequence in the other areas before the final modifications of the tihi.

One of the aims of the excavation was to establish the relationship between the three large pits visible on the surface of the ridge outside the pā to the north and the pā itself. It seems most likely that the external pits pre-date the construction of the pā. Pits F4/1 and G4/1 are the earliest in their respective squares and the largest uncovered in Area B, comparable in size to the external pits. They could therefore easily belong to a period of undefended pit construction over the wider area of the headland, which Sullivan (1972: 60) described as 'extensive', rather than 'constricted, concentrated and intensive'. In support of this view, Sullivan also identified what she considered spoil from ditch construction in the fill of her large external pit after its main use had ceased (1972: 48, 59).

Although the large external pit was never completely filled in, a smaller adjacent pit was. This feature (Pit E) was rectangular, with an end buttress, and was comparable to the pit in Area C. Sullivan considered Pit E to be contemporary with the use of the large pit and argued that it was deliberately filled to provide a subsequently well-used path along the east edge of the ridge to the pā. She also identified the earliest feature in the area she investigated as a probable small terrace (Structure W) just to the southwest of her large pit, arguing that it pre-dated the large pit by a definite time gap (Sullivan 1972: 33). This small terrace is not shown on the site plan.

A sequence can therefore be suggested as follows:

1. Initial use of the area represented only by Structure W, probably a small living terrace.
2. Use of the ridge top, both inside and outside what would become the pā area, for the construction of kūmara (sweet potato, *Ipomoea batatas*) storage pits, both large and small rectangular pits, and smaller ovoid and rounded rectangular pits.
3. Initial ditch construction with continued construction of mainly smaller pits.
4. Final refortification without pits, at least in the areas excavated.

This sequence depends on the assumptions that the earliest pits inside the pā were probably roughly contemporary with the pits outside, and that use of the pā area continued after the latter were abandoned. The presumed Layer 3 palisade holes in squares E4 and E5 are very close indeed to the early pits in those squares and in some cases are dug partly through their fill. Fortification of the Layer 3 pits inside

Table 1 Radiocarbon dates for the three excavated sites at Station Bay.

Site	Lab#	Context	Material	$\delta^{13}\text{C}$	CRA
Pā	NZ4349	Burnt bracken in pit, Area A	Charcoal	$-23.6 \pm 0.1$	$35 \pm 66$
	WK35391	Midden at base of L2, Area B	Shell	$0.9 \pm 0.2$	$630 \pm 30$
	NZ8128	Fire feature in external pit, Area D	Charcoal	$-27.3$	$377 \pm 41$
	NZ4348	Burial, Area A	Human bone	$-25.0 \pm 0.1$	$367 \pm 41$
	WK35392	Burnt bracken on surface within L3, Area B	Charcoal	$-23.8 \pm 0.2$	$442 \pm 25$
Leahy site	NZ8129	Pit 2	Charcoal	$-26.0$	$323 \pm 35$
	NZ4347	Burial	Human bone	$-18.2 \pm 0.1$	$630 \pm 30$
Davidson site	NZ1168	Hāngī 1	Charcoal	$-27.0$	$189 \pm 86$
	NZ4346	Burial	Human bone	$-15.0 \pm 0.1$	$451 \pm 45$

the pā would have been possible only if the ambiguous feature in Area D was, in fact, an earlier ditch.

It is tempting to consider that the various burnt surfaces in Areas A, B and D represent a site-wide event – either a landscape fire when the site was unoccupied, or a deliberate fire on the site in preparation for reoccupation. This could assist in linking the various areas and establishing a chronology. On balance, however, it seems unlikely. The fire feature in Area E was interpreted by Sullivan (1972: 43–46) as a deliberate fire, localised within the pit, fairly soon after it fell into disuse. The burnt bracken in the partly filled pits in Area A was probably the result of deliberate burning some time after the pits had been abandoned. The various burnt patches in Layer 3 in Area B were small and localised, and unlikely to be connected to each other or to fires in other areas.

Although information was collected about structures, faunal remains and material culture for comparison with the Station Bay undefended sites and sites elsewhere on the island, little was learnt about the fortifications, or about how the site actually functioned as a fortified pā. The northern ditch, with its sheer walls backed by substantial palisading, was clearly a serious defensive device, requiring considerable labour to construct. How it related to the terraces above and below it, and to the southern ditch, could not be established in the time available.

## Chronology

Radiocarbon dates from Station Bay provide a good example of why radiocarbon dating is often not very helpful in establishing a clear chronology for pre-European sites in New Zealand. The extent of the probability ranges and multiple

intercepts on the calibration curves make interpretation difficult. It has also become apparent that on Motutapu, charcoal from immediately beneath the Rangitoto ash can readily be incorporated into cultural deposits.

Nine radiocarbon dates for the three Station Bay sites have previously been published (Davidson 1972: 5–6; 1978a: 15). Three of the published dates from the Davidson undefended site were from non-cultural contexts beneath the Rangitoto ash. One from an apparent cultural context (NZ1164) was of similar age; this sample is assumed to have been pre-ash charcoal redeposited in pit fill. A further previously unpublished charcoal date, NZ8130, returned a conventional radiocarbon age (CRA) result of  $656 \pm 31$  BP ( $\delta^{13}\text{C}$ -27.4) and was evidently also pre-ash charcoal. These dates are not considered further here.

The remaining five published dates and four additional ones are listed in Table 1. Slight differences between Table 1 and previously published results are due to recalculation at the Rafter Radiocarbon Laboratory. The age ranges corrected for marine reservoir and secular effects in years Cal BP are presented in Fig. 17.

Houghton (1977: 40) used nitrogen levels in the bones of the burials from Station Bay to estimate the site ages as follows: Leahy site, AD 1400; Davidson site, late 1700s; and the pā, early 1700s. The burials provided the samples for the radiocarbon dates NZ4346, NZ4347 and NZ4348. The human bone dates are consistently earlier than the charcoal dates from similar contexts; in the case of the pā, the burial is thought to be stratigraphically more recent than the bracken sample (NZ4349) from the adjacent pit in Area A. The possibility that a major contribution of seafood to the

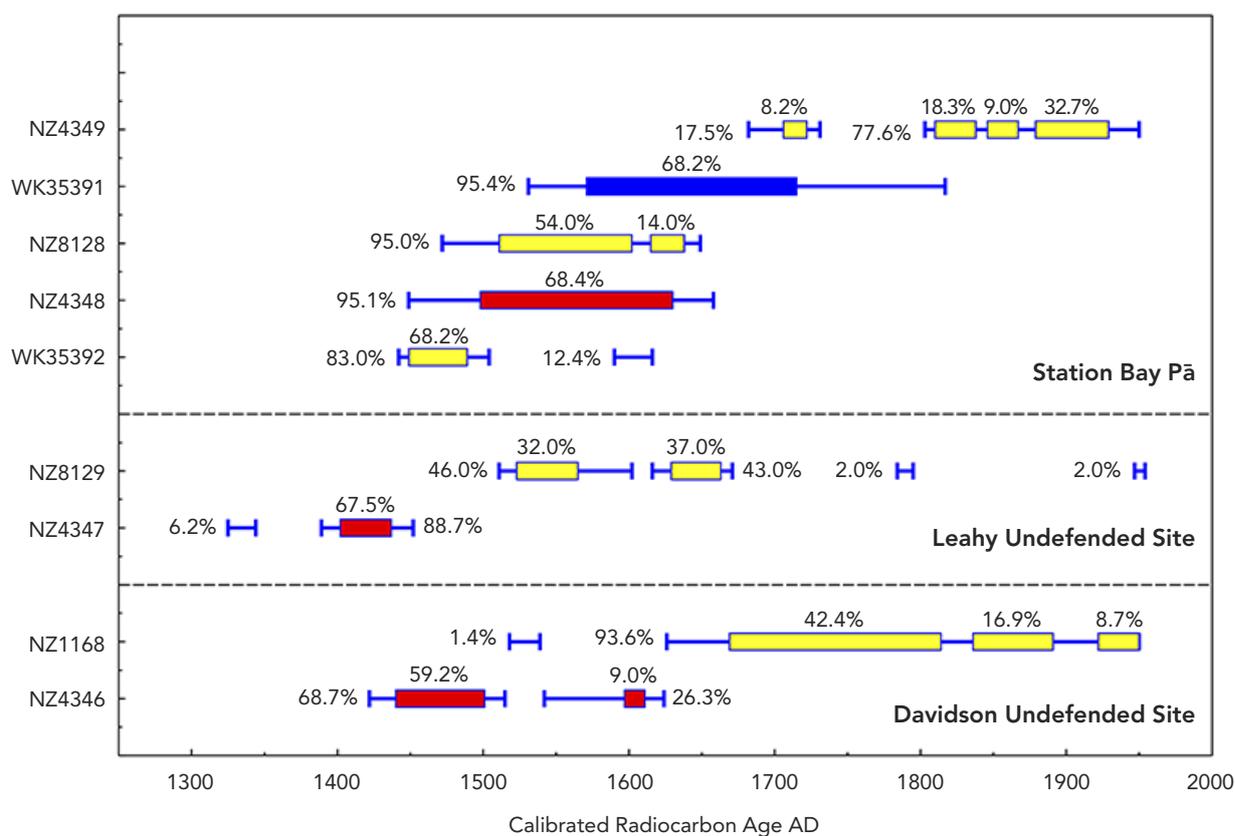


Fig. 17 Radiocarbon dates from the three Station Bay sites in years Cal AD after secular correction and calibration by the laboratories using southern hemisphere atmospheric data from McCormac *et al.* (2004) and, for the shell sample, marine data from Reimer *et al.* (2009). Yellow, charcoal dates; red, human bone dates; blue, shell date.

diet of these people has influenced the bone dates does not appear to be supported by the  $\delta^{13}\text{C}$  values.

The results suggest that the site on the headland, including the external pits as well as the pā, was periodically occupied over a period of up to three centuries, with the final occupation probably close to the end of the eighteenth century or early in the nineteenth century. Of the two undefended sites, the Leahy site is earlier, perhaps close to the initial use of the headland for pits, and the Davidson site, in its final use at least, is later, perhaps close to the final occupation of the pā.

## Material culture

Very few items of material culture were recovered from the excavations. A stone adze and a small selection of worked bone and shell came from Area B. Most items were from Layer 2 but some were from Layer 3 or from the sometimes confused junction between the two. Obsidian was quite differently distributed, as described below.

## Bone and shell items

Worked bone was examined by Ian Smith and Sheryl McPherson but in most cases the material could not be determined.

Two points of composite fishhooks are round-sectioned pieces of bone with minimal modification. One, from E5, Layer 3, has a slight but definite barb (Fig. 18C). The foot and lashing ridges seem to suggest that the barb was intended to be on the outer surface, but the base may have been damaged and repaired to produce this unusual effect. The material is possibly moa bone. The other point, from G4, Layer 2 (Fig. 18B), is smaller and simpler with no barb, a clearly defined face for attachment to the shank, and five tiny grooves to assist lashing. The material is possibly whale bone.

Two pieces of worked shell that may be parts of fishhooks were found in the bulk faunal sample from F4, Layer 2. A worked piece of what appears to be Cook's turban *Cookia sulcata* shell with a single tiny notch at one end is probably

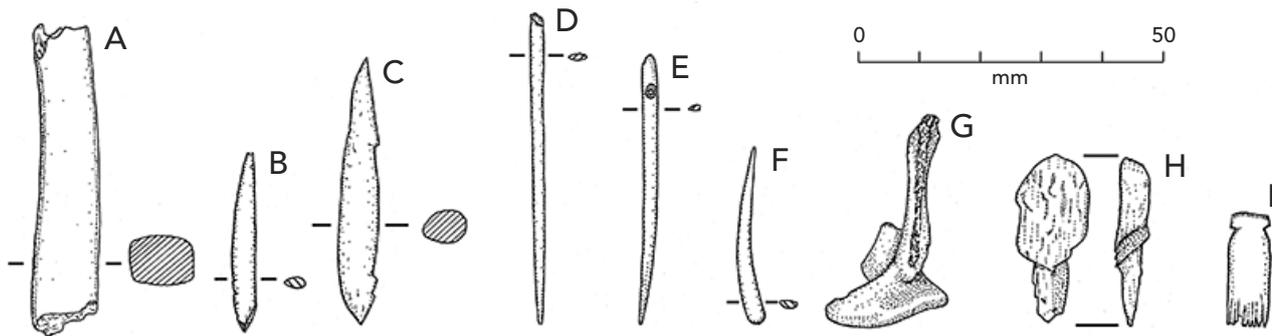


Fig. 18 Bone artefacts and worked bone. See text for contexts and descriptions.

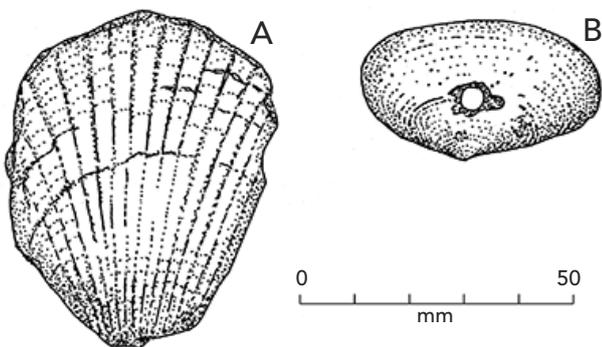


Fig. 19 Worked shell. See text for details.

part of the shank of a baited hook. A flat tapering piece of green mussel shell (*Perna canaliculus*) with a slight knob at the end could be from a trolling lure shank, or could be part of a pendant.

A complete needle (Fig. 18E) came from Layer 1 in G4, and what is probably the point of another from Layer 2 in E4 (Fig. 18D). The complete needle is slightly curved, following the shape of the original bone. It has a drilled hole with what appears to be an attempt at another hole partly drilled just above it on the convex back surface. An item from Layer 2 in E4 is just a rounded piece of bone tapering to a fine point (Fig. 18F). The other end is blunt and the item appears to be complete. Its function is uncertain.

The only object relating to adornment is a small tattooing chisel (Fig. 18I) from Layer 2 in F4. It has 11 uneven teeth.

A broken piece of bone, possibly moa, worked to a square section (Fig. 18A) came from E5, Layer 3, the same context as the fishhook point that was also identified as possibly moa bone. Two examples of cut dog mandibles, one of which is illustrated in Fig. 18G, were found in Layer 2 in F4 and G4. They are presumably by-products of the manufacture of needles or fishhook points. Elsewhere in the Auckland area,

worked dog jaws were found at Taylor's Hill (Leahy 1991: 54). A puzzling small fragment of a well-made bone object of some kind from Layer 2 in G4 is possibly whale bone (Fig. 18H). A tilly bone from Layer 3 in G4, probably from a snapper, appears to have been slightly modified. A fragment of a long bone shaft, probably dog bone, from the fill of a Layer 2 posthole in F4 has been sawn transversely.

Worked shell includes a pipi (*Paphies australis*) valve with a central perforation from E5 (Fig. 19B), and a dog cockle (*Glycymeris*) shell from Layer 2 in F4, chipped all round the edges (Fig. 19A). Nichol (1988: 392, fig. 9.13E) figures a fragment of a similarly chipped shell, which he describes as a scraper, from the Sunde site. However, Furey (1986) has described pendants made from dog cockle shells from a variety of North Island locations and it is possible that the Station Bay shell was the first stage of pendant preparation.

## Stone tools

The sole stone adze blade, from Layer 2 in F4, is a small, untanged, typically 'Classic Māori' adze, in a fine-grained black stone (Fig. 20). All surfaces, including the poll, are well ground. It is heavily chipped along about two-thirds of the cutting edge and may have been deemed not worth repairing. Similar small adze blades were found at Oruarangi, for instance, although those examples had a clearly defined bevel shoulder (Furey 1996: 108, 110). This adze is different from the adzes found in the two undefended sites in Station Bay (Davidson 1970b: 49; Leahy 1970: 69, 71).

Also from F4, but from the Layer 3 fill at the base of Pit 3, was a hōanga (grinding stone) of fairly coarse sandstone. It is roughly rectangular, 60×65 cm, with a maximum thickness of 22 cm. Two edges are flat and rough, while the other two are tapered. One flat surface and one tapered edge appear to have been particularly used as abraders.

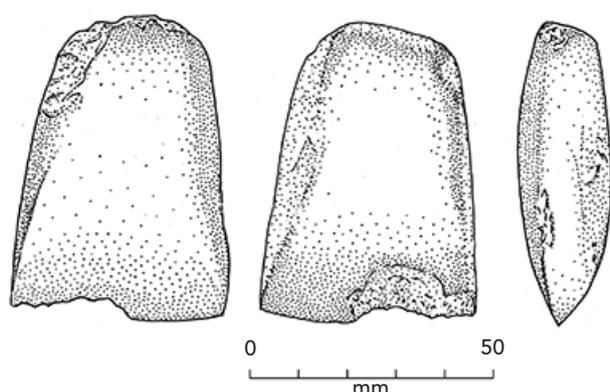


Fig. 20 Stone adze blade from Square F4, Layer 2.

A smooth round pebble weighing 442 g from Layer 3 in G4 is possibly an *autoru*, or stone for grinding *kōkōwai* (iron oxide), although there are now no obvious traces of pigment on it. The largest flat surface is faintly dished and abraded.

Two pieces of beach cobbles, found in Layer 2 in F4, appear to show opportunistic use. One is a flake-like spall, possibly used as a rough scraper. The other is a significant part of an oval cobble, one end of which, forming a natural bevel, appears to have been used as a rough, probably hand-held, chopper. A similar object from R10/497, a more recently excavated undefended site on Motutapu, was described by Watson (2004: 100) as a heavy pounder or hammer stone.

A number of other chips, spalls and fractured pieces of greywacke, collected during the excavation, appear to have been broken accidentally and left unused. There is no sign of the deliberate flaking of local greywacke and chert, as was seen in the two undefended sites, particularly the Leahy site, where 868 flakes were recovered from the small area excavated during the first season (Leahy 1970: 74). However, only one greywacke flake was found during the subsequent excavation (Leahy 1972: 20), showing that a flaking area can be very localised within a site. The absence of greywacke flakes from the excavated areas does not necessarily mean that this kind of activity was not carried out anywhere on the *pā*.

## Obsidian items

One hundred and seventy-one pieces of obsidian were recovered from the excavation. Many are tiny chips and there are few large items. The distribution of obsidian is very different from that of faunal remains or, indeed, the small

number of other artefacts described above, which all came from Area B. More than 70% of the obsidian pieces came from Area A: 115 from Layer 2 and seven from the pit fills. There are 11 pieces from the otherwise largely sterile soil above the infilled pit in Area C. Within Area B, most of the obsidian came from G4: 13 pieces from just under the top-soil, nine from Layer 2 and seven from Layer 3. In contrast, there were only 10 pieces from all layers in E4, E5 and F4 combined. It appears that obsidian is largely associated with areas where there is little or no midden. It is possible that some tiny chips of obsidian escaped notice during excavation of the midden deposits in Area B, but this should not be enough to alter the overall picture of the distribution.

The obsidian assemblage largely consists of detritus or chunks, much of which would have resulted from chipping larger pieces and discarding scraps, but there are also larger pieces that show signs of use. Every piece, regardless of size, was examined under low-power binocular microscope for signs of use-wear and secondary working. Experimental research (e.g. Egeland 2003) has shown that even a tiny piece of obsidian or chert is very effective in butchering a large animal, since the edges can be extremely sharp, easily severing sinews and removing joints of meat. However, the paucity of obsidian in Area B suggests it was not being used in this way.

Although obsidian can be fashioned into such sharp tools or used simply as a flake, it is very brittle, so it is best suited to cutting and scraping softer materials. It can be used for working wood, bone and shell, but acute-angled edges do not last long, and steep angles are more effective. It is therefore not surprising that amongst the obsidian collection quite a few steep-angled tools were found. The term 'tool' is used here not in the formal sense of a specific shape being manufactured before use, but in the sense that a piece of obsidian was used as a tool, taking advantage of high-angled edges. There are also some tools in the collection with more acute-angled edges. Some of these show use marks along concave edges, and qualify as notch-scrapers, sometimes referred to as spokeshaves. Some of the more notable tools are described below:

### Area A, Layer 2

*AR3598.41* This small tool shows bi-directional micro-flaking along a nose-shaped part of a chunk-shaped piece. Such use-wear results from rotating a tool backwards and forwards by hand while drilling a hole. The tool could have been used to ream out a hole in a piece of shell.

*AR3598.34* This small flake terminates in a hinge fracture with a 15° cutting edge to the front surface. Along this edge there is extremely fine micro-flaking. It was probably used as a small knife.

*AR3596.20* A tiny flake with a cutting edge of about 5° angle showing extremely fine micro-flaking. It was probably used as a small knife.

#### Area A, Layer 3

*AR3597a* This is one of the largest pieces of obsidian: 55 mm wide, 22 mm long and 6 mm thick. It is a wide, short flake with cortex on the outer surface. The flake terminates in a hinge fracture. The top of the flake, where the bulb of percussion would have been, has been snapped off. This snapped edge has one sharper edge of about 20° angle and is 35 mm long. There is very fine micro-flaking along this edge, suggesting use as a knife on some relatively soft material.

#### Area C

*AR3594e* A flake that has been snapped into more than two pieces. The original flake terminates in a hinge fracture. One of the two snapped faces has two 90° edges, and both of these show considerable use-wear in the form of micro-flaking. Given the high angle of the edges, a scraping function is suggested, such as scutching flax or scraping wood.

#### Area B, Layers 1 and 2

*AR3588d (Square G4)* This small flake has acute-angled edges on both sides, and each displays pronounced micro-flaking. Most of the chipping is unidirectional. This type of use-wear results from a scraping action. The flake would have been used on a harder material, perhaps bone or wood.

*AR3574 (Square E5)* This small flake has been broken or flaked at the striking platform end, leaving a concave edge that is covered in unidirectional micro-flaking. It has been used as a small spokeshave on some round-sectioned object such as a spear handle.

*AR3571 (Square E4)* This is a small chunk with a nose-shaped edge at one end. There is unidirectional micro-flaking along this edge. This type of use-wear results from scraping in a groove. The tool could have been used during woodcarving.

#### Area B, Layer 3

*AR3592 (Square G4)* This is very similar to item *AR3594e* from Area C, described above, in that a snapped flake has

been used that has two 90° edges, both of which show considerable use-wear in the form of micro-flaking. This is also a scraping tool.

*AR3590a (Square G4)* This is best described as a chunk rather than a flake. One snapped edge has micro-flaking along one of the 60° edges. This could be a knife for some harder material such as wood.

## Discussion

This small artefact assemblage is compatible with assemblages from other Māori sites in the northern North Island that date to the middle and late parts of the prehistoric sequence. Activities on the site probably included fibre-working, limited woodworking, and the repair and maintenance of tools, as well as food processing and, at least occasionally, tattooing. However, the small size of the assemblage could imply brief periods of occupation, rather than more settled residence. The possible use of artefacts made from moa and whale bone is intriguing and may suggest links to the Pig Bay site, where such items were found (Davidson 1978b: 11),

## Faunal remains

The main objective in studying the faunal remains was to document the shellfish, fish, bird and mammal foods of the occupants of the site and to explore variability within and between the two main layers in Area B. The great bulk of protein food came from marine environments, and it is therefore worth considering what these might have been.

Allo, who studied the faunal remains from the two undefended sites at Station Bay, described five types of marine environment: 1, the Station Bay beach, which at that time (late 1960s) was stony and exposed to wave action (Fig. 21); 2, the rocky headlands at either end of the beach and along the adjacent coastline; 3, the sheltered and rather muddy beaches on the east and southeast of the island, a rich source of bivalves such as pipi and cockle (*Austrovenus stutchburyi*);<sup>2</sup> 4, the more exposed sandy beaches in the north of the island, where she believed tuatua (*Paphies subtriangulata*) could be found; and 5, the offshore fishing ground (Allo 1970: 83).

In February 2012, Hayward & Morley (2012) carried out a survey of intertidal biota at Station Bay. They reported 113 species of mollusc and eight species of echinoderms, as well as other invertebrates, listing them as abundant, common,



Fig. 21 The Station Bay beach in January 1968, with the pā in the background (photo: Janet Davidson).

frequent, occasional, rare or dead specimens only. The similarities and differences between their survey and the contents of the midden are discussed below.

Midden deposits in the Station Bay pā were largely confined to Area B. Six identifiable fish bones (snapper and elasmobranch) were recovered from Area A. A few very weathered pieces of shell from the same context amounted to about seven pipi, four cat's eyes (*Lunella smaragdus*), and a few possible fragments of mussel (*Perna/Mytilus*) and pāua (*Haliotis* spp.). A single identifiable fish bone was found in Area C, and there was no faunal material in Area D.

The deposits in Area B were different from the more concentrated shell middens, consisting largely of cockles, found on the volcanic cones of Auckland such as Maungarei (Mt Wellington) (Davidson 2011: 62). At the Station Bay pā, faunal remains were scattered through the soil, with concentrations in occasional patches and in the fills of some features.

## Methodology

About half the material was processed in Auckland in the early 1970s. In 2012, the remainder (the remaining part of Square F4 and all of E5) was sorted and the previously

analysed material checked and mostly rebagged. Bivalves were sorted according to side and all complete hinges counted. A decision was taken at the start to count the umbo of gastropods; in hindsight that was unwise, as some species proved more easily identifiable from the aperture. Rarer species, usually represented only by other fragments, were noted as present and given a minimum number of individuals (MNI) value of 1 in each sample in which they were present. Species such as scallops (*Pecten novaeselandiae*) and pāua may therefore be overrepresented, while some gastropods, notably *Diloma* spp. and *Cominella* spp., are underrepresented. However, in the overall scheme of things, these differences are unlikely to be important.

Fish bones extracted during the first sorting in the 1970s were identified by Leach according to his established methodology (Leach 1986) and included in his reviews of pre-European Māori fishing (Leach & Boocock 1993; Leach 2006). The remaining fish bones were identified by the same procedure in 2011, using the comparative collection in the Archaeozoology Laboratory at the Museum of New Zealand Te Papa Tongarewa (Te Papa). The combined data sets are presented here.

Bird and mammal bones were identified by Ian Smith and Sheryl McPherson (see Appendix 1).

## Shellfish

The relatively large bulk sample from near the base of Layer 2 in Square F4 (AM448) provided the starting point for the present study (Table 2). This yielded most of the species represented in the deposits on the site and was large enough to give an indication of relative abundance. It was apparent that the occupants of the pā were gathering shellfish from the nearby rocky shore but also from both protected, and to a lesser extent open, beaches (in the terms of Morton & Miller 1968: 445). The bulk sample also contained some fish bones and otoliths, discussed below, and 151 g of small pieces of unworked stone.

Table 3 compares the relative abundance of all shells recovered from the midden with their relative abundance in the bulk sample AM448 and their representation in the survey by Hayward & Morley (2012).

In several cases, specimens of one genus from similar habitat have not been identified to species. Thus limpets of the genus *Cellana* probably include both *C. radians* and *C. ornata*; the thaidis of the genus *Cominella* include *C. maculosa*, *C. virgata* and probably a few examples of *C. adspersa*; the topshells of the genus *Diloma* are predominantly *D. aethiops* but probably also include *D. arida*. All of these molluscs are likely to have been collected from the rocky shore in the vicinity of the pā.

Every attempt was made to distinguish between the blue mussel (*Mytilus*) and the green mussel (*Perna*), using difference in hinge form and/or colour when preserved, but this was not always possible. In summarising relative abundance, all mussels have been grouped together. Neither the large horse mussel *Atrina* nor the smaller mussel *Modiolus* has been identified in the midden, but either or both may be present in very small numbers among the fragile fragments.

The small oysters in the bulk sample AM448 were identified by Bruce Marshall (Te Papa) as *Ostrea capsa*. Most of the oysters from the site appear to be of this species, although examples of the northern rock oyster (*Saccostrea cucullata glomerata*) are also present.

The rocky shore component of the midden centres on the cat's eye, which is the most abundant species in all contexts except the small and aberrant sample from G4 (Tables 4 and 5). Other consistently appearing species are its predators, including *Cominella* spp., the rock shells *Dicathais orbita* and *Haustrum haustorium*, and fellow browsers *Diloma* spp. The mussels and rock oysters also come from this

Table 2 Relative abundance of shells in the bulk sample AM448 from Station Bay pā.

Taxon	Element	No.	MNI	%
<i>Lunella smaragdus</i>	Umbo	577		
	Operculum	744	744	36.7
<i>Austrovenus stutchburyi</i>	L valve	532	532	26.2
	R valve	489		
<i>Mytilus edulis galloprovincialis</i>	L valve	145		
	R valve	134		
<i>Perna canaliculus</i>	L valve	23		
	R valve	23		
<i>Perna/Mytilus</i> spp.	L valve	10		
	R valve	8		
Total mussel	L valve		178	8.8
<i>Diloma aethiops</i>	Umbo	139	139	6.5
<i>Nerita (Lisanerita) melanotrachus</i>	Umbo	72	72	3.6
<i>Protothaca crassicosta</i>	L valve	54	54	2.7
	R valve	45		
<i>Paphies australis</i>	L valve	35		
	R valve	37	37	1.8
<i>Gari stangeri</i>	L valve	34		
	R valve	37	37	1.8
<i>Cominella</i> spp.	Umbo	9	9	<1.0
<i>Dicathais orbita</i>	Umbo	8	8	<1.0
<i>Haustrum haustorium</i>	Umbo	6	6	<1.0
<i>Paphies subtriangulata</i>	R valve	3	3	<1.0
<i>Dosina zelandica</i>	R valve	2		
	L valve	2	2	<1.0
<i>Paphirus largillierti</i>		1	1	<1.0
<i>Cookia sulcata</i>	Fragment	1	1	<1.0
<b>Total edible</b>			<b>1823</b>	<b>89.9</b>
<i>Maoricrypta monoxyla</i>	Whole shell	157	157	7.7
<i>Ostrea capsa</i>	Upper valve	36	36	1.8
<i>Haustrum scobina</i>	Whole shell	6	6	<1.0
<i>Patelloida corticata</i>	Whole shell	1	1	<1.0
<i>Paratrophon quoyi</i>	Whole shell	1	1	<1.0
<i>Coelotrochus viridis</i>	Whole shell	1	1	<1.0
<i>Eudoxochiton nobilis</i>	Plate	1	1	<1.0
<i>Echinocardium cordatum</i>	Fragment	1	1	<1.0
<i>Novastoa lamellosa</i>	Cluster		1	<1.0
<b>Total inedible</b>			<b>205</b>	<b>10.1</b>
<b>Total MNI</b>			<b>2028</b>	

Table 3 Relative abundance (per cent) of shells in the bulk sample and total collection from the Station Bay pā, compared with the modern survey of the bay by Hayward & Morley (2012) (abbreviations: a, abundant; c, common; f, frequent; o, occasional; r, rare; d, dead; x, not present).

	Modern sample	AM 448	Total collection
<b>Gastropods</b>			
<i>Alcithoe</i> spp.	d	—	<1
<i>Calliostoma (Maurea) punctulata</i>	x	—	<1
<i>Cellana</i> spp.	f, o	—	<1
<i>Coelotrochus viridis</i>	d	<1	<1
<i>Cominella</i> spp.	c, d, o	<1	<1
<i>Cookia sulcata</i>	x	<1	<1
<i>Dicathais orbita</i>	x	<1	<1
<i>Diloma aethiops</i>	c, f	6.5	5.6
<i>Haliotis iris</i>	x	—	<1
<i>Haustrum haustorium</i>	o	<1	<1
<i>Haustrum scobina</i>	o	<1	<1
<i>Lunella smaragdus</i>	a	36.7	37.3
<i>Maoricolpus roseus</i>	d	—	<1
<i>Maoricrypta costata</i>	f, o	—	<1
<i>Maoricrypta monoxyla</i>	a	7.7	4.3
<i>Nerita (Lisanerita) melanotrachus</i>	a	3.6	1.4
<i>Paratrophon quoyi</i>	x	<1	<1
<i>Patelloidea corticata</i>	x	<1	<1
<i>Penion</i> spp.	d	—	<1
<i>Sigapatella novaezelandiae</i>	c	—	<1
<i>Struthiolaria</i> spp.	x	—	<1
Unidentified	—	—	<1
Vermetidae	x	<1	<1
<b>Bivalves</b>			
<i>Austrovenus stutchburyi</i>	f	26.2	16.9
<i>Dosina zelandica</i>	d	<1	<1
<i>Gari stangeri</i>	d	1.8	<1
<i>Mytilus edulis galloprovincialis</i>	o	7.1	10.1
<i>Mytilus/Perna</i>	n/a	0.5	1.3
<i>Nucula hartvigiana</i>	x	—	<1
<i>Ostrea capsa</i>	Not listed	1.8	1.3
<i>Paphies australis</i>	o	1.8	9.5
<i>Paphies subtriangulata</i>	x	<1	1.8
<i>Paphirus largillierti</i>	d	<1	<1
<i>Pecten novaezelandiae</i>	d	-	<1
<i>Perna canaliculus</i>	o	1.1	3.2
<i>Protothaca crassica</i>	d	2.7	<1
<i>Saccostrea glomerata cucullata</i>	a	—	<1
<i>Tucetona laticostata</i>	x	—	<1
<b>Echinoderms</b>			
<i>Echinocardium cordatum</i>	d	<1	<1
<i>Evechinus chloroticus</i>	f	—	<1
<b>Chitons</b>			
<i>Eudoxochiton nobilis</i>	x	<1	<1
<b>Total MNI</b>		<b>2028</b>	<b>13775</b>

environment, as do the very rare examples of *Coelotrochus viridis* and *Maurea punctulata*. Also from rocky environments are *Cellana* spp., *Nerita (Lisanerita) melanotrachus*, *Penion* spp. (probably *P. sulcatus*, identified only from columella and whorl fragments), the heart urchin *Echinocardium cordatum*, the common sea egg or kina (*Evechinus chloroticus*), and the chitons.

The Cook's turban shell and pāua are rocky shore dwellers, although neither was recorded in Station Bay by Hayward & Morley (2012). Pāua are apparently not present in the Auckland region today (B. Hayward, pers. comm., 13 August 2012). Small turbans are often associated with cat's eyes, while larger ones are found under intertidal rocks (Morton & Miller 1968: 81). The iridescent shells of turbans and pāua were sometimes used for artefacts such as fishhooks and pendants, and it is possible that some of these shells were brought to the site at least partly for this purpose. However, the presence of the opercula of turbans may argue against this suggestion for that species.

A significant number of small shells in the midden (MNI 826, 6.3% of total MNI) are probably incidental by-products of gathering from this rocky shore. Particularly numerous are the slipper limpets *Maoricrypta monoxyla*. These, along with the rarer examples of other slippers *Maoricrypta costata* and *Sigapatella novaezelandiae*, would have arrived in the site attached to cat's eyes and mussels in particular. Other probable by-products are the small carnivores *Haustrum scobina* and *Paratrophon quoyi*, and the small limpet, *Patelloidea corticata*. The small oysters, *Ostrea capsa*, also attach to shells; examples were noted on *Haustrum*, mussel and pāua shells, and 34 examples were counted on two large white rock shells (*Dicathais orbita*) from one context. The vermetid worm *Novastoa lamellosa* and some extremely small cat's eyes are probably also incidental.

The principal species not from the rocky shore are the cockles and pipi, both of which live on protected beaches. Both are present in Station Bay now, although small and infrequent, but were not seen at the time of the excavations, when it was assumed that those in the middens of the excavated sites had probably been brought from the extensive sheltered areas of Islington Bay and Gardiner Gap on the other side of the island, adjacent to Rangitoto. Haywood and Morley mention a sand ridge that now provides a sheltered habitat in Station Bay for these species. Whether this has come and gone over the years and was present at the time the pā was occupied unfortunately has not been determined.

One indication of its past existence may be the presence of *Gari stangeri* in the midden; this species is seldom reported from archaeological sites but is noted by Hayward & Morley (2012) as present today on the sandbank. Associated with cockles and pipi may have been the volute *Alcithoe*.

Almost certainly not from a protected environment is the tuatua, which lives on exposed sandy beaches. This shell is consistently present in small numbers in all contexts, but is relatively more important in Layer 3. The nearest definite source would have been the open beaches of Takapuna and Milford on the mainland. Allo (1970: 83) thought tuatua were present on beaches on the north of Motutapu, while Szabó (1999: 14), who studied faunal remains from sites closer to these beaches (see below), thought there were no tuatua there, but that they could be found on the eastern beaches. I am inclined to think that there were never any tuatua on Motutapu beaches. Possibly associated with tuatua would be *Dosina zelandica* and *Alcithoe* spp.

The source of the remaining non-rocky shore species is more difficult to pinpoint. Morton & Millar (1968: 566) mention *Gari stangeri*, *Maoricolpus roseus*, *Paphirus largillierti* and *Protothaca crassicosta* as dwellers in harbour channels (at what appear to be unsuitable locations for gathering), while *Protothaca* is also shown as a borer in the Waitemata sandstone that forms the southern and eastern parts of Motutapu Island (Morton & Millar 1968: 245). Since dead examples of all of these shells were found by Hayward & Morley (2012), it is possible that they were formerly available in or near Station Bay. In the 1970s, the bay provided what was probably a suitable environment for *Protothaca crassicosta*. *Gari stangeri* and *Paphirus largillierti* may have been associated with pipi. *Maoricolpus roseus* could be a by-product of this association.

There are both marked similarities and striking differences between the content of the midden and the biota present in the vicinity of Station Bay today. Of the principal species gathered, cat's eyes are 'abundant' and cockles 'frequent' today, while pipi and mussels are 'occasional', and tuatua are absent. Of the slippers, *Maoricrypta monoxyla* is abundant, as might be expected, while *M. costata* and *Sigapatella novaezelandiae* are, respectively, frequent and common, although a modern sample of cat's eyes collected from the bay in February 2012 by Hayward & Morley (2012) yielded only *M. monoxyla*.

Missing from Station Bay today on the basis of this one survey and therefore rare, if in fact present, are the significant rocky shore species turban, pāua and white rock shell, as well as some minor species. As noted above, turbans and

pāua could have been collected as raw material, but the white rock shell was a consistent part of the rocky shore contribution to diet. The rock oyster is abundant in the bay today and the kina is frequent, and both are of edible size (B. Hayward, pers. comm., 13 August 2012). Both are, however, rare in the midden. This could suggest that these now prized food species had been largely eliminated locally by overgathering at the time the pā was occupied.

The data were examined for variations within and between layers, focusing on rocky shore and soft shore gathering. Tables 4 and 5 show the relative abundance of the most common species by square and layer (including subdivisions of Layer 2), and the proportions of rocky shore and soft shore species. It is interesting to note that the bulk sample AM448 has almost identical proportions of rocky to soft shore species as the total sample, although there is some variety in the actual species represented. There is enough variation between squares and between sub-samples to suggest that meal contents varied from day to day; it would be unwise to suggest any real chronological changes.

There have been several previous analyses of shells from sites of various ages on Motutapu. Allo (1970) studied the relatively small samples from the two undefended sites on the ridges on the western side of Station Bay. In both she found that soft shore shellfish dominated, although there was also a rocky shore component. Whereas pipi were most numerous at the Davidson site followed by cockle, tuatua dominated at the Leahy site, again followed by cockle. Allo tentatively suggested that this may have reflected different periods of occupation of the two sites. Based on the environmental conditions in Station Bay in the late 1960s, she assumed that the cockles and pipi did not come from there, but from the protected beaches on the western side of the island, and the tuatua from more open beaches on the north side of the island.

The pā midden is different again, with rocky shore species – headed by cat's eye and followed by mussels – dominating in almost all contexts. Cockles were more numerous than pipi, and tuatua much less significant. The exception is the small samples from Layer 2 and Layer 3 in G4, where pipi were the dominant species in both. As Layer 2 was very thin in G4, it is possible that most, if not all, of the shell collected from this square should have been assigned to Layer 3.

Elsewhere on Motutapu, Nichol (1988) carried out a major study of shell (and other faunal remains) at the Sunde site on the west of the island. The 'oyster lens' below the ash from the Rangitoto eruption was dominated by rock oysters,

Table 4 Relative abundance (per cent) of principal shell species and habitat at the Station Bay pā by square.

	AM448	F4	E4	E5	G4	Total
<i>Lunella smaragdus</i>	36.7	37.1	37.7	38.2	25.9	37.3
<i>Austrovenus stutchburyi</i>	26.2	12.4	18.3	15.0	2.6	16.9
<i>Paphies australis</i>	1.8	20.4	6.9	7.4	44.6	9.5
All mussels	8.8	8.5	16.3	16.9	7.5	14.6
<i>Diloma</i> spp.	6.9	5.4	3.9	7.0	0.5	5.6
All slipper shells	7.7	0.9	4.9	4.7	0.3	4.4
<i>Paphies subtriangulata</i>	0.1	5.7	0.9	1.3	6.5	1.8
Subtotal	88.2	90.4	88.9	90.5	87.9	90.1
All others	11.7	9.6	9.4	9.5	12	9.9
Total MNI	2028	2175	4252	4936	389	13780
% rocky shore species	67.2	58.8	72	74.3	42.2	67.5
% soft shore species	32.8	41.2	28	25.7	57.8	32.5

Table 5 Relative abundance (per cent) of principal shell species and habitat at the Station Bay pā by layer.

	L2 main*	L2 ashy	L2 other	L3	Total
<i>Lunella smaragdus</i>	34.5	46.1	32.9	37.4	37.3
<i>Austrovenus stutchburyi</i>	24.2	9.8	19.7	5.0	16.9
<i>Paphies australis</i>	7.8	3.2	6.2	25.3	9.5
All mussels	12.5	16.7	21.4	8.9	14.6
<i>Diloma</i> spp.	5.0	10.0	2.8	4.2	5.6
All slipper shells	4.4	6.1	4.1	1.2	4.4
<i>Paphies subtriangulata</i>	0.5	0.4	0.8	8.1	1.8
Subtotal	88.9	92.3	87.9	90.1	90.1
All others	11.1	7.7	12.1	9.9	9.9
Total MNI	5757	3062	2653	2308	13780
% rocky shore species	58.9	84	68	58.7	67.5
% soft shore species	41.1	16	32	41.3	32.5

\*Includes bulk sample AM448.

with significant secondary components of mussels and kina (Nichol 1988: 233), while the apparently disturbed post-eruption deposits were dominated by pipi followed by cockles, with a very minor component of rock oysters and almost no mussels (Nichol 1988: 389).

Szabó (1999) explored the concept of optimal foraging through examination of three sites on Motutapu: the Sunde site as documented by Nichol, and two more recently excavated undefended sites in the northwest of the island,

R10/494 and R10/497. In the relatively small assemblages from these two sites there were hardly any oysters, and mussels were fifth in rank order. At R10/494, cat's eyes were first, followed by pipi, tuatua and cockle in that order. At R10/497, the order was cockle, cat's eye, pipi and tuatua. There was variability in relative abundance within both these sites, and also an important difference in size of pipi between midden dumps (smaller) and fill of features (larger). Szabó attributed this to the gathering of smaller shells in the

immediate vicinity and larger ones from further afield, possibly during excursions for other activities.

It is unfortunate that the chronology of these sites on Motutapu is not well defined, so the possible effect of time cannot be gauged, except in the distinction between pre- and post-eruption deposits. The Sunde site stands out from the others in the remarkable content of the pre-eruption oyster lens. Never again could oysters, kina and mussels have been available in such abundance. Szabó (1999: 47) speculated that the ash fall may seriously have affected the oysters and kina, but it is likely that human impact was a factor in their failure to recover.

The post-eruption deposit at the Sunde site, studied by Nichol, also stands out in its complete dominance of pipi and cockle. This site is closer than the other five to the probable source of these shellfish in the protected shores created by the eruption in what are now Islington Bay and Gardiner Gap. In Szabó's 1999 study, both the pre- and post-eruption deposits met her criteria for optimal foraging.

The composition of the shell midden at the Station Bay pā and in-site variations in relative abundance in the other five sites suggest that people were gathering from several locations, perhaps taking advantage of trips to different parts of the island for other purposes to gather non-local shellfish. But as Szabó (1999: 54) pointed out, it is difficult to pursue such arguments very far, when our understanding of what may have been in the local environment at the time is derived from what is in the midden, rather than from independent evidence. The question of whether the cockles and pipi in the midden of the Station Bay pā were gathered locally or not may never be answerable. The variation within Layer 2 at the Station Bay pā is a further warning against basing conclusions about chronological change or optimal foraging on small samples.

Nichol (1986: 195; 1988: 99) suggested that the relative proportions of shells to opercula of cat's eyes in middens may indicate processing and removal of the meat with opercula still attached. This would require the more difficult removal of raw animals from their shells, as the operculum is easily detached by slight steaming. It is most probable that the shellfish brought to the Station Bay pā were eaten there rather than processed for preservation and later consumption elsewhere. Even so, it is worth considering the possibility of processing. The relative proportions of shells and opercula in the midden were highly variable. Overall, there were fewer opercula, but in some of the larger samples, particularly, opercula considerably outnumbered shells. Preservation as

proposed by Nichol appears to be ruled out, although the differential distributions raise interesting questions about processing and dumping.

#### Shell size

Size-frequency distributions of shells from archaeological sites can provide information on gathering practices, suggest possible changes in natural populations and are used in calculations of the meat weight a particular species contributed to diet at a site or sites.

Nichol (1988: 400) measured shells of cockle and pipi from above the ash at the Sunde site, using the length of the resilium to estimate the maximum dimensions of broken shells. He measured other species from below the ash at the Sunde site and from other sites, including cat's eyes from sites in Northland and Coromandel, where he demonstrated a relationship between operculum length and shell length (Nichol 1988: 52, 101). His samples were relatively small and he graphed his results by 5 mm blocks.

Szabó (1999: 20) measured shells as part of her focus on gathering practices and selection in two undefended sites on Motutapu, avoiding links to human predation or any other causes of size variation. Like Nichol, she used resilium length to estimate sizes of pipi from fragments from both R10/494 and R10/497. She measured shells of cat's eyes from R10/494, using the dimension of shell height to investigate possible selection for or against juvenile specimens (which are recognisably different), but found that size appeared to be the main criterion for selection. She noted the presence of some very large shells.

Unfortunately, pipi from Station Bay pā are too few and too widely dispersed among a number of relatively small sub-samples to be worth measuring. Sub-samples of the two most abundant species, cat's eyes and cockles, were selected for measurement.

The shell of the cat's eye is not very dense, being rich in a protein known as conchiolin, and is frequently broken when found in middens. It is therefore not easy to measure. However, it has a dense calcareous operculum, which usually survives intact in archaeological deposits and is ideal for calculating MNI and estimating live animal size. Although Nichol (1988: 52) had previously demonstrated an allometric relationship between operculum size and shell size, his sample was small. A modern comparative collection was made for the present study. Live specimens were collected at various localities: Ngakuta Bay in the Marlborough Sounds ( $n = 49$ , mainly small), the northern ( $n = 51$ ) and southern ( $n = 75$ ) ends of Station Bay, Hobson Bay in

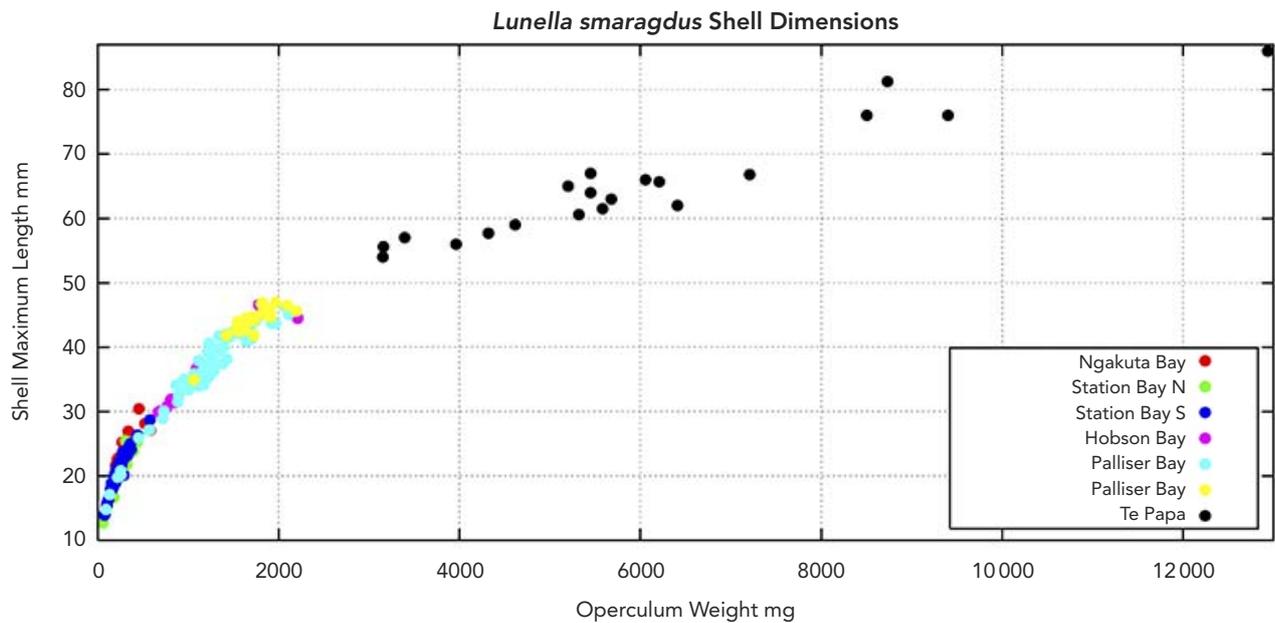


Fig. 22 The cubic relationship between operculum weight and shell size of cat's eyes (*Lunella smaragdus*).

Auckland ( $n = 9$ , mostly large), and Palliser Bay southeast of Ngawi Point ( $n = 64$  and  $n = 21$ ). A further 20 very large specimens in the gastropod collection at Te Papa, nearly all from the south of the South Island, were added to make a total sample of 289.

This comparative collection was measured and weighed as follows. The whole shell was placed on a flat surface and digital callipers were used to measure the maximum diameter in the plane of the flat surface (maximum length in millimetres recorded to two decimal places). The maximum length of the operculum was similarly obtained, and it was then weighed with a precision of 1 mg. The relationships between these two operculum dimensions and the live shell size are illustrated in Figs 22 and 23.

The range of dimensions in the comparative collection was: shell length 12.6–86.0 mm, operculum length 5.5–25.2 mm, and operculum weight 55–12,936 mg. This fairly represents the full range that could be found in archaeological sites. Least squares analysis was carried out between pairs of the three dimensions to provide suitable allometric equations that could be used to estimate live shell length from operculum measurements. The relationship between a linear dimension and weight requires a power curve fit, and analyses of real data invariably find a power within a margin of statistical variation  $\approx 3.0$ . There are good theoretical reasons why this should be a cubic function, so a value of  $\equiv 3.0$  is chosen here.

The linear regression equation is:

$$\text{Shell length mm} = 2.369 * \text{operculum length mm} + 0.792 \pm 1.3 \text{ mm}$$

$$\text{Correlation coefficient} = 0.995 \text{ (student's } t = 174.6)$$

The cubic regression equation is:

$$\text{Shell length mm} = 3.718 * (\text{operculum weight mg})^{1/3} - 1.80 \pm 1.4 \text{ mm}$$

$$\text{Correlation coefficient} = 0.995 \text{ (student's } t = 162.6)$$

In both cases, the correlation coefficient is very high and the standard error of the estimate is very low. Therefore, either of these equations could be used with excellent results when estimating original shell size from the operculum. A Sartorius top-loading balance, model BAS01S, with a precision of 1 mg was available, and was found to be much faster than digital callipers for measuring archaeological specimens of opercula.

Cat's eyes from four contexts in the Station Bay pā were studied and characterised according to stratigraphic position within the site: the top of Layer 2 in E5 (late), the ashy midden at the base of Layer 2 in E5 (middle 1), the bulk sample from the base of Layer 2 in F4 (middle 2), and the total number dispersed throughout Layer 3 in the four squares (early). These may be meaningfully examined to test for potential changes through time. The two middle samples are especially useful because they are both from the base of Layer 2 but spatially separate. They can therefore

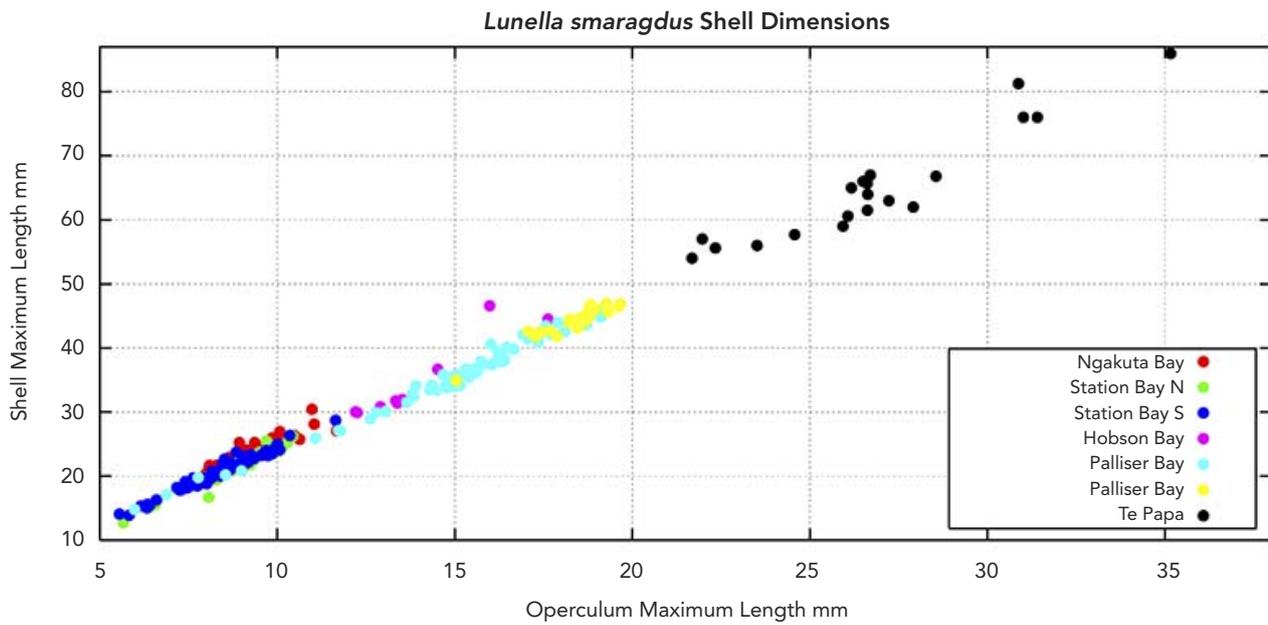


Fig. 23 The linear relationship between operculum length and shell size of cat's eyes (*Lunella smaragdus*).

Table 6 Dispersion statistics for modern and archaeological samples of *Lunella smaragdus*.

Sample	No.	Range	Mean	SD	Coef. Var.	Skewness	Kurtosis
						g1/w1	g2/w2
Modern	126	12.7–28.7	21.0 ± 0.2	2.7 ± 0.2	12.8 ± 0.8	-0.6/3.5	3.9/2.3
Late	544	13.1–48.7	28.3 ± 0.3	6.5 ± 0.2	23.0 ± 0.7	0.5/6.8	3.0/0.1
Middle 1	852	11.1–48.2	26.6 ± 0.2	5.6 ± 0.1	21.1 ± 0.5	0.8/10.5	3.8/4.6
Middle 2	741	16.4–41.7	24.6 ± 0.2	4.7 ± 0.1	19.1 ± 0.5	0.8/10.0	3.1/0.7
Middle all	1593	11.1–48.2	25.7 ± 0.1	5.3 ± 0.1	20.7 ± 0.4	0.8/15.0	3.8/6.2
Early	313	10.5–61.1	28.3 ± 0.4	7.3 ± 0.3	25.9 ± 1.0	0.7/6.0	4.2/4.4
Black Rocks	248	20.4–55.2	40.4 ± 0.4	6.8 ± 0.3	16.8 ± 0.8	0.6/4.9	2.8/0.6

help to define the range of variation that can be expected within a similar time period. This in turn helps to define a baseline against which to examine potential changes through time. The late sample was physically above the Middle 1 sample.

The opercula from these four samples were weighed and the equation above used to estimate original live shell size. The two middle samples were also combined for comparison with the others. The modern sample from Station Bay

collected by Hayward & Morley (2012) and a grab sample from the archaeological site known as the Black Midden, BR3, at Black Rocks in Palliser Bay were included for comparison. After shell size was estimated from the opercula, the dispersion statistics were calculated and are presented in Table 6.

The student's *t*-test was carried out on all pairs of means of these samples. All values except one are highly significant ( $p < 0.01$ ). The exception is the means of the late and early

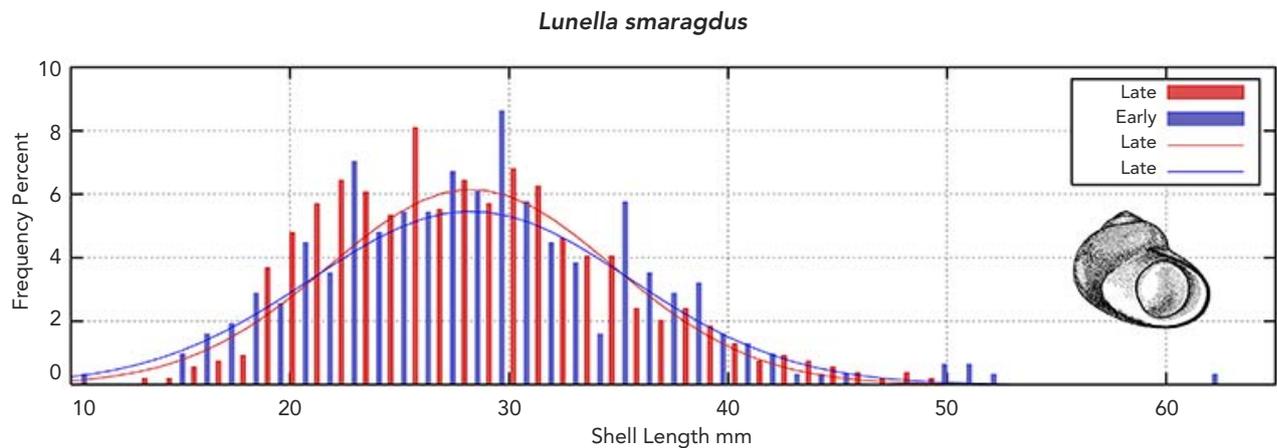


Fig. 24 Estimates of live shell size of cat's eyes (*Lunella smaragdus*) from the early and late horizons at the Station Bay pā, showing slight differences in size-frequency curves.

samples, which are not significantly different ( $p = 0.05$ ). These results are most interesting and suggest that catches vary considerably in size over short periods and, in the case of the two middle samples, from one place to another in the same horizon. One would therefore have to observe a considerable difference in mean size between two samples to be sure that this indicated an effect on the biological population of this species, such as might result from human predation pressure. This is also reflected in the coefficients of variation, which are all high, varying from 19% to 26%. Two results do stand out, however: one is that specimens in the modern sample from Station Bay are certainly smaller than others, and the other that those from Black Rocks are by far the largest. With one exception, the normality statistics  $g_1$  and  $g_2$  are all significant at various levels ( $w_1$  and  $w_2$ ). This is typical of archaeological samples of shell, which seldom display normal size-frequency distributions. This is usually because humans preferentially harvest larger specimens wherever possible, which results in positive skewness ( $g_1 > 0$ ) and positive kurtosis ( $g_2 > 3$ ).

In spite of the identical mean values of the early and late samples, there are subtle differences, which are clearer when size-frequency curves are examined (Fig. 24).

The early sample shows a far wider distribution than the late one, with several shells larger than 50 mm and one that is 61 mm. Nothing approaching this size is present in the late sample or in the modern environment at Station Bay. Such shells are more comparable to the very large specimens in the gastropod collection at Te Papa. Another difference in these two curves is a greater central tendency in the early sample, reflected in significant leptokurtosis in Table 6. This is what results from selective harvesting by size. By contrast,

the late sample has a mesokurtic shape. Overlain on this size-frequency graph are the two pure Gaussian curves that have the same means and standard deviations as the two archaeological samples, but have normal skewness and normal kurtosis.

Finally, a comment should be made about cat's eyes as food. The shells need to be only lightly steamed before the meat can easily and quickly be removed by piercing it with a sharp stick and rotating it from the shell. The flavour is quite strong and slightly bitter, and not popular with everyone.

There were insufficient cockles from the site to explore possible variations in cockle size through time. A combined sample from secure Layer 2 contexts was measured for comparison with cockle samples from the volcanic cone of Maungarei (Mt Wellington) in the east of the Tamaki Isthmus within sight of Motutapu (Fig. 1) and two other more distant sites in the North Island. Kauri Point is in the western Bay of Plenty north of Tauranga and Pauatahanui is an inlet of the Porirua Harbour north of Wellington. The Station Bay sample consisted of 574 left valves: 152 from the bulk sample AM448 and 422 from 15 smaller sub-samples taken from the  $\frac{1}{4}$  in (6.35 mm) sieve from throughout Layer 2. Measurements were taken with digital callipers and captured electronically in a database. The measurement used was maximum shell length as defined by Williams *et al.* (2008).

Dispersion statistics were calculated and are presented in Table 7, together with similar results from three other archaeological sites for which comparable data are available. A two-tailed  $t$ -test was carried out on each pair of mean

Table 7 Maximum-length statistics for cockles (*Austrovenus stutchburyi*) from the Station Bay pā.

Site	No.	Range	Mean	SD	Coef. Var.	Skewness		Kurtosis	
						g1/w1	g2/w2		
Maungarei	2049	10.3–43.0	20.0 ± 70.1	3.1 ± 0.0	15.1 ± 0.2	0.6/13.9**	1/19.2**		
Kauri Point	1123	11.0–42.0	22.9 ± 0.1	4.8 ± 0.1	21.0 ± 0.4	0.5/9.4**	2.7/2.1*		
Station Bay	574	11.9–37.4	24.2 ± 0.1	3.6 ± 0.1	15.1 ± 0.4	0.2/4.8**	3.4/1.8*		
Pauatahanui	5753	15.1–66.0	38.4 ± 0.1	5.4 ± 0.1	14.2 ± 0.1	0.7/25.7**	4.4/21.6*		

\*Denotes significant at  $p = 0.05$ . \*\* Denotes significant at  $p = 0.01$ .

values. The  $t$  results are:  $1/2 = 3.8$ ,  $1/3 = 21.2$ ,  $1/4 = 179.1$ ,  $2/3 = 6.3$ ,  $2/4 = 96.9$ ,  $3/4 = 85.4$ . The numbers  $1/2$  etc. refer to the numbers allocated to the sites in Table 7. Each of these is significantly different ( $p = 0.01$ ). In spite of these individual differences, the most striking aspect of cockle size is just how small cockles from the three northern North Island archaeological sites are compared to those from Pauatahanui (Fig. 25). These northern sites date to the latter half of the pre-European period, so the small size may reflect a biological response of the species to a long period of sustained human predation. Unfortunately, it is not yet possible to test this hypothesis, since there are no archaeological samples from substantially earlier contexts in the same areas. It is hoped that future archaeological research will shed light on this.

It can be seen in Table 7 that each archaeological sample of cockles displays marked non-normal characteristics. That is, they all have both significant positive skewness and significant positive kurtosis. Positive kurtosis, also described as a leptokurtic shape, refers to a very strong central tendency, characteristic of a harvesting strategy that is strongly biased towards a certain size. In this case it is towards large specimens (strong positive skewness), deliberately rejecting smaller-sized specimens.

As noted above, it is not at present possible to say where the cockles in the Station Bay pā came from, although it seems most likely that they came from the other side of the island, from the extensive cockle beds at Islington Bay and Gardiner Gap. The small sample of cockles Nichol measured from the disturbed post-eruption layers he excavated at the Sunde site, very close to this resource (Nichol 1988: 400), shows a similar size range to the Station Bay sample, although the data are not directly comparable.

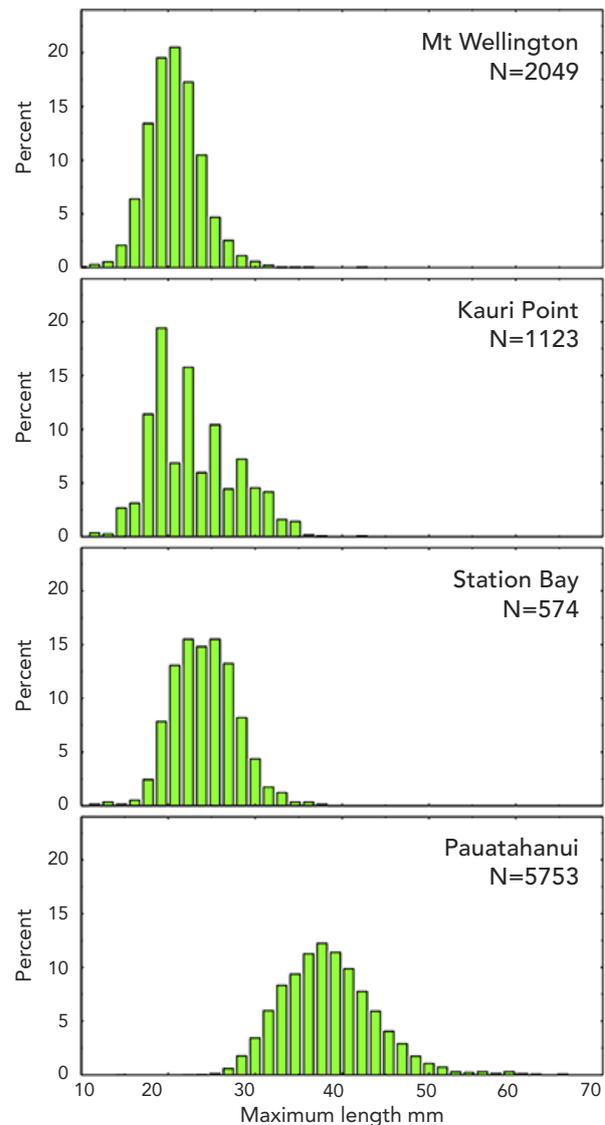


Fig. 25 Size-frequency distributions of cockles (*Austrovenus stutchburyi*) from the Station Bay pā and three other North Island archaeological sites.

## Discussion

The above discussion has been primarily concerned with what shellfish the occupants of the Station Bay pā were gathering and where they were getting them from. However, shells as well as other fauna in archaeological sites have the potential to contribute knowledge to fields other than prehistory. Rowland's study of the limpet *Cellana denticulata* in Coromandel middens began as an investigation of whether this species might be a useful chronological marker for archaeologists, but led him to conclude as follows:

It would not seem presumptuous to consider that archaeology can contribute to understanding the modern population dynamics of species from the information stored in prehistoric middens or that the archaeologist can assist the zoologist in studying past distribution of species. This study further emphasises the long-term and cumulative effects of human pressure on shellfish resources that must be taken account of by zoologists investigating current species' distributions. (Rowland 1976: 14)

More recently, Szabó (2001) suggested that the gastropod *Nerita (Lisanerita) melanotrachus*, a species susceptible to changes in temperature, might provide evidence of climatic fluctuations: specifically, that its absence from the undisturbed site R10/497 on Motutapu Island, in contrast to known earlier and probably later sites, might be indicative of a period of cooler temperature.

Szabó's carefully framed argument was challenged by McFadgen & Goff, who concluded (2001: 316): 'This rare intertidal gastropod is erroneously used as an indicator of palaeoclimatic conditions and to provide "evidence" for prehistoric temperature fluctuations. A far more likely explanation is that regular indiscriminate shellfish gathering temporarily exhausted a scarce resource, although fluctuations of the EAUC [East Auckland Current] have undoubtedly played a role in the presence or absence of *N.[erita] atramentosa [now Nerita (Lisanerita) melanotrachus]*.'

It is worth commenting that although *Nerita (Lisanerita) melanotrachus* accounts for only 3.6% of the bulk sample AM448 at the Station Bay pā and a mere 1.5% of the total sample from the site, it is present in small numbers in almost all contexts and layers. This casts some doubt on the suggestion that 'regular indiscriminate shellfish gathering' might temporarily exhaust this supposedly scarce resource. It should also be noted that although, as McFadgen & Goff point out (2001: 315), *N. (L.) melanotrachus* was present above the Rangitoto ash in Scott's excavation at the Sunde site, it was present only in the two most recent of the four layers above the ash, and not in the lower two, which might

Table 8 Relative abundance of fish from the Station Bay pā by family.

Family: common name	NISP	MNI	MNI %
Sparidae: snapper	899	236	68.41 ± 5.1
Triglidae: gurnard	65	35	10.14 ± 3.3
Chondrichthyes: sharks, etc.	53	24	6.96 ± 2.8
Gemphylidae: barracouta	24	16	4.64 ± 2.4
Arripidae: kahawai	13	10	2.90 ± 1.9
Carangidae: trevally, kingfish, mackerel	8	7	2.03 ± 1.6
Mugiloididae: blue cod	6	6	1.74 ± 1.5
Labridae: spotty, etc.	7	6	1.74 ± 1.5
Zeidae: John Dory	4	4	1.16 ± 1.3
Osteichthyes: ?species	1	1	0.29 ± 0.7
Totals	1080	345	100%

be expected to correspond to the time when Szabó suggests the species might have been very rare or absent in the vicinity. The possibility of significant fluctuations in the presence of *N. (L.) melanotrachus* in the Auckland area should not be rejected out of hand.

Distinguishing between the effects of environmental change and human impact will not be easy, but there is no doubt that well-curated archaeological collections in long-term storage have great potential for further studies, including some not envisaged at the time the archaeological material was collected, as Rowland (1976: 14) implied.

## Fish

A minimum number of 345 fish were identified, suggesting that fish were the main contributor of protein to the diet of those who occupied the pā. The number of identified specimens (NISP) was 899. As might be expected in this part of New Zealand, snapper were by far the most common species, followed by gurnard (Table 8 and Fig. 26). Fish bones from the large bulk sample were inadvertently excluded from the analysis. Fourteen identifiable bones, all snapper, were present. An MNI of three fish was represented by three right pre-maxillas. Surprisingly, however, 14 otoliths were present in the sample; only one other otolith was recovered from the site. A small number of identifiable

Table 9 Anatomical parts identified for snapper (*Sparidae*).

Anatomy	NISP
Left dentary	125
Right dentary	107
Left articular	62
Right articular	53
Left quadrate	44
Right quadrate	51
Left pre-maxilla	123
Right pre-maxilla	149
Left maxilla	95
Right maxilla	90

fish bones were missorted as mammal bones. These, too, were not included in the analysis described below.

There is relatively little comparative information about fish remains from sites in the Auckland region. The pioneering study of Galatea Bay on Ponui Island produced an MNI of 108 snapper, eight other small fish and two stingrays (Shawcross 1967: 112). Motutapu has been reasonably well served, with a large number of identifications from the Sunde site, and smaller amounts from several undefended sites. Snapper is the predominant species in all these sites, but other species are always present in small numbers.

Allo's (1970) initial identifications of fish from the two undefended sites at Station Bay have been amended using a more comprehensive comparative collection (Leach 2006: appendix 1). The Davidson site yielded 39 snapper (72% of total MNI), seven barracouta, four sharks/rays, three gurnard and one John Dory. The Leahy site provided eight snapper (67%), three gurnard and one kahawai.

Of the more recently excavated undefended sites, R10/497 yielded 26 snapper, along with eight barracouta, four sharks/rays, three red gurnard, two spotted gurnard, and one each of kahawai, trevally, pōrae and sand flounder (Watson 2004: 154). This is an unusually low proportion of snapper. Ladefoged & Wallace (2010: 177, 180) report fish remains from R10/494 by NISP rather than MNI, with snapper as 79% of total NISP, followed by gurnard (15%) and small amounts of kingfish, trevally, jack mackerel and shark/ray.

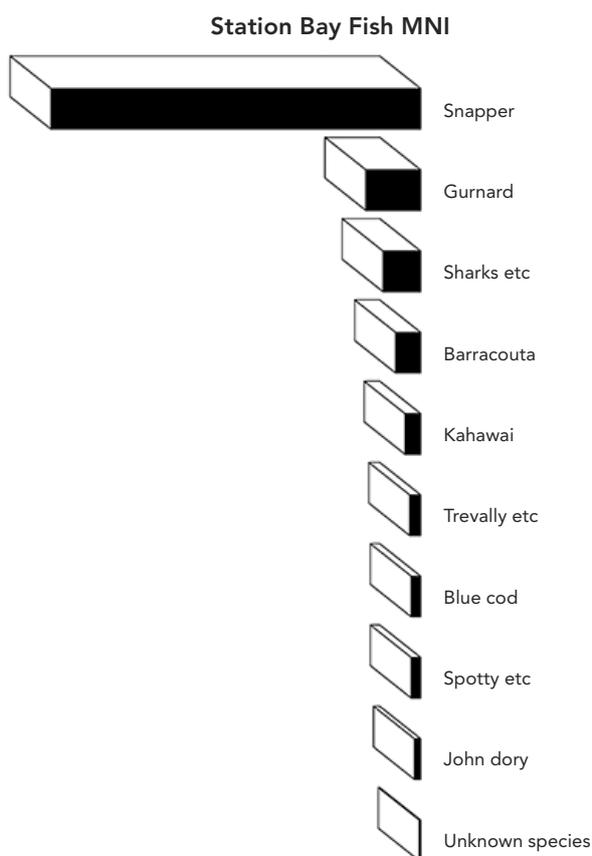


Fig. 26 The relative abundance of fish species at the Station Bay pā. The total MNI value is 345.

### Snapper size

Cranial bones of snapper were measured with digital callipers and the data used to estimate the live fish size and weight using the method described by Leach & Boocock (1995). Statistical data are presented in Table 10 with data for eight other New Zealand sites for comparison. Size-frequency diagrams are given in Fig. 27.

There was a wide range of sizes in the catch. There can be little doubt that seine nets would have been used for taking the smallest of these fish and possibly many of the larger ones too. The two bone fishhook points from the site (Fig. 18) show that baited line fishing was used at least occasionally by the people who occupied the pā. Such hooks are not effective for catching small fish.

The smallest fish in the site (187 mm fork length) would have weighed only about 131 g, but the largest weighed 7.5 kg (732 mm fork length), which is a good size. The mean fork length and weight (436 mm and 1.9 kg) are at the smaller end of the size range of pre-European snapper catches and fairly typical of North Island archaeological

Table 10 Live fork-length statistics of snapper from Station Bay pā and a selection of other sites.

Site	No.	Range	Mean	SD	Coef. Var.	Skewness	Kurtosis
						g1/w1	g2/w2
Station Bay	481	187	732	435.8±4.5	98.2±3.2	0.42/5.83	3.00/0.04
Mt Wellington	145	128	903	428.6±13.3	160.6±9.4	0.12/1.74	2.78/0.46
Houhora	8847	218	1010	490.5±0.9	81.6±0.6	0.33/22.07	3.79/15.28
Twilight	1914	176	994	532.0±2.3	102.5±1.7	0.37/10.85	3.64/5.73
Galatea Bay	212	246	799	464.2±7.1	103.2±5.0	0.52/4.36	3.35/1.15
Cross Creek	997	146	782	400.0±3.0	94.9±2.1	0.28/6.86	3.2/1.80
Foxton	1080	239	953	471.5±3.0	100.0±2.2	0.48/9.32	3.4/3.04
Mana Island	527	266	939	463.7±5.1	116.13±0.6	0.70/7.92	3.17/0.84
Rotokura	824	138	870	575.0±3.3	93.5±2.3	-0.38/7.21	4.8/11.09

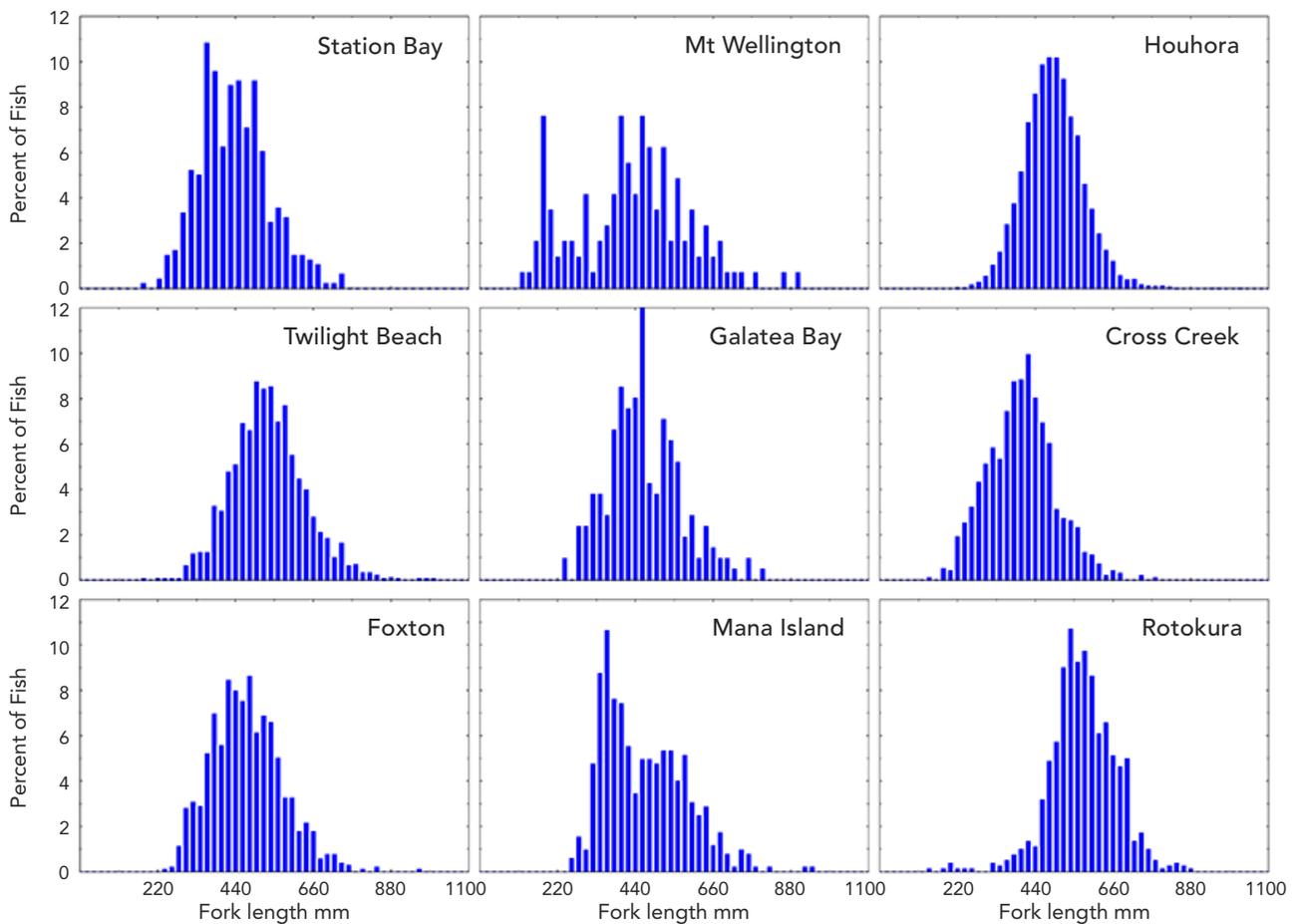


Fig. 27 Fork-length frequency distribution of snapper in the Station Bay site, with several other sites for comparison. See Table 10 for statistical data relating to these catches.

sites dating to the latter part of the prehistoric sequence. The total meat weight represented by the catch at Station Bay is estimated to have been 897 kg. Clearly, fish was an important source of protein for these people.

There are no signs of multi-nodality in the size-frequency distribution of the snapper catch, something that was observed at the nearby site of Maungarei (Mt Wellington). The normality statistics g1 and g2 show slight but significant positive skewness and normal kurtosis. In this respect the snapper catch here is similar to that of several other sites.

Allo (1970: 89) reconstructed the sizes of snapper from the Station Bay undefended sites, following the method of Shawcross (1967). Unfortunately, the very small samples gave only an indication of range: 19 fish of 9–23 in (c. 23–58 cm), with a single larger fish of 32 in (c. 81 cm) from the Davidson site; and a range of 7–21 in (c. 18–53 cm), with an outlier of 29 in (74 cm), for 11 fish from the Leahy site.

Nichol (1988: 280) produced size-frequency distributions from three successive parts of the oyster lens beneath the Rangitoto ash at the Sunde site and demonstrated a decline in size through time, although the largest sample at the top of the lens had a fish measuring over 80 cm long. Although not directly comparable, Nichol's three size-frequency diagrams, and particularly the earliest one, are quite similar to that resulting from finds at Station Bay pā.

## Mammals and birds

Mammal and bird bones, identified by Ian Smith and Sheryl McPherson, are described in Appendix 1. This small assemblage stands in marked contrast to the amount of fish and shellfish recovered from the pā, and is fairly typical of mid- and later-period northern sites. Apart from relatively recent remains of rabbits and possums, which post-date occupation of the site, the principal mammal remains are from dogs and rats. There are no marine mammal remains, in contrast to the earlier Pig Bay site, where a few pilot whale bones were found (Smith 1981: 97). Smith and McPherson have treated the bird and mammal bone as a single assemblage, which means the minimum numbers are not comparable to those for fish, which were treated as a number of separate smaller assemblages.

The apparent difference in abundance of rats and dogs between Layer 2 and Layer 3 in Area B is intriguing and may reflect the fact that the site was not actually occupied very much during the earlier period of pit construction and use, compared with the perhaps briefer but more intensive Layer 2 occupation.

## Charcoal analysis

Charcoal was not collected systematically. As noted above, despite the clear evidence of cooking activity provided by the large amounts of heat-fractured stone in Area B, only one definite fire feature was found, and that contained only tiny charcoal fragments. Charcoal was picked from concentrations in the layers and from the sieves. Thirty bags were submitted to Rod Wallace, who identified 291 pieces. The identifications are summarised in Table 11 and listed in more detail in Table 12. Most of the samples are from Area B. The Layer 3 samples are evenly divided among the four squares but the Layer 2 samples are predominantly from E5.

The abundant heat-fractured stone and midden from cooking activities suggests that much of the charcoal in the assemblage was from firewood. This is very likely to have been sourced locally by the inhabitants and to reflect vegetation in the immediate vicinity of the site at the time of occupation. The overwhelming dominance of smaller shrub species in the assemblage strongly suggests there was little in the way of mature woody vegetation in the vicinity of the site at this time.

Only two samples contained bracken charcoal, although it was found in patches throughout the layers of the site. This species is unlikely to have been used as firewood and the charcoal probably originated in landscape fires in bracken cover on the site during periods when it was not occupied or from deliberate burning in preparation for reoccupation. Wallace (2012) states that bracken charcoal in most site assemblages is usually accompanied by tutu (*Coriaria arborea*), *Hebe* spp. and *Coprosma* spp. This implies that some of the charcoal of these species in the site may have come from landscape fires rather than domestic activities. The fact that the bracken previously identified by Goulding (pers. comm., 10 August 1971) from low in the fill of Pit 1 in Area A appeared to have been burnt immediately before the remainder of the pit was deliberately filled suggests that in this instance vegetation on the site was burnt as a prelude to reoccupation.

On the basis of his review of charcoal samples from several sites on Motutapu, including the Station Bay pā, Wallace (2012) has concluded 'that most of the forests on the island were cleared by fire at the time of the Rangitoto eruption and that only limited areas of bush remained in the vicinity of the sites at the time they were occupied'. He suggests that the main woody vegetation present consisted of shrubs accompanied by pūriri (*Vitex lucens*) and

Table 11 Summary of charcoal identifications from the Station Bay pā.

Plant group	Species	No. of pieces	%
Ferns	Bracken ( <i>Pteridium esculentum</i> ) stems	20	8%
	Ponga ( <i>Cyathea dealbata</i> )	3	
Shrubs and small trees	Tutu ( <i>Coriaria arborea</i> )	12	71%
	Rangiora ( <i>Brachyglottis repanda</i> )	6	
	<i>Hebe</i> spp.	13	
	<i>Coprosma</i> spp.	38	
	<i>Pseudopanax</i> spp.	94	
	Mānuka ( <i>Leptospermum scoparium</i> )	26	
	Māhoe ( <i>Melicactus ramniflorus</i> )	14	
	<i>Pittosporum</i> spp.	2	
	<i>Olearia</i> spp.	4	
	Ngaio ( <i>Myoporum laetum</i> )	2	
Ribbonwood ( <i>Plagianthus regius</i> )	1		
Large broadleaf trees	Karaka ( <i>Corynocarpus laevigatus</i> )	6	15%
	Beech ( <i>Nothofagus</i> sp.)	1	
	Kohekohe/pūriri ( <i>Dysoxylum spectabile/Vitex lucens</i> )	12	
	Pōhutukawa ( <i>Metrosideros excelsa</i> )	24	
Conifers	Kauri ( <i>Agathis australis</i> ) branch wood	5	6%
	Kahikatea ( <i>Dacrydium dacrydioides</i> )	4	
	Rimu ( <i>Dacrydium cupressinum</i> )	8	
	<b>Total</b>	<b>291</b>	<b>100%</b>

pōhutukawa. Consequently, conifer timber for houses and pit superstructures may not have been obtained locally and may even have been imported to the island.

As can be seen in Table 12, there is little difference in the content of the samples from the two main layers in Area B or between the actual layers and the fills of features. There is very little evidence of structural timbers in Area B; the eight pieces of rimu (*Dacrydium cupressinum*) and 10 pieces of kohekohe/pūriri (*Dysoxylum spectabile/Vitex lucens*) from Layer 3 are each from a single sample. It appears that palisade posts and the timbers from pit superstructures were removed from the area excavated. Of the three pieces of ponga (tree fern, *Cyathea* sp.), which might have been used in pit lining, only one is associated with the base of a pit fill.

The widespread presence of pōhutukawa is not surprising. This tree still grows in the immediate vicinity of the site today and branches are readily accessible for firewood. The presence of karaka in Layer 2 is unusual; this tree was a

food resource for Māori and was sometimes deliberately planted, both in gardens and in pā (Colenso 1881: 17). It was present on Motutapu before the Rangitoto eruption (Cooper 1970) but has not been recorded in other charcoal samples from the island studied by Wallace (2012). The single piece of beech may have originated from the palaeosol under the Rangitoto ash layer during occupation of the site. Wallace (2012) has found that this species dominates charcoal from that horizon.

Most of the charcoal from Area A is from Layer 2 there, probably contemporary with Layer 2 in Area B. However, the conifer pieces are from deliberate pit fill immediately preceding Layer 2, and may represent fragmentary remains of earlier structures. The few fragments from Area C are from a context following initial pit construction but preceding considerable renewed activity on the tihī above, and probably equate with a relatively early stage of pit construction in Area B nearby.

Table 12 Charcoal identifications by context.

Context	B, L2	B, L2 feature	B, L3	B, L3 feature	A, all contexts	C	Total
Number of bags	10	4	6	5	4	1	30
Bracken	—	—	10	10	—	—	20
Ponga	—	1	—	1	—	—	3
Tutu	8	2	3	—	—	—	12
Rangiora	—	6	—	—	—	—	6
Hebe	9	2	—	—	2	—	13
Coprosma	13	5	11	5	3	1	38
Pseudopanax	36	19	16	5	8	—	84
Mānuka	2	—	24	—	—	—	26
Māhoe	2	10	1	1	—	—	14
Pittosporum	—	—	—	—	2	—	3
Olearia	2	2	—	—	—	—	4
Ngaio	1	—	—	—	1	—	2
Ribbonwood	—	1	—	—	—	—	1
Māpou	2	—	1	—	1	—	4
Karaka	3	5	—	—	—	—	8
Beech	—	—	1	—	—	—	1
Kohekohe/pūriri	2	—	—	10	—	—	12
Pōhutukawa	2	2	2	9	8	1	24
Kauri branch wood	—	—	—	1	2	2	5
Kahikatea	—	—	—	—	3	1	4
Rimu	—	—	8	—	—	—	8
<b>Total</b>	<b>82</b>	<b>54</b>	<b>78</b>	<b>42</b>	<b>30</b>	<b>5</b>	<b>291</b>

Charcoal from the large pit outside the pā, identified by Wallace (2012), includes a relatively large amount from the trunks of ponga, which Wallace considers may have been from the lining of the pit when it was in use, as well as broadleaf and conifer trees, probably from the pit's structural timbers. Sullivan (1972: 43) interpreted much of the burnt material in the pit (which also included what she described as 'bracken ... wrenched up by the roots') as the result of a deliberate fire, rather than a landscape fire. She argued that this fire was lit not long after the pit had fallen into disuse. One burnt kūmara tuber is consistent with the interpretation of the pit as a food-storage structure.

## Discussion and conclusions

The Station Bay pā exists in the immediate context of other sites in and around Station Bay, including the two excavated undefended settlements, and the wider contexts of the island and adjoining regions.

As discussed above, the radiocarbon dates suggest repeated use of the pā headland and less intensive use of the two undefended settlements in Station Bay over several centuries in the latter half of the pre-European sequence in the region. Both of the undefended sites showed some evidence of reoccupation or modification, but much less intensity of use than the pā. The excavated terrace at the Leahy site is the lowest of a series extending up the ridge. The

extent to which these terraces were contemporary with each other is unknown.

The three sites have revealed an impressive range of pits and pit-like structures. Pits on the headland, both inside and outside the defences, include larger, deeper pits than those in the undefended settlements, as well as smaller and shallower rectangular pits and a range of small oval pits with rounded bottoms. It is noteworthy that there are no drains in any of the pits on the headland, whereas most of the pits and pit-like structures in the undefended sites have drains. End buttresses are present but relatively uncommon in all three sites, while what appear to be side or asymmetrical buttresses are found only in the pā. The days when it was believed that pit typology could provide chronological markers (e.g. Parker 1962) are long gone, but there is still scope to consider variations among pits in specific areas.

The pā is comparable in area to the larger of two defended high points on the summit of the volcanic cone of Maungarei (Mt Wellington), which is in the same general size category as defended areas on the volcanic cone of Pouerua in the inland Bay of Islands and non-volcanic cone pā such as the Kauri Point pā in the western Bay of Plenty (Davidson 2011: 80). Although the Station Bay landscape is visually much less striking than Maungarei or Pouerua, it reflects a similar settlement pattern: gardens and undefended settlements dispersed over the landscape, with a refuge nearby. At Maungarei and Pouerua, that refuge is on the summit of a prominent hill. At Station Bay it is on a steep headland, readily visible to potential enemies approaching by canoe. It is likely that similar-sized social groups used these geographically rather different landscapes in a very similar way.

The pā catchment is considerably bigger than the immediate vicinity of Station Bay. As many as 50 undefended settlements in this part of the island are closer to the Station Bay pā than to any other pā (Fig. 28). Station Bay and its pā would have been a focal point for the occupants of most or all of these sites.

Analysis of charcoal from the three Station Bay sites suggests a landscape predominantly covered in scrub, much of it probably on gardens in fallow, with a few trees, particularly pōhutukawa, which are still such a feature of the coastal margins.

The subsistence economy at all three sites was based on kūmara cultivation and the harvesting of fish and shellfish from nearby marine environments. Rats and dogs were represented in all the sites, but birds were virtually absent. A dietary contribution from other plant foods, such as

bracken rhizomes and karaka berries, is likely but not confirmed, although Houghton's (1977) identification of so-called 'fern root planes' on the teeth of the two individuals from the pā and the one from the Davidson undefended site lends some support to this.

Analysis of shell shows that people were gathering from three different environments: the nearby rocky shore, protected beaches and unprotected beaches, with differing proportions in the different sites but also within the larger sample from the pā. Similar variation was found in the two other undefended sites on the island studied by Szabó (1999). Realistically, what was gathered from day to day probably depended on the state of weather and tides, other activities that were taking people to different locations where they could also gather shellfish, and even such factors as whether or not children were contributing to what was collected on a particular day.

A possible indicator of chronological change is provided by tuatua. Allo (1970) proposed that the preponderance of tuatua in the Leahy site compared with the Davidson site might indicate chronological difference. The radiocarbon dates suggest that the Leahy site is earlier than the Davidson site. There are clearly more tuatua in Layer 3 at the pā than in Layer 2, which might reflect a similar trend. However, the samples from the undefended sites are small and there are a few tuatua in almost all contexts in the pā. The fact that there are tuatua at all, given the question of where they came from, raises an interesting topic for future research.

It is no surprise that the predominant fish in the middens of all three sites was snapper, as the species predominates in almost all northern sites. Station Bay is well placed for access to the fishing grounds of the Hauraki Gulf.

The amount of durable fishing gear is disproportionate to the amount of fish bone. From the pā there are two bone two-piece fishhook points and a possible shank fragment made from shell. One dentary of a kahawai has a perforation commensurate with being taken on a lure. There is a single dog-tooth point from the Leahy site. It appears that most of the fishing was carried out with nets.

The few fishhooks are part of a small assemblage of artefacts from the three sites that is a pale reflection of Māori assemblages dating to the latter part of the pre-European sequence elsewhere in the North Island. Needles, pickers and tattooing chisels are typical of, but not confined to, relatively recent sites. A single pendant fragment of nephrite from the Leahy site is the only ornament recovered.

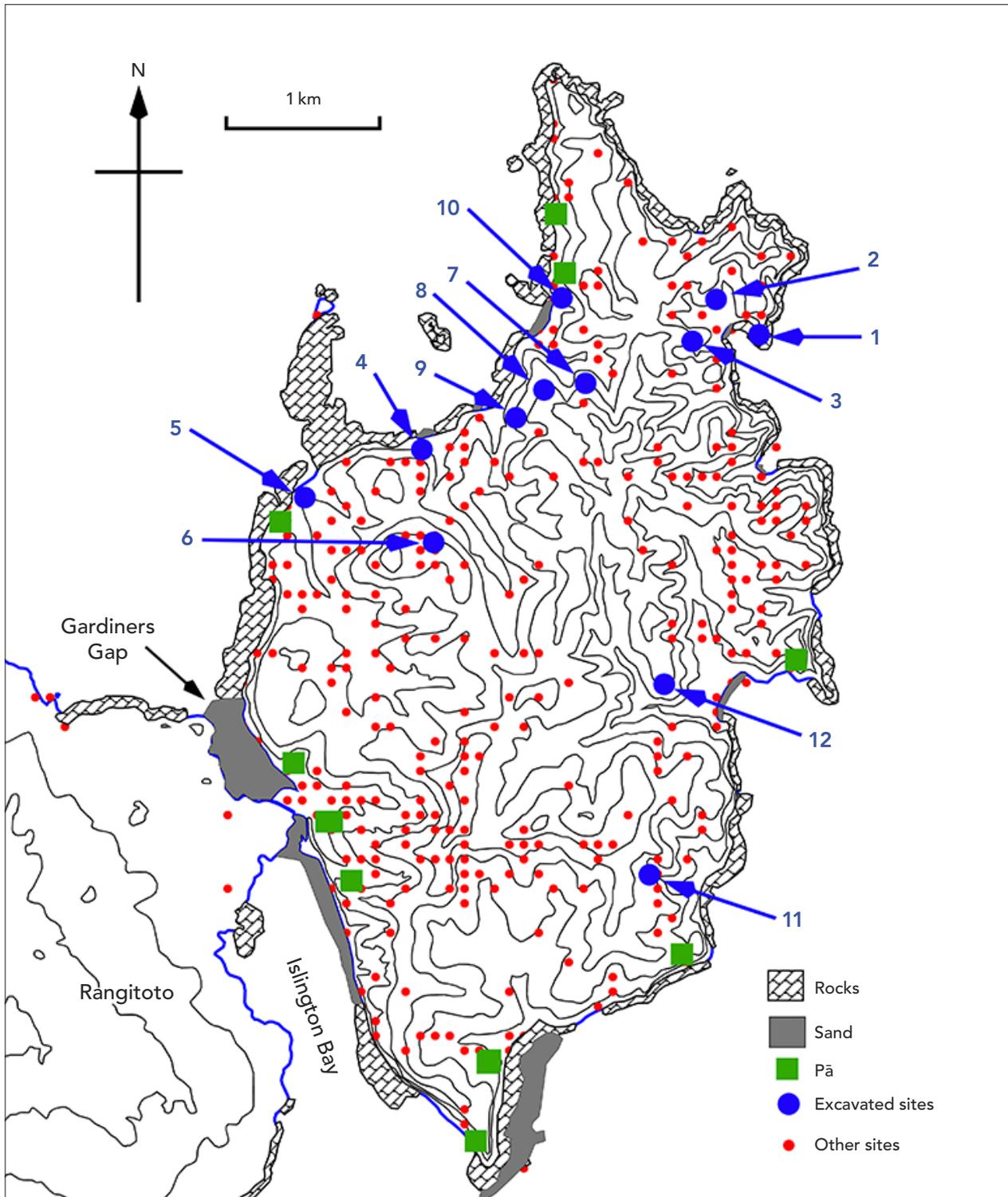


Fig. 28 Map of Motutapu, showing recorded and excavated sites. 1, Station Bay pā; 2, Leahy site; 3, Davidson site; 4, Pig Bay; 5, Sunde site; 6, Leahy N38/404; 7, R10/494; 8, R10/497; 9, R10/496; 11, R11/1277; 12, R10/557.

Stone tools and by-products from their manufacture are the main component of the assemblages. At the two undefended sites, local greywacke was still being worked into adzes as it had been at Pig Bay and the Sunde site, although the distinctive Archaic types found at Pig Bay were no longer present. The absence of any evidence of greywacke-working in the pā, apart from apparently opportunistic use of a beach cobble, may be an important difference between the pā and the undefended sites, but may simply be due to lack of an adequate areal sample of the pā.

The unusual burial of two individuals in a pit on the tihī of the pā has been described above. The pit had every appearance of being a food-storage pit and would therefore be *noa*, the antithesis of *tapu*. On the other hand, it is on the tihī or highest point on the site, which would have been ceremonially or ritually important. The fact that these two people were buried together at the same time suggests that they had died together, either in an accident, or as the result of violence. If they were of protohistoric age they could conceivably have died of an introduced illness. They appear to have been carefully placed rather than carelessly tossed into the pit, but burial in a food-storage pit does seem to suggest the scornful treatment of enemies or the sacrifice of low-status people rather than the respectful, ritual interment of members of the community.

A possible parallel can be found at Kauri Point in the Bay of Plenty, where partly dismembered bodies were found in two shallow pits, late in the sequence (Ambrose 1967: 15).

A single burial of a woman in a crouched position in a shallow grave, a more normal form of interment, was found in each of the other sites at Station Bay (Davidson 1970b: 43–44; Leahy 1970: 67). Houghton's measurement of nitrogen levels in the bones of these individuals suggested that the woman from the Leahy site was significantly earlier than the others (Houghton 1977: 40). He suggested that this woman had a better diet, which enabled her to grow taller and live longer than the later people. However, there is nothing in the archaeological evidence from the sites to confirm any difference in diet. Houghton also found evidence that the woman from the Leahy site and the man from the pā were habitual canoe paddlers – hardly surprising for these island people.

The picture that emerges from the three excavations is of a stable, established way of life on the island during the latter half of the pre-European sequence. It involved horticulture and the harvesting of marine resources, and was predominantly peaceful, but with periodic episodes of stress

requiring the construction or reconstruction of defences and relatively brief occupations of the headland.

Contacts with the wider region are reflected in imported items, primarily obsidian. A tiny fragment of a nephrite pendant from the Leahy site is the only example of something from beyond the northern half of the North Island.

The sources of the obsidian found in the pā have not been determined. Most of the pieces are grey in transmitted light; only about 15% are green and therefore probably, although not certainly, from Mayor Island (Tuhua). Reeves (1972) attributed nine pieces from the Leahy site to Great Barrier Island (Aotea Island) and one to Whitianga on the Coromandel Peninsula; and two from the Davidson site to Great Barrier Island (Aotea Island) and Mayor Island (Tuhua). A further sample of 30 pieces from the Davidson site that were grey in transmitted light was submitted to Ward (1974), who was able to analyse 24. He attributed 17 to Te Ahumata and four to Awana, both on Great Barrier Island (Aotea Island), and three to Huruiki in Northland.

Recent research by Cruickshank (2011: 88) has shown that in the Auckland area during the latter part of the pre-historic sequence, Te Ahumata on Great Barrier Island (Aotea Island) was the most important source of obsidian, followed by Mayor Island (Tuhua), with less than 3% in the sites he studied coming from Northland and Coromandel sources. McCoy's recent study of obsidian from Maungarei (Mt Wellington) (Davidson 2011: 59) found that the majority of items sourced were from Te Ahumata, with a much smaller amount from Mayor Island (Tuhua) and smaller amounts still from Rotorua, Awana and two Coromandel sources.

The Station Bay undefended sites tend to fit this pattern, with Te Ahumata dominating, followed by Mayor Island (Tuhua). Cruickshank argued that only the Te Ahumata source on Great Barrier Island (Aotea Island) has high-quality obsidian for tools, and that the Awana source was probably not used by Māori (2011: 102). Moore (1982: 245) has noted the difficulty of distinguishing the material from the Northland source of Huruiki and that from Coromandel sources, a point also discussed by Cruickshank (2011: 81). Moore's most recent study shows Motutapu Island falling within the primary distribution area of Te Ahumata and secondary distribution areas of Huruiki and Cooks Beach/Hahei (2012: 23, 25). Moore's definitions of distribution areas are, of course, derived from obsidian in archaeological sites, and the Station Bay attributions (not included in Moore's study) conform to this pattern.



Fig. 29 Square F4 looking east, giving a clear view of one of two large rectangular postholes that suggest there may have been a substantial house in Area B. The second similar posthole is to the left (see Fig. 11 for details). Houses are difficult to identify in sites like this where there have been repeated episodes of occupation and the digging of storage pits (photo: Janet Davidson).

Cruikshank (2011: 88) included obsidian from Pig Bay and the Sunde site on Motutapu as Archaic (early) period sites in his study. They showed a dominance of Mayor Island (Tuhua) obsidian, followed by Cooks Beach/Hahei and Whangamata. His Classic (late) period sites are from the Auckland mainland. It is to be hoped that further sourcing studies of obsidian from Motutapu sites will expand on this apparent picture of changing access to this resource over time.

Twelve sites have been excavated on Motutapu to date: two beachfront settlements (Sunde and Pig Bay), nine undefended sites that are not immediately on the coast, and the pā that is the subject of this paper (Fig. 28). Not surprisingly, the beachfront settlements and the pā revealed more complicated histories of repeated occupation than the undefended settlements. The former are situated in particularly desirable locations: flats adjacent to stream mouths with canoe-landing beaches, and a naturally steep and relatively easily defended headland.

Five of the undefended sites (the Leahy site, R10/494, R10/496, R10/497, R10/557) have provided clear evidence of houses, usually associated with one or more roofed storage pits (Leahy 1970, 1972; Szabó 1999; Watson 2004; Ladefoged & Wallace 2010; G.J. Irwin, pers. comm., 24 August 2012). The pā, with its much more complex history of repeated occupations, provided only one tantalising glimpse of a possible substantial house, in the form of the two large rectangular postholes in F4 in Area B (Fig. 29). It is, of course, possible that houses might be found in other parts of the site, but our failure to find them in the areas investigated was disappointing.

Eleven pā are distributed around the coast of Motutapu;<sup>3</sup> there was probably one more at the northern tip of the island, destroyed by Second World War installations. There are at least 300 undefended sites, depending on how they are defined. These vary greatly in size. Some, such as R10/54, are comparable in area to pā or larger. Assuming that the inhabitants of the undefended sites retreated to pā during

periodic episodes of stress, it is likely that all the pā had histories at least as complex as that of the Station Bay pā.

The excavations at Pig Bay and the Sunde site provided information about the earlier centuries of the occupation sequence on the island. Clearly, there were dramatic changes in subsistence economy and less dramatic but still significant changes in material cultural (Davidson 1978b: 2). Important questions to be answered in future are just how quickly the way of life reflected in the three Station Bay sites came into being after the Rangitoto ash blanketed Motutapu, and how the Pig Bay sequence, in particular, relates to the Station Bay pā and the nine excavated undefended sites. One thread of continuity is the use of Motutapu greywacke and chert for tool manufacture in the more recent sites. An important indication of changing social relations may be the shift in obsidian procurement away from Mayor Island (Tuhua) and Coromandel sources to Great Barrier Island (Aotea Island).

Motutapu is exceptional in its preservation of a former cultural landscape in a reserve so close to a major conurbation. Overlying the evidence of centuries of Māori occupation are smaller areas relating to a more recent history of pastoral farming and defensive structures dating from the Second World War. The island presents magnificent opportunities for public interpretation of past ways of life. There is abundant scope for further archaeological research to build on the information that has already been obtained from more than 50 years of research on the island, and to explore in greater depth questions that have arisen from that research.

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## Notes

- 1 Previously wrongly listed as I6.
- 2 The construction of the causeway linking Rangitoto and Motutapu during the Second World War must certainly have increased the shallow, sheltered area between the islands, but it has generally been assumed that this sheltered area formed soon after Rangitoto came into existence. Samuel Marsden is thought to have tried to sail through the passage from the north in November 1820, grounding his boat on a sandbank and having to be dragged off by local Māori. He described the northern approach as 'a narrow, shallow channel between two islands ... where the surf broke with much violence' (Elder 1932: 310), but then passed into the sheltered area between the islands, where he ran aground.
- 3 There is no evidence that the large terraced site in the northwest of the island, R10/54, which was originally recorded as a pā, was actually a defended site.

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## Appendix 1: Mammal and bird remains from the Station Bay pā

Ian W.G. Smith\* and Sheryl McPherson\*\*

\*Department of Anthropology &amp; Archaeology, University of Otago, PO Box 56, Dunedin (ian.smith@otago.ac.nz)

\*\*Faunal Solutions, 106 Bond Street, Dunedin

Mammal and bird remains from Station Bay pā were analysed in the archaeological laboratories of the Department of Anthropology and Archaeology, University of Otago, using the faunal reference collections housed there. All specimens were identified to the most precise taxonomic class to which they could be assigned with confidence, and the anatomical element represented and portion present noted, along with any evidence of developmental age, taphonomic condition, and presence of cut marks or other notable features. The number of identified specimens (NISP) that each identi-

fication represented was recorded and two quantification measures were derived: the minimum number of anatomical elements (MNE) and the minimum number of individual animals (MNI). The latter were calculated treating all material from the site as a single assemblage.

A total of 270 mammalian specimens, 10 bird specimens and another five unidentifiable fragments were examined (Table A1.1). Almost 40% of these items must have entered the archaeological record after abandonment of the site. A cluster of bones from the brushtail possum (*Trichosurus*

Table A1.1 Mammalian and avian fauna (NISP) from N38/25.

Square	Layer	Possum	Rabbit	Rat	Dog	Human	Mammal ?sp	Shag	Gannet	Gull	Bird ?sp	Unident.	Total
E4	2	—	—	7	2	—	—	1	—	—	—	—	10
	3	—	—	5	3	—	—	—	—	—	—	—	8
E4 or 5	1	—	—	—	1	—	—	—	—	—	—	—	1
E5	1	48	—	1	1	—	—	1	—	—	—	—	51
	1 & 2	—	—	—	2	—	1	—	—	—	—	—	3
	2	1	—	—	2	3	1	1	—	1	—	—	9
	3	—	—	19	3	7	—	—	—	—	—	—	29
F4	1 & 2	—	49	—	2	—	1	—	—	—	—	1	53
	2	—	1	4	3	1	—	—	—	—	—	—	9
	3	—	—	8	1	—	—	—	—	—	3	—	12
G4	1	—	1	—	7	—	—	—	2	—	1	1	12
	2	—	—	1	4	—	1	—	—	—	—	—	6
	3	—	—	58	—	—	7	—	—	—	—	2	67
J7	1	—	11	—	—	—	—	—	—	—	—	11	
L4	2	—	—	1	—	—	—	—	—	—	—	1	2
	3	—	—	2	—	—	—	—	—	—	—	—	2
<b>Total</b>		<b>49</b>	<b>62</b>	<b>106</b>	<b>31</b>	<b>11</b>	<b>11</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>285</b>

Table A1.2 Number of identified specimens (NISP), minimum number of anatomical elements (MNE) and minimum number of individuals (MNI) of presumed pre-European mammals and birds from the Station Bay pā.

	NISP	MNE	MNI
<b>Mammals</b>			
Rat	106	80	10
Dog	31	17	1
Human	11	10	1
Mammal ?sp	11	—	—
<b>Subtotals</b>	<b>159</b>	<b>107</b>	<b>12</b>
<b>Birds</b>			
Black shag	3	3	1
Australasian gannet	2	2	1
Southern black-backed gull	1	1	1
Bird ?sp	4	1	—
<b>Subtotals</b>	<b>10</b>	<b>7</b>	<b>3</b>
<b>Totals</b>	<b>169</b>	<b>124</b>	<b>15</b>

*vulpecula*) was found in Layer 1 of Square E5. These must post-date 1869, when the species was first introduced to the Auckland region at Kawau Island, but are more likely to have reached Motutapu after the 1931 liberation on Rangitoto Island (Pracy 1962: table 3). The rabbit (*Oryctolagus cuniculus*) bones in the upper layers of squares F4, G4 and J7 may date to the nineteenth century, as this species was reported as ‘common on Motutapu before 1883’ (Gibb & Williams 1990: 144). However, rabbits were still common on the island at the time of the excavations. These items, along with four unidentifiable fragments, have been excluded from further consideration here.

Among the remaining taxa, rat bones predominate, making up 63% of NISP (Table A1.2). These are all small specimens, making it almost certain that they are kiore, the Polynesian rat (*Rattus exulans*). Kurī, the Polynesian dog (*Canis lupus familiaris*) is the next most common, followed by human (*Homo sapiens*) remains. Bird bones were comparatively scarce, but three species were identified: Australasian gannet (*Morus serrator*), southern black-backed gull (*Larus dominicanus dominicanus*) and a cormorant, almost certainly the black shag (*Phalacrocorax carbo novaehollandiae*).

Rat bones were mostly in squares E4, E5, F4 and especially G4, where more than half of them were found. This cluster accounts for half of the total MNI of 10 animals. Both here, and elsewhere in the site, the rats were represented by skeletal elements from all parts of the body, indicating that they were deposited, or otherwise entered the site, as complete skeletons. The rat remains are strongly concentrated in the basal strata of the site, with 82% of NISP from Layer 3.

In contrast, 71% of the dog remains derive from Layers 1 and 2, also most prominently in squares E4, E5, F4 and G4. Given that there is probably a time difference between upper and lower strata, it is likely that there are multiple individual dogs represented, although when all the remains are considered together they amount to no more than one animal, with skeletal elements from most parts of its carcass.

The human remains are, like the rat remains, mostly found in Layer 3, with all but one item in Square E5. Most are small bones – five metacarpals, one metatarsal and one tarsal – although there are also two fragments of radius, one of ulna and one long bone shaft fragment. Such items may have been displaced from a burial, although it is notable that the radius fragment has what appears to be a dog-tooth puncture mark on its shaft, which might indicate scavenging of body parts from a recently deceased corpse.

The shag is represented by three bones from Layer 2 in squares E4 and E5 and Layer 1 in E5. They are almost certainly black shag, but the Otago reference material for this species is limited, and smaller than the Station Bay specimens. This species occurs widely throughout New Zealand (Tennyson 2010: 145). It is comparatively rare in well-dated middens from the northern North Island, but is known from early deposits at the Sunde site on Motutapu Island, as well as Port Jackson and Hot Water Beach on the Coromandel Peninsula (Smith & James-Lee 2010: appendix 4).

The two bone fragments from the Australasian gannet were both found in Layer 1 of Square G4, and could be from a post-occupational bird-wreck. This species is also widespread in New Zealand (Tennyson 2010: 139), again relatively rare in well-dated northern middens, but is represented at the Sunde site (Smith & James-Lee 2010: appendix 4). The southern black-backed gull is represented by a single bone. This is also a widespread species.

The Station Bay pā material is important, because there are relatively few published mammal and avian bone assemblages from northern sites dating after about AD 1500 (Smith 2013). Like those few others, it shows that bird

bones were scarce, and that the only mammals were rats, dogs and humans. What is interesting about the Station Bay pā assemblage is that it shows a shift in dominance from rats, earlier on, to dogs, later. Whether this is a product of sampling or rat nesting behaviour, or reflects a shift in economic conditions at the site and perhaps more generally, are questions that further publication of later prehistoric bone assemblages from the region could seek to address.

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# Rites of passage: public response to Don Driver's *Ritual* (1982) and its institutional history

Sarah Farrar

Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand (sarah.farrar@tepapa.govt.nz)

**ABSTRACT:** For 30 years Don Driver's artwork *Ritual* (1982), from Te Papa's collection, has intrigued, angered and confused audiences. This text analyses documentation of the public response to the work and its institutional history from 1982 to 2012, and considers the impact of this chequered history upon *Ritual*'s iconic status within New Zealand art.

**KEYWORDS:** Don Driver, *Ritual*, sculpture, contemporary art, New Zealand, National Art Gallery, Te Papa, controversy.

## Introduction

Don Driver's *Ritual* in the collection of the Museum of New Zealand Te Papa Tongarewa (Te Papa) presents an opportunity to examine how a work obtains iconic status in New Zealand art and its varied fortunes over time. The story around *Ritual* has all the classic hallmarks of a good art scandal: an artist admired by art experts whose work baffled the general public; an artwork with overt sexual content and a whiff of black magic; and a controversy that played out in the media when the work was exhibited and, especially, when it was proposed for acquisition by a public gallery.

In order to understand why and how a work of art achieves fame, we need to consider the original context in which it was made, its initial and ongoing public and critical reception, and changes to the display and presentation of the work over time. All of these factors play a critical role in how a work of art becomes 'iconic', yet rarely is serious attention given to a work's entire exhibition history and the impact this has on consolidating its status within art history.

Rather than focus on the subject matter of *Ritual*, this text examines its rite of passage to become an iconic work in New Zealand art by addressing its history of public response and its institutional history. It is essential to interrogate the history of the work's reception in order to consider its legacy.

## 'Virtually no rules': a new installation for the National Art Gallery

Towards the end of 1981, Don Driver was invited to prepare a work for the National Art Gallery in Wellington. (The National Art Gallery was combined with the National Museum by an Act of Parliament in 1992 to become the Museum of New Zealand Te Papa Tongarewa, which opened in 1998.)

By 1981, Driver already had a considerable reputation as a leading contemporary New Zealand artist. Under the mandate of National Art Gallery Director Luit Bieringa, 10 of his works were held in the national art collection.<sup>1</sup> In 1978, Driver had been selected as one of the New Zealand artists in the Mildura Sculpture Triennial in Australia, and a substantial survey show of his work organised by the Govett-Brewster Art Gallery in New Plymouth toured to numerous public galleries around New Zealand, including the National Art Gallery in 1979.<sup>2</sup>

The invitation from the National Art Gallery was very open in its brief. Louise Upston (now Pether), the exhibitions officer, wrote to Driver in 1981 on behalf of the gallery asking him to be part of a series of sculpture installation



Fig. 1 Don Driver, *Ritual*, 1982, plastic, fabric, bone, steel, iron, rubber, leather, paint, wood and straw with audio component, 1760 × 2210 × 2480 mm. The work is seen here installed at the National Art Gallery, Wellington, in 1982–83 (Te Papa 1989-0034-1) (photo: Te Papa).

projects: ‘We are attaching virtually no rules or regulations to the invitation’, Upston wrote, ‘(other than budgetary ones) as we wish to bring to the attention of the Wellington public nationally important artists.’<sup>3</sup> Driver accepted the invitation and the result was his arresting installation *Ritual*, which was displayed at the gallery from 22 November 1982 to 6 February 1983 (Figs 1 and 2).

Some of the other artists invited to participate included Warren Viscoe, Neil Dawson, Jacqueline Fraser, Christine Hellyar, Pauline Rhodes, Andrew Drummond and Terry Stringer.<sup>4</sup> Driver’s exhibition occurred after Drummond’s in this sequence and the preceding installations had also been of an experimental nature. Observations made by the National Art Gallery’s education officer about Viscoe’s installation are particularly interesting in light of Driver’s future project: ‘Viscoe acknowledges that his type of art



Fig. 2 Don Driver with *Ritual* at the National Art Gallery, Wellington, c. 1982 (photo: Mark Strange, Te Papa).

may owe something to the South Pacific culture, where the artist works very closely with ordinary materials from daily life, and where objects can possess a power and totemic quality ... He recognises that his work is of little “popular” appeal. It is neither pretty nor easy.<sup>5</sup> These comments demonstrate the context within which Driver’s installation was likely received by visitors to the National Art Gallery.



Fig. 3 Detail of *Ritual* (photo: Te Papa MU000052/001/0011).

### From goats' skulls to pitchforks: Driver's source materials

Unfortunately, there is little correspondence in Te Papa's archives relating to what Driver intended to display, except for an intriguing reference to a book he had left behind at the gallery: Gert Schiff's *Images of horror and fantasy* (1979).<sup>6</sup> The book followed an exhibition that Schiff had organised for the Bronx Museum of the Arts, New York, in 1977, in which a selection of historical and contemporary artworks were grouped around the following themes: 'Fear / Despair, Religion / Superstition, Persecution / Paranoia, Captivity / Madness, Pain / Torture, Sex / Sadism, Death, War, Dream, Utopia / Arcadia'. Clearly, the book did not offer light reading or viewing. Driver had a considerable personal library of books on the subject of black magic, superstition and ethnic art traditions from around the world, as well as a wide selection of science fiction and fantasy novels.<sup>7</sup> He was

also an avid watcher of horror movies, and his wife, Joyce, recalls that 'a horror movie couldn't come to New Plymouth without Don going to see it'.<sup>8</sup> Although the subject matter of *Ritual* is not the focus of this paper, unpacking the work in light of its art historical and cultural references – as perhaps indicated by Driver's possession of Schiff's book and the fact that he took it with him to the National Art Gallery around the time of early discussions about *Ritual* – warrants further investigation.

In July 1982, Upston wrote another letter to Driver, in which she noted, 'Other than your wonderful idea I have not heard anything definite back from you in the form of a proposal or budget for your installation here in November.'<sup>9</sup> Their subsequent correspondence appears to have been largely of a financial or practical nature. One letter written by Joyce Driver to Upston later that month includes a list: 'Chris Garnham's labour, dray, 2 hayforks, 1 pitchfork, 1 slasher, other tools, stands, dolls, glass, timbacyrl, drums,



Fig. 4 Don Driver in his studio, New Plymouth, 1981 (photo: Tony Mackle, Te Papa).

dresses, appendages, fibreglass, lights, mirror, skulls, sewing, tape-recording.<sup>10</sup> In the same Te Papa Archives file is a letter from Driver to Chris Cane at the National Art Gallery, asking ‘a big favour’ – ‘Would it be possible to get the ½ a dozen goats’ skulls with horns attached? Maybe from the Museum Geology Dept. Luit was saying they could possibly have some. Here is hoping.’<sup>11</sup>

As things turned out, sourcing the goats’ skulls proved to be quite difficult (Fig. 3). A newspaper article mentions that:

*Ritual* took six months to complete, with Don Driver working at it every morning and evening in the garage-studio of his home. *Ritual*’s starting point was the goat skulls. The supply problem (art shops tend to be limited in their range of animal heads) was solved by an advertisement in a New Plymouth paper. A local taxi driver-cum-hunter saw it, and in due course a suitable series of skeletal devil-heads arrived at Driver’s home.<sup>12</sup>



Fig. 5 Don Driver, *Fetish*, 1978, plastic, metal, fibre, wood, glass, 195 × 275 × 300 mm. Jim Barr and Mary Barr collection (photo: Bryan James, Govett-Brewster Art Gallery; reproduced with permission).

## Fetish objects for twentieth-century New Zealand: *Ritual* and Driver’s other works

*Ritual* relates to other works that Driver had been making in the late 1970s (Fig. 4). He had begun to incorporate dolls into his sculptures some years earlier, and his two works *Fetish* (1978) and *Girl with skull* (1981) can be seen as predecessors to *Ritual*. About *Fetish* (Fig. 5), Driver commented, ‘I have always been interested in African sculpture with an emphasis on the fetish type of effigy. This is my own twentieth century New Zealand version’.<sup>13</sup>

Reflecting on *Girl with skull* (Fig. 6) in 1985, Driver noted:

I wanted to use the doll, with the head and skull in hand, to produce an awesome feeling. The blue dress against the



Fig.6 Don Driver, *Girl with skull*, 1981, mixed-media assemblage, 1534 × 600 × 600 mm. Gift of Hamish Keith, 1987 (Te Papa 1987-0003-1).

green drum and then the heads in the hands, the rough against the smooth – rusty iron chains, corroded head against the smoothed plastic, the shock of seeing a goat's skull upon a human body. This idea was later developed, and became a component part of a very large work *Ritual*.<sup>14</sup>

### Ironic juxtaposition: Driver's *Ritual* and Rita Angus

The timing of *Ritual*'s display at the National Art Gallery appears quite ironic. Shortly after the project was launched on 22 November 1982, the gallery opened its substantial survey exhibition of modernist New Zealand artist Rita Angus (1908–70). Many visitors to the gallery would have passed through the room *Ritual* occupied in order to visit the Angus show (Fig. 7). It is fascinating to speculate on the potential impact that this experience may have had on

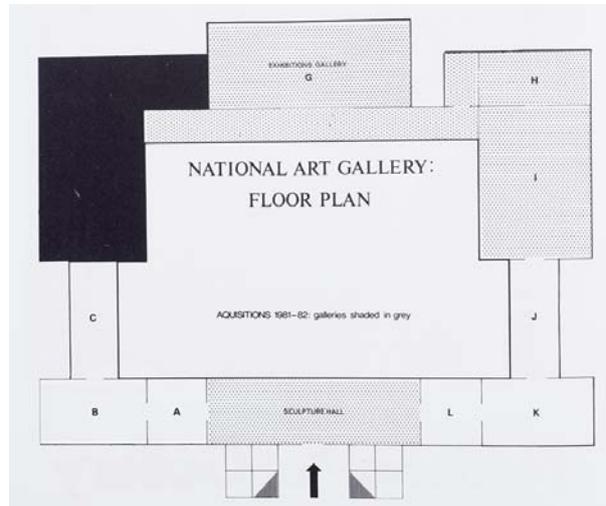


Fig.7 Floor plan of the National Art Gallery in 1982. *Ritual* was displayed in the space marked 'J' and the Rita Angus exhibition was shown in galleries G, H, I and the Blue Room (reproduced from National Art Gallery (1982), *Acquisitions 1981–82*, Wellington: National Art Gallery, p. 2).



Fig.8 Rita Angus, *Fay and Jane Birkinshaw*, 1938, oil on canvas, 532 × 692 mm. Purchased 1998 with New Zealand Lottery Grants Board funds (Te Papa 1998-0028-3) (photo: Michael Hall, Te Papa; reproduced courtesy of the Angus Estate).

gallery visitors when they went on to view Angus's works, such as her double portrait *Fay and Jane Birkinshaw* of 1938 (Fig. 8). It's hard to imagine viewing Fay and Jane without a lingering sense of unease after seeing Driver's fetish dolls aboard a farm dray. Even the girls' playthings in the painting's background appear uncannily animated. Likewise, the shock of encountering Driver's work again after being immersed in the relative comfort and familiarity of Angus's paintings must have been quite unsettling.



Fig. 9 Don Driver among his works in the loading dock at the Govett-Brewster Art Gallery, New Plymouth, c. 1979–80 (photo: photographer unknown; Don Driver unnumbered artist's file, Te Aka Matua Research Library, Te Papa). By this date Driver had dismantled *The magician* (1967) and later reworked the parts into a new sculpture titled *The red lady*, which appears to the left of the artist. This photograph was possibly taken around the time that the Govett-Brewster organised the retrospective exhibition of Driver's work that went on to tour extensively around New Zealand. The exhibition was on show at the Govett-Brewster from 28 June to 15 July 1979. To the right of the artist is his work *Flyaway* (1966–69), acquired by the Govett-Brewster in 1970 and included in the 1979 exhibition.

## A shock to the system: *Ritual's* initial reception

When *Ritual* was first shown at the National Art Gallery in 1981, Driver was already no stranger to controversy. Writing in 1999, journalist David Hill commented, 'Hell and its self-appointed opponents have often raged around Driver's work.'<sup>15</sup> *The magician* (1967) had been withdrawn from an exhibition at the public library in New Plymouth after a



Fig. 10 Cover of the *Friends of the Govett-Brewster Art Gallery Newsletter* 29, June–July 1983 (reproduced with the permission of the Govett-Brewster Art Gallery, New Plymouth).

large number of complaints were received, and there was further outcry when the Govett-Brewster Art Gallery proposed the purchase of another Driver work, *50kg* (1978). The artist's award-winning entry into the 1972 Benson & Hedges Art Award – *Painted relief no. 11* (1972) – was not a popular choice, with the *New Zealand Herald's* headline reading 'Top painting "not for average man"' and some members of the public describing the abstract painting as a 'confidence trick'.<sup>16</sup> In 1980, the National Art Gallery's purchase of *High chair* (1968) became the focus of media attention when it contributed to the loss of a \$500 annual grant from the Hutt Valley Electric Power and Gas Board.<sup>17</sup> Board member Len Little had denounced the purchase and claimed the money had been 'wasted on these stupid gallery people'.<sup>18</sup>

Given this context, it is surprising that there is little record of the initial public response to *Ritual*, other than a couple of anecdotes and thoughtful reviews. Elizabeth Smither's article in the *New Zealand Listener* is notable here both for its engagement with the work and for the writer's



Fig. 11 *Ritual* in the *Installation Art* exhibition at the Govett-Brewster Art Gallery, New Plymouth (photo: Govett-Brewster Art Gallery; reproduced with permission).

ability to elicit some fascinating comments about the work from the artist. In particular, Smither quotes Driver saying that ‘magic is very strong in most people’s lives. I think we cover it up in New Zealand’.<sup>19</sup>

Joyce Driver recalls the response of other artists and the arts community in general as being very positive.<sup>20</sup> In a letter to Don dated 23 December 1982, shortly after the opening at the National Art Gallery, Louise Upston wrote that ‘the exhibit is looking really good and have many appreciative comments – one person has written in the visitors book “Bravo to Don Driver” – others have obviously had their say as well’.<sup>21</sup> She tells Driver about a mysterious action that occurred each night after the show had opened. A newspaper article recounts the story: ‘On the first few mornings after it was installed, there were indications that *Ritual* had been interfered with. It turned out to be a gallery guard, disturbed by the undeniable maleness or femaleness of the figures, was going around each night tugging down the hemlines of their dresses’.<sup>22</sup>

Elva Bett reviewed the exhibition for *The Dominion* in 1983, describing Driver’s work as a ‘shock to the system’ and ‘tough fare, thought provoking in its symbolism and shattering in implication’.<sup>23</sup> She wrote that *Ritual* harbours

those voodoo practices we in the Western world feel reluctant to acknowledge ... These half-child, half-goat spectres stand ready to indulge in the pagan rites of their idolatrous society ... Don Driver is one of New Zealand’s most innovative artists ... He can place innocence upon pedestals and we are left to face the ills and obscenities in our society which we would sooner keep hidden. For Driver is our social conscience. God forbid that we actually need him.<sup>24</sup>

Not everyone felt the same way. In fact, *Ritual* was seen as objectionable and in ‘bad taste’ by some when it was shown at the Govett-Brewster later in 1983 as part of the gallery’s *Installation Art* exhibition (Figs 10 and 11).<sup>25</sup> Letters to the editor of New Plymouth’s *Daily News* decried the work as ‘disgusting’.<sup>26</sup> ‘If this “Ritual” was displayed in a shop or street somebody would be locked up for perverted behaviour or indecent exposure, but inside an art gallery it is apparently allowed’, wrote ‘MG’ of Waitara.<sup>27</sup> Yet even amidst the protests against the work, some commentators and correspondents advised open-mindedness, including ‘Think Bigger’ of New Plymouth, who said that people ought to ‘give themselves more time to think about what the artist is trying to say. They might be surprised rather than confused and disgusted’.<sup>28</sup>

**Council says no to  
controversial artwork**

**DRIVER WORK IN BAD  
TASTE: COUNCILLOR**

Driver’s *Ritual* divides council

**Art work price**

**tag too high Council rejects Ritual**

*Delay buying Driver  
artwork, experts say*

**Driver sculpture  
divides council**

**Council defers \$5000 art purchase**

**Sculpture price to  
be renegotiated**

**Bid to block  
art buy fails**

Move to block art work fails

**Gallery approves  
Driver’s Ritual**

Fig. 12 Selection of newspaper headlines dating from the proposed acquisition of *Ritual* by the Govett-Brewster Art Gallery in 1984–85.

## Driver’s *Ritual* divides council: attempts to acquire *Ritual*

In 1984, the Govett-Brewster sought the New Plymouth City Council’s approval to acquire *Ritual* for its collection. This is when the media storm began (Fig. 12).

The gallery’s director at the time, Dick Bett, defended *Ritual* as ‘an extremely important work by Driver’.<sup>29</sup> In response to Councillor David Lyall’s wish to disassociate himself from the purchase on the grounds that he wanted to respect those people who found *Ritual* offensive, Bett is recorded as responding that ‘Personally I do not find it offensive – far, far from being offensive’.<sup>30</sup> And while the police had never been called in to act on complaints about the work being obscene,<sup>31</sup> some feared that *Ritual* was a comment on the occult and that if the council approved the purchase then it was ‘virtually saying that occult practices were quite acceptable in the community’.<sup>32</sup>

The council’s deliberations continued through 1985, during which time Cheryl Sotheran replaced Dick Bett as director of the Govett-Brewster. Sotheran reinitiated the acquisition process. When the New Plymouth City Council voted against the acquisition once again, the matter went

into arbitration. It is important to note that council money was not being used to acquire the work – the Monica Brewster Trust provided the gallery's annual acquisition budget. As a condition of the trust, the directors of four New Zealand public galleries had to be asked for their advice and recommendation in the event that an acquisition did not receive council support. These four galleries were the National Art Gallery in Wellington, the Auckland Art Gallery, the Robert McDougall Art Gallery in Christchurch and the Dunedin Public Art Gallery.<sup>33</sup> If the four committee members disagreed, then the director of the National Art Gallery had the deciding vote. Te Papa's archives include a letter sent by Sotheran to the director of the National Art Gallery, Luit Bieringa, in June 1985 to kickstart this process.<sup>34</sup> The committee went on to support the acquisition but advised the gallery to defer taking action and instead arrange an option on the work owing to limited funds at that time.<sup>35</sup>

## When art hits the headlines: *Ritual* on display

In October 1987, *Ritual* was exhibited at the Dowse Art Museum, where it again caused uproar. Newspaper headlines include "Ritual" sexual overtones concern', 'Driver's "primitive" art startles' and 'Dowse exhibit revolts visitor'.<sup>36</sup> A Lower Hutt city councillor received about a dozen complaints from Dowse visitors.<sup>37</sup> Pauline Clayton noted in an article that Driver's

ability to put together source material which could come from a monastery or a junk heap, has both riled and caused anguish as well as great joy and enlightenment ... One wonders if the attitudes of fear and 'revulsion' expressed so audibly, are based on similar responses to those of some of the early Christian missionaries who were known to cut penises from Maori carvings rather than be confronted by the commonplace – yet sacred – symbols of fertility and racial survival.<sup>38</sup>

A review of a subsequent 1989 exhibition of Driver's work at the Dowse noted that when *Ritual* had been put on display in 1987, the gallery's attendance figures had nearly doubled.<sup>39</sup>

Following the Dowse exhibition, *Ritual* was borrowed once again by the National Art Gallery from the artist for its exhibition *When Art Hits the Headlines: a survey of controversial art in New Zealand*. Curated by Jim and Mary Barr, this exhibition was held at the National Art Gallery's



Fig. 13 National Art Gallery exhibition designer Neil Pardington working on the layout for the exhibition *When Art Hits the Headlines* at Shed 11, the Temporary/Contemporary, 1988. *Ritual* is shown in the centre of the gallery. In the foreground on the left-hand side is a model of possibly the world's most notorious artwork, Marcel Duchamp's *Fountain* (1917) (photo: Te Papa).

additional venue Shed 11, the Temporary/Contemporary, from 12 December 1987 to 14 February 1988. The inclusion of *Ritual* within this exhibition cemented its reputation as a provocative and challenging work.

The exhibition placed *Ritual* alongside possibly the most notorious artwork in the world, Marcel Duchamp's *Fountain* (1917), a ready-made urinal sculpture (Fig. 13). From the outset, *Fountain* had challenged audiences – including the art world – and it continued to spark strong reactions when it was included in an exhibition of Duchamp's works from the Mary Sisler collection touring New Zealand in 1967. The work was illustrated in an article in the *Evening Post*, headlined 'It's the rudest and crudest show ever held at the National Art Gallery'.<sup>40</sup> In Christchurch, *Fountain* and another work had not been put on public display but were available for viewing, upon appointment, in the director's office.



Fig. 14 Installation view of *Ritual* within the exhibition *When Art Hits the Headlines* at Shed 11, the Temporary/Contemporary, 1988 (photo: Te Papa).

*When Art Hits the Headlines* was also the first exhibition in which *Ritual* was displayed with hay beneath the dray (Fig 14). Despite being part of the artist's original plan for *Ritual*, the hay component had not been accommodated at the National Art Gallery, the Govett-Brewster Art Gallery or the Dowse Art Museum. Looking back, hay is conspicuously absent from early photographic documentation of *Ritual* at these venues. A letter from Louise Pether to Don Driver dated 6 July 1987 provides more information:

Now I recall, when we had it installed here that you were rather inclined to have it on hay and we couldn't do it. At Shed 11 we could! Of course it would have to be restrained to the area near the dray but I think even so it would look great. Is it an area you'd still like to see happen? Let me know.<sup>41</sup>

Driver certainly did, and Joyce Driver notes Pether's description of Driver being 'rather inclined' to the plan as something of a diplomatic understatement.<sup>42</sup> Since December 1987, *Ritual* has been exhibited according to the artist's original intentions, and whenever it is shown the smell of hay permeates the surrounding gallery space.

## Preventing a ritual burning: *Ritual's* acquisition by the National Art Gallery

After the *When Art Hits the Headlines* exhibition, *Ritual* was returned to the Dowse in 1988, where it remained in storage until the gallery's director, Bob Maysmor, informed Driver that the space was needed for other things. At this point, Driver contacted the National Art Gallery to ask whether it would consider taking the work as either a long-term loan or a loan for display, or as a purchase. He had no space for the work back in New Plymouth and wrote: 'I am seriously considering a *Ritual* burning unless you have any other ideas?'<sup>43</sup> By this time, Driver had clearly given up hope on the Govett-Brewster acquiring the work, and the National Art Gallery was quick to act. On 20 July 1989, Robert Leonard, then curator at the National Art Gallery, wrote a short curatorial justification for the acquisition proposal, saying:

*Ritual*, initially executed as a project for this gallery, has become one of the most controversial and despised works



Fig. 15 Installation view of *Ritual* within the exhibition *With Spirit* at the Govett-Brewster Art Gallery, New Plymouth, 1999 (photo: Bryan James, Govett-Brewster Art Gallery; reproduced with permission).

of New Zealand art history. It is also one of Driver's most important and successful works, and probably his best installation work ever. This portrayal of Pakeha rural sexual mythology as primitive fetish is properly regarded as misogynist, but the extent to which the misogyny is Driver's or merely part of his subject matter (NZ rural sexual mythology) is debatable.<sup>44</sup>

Luit Bieringa signed his approval of the acquisition on 12 August 1989 and *Ritual* arrived back at the National Art Gallery on 31 August 1989. It remained in storage for the next decade.

### *With Spirit: exhibiting Ritual* in the 1990s and 2000s

If the exhibition *When Art Hits the Headlines* firmly established *Ritual* as one of the most notorious examples of contemporary New Zealand art, it was the 1999 exhibition *With Spirit: Don Driver a retrospective* and its accompanying catalogue that confirmed the work as one of Driver's most important. Following a stint at the Govett-Brewster Art

Gallery (Fig. 15), the exhibition travelled to the Manawatu Art Gallery, the Auckland Art Gallery, the Dunedin Public Art Gallery, the Robert McDougall Art Gallery and the Waikato Museum of Art and History. Initial plans discussed including a stint at City Gallery Wellington, but this never eventuated.

*Ritual* was a key work displayed at each venue and there is little record of a negative public reaction – in the media at least. One can speculate that within the context of Driver's other works, *Ritual* lost some of its shock value. Reviewing *With Spirit* for *Art New Zealand*, William McAloon wrote that *Ritual* 'compellingly combines a sense of magical potency – what Driver calls "myths of the past but also the ongoing of myth in the future" – with equal measures of revulsion and eroticism, humour and sensual pleasure. It's a dangerous combination, and one that retains its potency nearly two decades after the work's production.'<sup>45</sup>

*Ritual* was displayed at Te Papa from November 2003 to October 2004 within *Signs and Wonders*, an exhibition exploring spiritual aspects of works from the national art collection. Once again, there is little record in either the



Fig. 16 Detail of *Ritual* (photo: Michael Hall, Te Papa).

media or anecdotally about *Ritual*'s reception. However, there is a note in Te Papa's object files that in May 2004 one of the hosts noticed that 'someone had pulled down three of the dresses that were previously folded up'.<sup>46</sup> The next day, the dresses were put back to their original position by one of the art collection managers. Evidently, the overt sexual nature of *Ritual* continued to cause trouble.<sup>47</sup>

### *Ritual and The Obstinate Object*

In 2012, some 30 years after it was first exhibited, *Ritual* was presented in the context of a survey of contemporary New Zealand art at City Gallery Wellington.<sup>48</sup> *The Obstinate Object*'s curator, Aaron Lister, had wanted to bring the work back into the spotlight, to examine its impact and legacy upon subsequent sculptural practice in New Zealand. Despite this intention, visitors who saw *Ritual* within the exhibition may have left wondering what all the fuss surrounding the work had been about.

Certainly, audiences in contemporary art galleries in 2012 have different expectations than those during the 1980s, 1990s and even the 2000s. The wide proliferation of contemporary art galleries worldwide and the general popularisation of contemporary art – not to mention the growing influence of the international contemporary art market – attest to a growing familiarity with contemporary art and its modus operandi. Many would argue that people have become used to the idea of being shocked when visiting contemporary art galleries. These arguments suggest that Driver's work would be considered less contentious in 2012 than when it was first shown.

However, there is another angle to consider: to what extent did the presentation of the work within *The Obstinate Object* actually dilute *Ritual*'s impact? At City Gallery the work occupied a central position within the exhibition's first gallery space and was presented alongside work by younger artists, including Eddie Clemens, Peter Trevelyan, Glen Hayward and Bekah Carran. Clemens' work was made in direct response to *Ritual* and connected the work with other 1970s, 1980s and 1990s pop culture references such as British horror *The Wicker Man* (1973), through to more recent film series such as *Mad Max* (1979–85), *Terminator* (1984–2009) and *Child's Play* (also known as 'Chucky', 1988–2004) (Fig. 17). While *Ritual* packed an undeniable punch within this selection of artists' works, the group show presentation arguably reduced the intensity of encountering *Ritual* on its own terms, as the artist had originally devised.



Fig. 17 *Ritual* on display in *The Obstinate Object* exhibition at City Gallery Wellington, 2012. In the background is Eddie Clemens' artwork *Delusional Architecture (temporary)* (2012) (photo: Kate Whitley, City Gallery Wellington; reproduced with permission).

While *The Obstinate Object* exhibition sought to reinforce the importance of *Ritual* to the history of contemporary New Zealand sculpture, the unintentional result may instead have been to raise the question of why *Ritual* has obtained such iconic status.

## Conclusion

*Ritual*'s chequered history of display and its relationship to New Zealand art institutions and audiences offers a fascinating insight into the way in which an artwork claims territory within New Zealand art history. Thirty years after it was first exhibited, *Ritual*'s presentation within a survey of contemporary New Zealand art provided an opportunity to take stock, to consider how it has stood the test of time and to interrogate the myths that surround it. In Jim and Mary Barr's essay about Driver's work in the *With Spirit* catalogue, they describe *Ritual* as 'trekking endlessly through the order and mock neutrality of twentieth century, white

cube, art galleries'.<sup>49</sup> With this in mind, the latest exhibition, *The Obstinate Object*, is just another moment along *Ritual's* journey – wherever it goes from here is for the future to determine.

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## Notes

- 1 These 10 works include *Horizontal no. 2* (1970–71); *Relief VIII* (1976), purchased in 1976; *Billy Apple as a prisoner* (1977); *High chair* (1968); *Lawn cuttings* (1978); *Painted relief no. 14: three blues* (1972), purchased in 1980; *Battery case no. 2* (1972–73); *Big relief* (1980); *Blue and green Pacific* (1978); and *Zither* (1968), purchased in 1981.
- 2 The exhibition *Don Driver, 1965–1978* was organised by the Govett-Brewster Art Gallery with the support of the Queen Elizabeth II Arts Council of New Zealand. The exhibition travelled around New Zealand from late June 1979 through to mid-July 1980. The full list of venues included the Govett-Brewster; the Sarjeant, Wanganui; Manawatu Art Gallery, Palmerston North; National Art Gallery, Wellington; Bishop Suter Art Gallery, Nelson; Robert McDougall Art Gallery, Christchurch; Wairarapa Arts Foundation, Masterton; Hastings Cultural Centre, Hastings; Gisborne Museum and Art Centre, Gisborne; Rotorua City Art Gallery, Rotorua; Auckland City Art Gallery, Auckland; and Waikato Art Museum, Hamilton.
- 3 Louise Upston to Don Driver, draft letter, 1981, MU000052/001/0011, Te Papa Archives, Wellington.
- 4 Following is a chronological list of these solo artist 'installation' exhibitions at the National Art Gallery, Wellington, from early 1981 to mid-1983. The series was at times referred to as 'Installations', but more often the exhibitions appear to have been presented as individual artists' projects with individual titles or with the word 'installation' used in a descriptive sense. Each artist was invited to develop a new work for a single gallery space of their choice within the National Art Gallery. 'Warren Viscoe: A midden site', 14 March–10 May 1981; 'Neil Dawson: Reflections', 5 September–1 November 1981; '3 Sculptors: Jacqueline Fraser, Christine Hellyar, Pauline Rhodes', 5 November 1981–14 January 1982; 'Andrew Drummond: Cycles/stages', 13 March–16 May 1982; 'Don Driver: Ritual', 22 November 1982–6 February 1983; 'Terry Stringer: Wrap around sculpture', 29 July–19 September 1983.
- 5 National Art Gallery, 'Warren Viscoe installation at the National Art Gallery', information sheet, Wellington: National Art Gallery, 1981, p. 2, located in Warren Viscoe unnumbered artist's file, Te Aka Matua Research Library, Te Papa, Wellington.
- 6 Joyce and Don Driver to Louise Upston, letter, 22 January 1982, MU000052/001/0011, Te Papa Archives, Wellington.
- 7 Joyce Driver, conversation with the author, 29 January 2013.
- 8 Ibid.
- 9 Louise Upston to Don Driver, letter, 21 July 1982, MU000052/001/0011, Te Papa Archives, Wellington.
- 10 Joyce Driver to Louise Upston, letter, 30 July 1982, MU000052/001/0011, Te Papa Archives, Wellington.
- 11 Don Driver to Chris Cane, letter, undated, MU000052/001/0011, Te Papa Archives, Wellington.
- 12 David Hill, 'Ritual shows power', *Auckland Star*, 25 August 1983, p. B7.
- 13 Don Driver quoted in National Art Gallery, 'Don Driver', pamphlet for *Don Driver* exhibition, 12 February–22 June 1986, Wellington: National Art Gallery, 1986, p. 2, located in Don Driver High chair 1980-0014-1 object file, Art Department, Te Papa, Wellington.
- 14 Don Driver quoted in William McAloon (ed.), *Art at Te Papa*, Wellington: Te Papa Press, 2009, p. 344. (Originally cited in Ken Adams (ed.), 'A survey of contemporary New Zealand sculpture', unpublished compilation, Lynfield College, Auckland, 1985, p. 5, located in Don Driver Girl with skull 1987-0003-1 object file, Art Department, Te Papa, Wellington.)
- 15 David Hill, 'Junk bonding: a major retrospective reveals New Plymouth artist Don Driver as an alchemist of the ordinary', *New Zealand Listener*, 27 February 1999, p. 36.
- 16 'Top painting "not for average man"', *New Zealand Herald*, 9 June 1972, p. 3; Jim Barr and Mary Barr, *When Art Hits the Headlines*, Wellington: National Art Gallery, 1987, p. 31. Also Priscilla Pitts (ed.), *With Spirit: Don Driver a retrospective*, New Plymouth: Govett-Brewster Art Gallery, 1999, p. 72.
- 17 'Board member snubs art visit', *Hutt News*, 2 September 1980, p. 6.
- 18 Ibid.
- 19 Elizabeth Smither, 'Dolls and the unknown', *New Zealand Listener*, 9 July 1983, p. 42.
- 20 Joyce Driver, conversation with the author, 29 January 2013.

- 21 Louise Upston to Don and Joyce Driver, letter, 23 December 1982, MU000052/001/0011, Te Papa Archives, Wellington.
- 22 Hill, 'Ritual shows power'.
- 23 Elva Bett, 'Provocative symbolism delves into myth', *The Dominion*, 3 January 1983, p. 4.
- 24 Ibid.
- 25 'Driver work in bad taste: councillor', *Daily News* [New Plymouth], 13 November 1984, p. 3.
- 26 'Art Gallery', *Daily News* [New Plymouth], 21 July 1983, p. 4.
- 27 Ibid.
- 28 Ibid.
- 29 Dick Bett quoted in 'Driver work in bad taste'.
- 30 Ibid.
- 31 'Bid to block art buy fails', *Taranaki Herald*, 18 December 1984, p. 8.
- 32 'Move to block artwork fails', *Daily News* [New Plymouth], 18 December 1984, p. 1.
- 33 The directors were Rodney Wilson, Auckland City Art Gallery; Luit Bieringa, National Art Gallery, Wellington; John Coley, Robert McDougall Art Gallery, Christchurch; and Frank Dickinson, Dunedin Public Art Gallery.
- 34 Cheryll Sotheran to Luit Bieringa, letter, 26 June 1985, located in Don Driver Ritual object file 1989/34/1-11, Art Department, Te Papa, Wellington.
- 35 'Delay buying Driver artwork, experts say', *Daily News* [New Plymouth], 13 August 1985, p. 3.
- 36 "'Ritual" sexual overtones concern', *Hutt News*, 6 October 1987, p. 48. Also Pauline Clayton, 'Driver's primitive art startles', *Contact*, 16 October 1987, p. 47; and 'Dowse exhibit revolts visitor', *Evening Post*, 7 October 1987, p. 60.
- 37 'Goat-skulled dolls OK at National', *Evening Post*, 8 October 1987, p. 8.
- 38 Clayton, 'Driver's primitive art startles'.
- 39 'A mixed bag at Dowse Art Museum: mixed-media fills Lower Hutt', *Capital Times*, 1 August 1989, p. 4.
- 40 'It's the rudest and crudest show ever held at the National Gallery', *Evening Post*, 15 June 1967, p. 28.
- 41 Louise Pether to Don Driver, letter, 6 July 1987, located in Don and Joyce Driver's personal 'Ritual' correspondence file.
- 42 Joyce Driver, conversation with the author, 29 January 2013.
- 43 Don Driver to the National Art Gallery, letter, undated [c. 1989], located in Don Driver Ritual 1989-34-1 object file, Art Department, Te Papa, Wellington.
- 44 Robert Leonard, acquisition proposal for Don Driver's *Ritual*, 20 July 1989, located in Don Driver Ritual object file 1989-34-1, Art Department, Te Papa, Wellington.
- 45 William McAloon, 'Invention unlimited: With Spirit: Don Driver a retrospective', *Art New Zealand* 92, Spring 1999, p. 87.
- 46 Museum of New Zealand Te Papa Tongarewa, Notification of change or damage form, 13 May 2004, located in Don Driver unnumbered artist's file, Te Aka Matua Research Library, Te Papa, Wellington.
- 47 *Ritual* was not the only work by the artist to attract negative reaction at Te Papa. In 1998, a letter was written by a member of the public to Te Papa's director, Cheryll Sotheran, raising concerns about Driver's *Girl with skull*, then on display in the *Parade* exhibition on level 4. Don Driver *Girl with skull* 1987-0003-1 object file, Art Department, Te Papa, Wellington.
- 48 In conjunction with the exhibition, City Gallery Wellington and Te Papa jointly organised a symposium to examine Don Driver's work and legacy. An earlier version of this article was originally presented by the author as a lecture at this symposium.
- 49 Jim Barr and Mary Barr, 'Made to order', *With Spirit: Don Driver a retrospective*, New Plymouth: Govett-Brewster Art Gallery, 1999, p. 14.

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# *The Mixing Room* project at Te Papa: co-creating the museum with refugee background youth in Aotearoa/New Zealand

Stephanie Gibson\* and Sara Kindon\*\*

\* Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand  
(stephanie.gibson@tepapa.govt.nz)

\*\* School of Geography, Environment and Earth Sciences, Victoria University of Wellington,  
PO Box 600, Wellington, New Zealand (sara.kindon@vuw.ac.nz)

**ABSTRACT:** The Museum of New Zealand Te Papa Tongarewa (Te Papa) represents the diverse cultures of New Zealand through community exhibitions. *The Mixing Room: stories from young refugees in New Zealand* is the museum's sixth community exhibition and focuses on young people from refugee backgrounds and their stories of resettlement.

The exhibition tested traditional ideas of community by focusing on a community of situation – that of being a refugee. The exhibition also tested Te Papa's development of community exhibitions by embracing contemporary museological practice, which advocates for greater social responsiveness and engagement. Consequently, the project was created through a participatory model guided by the principles of participatory action research (PAR) and youth development practice.

The exhibition content was created by the young people themselves and presented digitally within the exhibition without editorial intervention. In this paper, we investigate the methodologies and aims behind *The Mixing Room* project, discuss its results, challenges and outcomes, and explore the implications of working in this way for other museums and exhibition teams considering a co-creation model for exhibition development.

**KEYWORDS:** Museum, New Zealand, Te Papa, community, exhibition, refugees, refugee background youth, participatory action research (PAR), co-creation, collaboration, youth development, engagement.

## Introduction

*The Mixing Room: stories from young refugees in New Zealand* is an exhibition in the Community Gallery at the Museum of New Zealand Te Papa Tongarewa (Te Papa) (Figs 1–7).<sup>1</sup> It is the sixth community exhibition to be presented since Te Papa opened in 1998, and was preceded by exhibitions on the Chinese, Dutch, Indian, Italian and Scots communities in New Zealand. Such exhibitions help Te Papa fulfil one of its key mandates: 'To have regard to the ethnic and cultural diversity of the people of New Zealand, and the contributions they have made and continue to make to New Zealand's

cultural life and the fabric of New Zealand society ... and [to provide] the means for every such culture to contribute effectively to the Museum' (New Zealand Government 1992: ss. 8(a), 8(b)).

The Community Gallery space is integrated into the main visitor experience on level four of the museum. The footprint remains the same for each exhibition, but the design, look and feel of each one is different. Until *The Mixing Room*, Te Papa's community exhibitions focused on shared ethnicity and culture, with stories from first arrival to contemporary life. These exhibitions were object-rich, with personal stories recorded and edited by Te Papa staff. They

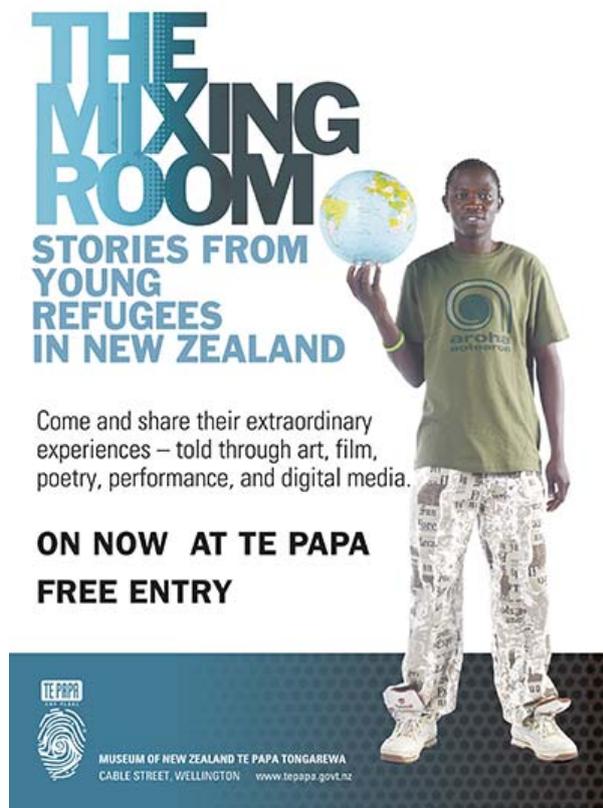


Fig. 1 Poster for *The Mixing Room: stories from young refugees in New Zealand* (2010–13) (file EP-EX-011-04-01#e01 (ref. 690604), Te Papa).

were developed in consultation with community advisory groups, but with final authority and decision-making resting with Te Papa.<sup>2</sup>

*The Mixing Room* differed radically from previous community exhibitions because it:

- focused on a different idea of community – one of situation;
- was created through a participatory model with refugee background youth (defined for this project as being between 12 to 29 years old);<sup>3</sup>
- involved working with many different ethnic and cultural communities;
- focused on contemporary stories of resettlement;
- did not include material culture; and
- was both a project *and* an exhibition, where the processes were as important as the outcomes.

These changes in focus and process enabled the exhibition team to test the physical space of the Community Gallery and how Te Papa normally presents community stories; to

go beyond previously held notions of community; to engage fully with, and accept the creative work by, participants without editorial intervention; and, most significantly, to act as an agent of positive change and capacity-building both within the museum and within former refugee communities, and among the participants themselves.

*The Mixing Room* was a collaborative project and an exhibition with co-created content. In collaborative projects, communities are invited to assist the museum on projects that originate with, and are ultimately controlled by, the museum. Co-creation requires community members and staff members to work together from the beginning to define the project's goals and generate the content and programming (Simon 2010: 187). Co-creation shifts relationships towards equality and brings about more meaningful results for all involved.

Contemporary museological practice advocates for such social responsiveness and participatory engagement in order for museums to remain relevant and vital, and to be able to present diverse cultures and heritage meaningfully (e.g. Bennett 2006; Sandell 2007; Watson 2007; Govier 2010; Simon 2010). Te Papa staff aimed to meet this challenge through *The Mixing Room*. Throughout the project, staff and community advisers took a strengths-based orientation to working with communities and young people, building on their knowledge, skills, abilities and insights (Ministry of Youth Development 2007). Participatory action research (PAR) was used as a vehicle to achieve this orientation (Kindon *et al.* 2007).

This paper investigates the development, production and reception of *The Mixing Room* project, thereby contributing a case study to the growing scholarship on inclusive and participatory ways for museums to work with communities (e.g. Morse *et al.* 2013).<sup>4</sup>

## Refugees – a community of situation

*The Mixing Room* exhibition presents a community of situation: people who come to New Zealand not by choice but as refugees. As defined by the United Nations High Commissioner for Refugees (UNHCR) in 1951, a refugee is a person who, 'owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that



Fig. 2 Entrance to *The Mixing Room* exhibition, with title sentinels welcoming visitors in the participants' own words. On the left, the young people from the youth forum welcome visitors and explain what a refugee is and how many come to New Zealand each year. On the right, a young man (Patrick John from the youth reference group) also welcomes visitors and explains that the exhibition was made by refugee background youth (photo: Kate Whitley, Te Papa MA\_I.302074).



Fig. 3 The walls inside the exhibition featured backlit photographs of some of the journeys that refugees take to come to New Zealand, with evocative quotes alongside (photo: Kate Whitley, Te Papa MA\_I.302078).

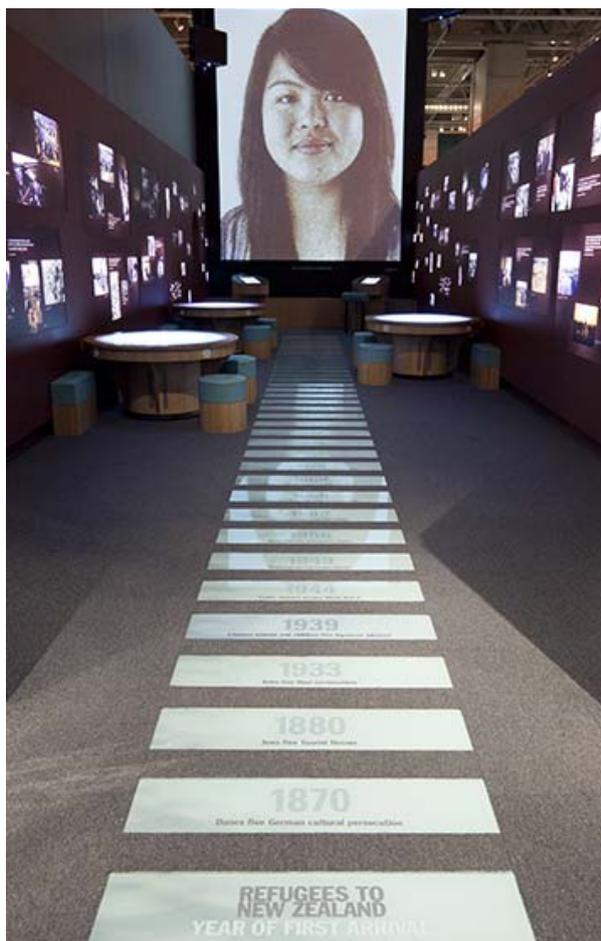


Fig. 4 Chronological timeline charting the first years of arrival of the many refugee communities that have come to New Zealand since 1870 (photo: Kate Whitley, Te Papa MA\_I.302077).

country' (United Nations High Commissioner for Refugees 2011: 14). Being a refugee is an identity based on time, place and situation. Once resettled in New Zealand, such a person is no longer a refugee under the UNHCR definition.

Refugees have resettled in New Zealand since the late nineteenth century (Beaglehole 2009). In 1987, the New Zealand government began accepting an annual quota of refugees for resettlement. New Zealand is one of a small group of countries to receive refugees in this way. The quota is selected from those recognised as refugees under the UNHCR's mandate. The annual quota for New Zealand is 750 places. New Zealand also accepts a small number of refugees who arrive in the country as asylum seekers, and accepts many migrants who enter under family reunification policies (Duke *et al.* 2011: 3).

Over the last two decades an enormous amount of research about former refugees in New Zealand has

been published by government departments and non-governmental organisations (e.g. Higgins 2008). Te Papa curatorial staff (including history curators, a concept developer and an interpreter) met with many of these organisations and researchers in preparation for the project.<sup>5</sup> Much of the literature and conversations made for sober reflection. The refugee experience is extremely complicated and fraught with difficulties. Resettlement in a third country such as New Zealand is the final option considered by the UNHCR, and can have mixed results for individuals. While it may provide physical safety, it may not provide psychological and emotional safety. Trauma and the stress of resettlement can mar lives for many years, and mental health can be vulnerable in even the seemingly most resilient. It was the responsibility of Te Papa staff to know and understand these issues, and to seek guidance from the relevant professionals and community leaders.

## Representation and museums

Since the late twentieth century, former refugee communities in New Zealand have become increasingly empowered and engaged with government and society on their own terms (ChangeMakers Refugee Forum 2008; Gruner & Searle 2011). They are now seen as 'agents of change, representing themselves rather than being spoken for by others' (Gruner & Searle 2011: v). This is due to increased experience of non-governmental organisations; improvements in how government agencies work with refugees; inter-agency collaboration and awareness; and the establishment of inter-ethnic refugee coalitions, including the New Zealand National Refugee Network. All these sectors aim to build the capacity of former refugee communities and provide opportunities for leadership, particularly amongst younger members (Gruner & Searle 2011: 37).

In the museum world, these shifts are paralleled by 'more inclusive processes of exhibition-making and the portrayal of diverse communities in more respectful and equitable ways' (Sandell & Dodd 2010: 3). Richard Sandell observes that museums 'might be uniquely positioned to act as catalysts for community involvement and as agents for capacity building' (2007: 99). Museums can be a less threatening, less formal and more creative forum through which communities can gain skills and confidence in taking control of their identity, representation and future (Sandell 2007: 99). Ideally, such community involvement works the other way as well – whereby museums and staff are enriched



Fig. 5 Interactive touch tables, in which the content created by the young participants was embedded (photo: Kate Whitley, Te Papa MA\_I.182887).



Fig. 6 Exploring the stories and artwork on a touch-screen table (photo: Kate Whitley, Te Papa MA\_I.201818).

by such experiences, and all visitors find the museum more relevant to their lives (Govier 2010: 19, 26).

However, museums can also be sites of privilege, constructing and representing identity, community and culture. Museums on the scale of Te Papa are complex, having many diverse staff members and stakeholders with divergent views and ways of working (Hooper-Greenhill 2007: 90). It is almost impossible for such a large museum to relinquish power to its communities (Watson 2007: 15). However, through the open hearts and minds of exhibition development staff, and their willingness to promote participatory processes to Te Papa's senior management, *The Mixing Room* project enabled a transition from consultation to participation to take place.

### *The Mixing Room* project goals

*The Mixing Room* project was guided by the following goals (Museum of New Zealand Te Papa Tongarewa 2010a: 4):

- Target and maintain under-represented audiences
- Build capacity within the refugee youth communities

- Ensure experiences and interpretation are aligned with the values, needs and interests of the refugee background community
- Deal with the dreams of the people with the utmost generosity that is within your power to manage
- Promote user generated content – telling their stories their way
- Develop touring manual and document the project<sup>6</sup>

The primary communication goals of the exhibition were that visitors may:

- Consider what it means to be a refugee
- Appreciate the strengths and optimism of refugee background youth as they settle into New Zealand society
- Be challenged to consider their own views on refugee resettlement

The secondary communication goal of *The Mixing Room* was that visitors may:

- Understand that exhibition is a collaborative and participatory project where refugee background youth have generated much of the concept and content themselves.

In addition to these formal goals, the steering group for the exhibition (comprising members of senior management)



Fig. 7 Accessing the images within the large digital mosaic dominating the far wall of the exhibition (photo: Kate Whitley, Te Papa MA\_I.182893).

challenged the exhibition team to 'shake up' the Community Gallery space and try new approaches. The results were an exhibition with no segmental or thematic breakdowns; no objects on display; text delivered mainly in the first-person voice; and minimal editorial intervention in the content created by the young people. Most of the content was delivered digitally or two-dimensionally (Figs 2–7).

## The participatory approach

The Te Papa exhibition team was guided primarily by ChangeMakers Refugee Forum (a non-governmental agency in Wellington), particularly its 'Standards for engagement' (2008); and by youth development practice, particularly the 'Youth development strategy Aotearoa' (Ministry of Youth Development 2007). Both of these embed the participatory principles of PAR (e.g. Kindon *et al.* 2007).

The key principles of 'Standards for engagement' include the centrality of human rights, the strengths of former refugees, trust and reciprocity, sharing and working together, open and honest communication, meaningful participation, and inclusive and fair engagement in all stages of involvement (ChangeMakers Refugee Forum 2008). Similarly, one of the key principles of youth development is full participation with the goal of 'creating opportunities for young people to actively participate and engage' (Ministry of Youth Development 2007: 8). The 'Youth development strategy Aotearoa' envisions 'a country where young people are vibrant and optimistic through being supported and encouraged to take up challenges' (Ministry of Youth Development 2007: 7). According to the document, all sectors of society, including museums, have a role to play in implementing this vision (Ministry of Youth Development 2007: 44).

One of the key aims of PAR is for people who would normally be subjects of research to become producers of knowledge and be part of positive social change (Askins & Pain 2011: 806). PAR involves a genuine desire for involvement at all stages of a project, and is oriented towards practical change and capacity-building for all involved. It requires that museum staff trust in participants' abilities, treat them as competent and capable agents, and accept their actions and contributions (Simon 2010: 183). Ideally, projects are useful to participants, based in their contexts, and integrative of their values and beliefs (Kindon *et al.* 2007: 14).

The participatory approach values relationships based on mutual respect and dignity, shifting 'normal' research relationships to include friendship and personal transformation (Pain *et al.* 2007: 30). It often requires researchers (in this case museum staff) to act from their hearts and minds, and to let go of preconceived ideas about the outcomes of a project, so that the project can go in the direction of the greatest value to the participants (Pain *et al.* 2007: 29).

This process requires time, patience, optimism, collaboration, flexibility and sociability. Those involved must accommodate 'chaos, uncertainty and messiness', and accept that not all issues will be fully addressed or resolved (Kindon *et al.* 2007: 14). They also need to remain open to the reality that the chaos may 'produce something we could never have imagined ... bringing us new, deeply engaged audiences at the same time' (Govier 2010: 38).

Positively, this approach can release everyone from focusing on the end product. However, it can produce

challenges for museums, which need to ensure that the outcomes of participatory projects are ultimately intelligible and appealing to all visitors, not just the participants (Cieri & McCauley 2007: 143; Govier 2010: 38; Simon 2010: 302). At the very least, museums need to have project management and leadership in place to realise a project's goals and to fulfil their financial and legal responsibilities (Govier 2010: 35).

Levels and types of participation can vary significantly, and can ebb and flow over the life of a project. This is particularly the case when bringing full-time paid adult staff in a large institution together with voluntary young people from diverse backgrounds who are juggling the demands of family, peers, school and employment – all within the context of two cultures. They may simply have more pressing concerns than working with a museum. Participants may not wish for full participation in all parts of the project, and so 'care needs to be taken to work with people on their own terms' (Kindon *et al.* 2007: 16).

The capacity of the museum to engage in participatory projects must be thought through carefully and embedded deeply into the institution's philosophies and practices (Simon 2010: 323). As identified on previous community projects at Te Papa, the different levels of engagement within the museum can create areas of weakness (Gibson 2003; Wood 2005; Gibson & Mallon 2010). Museums are not homogeneous monoliths, but variegated organisms, where different professionals within the organisation will decide (either overtly or subconsciously) on their level of engagement. However, collaborative and co-creative projects must be wanted by the whole museum organisation, not just pockets of committed staff (Govier 2010: 35; Simon 2010: 334). The museum needs to know *why* it is co-creating (beyond the rhetoric of its mandate): whether the impulse is genuine and extends from top to bottom of the organisation; whether it is imposed by individuals or funders; or whether it is simply seen as 'on trend' to do so (Govier 2010: 35; Simon 2010: 323).

Adequate time is required to develop relationships and trust fully in order to work successfully in a participatory manner. Good relationships can take years to develop, and often go beyond the walls of the museum and the life of the project at hand (Cameron 2007: 213). It must also be acknowledged that such relationships are actually between individuals – not between museums and communities, but between particular staff members and individuals from within communities (Watson 2007: 18). That said, these

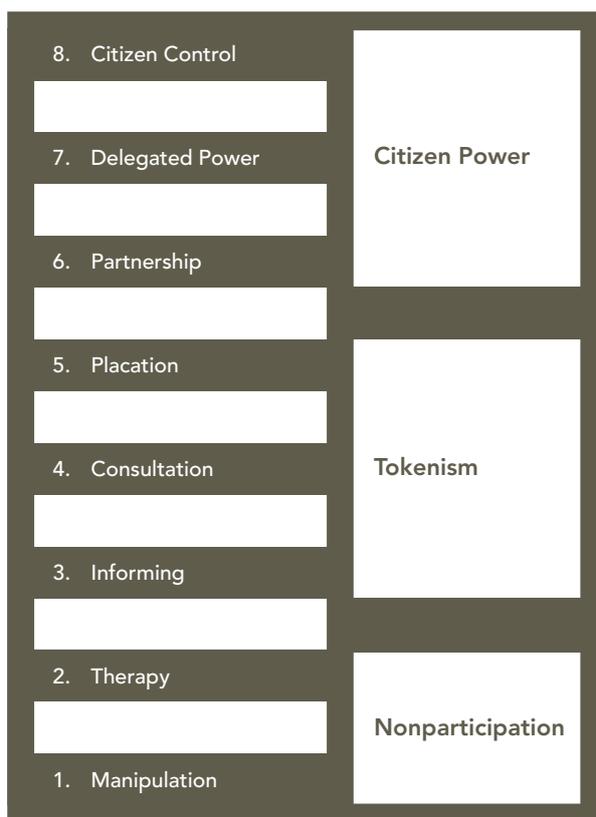


Fig. 8 Sherry Arnstein's ladder of citizen participation (Arnstein 1969).

relationships can occur and flourish only with formal institutional mandate.

Obverse to previous community exhibitions at Te Papa, where the underlying belief was that staff knew best, *The Mixing Room* philosophy was that the participants knew best. This led to the exhibition team adopting the philosophy that 'nothing about us is without us' for the project.<sup>7</sup> Participants were conceived of differently from previous exhibitions – they were active agents in the development of the concept and they actually *made the content*. This is something that had not occurred before.

This vital aspect of *The Mixing Room* project would translate into 'delegated power' according to Sherry Arnstein's 'ladder of citizen participation' (Fig. 8). Most of Te Papa's practice when working with communities ranges from 'consultation' to 'partnership'. Consultation allows communities to be heard, but their views may not be heeded by the institution. Partnership enables more community negotiating power and decision-making clout. Delegated power gives the majority of decision-making to participants (Arnstein 1969).

## Focus on young people

Te Papa's commitment to enabling a delegated power model was evident in the focus on, and engagement with, refugee background young people throughout the process. Adolescence is a rich time for experiences, particularly for those who are growing up in two different cultures. Young people dominate refugee statistics and are often looked to by older members of refugee families for support in negotiating their new lives in New Zealand, and as potentially being more agile in integrating with the host society (Quazi 2009: 9).

Refugee background youth negotiate complex lives within and between two cultures. They can be vulnerable, but they can also be incredibly optimistic and resilient, with intercultural skills and a hunger to contribute to society. Projects such as *The Mixing Room* provide ideal opportunities to grow young people's capacity to contribute to society (Ministry of Youth Development 2007: 23).

*The Mixing Room* project involved about 100 young people from a diverse range of refugee backgrounds: Assyrian, Iraqi, Iranian, Afghani, Sudanese, Somali, Ethiopian, Eritrean, Congolese, Rwandan, Burundian, Tamil, Burmese, Vietnamese, Cambodian, Bhutanese, Kosovar-Albanian and Colombian. They had 'situational' bonds in common as having been former refugees, but their diversity also saw them representing many different communities. By taking a participatory approach, the project could accommodate these complexities by allowing everyone to bring their full identities to the table.

To 'hear and honour young people's voices in research it makes sense to engage with them on as many levels as possible' (Higgins *et al.* 2007: 105). Ideally, this meant involving the young people in every aspect of the exhibition's development. However, *The Mixing Room* project was not able to engage them in all aspects of production because not all members of the Te Papa exhibition team were able to engage fully in the participatory process due to complex internal processes, technological issues and different levels of engagement in the project.

The Te Papa exhibition team was also mindful of power imbalances between staff and the young people, and the huge gulf between their lives and experiences because of age, background and socio-cultural distance (Higgins *et al.* 2007: 105). There were four key remedies. First, a diverse group of young people from Wellington were involved in the creation of conceptual themes for the exhibition during a weekend-long youth forum, and these themes were maintained and

respected throughout the production process. Second, a youth reference group was established in Wellington, made up of volunteers from the initial youth forum and their peers who joined in as the project developed.<sup>8</sup> This group met with the exhibition team every fortnight until the exhibition opened. Membership and attendance were fluid and ever-changing as the young people sometimes had more pressing needs to attend to, such as school, homework, jobs and family commitments.

Third, an adult reference group of community leaders and experts was established at the invitation of Te Papa, and met every two to three months to review and assess progress and to provide advice on any issues that arose.<sup>9</sup> Both groups of advisers continue to be consulted and updated during the life of the exhibition by Te Papa's community relations manager.

Fourth, youth coordinators from refugee backgrounds were appointed and trained by Te Papa to coordinate young people for creative workshops held in each city centre to create the content for the exhibition. These young people were put forward by refugee communities and agencies as promising leaders of the future. This approach was hugely successful in recruiting young people for the creative workshops, while assuring community leaders and families that the workshops would be safe environments for their young people. It was also a practical example of capacity-building – not only was Te Papa able to upskill the coordinators, it was also able to pay them for this particular role. We now discuss aspects of the process involving the young people in more detail.

## Creation of exhibition themes

At the beginning of *The Mixing Room* project, ChangeMakers' youth development coordinator, Tessa Johnstone, and Sara Kinson, a human geographer at Victoria University of Wellington working in partnership with ChangeMakers, ran a weekend youth forum, with Te Papa staff as observers. It was attended by a wide cross section of young people from refugee backgrounds in Wellington (Fig. 9).<sup>10</sup> The goal of the weekend was to develop themes for a community exhibition around one idea – settlement of refugee background youth in New Zealand. This essential idea was decided by Te Papa staff (curators, interpreter and concept developer) as it fitted the brief of the Community Gallery, but also because they felt that it was inappropriate to focus on refugee journeys to New Zealand and risk reawakening



Fig. 9 Refugee background youth who attended the initial youth forum held in Wellington, 21–22 February 2009. Standing, left to right: Lydia Bules, Farah Omar, Terefe Ejigu, Rahwa Hagos, Niusha Rezaie, Za Lian Hlawn Leu, Mayami Naser, Yasin Hassan, Sandra Bules, Daniel Philip. Front row, left to right: Patrick John, Estabraq Naser (photo: Kate Whitley, file EP-EX-011-04-01#e01 (ref. 712242), Te Papa).

associated trauma. Museum professionals are not trained specialists in mental health, and might not have been able to provide adequate emotional and psychological safety in the telling of such stories. Te Papa staff undertook no other conceptual work until after the youth forum so that the exhibition would develop directly from the young people's ideas.

Participatory methods were used during the weekend, focusing on dialogue, storytelling and collective action. The young people expressed themselves through arts- and media-based techniques (painting, collage, sculpture and photography), and through diagramming and mapping, where

they created charts, pictures and maps to explore issues and relationships (Figs 10–12) (Kindon *et al.* 2007: 16; Askins & Pain 2011). These hands-on and collaborative methods worked well with the young people, particularly as they were from different ethnic and cultural backgrounds, were of different ages and genders, and spoke English as a second language. Visual and creative techniques allowed them to share ideas and knowledge through symbols and abstract forms (Kindon *et al.* 2007: 16).

The strongest themes to emerge from the youth forum were ideas around freedom and opportunity; love and family (including growing up in two cultures); and the value of



Left: Fig. 10 Za Lian Hlawan Leu, Terefe Ejigu and Patrick John writing a performance piece at the youth forum, 2009 (photo: Kate Whitley, file EP-EX-011-04-01#e01 (ref. 712243), Te Papa).



Right: Fig. 11 Rahwa Hagos creating sculpture at the youth forum, 2009 (photo: Kate Whitley, file EP-EX-011-04-01#e01 (ref. 712245), Te Papa).

culture and connecting between cultures (including with the host community). The overarching approach was of optimism in a new land.

These themes and ideas were then taken around the country by the Te Papa curators and presented to community leaders and refugee agencies for their consideration. The curators visited the main centres of refugee settlement: Auckland, Hamilton, Palmerston North, Wellington, Nelson and Christchurch. Feedback was generally positive and supportive. The most consistent advice was threefold:

- that participation by young people in all parts of the project was critical to its success and the project should build young people's capabilities and not be extractive;
- that the history and context around being a refugee to New Zealand should be told in order to support the young people's work so that it did not float in a vacuum; and
- that as the mental health of refugee background youth can be vulnerable and fragile, Te Papa staff needed to be sensitive and approach young people through their parents and/or community leaders.

As *The Mixing Room* project progressed, a gulf grew between the sobering findings of the literature on one hand, and the positive experience of developing the exhibition on the other.

This was perhaps to have been expected when considering the political and policy-making agendas informing the literature, as opposed to the celebratory impulses when developing community exhibitions.<sup>11</sup> Te Papa has found that most people wish to celebrate and promote their cultures, identities and histories, particularly when it is their community's first contact with a heritage institution (e.g. Gibson 2003: 70).

Furthermore, it takes a significant amount of time and relationship-building to gain the trust of communities and individuals to reveal more difficult stories. However, even if *The Mixing Room* project had had a longer development period, it is unlikely that many of the participants would have admitted to negative and sadder realities when asked to present themselves on a public stage, particularly when that stage is the national museum of the country that has provided refuge.

## Creation of exhibition content

There is generally a dearth of material culture within resettled refugee communities, as refugees generally arrive in their new host societies with very little. Furthermore, the few items they do have may be so deeply significant



Fig. 12 Brainstorming ideas at the youth forum, 2009 (photo: Yasin Hassan, file EP-EX-011-03-06-03-01 #e01 (ref. 693687), Te Papa).

that it may be too much to ask to borrow them for inclusion in a long-term exhibition. When there is very little tangible material to draw upon, memories, stories, songs, cultural traditions and creative acts can embody an individual's or community's past and future instead (Hooper-Greenhill 2007: 81). This recognition, in light of the conceptual themes identified by the Wellington youth forum, helped shape the creation of content for the exhibition.

Content was created in a series of 12 creative workshops funded by Te Papa and held in Auckland, Hamilton, Palmerston North, Wellington, Nelson and Christchurch. Young people from refugee backgrounds were encouraged to attend the workshops by the youth coordinators.

A community arts-based model was used for the workshops, whereby arts tutors from each city developed classes to teach and encourage the young participants to

create content for the exhibition based on the three themes of the project, which had been refined to freedom, challenge and connection (Figs 13–16). Te Papa contracted experienced artists, writers, film-makers and performance tutors (depending on which speciality was being taught in which location), as the exhibition team believed it was important for the young people to work with professionals in terms of learning new skills, and in order to produce work for an exhibition in a formal gallery space. As described by Divya Tolia-Kelly in her work with South Asian women in London, collaboration with professionals 'enabled rigour in producing visual materials that are socially and culturally recognized as "Art", and provided essential advice and skills necessary to avoid the risk of participants viewing the ... process as naïve, "experimental", unethical or patronising' (Tolia-Kelly 2007: 133).



*Left:* Fig. 13 Creative writing and performance workshop held in Christchurch, 2009 (file EP-EX-011-03-06-03-01 #e01 (ref. 693703), Te Papa).



*Right:* Fig. 14 Glass-casting workshop held in Auckland, 2009 (file EP-EX-011-03-06-03-01 #e01 (ref. 693706), Te Papa).

## Outcomes of the workshops

In total, 70 young people from at least 20 different former refugee communities attended the workshops as voluntary participants, creating work based on digital storytelling, poetry, creative writing, performance, music, photography and art (including casting glass and screen-printing). Each piece of work was digitally delivered within the exhibition on three interactive tables (Figs 5 and 6).

The exhibition team determined which workshops would be held in which location based on budget constraints and reasonable geographical and community coverage. Gender was not a deciding factor. In hindsight, however, separate workshops would have encouraged greater participation of young women as some parents and community leaders were hesitant to let their young people mix together.

That said, most of the workshops provided 'spaces of interaction' that could enable 'meaningful encounters' between different groups, while providing opportunities for the young people to express themselves (Askins & Pain 2011: 803). The physical experiences of making art and using creative materials, and the resulting 'messiness of interaction', can 'enable new social relations' (Askins & Pain 2011: 817). In one of the poetry workshops, the tutor noted that the young people's poems proved 'the ways in which poetry can cross borders and remove barriers to communicating' (Museum of New Zealand Te Papa Tongarewa 2009b).

For many participants, the workshops were the first time they had experienced working with certain media. For example, a glass-casting workshop 'provided the participants the chance to experiment with new ways of conveying their experience of coming here as refugees' (Museum of New Zealand Te Papa Tongarewa 2009b) (Figs 14 and 15). Another poetry tutor noted that 'for most of those attending it was the first time they had ever written poetry and the comments from them indicate that the experience was revelatory' (Museum of New Zealand Te Papa Tongarewa 2009c).

Issues around timeframes and quality did arise from some of the workshops. One of the art tutors noted that she faced 'a group of people who wanted to create but had little basic skills; a childhood spent in a refugee camp does not, on the whole, include provision for developing creative ability' (Museum of New Zealand Te Papa Tongarewa 2009d).

Two of the photography tutors noted that 'not all of these photo-essays were completed to the satisfaction of the participants or the tutors; life has a habit of interfering with art and the difficulties of everyday life can be compounded when you are growing up with a foot in two cultures' (Museum of New Zealand Te Papa Tongarewa 2009d).

The key issue was the short timeframe for the workshops, which sometimes resulted in stress for the tutors and uneven levels of quality in the work produced by the young people. By the time the workshops were approved and funded by Te



Left: Fig. 15 Cast-glass sculpture made by Adan Jailane at the workshop held in Auckland, 2009 (photo: Kate Whitley, file EP-EX-011-04-01#e01 (ref. 712248), Te Papa).



Right: Fig. 16 Film-making workshop held in Nelson, 2009 (photo: Inspired Productions, file EP-EX-011-03-06-03-01 #e01 (ref. 693709), Te Papa).

Papa management, there was very little time for the actual running of them. The slowness of approval was partly due to the workshop idea being a first for Te Papa, and management needing more detailed assurances that the workshops would provide adequate content.<sup>12</sup> This resulted in the young people needing to learn new media and skills, develop their ideas and then produce finished material for the exhibition, all in a short space of time.

For example, a group of young people in Nelson (originally from Bhutan, Nepal, Burma/Myanmar, Cambodia and Vietnam) created 12 short films about their lives in New Zealand with the guidance of experienced film-makers (Fig. 16). Te Papa's decision-making and contracting processes took so long to finalise that a crucial school holiday period was missed, and much of the teaching and production had to take place during term time, when the young people had many other commitments. The short timeframe also meant that the film-makers had to direct the young people and help with editing decisions more than they normally would in a fully participatory process. The film-makers felt that with more time they would have been able to develop their relationships with the young participants and build greater trust. This would have increased the chance for yielding deeper stories. More time would have enabled the young

people to improve their technological skills and gain more confidence in their work (Inspired Productions 2010).

The issue of varying production values in the young people's work was debated among exhibition team members, in that there was a risk that uneven content or stories that did not clearly fit the themes could potentially undermine the visitor experience of the exhibition. Accuracy and high quality of content and presentation are important goals of Te Papa's exhibitions. Louise Govier observes that unless co-creative projects aim to create 'high quality museum spaces which engage a wide range of people and create all sorts of different, interesting meanings', they may be limited in their impact, mediocre in their presentation and marginalised within the museum building (2010: 36). Such results may also impact on participants, who may not feel pride in their work or in how it is displayed, and may not have developed their skills to a confident level (2010: 36).

However, the challenge for museums is to balance excellence with access. *The Mixing Room* team resolved this challenge by deciding to accept all the young participants' work for the exhibition. Such a decision reflected the exhibition's guiding philosophy that it would 'deal with the dreams of the people with the utmost generosity that is within your power to manage' (Museum of New Zealand Te

Papa Tongarewa 2010a: 4). The principles of PAR recognise that each person ‘has a right to a voice and a valuable contribution to make’ (Manzo & Brightbill 2007: 38). This was reiterated by the exhibition steering group when it advised: ‘if a young person has only presented one piece, it must go in the exhibition regardless, as a moral obligation to the spirit of the project’ (Museum of New Zealand Te Papa Tongarewa 2009a).

## Exhibition layout

Located on the fourth level of the museum in the Community Gallery, *The Mixing Room* welcomed visitors with two title ‘sentinels’ that introduced the exhibition in the words of the young participants (Fig. 2). The walls of the exhibition featured backlit photographs of some of the journeys that refugees take to come to New Zealand – from environments of war to refugee camps, to applying for resettlement, to arriving in New Zealand and reunification, to orientation at the Mangere Refugee Resettlement Centre, and to moving into new homes and being welcomed by New Zealanders (Fig. 3). Evocative first-person quotes sat alongside the images but were not directly connected to them.

A chronological timeline in glass steps on the floor charted the first years of arrival of the many refugee communities who have come to New Zealand since 1870. It ran almost the length of the exhibition (Fig. 4). Timelines are traditional museum devices, but the presence of this timeline in the floor enabled visitors to step through history literally, and it provided context for the young people’s work.

Three interactive digital tables were central to the gallery space (Figs 5 and 6). Each table was devoted to a theme of the exhibition – connection, freedom and challenge – and visitors could sit at them and explore the images, writing, artwork and videos created by the young people (Fig. 6). Visitors would reach their hand into a water-like digital effect and select an icon to view. By drawing the icon towards them, it opened up to reveal the work. Each piece of work included information on the participatory process behind it, a short biography of the young person who had created it and their artist’s statement.

The far wall was dominated by a large digital mosaic of faces of young people involved in the project. This mosaic changed constantly to create new faces, generated from a large database of images provided by young people from refugee backgrounds that could be added to through Flickr. The images could be explored in depth on two small

interactive screens in front of the mosaic (Fig. 7). As noted earlier, no material culture was included in the exhibition, which instead strove to represent the richness of young people’s stories in these innovative ways.

## Impacts of the exhibition and its process

Although feedback about their participation in the exhibition process was not formally sought from the participants, Abdalla Gabriel, a key member and spokesperson of the youth reference group, indicated the impact of the project when he was interviewed by the *Dominion Post* newspaper after the exhibition opened: ‘Talk of his childhood in Africa still causes him pain. “It’s been very hard to handle that. I couldn’t talk about it,” he says. “The exhibition sort of got that out of me, so I feel released”’ (Robinson 2010: 4). At the same time, Gabriel shared privately with Te Papa staff that ‘all of you been a great team in my life’ (Gabriel 2010). Similar unrecorded comments to both of us from other members of the youth reference group echoed Abdalla’s sentiments.

For members of the young participants’ communities, *The Mixing Room* was generally met with approval. There was one significant criticism, however, which was both conceptual and political, and did not surface until the exhibition had been open for 18 months. A member of the Vietnamese community felt that one of the original title sentinels cast contemporary Vietnam in a negative light, rather than acting as a personal introduction to a wider story (Fig. 17). Te Papa staff responded by working through the issues with key people in the complainant’s community, the young woman in the photograph and the youth and adult reference groups, and replaced the panel with a group image of the young people who had attended the initial youth forum held at Te Papa (Fig. 9).

A standard summative evaluation of the exhibition was conducted by Te Papa’s visitor and market research team after the exhibition had been open for 18 months (Allan 2011). Such an evaluation measures the core visitor-centric aspects of an exhibition’s objectives (as described earlier). Other evaluation frameworks were considered, including process evaluation (for example, the workshops and participatory approach), impact evaluation and remedial evaluation. However, the scope of these evaluations was considered very large and too time- and resource-intensive for Te Papa staff to manage effectively (Museum of New



Fig. 17 The original left-hand title sentinel, later replaced with the youth forum group image (Fig. 9) (photo: Kate Whitley, Te Papa MA\_I.182891).

Zealand Te Papa Tongarewa 2010b). In addition, the exhibition team hoped to include refugee background youth as co-researchers in the summative evaluation process. However, it was decided that it was too much to ask more of the young people, particularly as several months had elapsed since their main involvement. There were also funding, contractual and training concerns.

The results of the summative evaluation indicated that most visitors to the exhibition considered what it meant to be a refugee, and appreciated the strengths and optimism of refugee background youth as they settled into New Zealand society (Allan 2011: 28). However, the evaluation revealed that most visitors did not understand that *The Mixing Room* was a collaborative and participatory project where refugee background youth generated much of the concept and content themselves (Allan 2011: 30).

The key target group for the exhibition was refugee background youth, their families and their communities. Museum hosts observed that *The Mixing Room* 'has been attractive' to these groups, particularly when the exhibition

first opened and people came to see friends, family and community members in the exhibition (Allan 2011: 19). However, when the evaluation was undertaken more than 18 months later, the researchers found 'no discernable difference between the ethnicity of visitors who visited and those who didn't' (Allan 2011: 7).

The dark brown walls and low lighting of the exhibition were designed to create a social space, but some visitors – particularly older members of the public – found it a challenging environment (Fig. 5). For example, the seats were originally covered in dark brown vinyl, which blended in with the brown walls and dark carpet. After some visitors tripped on the seats, they were re-covered in a light blue fabric for visibility and safety. However, the low lighting of the space and digital presentation of the content continued to attract younger visitors (half of visitors were aged 16–34 years), who found the space comfortable and relaxed (Allan 2011: 7, 16).

Overall, the summative evaluation found that *The Mixing Room* 'had a profound effect' on a large number of visitors

who spent time in the exhibition and was ‘responsible for a wide range [of] emotional reactions and changed perspectives’ (Allan 2011: 7). To gain a sense of how many people may have been affected in this way, between 360,000 and 450,000 people visited the exhibition between April 2010 and September 2011. This equates to one in five visitors to Te Papa during that period (Allan 2011: 7).

Equally important were the effects on museum staff involved in the project. The staff most closely involved found that working and co-curating with refugee background youth was not only effective in terms of delivering the project, but was personally and professionally rewarding. There were also ripple effects into Te Papa’s senior management and their processes as they increasingly supported the participatory approach during the development of the project. For example, even though it took some time for money to be released for the creative workshops and even though no one could safely say what the end results would be, it was released none the less.

Taking a wider view of impact, Te Papa received accolades from the New Zealand Race Relations Commissioner in 2010 and 2012 for its achievements and contributions to diversity in New Zealand through *The Mixing Room* project. There is ongoing national and international interest in the project, for example through conference presentations, postgraduate research projects and community blogs.<sup>13</sup> Finally, one of the most rewarding examples of recognition came from a visit of the United Nations High Commissioner for Refugees in 2012 (António Guterres), who responded warmly to the exhibition.

## Reflections and conclusion

*The Mixing Room* project was a radical departure from Te Papa’s normal consultative ways of working with communities and developing community exhibitions. Staff working on the project brought together contemporary museological theories of social inclusion with youth development practice and participatory action research. They were able to gain both intellectual and financial support from senior management for the content of the exhibition being made through participatory processes, partly because senior management wished for a ‘shake-up’ of the Community Gallery space, and partly because the research findings for participatory action were so compelling.

The curatorial team carefully laid the foundations for the project with research and outreach, which involved

seeking out expert advice and guidance, and then presenting ideas to refugee background communities and relevant agencies throughout New Zealand. Community and agency feedback guided the project: that Te Papa always approach young people through their families and/or community leaders; that the exhibition contextualise the young people’s work in terms of the refugee experience; and that the project build young people’s capacities. Young people drove the conceptual and thematic development of the exhibition, which subsequently informed the kinds of content produced through the creative workshops across the country.

The workshops, although hurried at times, were successful in delivering content for the exhibition. Engaging young people as coordinators was an astute decision, as they understood the strengths of their local youth communities and were able to bring together a wide range of young people from across the country to participate. Engaging experienced community-based arts tutors enabled capacity-building by focusing on the process of learning new skills as well as creating content for the exhibition. However, in hindsight more time was needed for the workshops to allow the young people’s skills to flourish as much as possible.

The distinctiveness of the content being made by the young people was not generally understood by visitors to the exhibition. But it was well understood and valued by the young people involved, by their families and communities, by the adult and youth reference groups, and by the expert advisers and the agencies conferred with throughout the project. This finding reinforces the fact that the processes are just as important as the outcomes, and perhaps even more so.

Museums are ideal places for community involvement because of their public spaces and potential for attracting broad audiences. They are also ideal because of their potential for capacity-building, which can take place when staff members are committed to participatory ways of working and are supported by institutional mandates and resourcing. However, as noted in this paper, different levels of engagement amongst museum staff, inadequate time-frames, and concerns over resourcing and budgets affect the depth and breadth of participation. In the case of *The Mixing Room*, museum staff retained ultimate control over the presentation of the exhibition, but they exercised it in a benign and respectful way.

Participatory approaches to working with refugee background youth have given Te Papa staff effective tools for creating meaningful community projects and exhibitions in

the future. The challenge for Te Papa is to move co-creation beyond content only to full participation in all aspects of exhibition development when working with communities. This is possible within Te Papa's new vision for the future, which is 'to change hearts, change minds, and change lives' (Museum of New Zealand Te Papa Tongarewa 2012a). This vision includes the concept of manaakitanga (community responsibility), which is to 'welcome, include, inspire, respond to, and collaborate with our communities, championing the importance of culture, heritage, and natural history' (Museum of New Zealand Te Papa Tongarewa 2012b). The vision also includes the concept of mana taonga (sharing authority), whereby 'Te Papa will share decision-making with iwi (tribes), communities, and individuals with respect to managing and understanding their taonga (treasures)' (Museum of New Zealand Te Papa Tongarewa 2012c). In this case, taonga can include the tangible and intangible aspects of culture and identity within all communities that have made New Zealand their home.

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## Notes

- 1 *The Mixing Room* opened on 10 April 2010 and will be on display until 2013 (closing date to be confirmed). It is accompanied by a blog (<http://sites.tepapa.govt.nz/refugees> blog).
- 2 See case studies on Te Papa's previous work with communities in developing exhibitions (Gibson 2003; Wood 2005; Fitzgerald 2009; Gibson & Mallon 2010).
- 3 At times, the term 'refugee' can have negative connotations in New Zealand, but 'refugee background youth' acknowledges the particular set of circumstances, experiences and needs of this group (Horner *et al.* 2006: ii). The Ministry of Youth Development defines young people as being between 12 to 24 years (2007: 7). However, in consultation with community advisers, it was agreed that 12 to 29 years of age captured different cultural notions of youth. The youngest person involved in *The Mixing Room* project was 14 and the oldest 29. Participants originated from, or

identified with, Somalia, Ethiopia, Sudan, Eritrea, Rwanda, Burundi, Afghanistan, Burma/Myanmar, Vietnam, Cambodia, Iraq, Iran, Sri Lanka, Kosovo, Columbia, Bhutan, Democratic Republic of Congo.

- 4 Te Papa is not unusual internationally for developing such a collaborative project. In 2006–07, for example, the Museum of London held an exhibition called *Belonging: voices of London's refugees* as part of the Refugee Communities History Project (Museum of London 2005). A project closer to the ethos of *The Mixing Room* was *A Different Life: finding our future in San Diego*, which was a collaborative exhibition project in 2008 between the San Diego History Center and Somali teenagers (Kendig-Lawrence 2010; San Diego History Center n.d.).
- 5 The non-governmental organisations consulted were: Refugee Services, National Refugee Network, Auckland Refugee Community Coalition, Waikato Refugee Forum, ChangeMakers Refugee Forum, Canterbury Refugee Council, Nelson Multi-Ethnic Council, Former Refugees Focus Group in Palmerston North, Wellington Somali Council and Wellington Refugees as Survivors Trust (now Refugee Trauma Recovery). The key government organisations were: Ministry of Social Development, Ministry of Education, Office of Ethnic Affairs and Department of Labour (now Ministry of Business, Innovation and Employment). Advisers were consulted within the Department of Internal Affairs, Regional Public Health and Victoria University of Wellington. Cultural organisations consulted were: Mixit in Auckland, Evolve in Wellington and Voice Arts Trust, and staff of the New Dowse (Lower Hutt, Wellington), Capital E (Wellington) and Waikato Art Museum (Hamilton) for their creative work with local refugee background communities.
- 6 A touring manual was not developed. However, this paper attempts to document the project and provide a useful case study.
- 7 This philosophy originated in disability activism as 'nothing about us, without us', a catch-cry that real progress is made when government works in partnership with disability organisations in any decision-making process (Disabled Persons Assembly (New Zealand) Inc. 2009: 5).
- 8 The youth reference group's primary members were: Patrick John, Farah Omar, Terefe Ejigu, Abdalla Gabriel, Yasmin Yusuf, Hajar Ali, Anita Azizi and Daniel Philip.
- 9 The adult reference group comprised Joris de Bres (Race Relations Commissioner), Sara Kindon (Victoria University), Annie Coates (Burmese community and ChangeMakers), Sarjon Warde (Assyrian community) and Fahima Haidari (Afghani community).
- 10 Tessa Johnstone recruited young people to attend the youth forum through meeting with community groups, parents and leaders of the 10 former refugee communities associated with ChangeMakers, presenting the exhibition project as an opportunity for their young people. She facilitated the signing of two permission forms by the attendees, with

parental signature required for those under 18 years of age. A registration form covered practical matters such as health and safety, dietary requirements, cultural or religious requirements, emergency contacts, etc., and a consent form covered photography and recording of the youth forum by Te Papa.

- 11 Research on former refugees in New Zealand is mainly led by the government and focuses on social, political and cultural well-being, and health and education issues.
- 12 Others in the exhibition team needed assurance as well. As a measure to ensure that the three themes (freedom, challenge and connection) would be adequately communicated by the exhibition, the curators worked on filming four stories for the tables that overtly addressed these themes.
- 13 For example, Sarah Morris, interpreter at Te Papa, was an international keynote speaker for the Libraries of Australia conference, My Language – Connecting, Collaborating, Creating, held in Brisbane, Australia, in 2012 (the title of her paper was ‘*The Mixing Room* project’).

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# Polyvocal Tongan barkcloths: contemporary ngatu and nomenclature at the Museum of New Zealand Te Papa Tongarewa

Billie Lythberg

Mira Szászy Research Centre for Māori and Pacific Economic Development,  
University of Auckland, Auckland, New Zealand  
(blyt002@aucklanduni.ac.nz)

**ABSTRACT:** The Museum of New Zealand Te Papa Tongarewa (Te Papa) collects and exhibits Tongan barkcloth (ngatu) to illustrate curatorial narratives about Pacific peoples in New Zealand. I discuss the materiality and provenances of five ngatu at Te Papa, their trajectories into the museum's Pacific Cultures collection and, where relevant, how they have been exhibited. I consider the role of Tongan curators and communities in determining how, when and which ngatu will enter the collection, and how Tongan identity will be imaged by the objects. The paper concludes with a close examination of contemporary descriptive and evaluative nomenclature for ngatu made with synthetic materials, including examples at Te Papa.

**KEYWORDS:** Te Papa, Pacific Cultures collection, ngatu, barkcloths, Tonga, New Zealand, nomenclature.

## Introduction

The Pacific Cultures collection at the Museum of New Zealand Te Papa Tongarewa (Te Papa) includes Tongan barkcloths (ngatu) representative of material and technological innovation, significant historical events, and the confluence of seemingly divergent Tongan and museological politics of prestige. This paper examines their trajectories into the collection, the stories they tell and the narratives they illustrate there, and analyses Tongan systems for naming and categorising contemporary barkcloths, including those used at Te Papa.

The term polyvocal has been chosen here for its literal meaning, 'many voices', and its resonance with urban Pacific coinages such as 'polynisation'. Polynisation is a term associated with the late Jim Vivieaere, a New Zealand-based artist and independent curator of Rarotongan descent, who used it to describe the reappropriation of Polynesian ideas and

values by Polynesians, the ways in which Polynesian and Western popular culture have melded, and also the possibilities presented by these transactions (Refiti 1996: 124).<sup>1</sup> As well as being a literal descriptor of the multiple and overlapping Tongan systems of nomenclature for contemporary ngatu (see Table 1), the term polyvocal encompasses the many voices employed to talk about barkcloths that incorporate Tongan and Western materials and values, and the possibilities for Tongan vocality presented by their transaction into a display by New Zealand's national museum. Indeed, polyvocality is a key tenet of Te Papa's aim to 'provide the means [for New Zealanders] to contribute effectively to the Museum as a statement of New Zealand identity', as formalised in the Museum of New Zealand Te Papa Tongarewa Act 1992. In addition, the Act requires the board of Te Papa to 'have regard to the ethnic and cultural diversity of the people of New Zealand, and the contributions they have made and continue to make to

New Zealand's cultural life and the fabric of New Zealand society' and to 'endeavour to ensure that the Museum is a source of pride for all New Zealanders' (New Zealand Government 2005: 6).

Although the term *ngatu* is utilised throughout this paper as the generic Tongan term for decorated barkcloth, there are numerous Tongan terms for barkcloth discussed herein and in use at Te Papa. The museum is known for its use of indigenous and vernacular names for its Pacific Cultures objects, notably on its exhibition labels, in publications and throughout its online database system. Te Papa also involves indigenous communities and curators in the development of its exhibitions; the curatorial team responsible for the exhibitions discussed here included Tongans Maile Drake (former Pacific Cultures collections manager) and Kolokesa Māhina-Tuai (former Pacific Cultures curator). Pacific communities are regularly consulted as exhibitions are crafted from concept to reality and collections are augmented and updated, and this high level of participation demonstrates that the museum is viewed as a place where Pacific communities' tangible and intangible cultures can be protected and celebrated as part of New Zealand's story (Ross 2007: 2).

A Tongan story is told at Te Papa as part of a New Zealand-based contemporary and collective Pacific culture: an 'everyday' experience at 'our place'. Te Papa unabashedly exhibits the contemporary alongside the historical, sometimes to strong criticism, in its attempt to image identities for all of New Zealand's people. The ability of *ngatu* to tell a Tongan story in New Zealand hinges on the way that 'indigenous art can simultaneously proclaim difference or distinctiveness *from* the surrounding nation-state and also express that nation's identity within the world of nations. Objects, with their multivalent potentials, seem uniquely able to carry out such symbolic projects' (Myers 2004: 205). Where a New Zealand story is concerned – or exhibited – Pacific peoples are conceptualised as having expansive histories only very recently linked to the country. Where Tongans in New Zealand are exhibited, the story embraces their expansive history but is mediated by, and told through, New Zealand-based events. These narratives are often illustrated by contemporary objects made in, or linked to, New Zealand, such as *ngatu*.

The *ngatu* considered in this paper can be characterised, first and foremost, by their age. With the exception of one dating from 1953 (Te Papa FE005172), they were all made post-1990. Since the Pacific Cultures collection was first

Table 1 *Ngatu* nomenclature systems.

All hiapo (paper mulberry)	Top layer hiapo, substrate synthetic	All synthetic
<i>ngatu</i>	<i>ngatu pepa</i>	<i>ngatu pepa</i>
<i>ngatu ngatu</i>	<i>ngatu pepa laulalo</i>	<i>ngatu pepa katoa</i>
<i>ngatu mo'oni</i>	<i>ngatu loi</i>	<i>ngatu loi</i>
<i>ngatu fakatonga</i>	<i>ngatu hafekasi</i>	<i>ngatu fakapālangi</i>

delineated as a separate collection in 1993, its acquisition priorities have had a strong focus on the contemporary, including:

- Items for exhibitions, particularly those created and /or used in New Zealand by New Zealanders of Pacific Island descent, including items which show innovative use of materials or designs.
- Items that help to underpin research into the expressions of identity by Pacific people in New Zealand.
- Selected heritage items from Pacific cultures for exhibitions and education programmes or which provide context for contemporary items. (Museum of New Zealand Te Papa Tongarewa 2004b: 3)

Indeed, it is matter of pride for the museum that Te Papa's 'significant contemporary [Pacific] collections make it unique in the world. [We] are not aware of any other institution collecting contemporary [Pacific] material as actively as Te Papa' (Museum of New Zealand Te Papa Tongarewa 2004a: 3).

The *ngatu* I discuss can also be distinguished by their materiality. *Ngatu* are customarily made from the inner bark of the hiapo (paper mulberry, *Broussonetia papyrifera*), beaten into supple sheets called *feta'aki*. Starchy root vegetables, such as the *maho'a* Tonga (Polynesian arrow-root, *Tacca leontopetaloides*), manioke *koka'anga* (cassava or tapioca, *Manihot esculenta*) and *misimisi* (common flowering canna lily, *Canna indica*), are rubbed on the *feta'aki* sheets to paste them together. Concurrently, *kupesi* (motifs) are stained into the cloth with tree-bark dyes known as *koka* (red cedar, *Bischofia javanica*), *tongo* (native mangrove, *Rhizophora mangle*) and *tuitui* (candlenut tree, *Aleurites moluccana*). When the barkcloth is assembled and has dried, *kupesi* details are overpainted with *tongo* or *tuitui* bark dyes. The special type of barkcloth known as *ngatu'uli* (black barkcloth) is coloured with *tuitui* soot prepared from burned *tuitui* kernels, and *umea*, a clay obtained from

the northern archipelago of Vava'u, or more often from Anokula on the southern island of 'Eua.

However, the making of ngatu is not a static artform, impervious to change. In her important M.A. thesis completed in 1963, 'Cultural change in Tongan bark-cloth manufacture', Maxine Tamahori outlined in great detail the numerous changes that had already taken place in a complex she described as both incorporating and resisting innovation (Tamahori 1963: 213). In the mid-1980s, Tongan women in New Zealand began to explore the potential of synthetic materials and new technologies for making ngatu. Though synthetic fabrics, dyes and pastes were far removed from the plants, clay and tools that had been used to make ngatu for many centuries, these women were willing to experiment with them in order to produce ngatu in their new urban contexts. Store-bought fabrics, dyes and glues were experimented with, as were pigments produced from brick dust and soot, tyre and ironmonger's paint, and a simple paste made from flour and water.<sup>2</sup> In adherence with time-honoured practices, these new materials were made into ngatu using the techniques of the koka'anga, the communal barkcloth-making work sessions described below. Indeed, in 1999, it was suggested that, despite some minor differences in technique, 'late 18th and early 19th century technological descriptions of ngatu manufacture could apply to contemporary procedures' (Herda 1999: 152). The first synthetic ngatu incorporated a base layer of a spunbond material (trademarked varieties of which are commonly used as interfacing in the manufacture of clothing and reusable grocery bags, such as Pellon and Vilene) with a top layer of beaten bark; subsequent varieties were made entirely from synthetic materials. Both types were first known, colloquially, as ngatu pepa (ngatu made with 'paper'), and both are now made alongside plant-based ngatu in the Tongan diaspora and in Tonga itself.

Plant- and synthetic-based ngatu, though materially different, both conform to what art historian Jehanne Teilhet-Fisk (1991) termed Tongan 'sociocultural art-making ideologies'. These are performative art-making practices commensurate with Tongan social and cultural tenets, which Teilhet-Fisk (1991: 41) further defined as 'symbolic meanings, gender structures, and production decisions, as well as economic, social, and cultural factors'. Whether using beaten bark or synthetic material, ngatu-makers prepare a double-layered cloth and decorate it with Tongan motifs; each finished ngatu is the material output of individual and communal effort; each ngatu is (usually) intended as

a gift; and each ngatu embodies the potential to represent and 'regenerate Tongan people culturally' (Kaeppler 1999: 170). Despite the initial and ongoing ambivalent responses to ngatu made with synthetic materials, one of the first made in Auckland was gifted to Queen Halaevalu Mata'aho Ahome'e in the mid-1990s<sup>3</sup> and in 2006 two synthetic ngatu were presented at the funeral of King Tāufa'āhau Tupou IV (Veys 2009: 143). Prior to this, a synthetic ngatu was used under the King's casket, when his body was returned to Tonga from Auckland; this ngatu is now in the Pacific Cultures collection at Te Papa.

### *Mana Pasifika: celebrating Pacific cultures*

When Te Papa opened its doors on 14 February 1998, the first of its Pacific exhibitions, *Mana Pasifika: celebrating Pacific cultures*, was 'upbeat in tone and celebrated the persistence and survival of Pacific cultures in New Zealand' (Ross 2007: 2). *Mana Pasifika* occupied a small corner of the main exhibition hall, which necessitated a modest showcase of the extensive Pacific collections. Its historical and contemporary displays were grouped together around social and cultural themes designed to bring 'the feel of the tropical Pacific – its warmth and vibrancy – to Te Papa' (Museum of New Zealand Te Papa Tongarewa 2012) in a context that demonstrated Pacific peoples' contributions to the development of New Zealand within a paradigm of continued cultural practice:

Treasures such as jewellery, weapons, musical instruments, and fine carvings illustrate the rich Pacific past. Also displayed are contemporary items, ranging from a Jonah Lomu phonocard set to Michel Tuffery's corned-beef-can cattle sculpture.

You can see how, over the years, Pacific peoples have adopted new materials and blended Pacific and European styles. But objects such as fine mats, tapa, tivaevae (Cook Island quilts), and Fijian tabua (whale-tooth ornaments) remain at the heart of their cultures and are as important on ceremonial occasions today as they were a hundred years ago. (Museum of New Zealand Te Papa Tongarewa 2012)

This juxtaposition of contemporary pieces with the historical collections was not without its detractors; a review of the exhibition condemned the display of historic artefacts with their contemporary substitutes, focusing on a Tongan example:



Fig. 1 Ngatu launima, c. 1953, barkcloth, 22730 × 4340 mm. Artists unknown (Te Papa FE005172). *In situ* at *Mana Pasifika*, Te Papa, 2003 (photo: Te Papa). This ngatu was made to celebrate the visit of Queen Elizabeth II to Tonga, and was later placed under the casket of the late Queen Sālote Mafile’o Pilolevu Veiongo Tupou III when her body was returned to Tonga from Auckland in 1965.

Most offensive of all, a deeply patinated 19th-century kava bowl from Tonga is forced to share its glass case with a plastic ice cream container. All over the world, marvellous indigenous carving and pottery traditions have died, thanks to the importation of cheap aluminium and plastic containers. This is hardly something to celebrate, and that aged bowl deserves the dignity of an attention undistracted by its tacky, modern surrogate. (Dutton 1998: 23)

However, by exhibiting the ice-cream container and kava bowl together, Te Papa’s curators were not suggesting that kava circles were held around ice-cream containers, nor that ice-cream containers had replaced kava bowls for this purpose; rather, they were demonstrating a continuum of practice, whereby an ice-cream container can be used in the production of koloa (‘things that one treasures’), including ngatu. Tongan barkcloth-makers often use plastic ice-cream containers as receptacles for their dyes and pastes where formerly they used carved wooden dishes such as kumete and kava bowls.

When the *Mana Pasifika* exhibition was refreshed in 2003, it included a huge ngatu that was displayed in a tightly contained way. A Cook Islands drum set at the centre of the

original exhibition was replaced with a newly acquired Tongan drum set propped on a bale of ngatu, to show how drums might be presented in Tonga (Fig. 1). The display of the Tongan items was guided by Maile Drake, who folded the ngatu in a traditional Tongan way, with its outer edge exposed to show the numbered border that ‘counts’ the sections of a ngatu. This method of folding exhibits the scale of the ngatu through the knowledge of its size indicated by its borders.

The ngatu displayed was a launima made in 1953 (Te Papa FE005172) to celebrate the visit of Queen Elizabeth II to Tonga, and used in 1965 under the coffin of the late Queen Sālote Mafile’o Pilolevu Veiongo Tupou III (Queen Sālote) when her body was returned to Tonga after she died in Auckland. A launima is a ngatu comprising 50 numbered sections known as langanga, and is approximately 24 m long. Some ngatu called lautefuhi are 100 langanga long, and, owing to the methods by which they are constructed, ngatu can be made larger still. Lengths of ngatu have long been used to line pathways for members of the Tongan Royal Family to walk along and even drive their cars on. This



Fig. 2 Ngatu launima, c. 2006, barkcloth and synthetic fabric, 25600 × 4000 mm. Artists unknown (Te Papa FE012060). Presentation ceremony at Te Papa Marae, 27 February 2008 (photo: Te Papa). This ngatu was placed under the casket of King Tāufa'āhau Tupou IV when his body was returned to Tonga from Auckland in 2006.

is a way of honouring the Royal Family and also of containing their personal *mana* (personal potency or power), making the road safe for commoners to walk on afterwards (Veys 2009: 141). Hixon (2000: 199) described Queen Sālote's strict adherence to this protocol when in Tonga: 'at ceremonials she stepped on lengths of *tapa*, her feet not touching the earth', and the streets were lined with ngatu for her funeral.

For the visit of Queen Elizabeth II to Tonga in 1953, ngatu was prepared in great quantities to cover the paths along which she and Queen Sālote walked. According to Kenneth Bain (1954: 34), former Secretary to the Government of Tonga, 'Each village of Tongatapu made fifty yards of *tapa* [ngatu] and twenty *kiekie* [waist garments]; in all there was over a mile of *tapa*'. Afterwards, the ngatu was divided into small pieces and given to the British sailors at Queen Sālote's instruction, as a sign of respect for Queen Elizabeth II, whose exalted status was acknowledged and

appreciated by Queen Sālote (Bain 1954: 62). Because the monarchs had walked on these ngatu and exposed them to their *mana*, the ngatu could not be allowed to circulate in the Tongan gift economy, but by their division and distribution this *mana* could be safely contained and distributed, and the exalted status of the queens preserved. Unlike most of the ngatu made and used for this visit, the launima now at Te Papa was kept intact and in the royal stores, before it was used again in close proximity to Queen Sālote herself, and thereafter gifted to the Royal New Zealand Air Force (RNZAF) by the Tongan Royal Family. In 1968, the receiving officer, Flight Lieutenant McAllister (the pilot of the plane that carried the Queen's body back to Tonga), presented the ngatu to the Dominion Museum (Te Papa's predecessor).

Mirroring the events following Queen Sālote's death, in 2006 a ngatu (Te Papa FE012060) and two fine mats that had been placed under the casket of the late King Tāufa'āhau Tupou IV (King Tāufa'āhau) during the return of his body

to Tonga from Auckland on an RNZAF C-130 Hercules were donated to the 40 Squadron RNZAF by his wife, Queen Halaevalu Mata'aho. At the time of gifting, the Tongan Royal Family suggested that the ngatu (a launima made with a base layer of synthetic fabric) be cut into smaller pieces and distributed among the squadron (S. Mallon, pers. comm., October 2010). This is commensurate with the division of the pieces walked upon by Queen Sālote and Queen Elizabeth II, and befits the rank of King Tāufa'āhau, whose own mana was released upon his death (Veys 2009: 140). Operating within a Western paradigm but with the same interest in preserving the status of the late King, 40 Squadron's leader wished to keep the ngatu intact rather than cut it up – an act that may have seemed to denigrate its prestige and that of the late King. The squadron's leader sought instead to place the ngatu into a museum, a Western place of honour; it was donated to Te Papa during a formal ceremony in 2008 (Fig. 2). Tongan support of this initiative and attendance at the presentation ceremony further honoured the role the RNZAF had played in returning the deceased monarch to Tonga, and demonstrated a skilful navigation of transnational politics of prestige.

It can only be surmised that in 1965, as in 2008, a suggestion may have been made that the ngatu used under Queen Sālote's casket be cut into pieces and distributed among the RNZAF crew. That both of these ngatu survive intact is evidence of a Tongan engagement with Western politics of prestige and honour. On each occasion, the RNZAF chose to honour and keep the ngatu as a historical document of sorts at the Museum of New Zealand, and their decision to do so was upheld and supported by Tongan officials. Indeed, the value of ngatu to mediate not only status and kinship relationships but also complex intercultural ones has long been utilised in situations where they are gifted to non-Tongans. These include the multifaceted historical exchange relations between Tonga, Fiji and Samoa, and the first encounters with European visitors to Tongan shores (ngatu are first mentioned by the Dutchmen Willem Schouten and Jacob Le Maire in 1616, but the oldest ngatu extant are from Captain Cook's voyage of 1773–74). In time-honoured fashion, the gifting of the two twentieth-century royal launima some 40 years apart instantiated the relationship between the Tongan Royal Family and the RNZAF, and their presence at Te Papa, the Museum of New Zealand, can be read as an instantiation of the relationship between the nations of Tonga and New Zealand.

In *Mana Pasifika*, the tightly constrained display of the launima associated with Queen Sālote and Queen Elizabeth II is a further example of Tongan agency at Te Papa. When Maile Drake chose to exhibit the launima folded, she asserted a Tongan mode of presentation commensurate with layered gifts but at odds with Western gallery norms. Tongans often present significant gifts folded into bundles with the comment, 'Koe me'a si'i si'i pe' ('It's just something small'). This meaning is encompassed by the proverb 'Tu'a ē sino kae 'eiki ē fekau' ('A commoner who bears a chief's message'), alluding to something good that appears less impressive on the outside (Māhina 2004: 87). For Tongans, rather than diminishing its appearance and the opportunity to appreciate it, a beautifully folded ngatu can evoke māfana, or 'warmth of heart', an emotional response to Tongan aesthetic achievement. In this instance, māfana is evoked not solely in response to how a ngatu looks but also how well it performs when it is presented; the visual impact and three-dimensionality of ngatu is enhanced when it is used to line streets, carried as rippling sheets held high by lines of women, or presented, as here, in a carefully folded bundle.

It is ironic, then, that the exhibition of a bundle of ngatu may have been perceived as diminishing the value of the object because it diverged from the now classic mode of display where barkcloth are draped over poles and suspended from walls and ceilings. As Herda (2002: 143) has noted with regard to Cook Islands tivaevae (quilts), when tivaevae were exhibited folded in art galleries in New Zealand the makers were angered by the perception that 'the tivaevae that were hung were deemed "better" than those that were folded or piled'. In contrast, when displayed folded at Te Papa, the launima evoked a specifically Tongan type of aesthetic appreciation, speaking volumes to a Tongan audience.

### *Paperskin: the art of tapa cloth*

The launima made for Queen Sālote and Queen Elizabeth II had a more recent outing at the *Paperskin: the art of tapa cloth* exhibition in 2010.<sup>4</sup> A new installation method utilising small but powerful magnets anchored the 22.7 m-long and 4.3 m-wide ngatu to a large curved wall, where it effectively embraced all of the other barkcloths on display, dominating the space and imaging both Tongan society and the Tongan relationship with the British Royal Family (Fig. 3). This was the first time such a large ngatu had been displayed in its entirety in a gallery in New Zealand. The display of the launima in this way referred back to the way



Fig. 3 Ngatu launima, c. 1953, barkcloth, 22730 × 4340 mm. Artists unknown (Te Papa FE005172). Installation in progress for *Paperskin: the art of tapa cloth*, Te Papa, 2010 (photo: Te Papa). This is the same ngatu as shown in Fig. 1.

it had been used in Tonga, stretched out to make a pathway for the two monarchs to walk along.

When Tongans line pathways with ngatu, the ngatu not only contain the mana of those who walk upon them and evoke a māfana response, they also embody collectivity. Anthropologist Nicholas Thomas explains how collectivity can be manifest through the malleability of barkcloth:

Tapa was presented not only in bundles that were wrapped around individuals, but also sometimes in long strips that were carried by dozens of individuals in line; and in some cases, long and wide strips were laid along the ground, especially for those of high rank to walk along.

These uses of the material are significant because, in many parts of the Pacific, the metaphor of the path is fundamental to the imagining of relations of alliance and affinity. The long strip of cloth gives material form to the path, but does more than make a relationship visible: its presentation by a long line of people also makes their collective action, and their very collectivity, manifest. Neither society in general nor a particular group such as a clan simply exist; a sense of collectivity cannot be present in people's minds unless a group somehow appears and acts

as a whole ... It is in this context that collective products, such as large pieces of barkcloth, are especially important. The art form is part of a process of self-revelation and has a particular importance at a moment of presentation, when everyone's efforts converge; at other times, the cloth's significance may lie in the prospect or memory of such ceremonial events, or in a particular history of exchange-paths. (Thomas 1995: 143)

The pathways formed by ngatu are most significant when they are constructed for members of the Tongan Royal Family, and Tongan collectivity is manifest in the ngatu laid out to protect and respect their monarchs. A similar pathway was evoked by the launima exhibited in *Paperskin*. While the significance of the launima lies primarily in its evocation of the memory of a significant ceremonial event and its instantiation of the relationship between the two queens, its display in *Paperskin* also facilitated an 'imagining of relations of alliance and affinity' (Thomas 1995: 143), the history of its own particular exchange-paths and an imaging of Tongan identity.

## *Tangata o le Moana: the story of Pacific people in New Zealand*

In October 2007, Te Papa celebrated the opening of its newly refurbished Pacific galleries with performances, artists' talks, a Pacific market and a new long-term exhibition called *Tangata o le Moana: the story of Pacific people in New Zealand*. This exhibition tells the stories of Pacific cultures in New Zealand through a chronological framework that assesses the highs and lows of Pacific lives lived here. It engages with challenges to Pacific identities, such as the 'dawn raids' that targeted Pacific overstayers in New Zealand during the 1970s, and highlights New Zealand-based and New Zealand-assessed Pacific achievements, such as Tana Umaga's appointment as the first Pacific captain of the All Blacks (Teaiwa & Mallon 2005: 209). *Tangata o le Moana* continues Te Papa's approach of juxtaposing the contemporary with the historical, in recognition of a Pacific conceptualisation of time. This is in accordance with Tongan notions of the time continuum, in which the present is conceived as a dynamic space in relation to both past and future.

Installed high on one wall of *Tangata o le Moana* is a ngatu pepa made in 2000 by Kulupu Taliangi (Tongan Langafonua Tamaki Community Centre), Auckland, New Zealand (Te Papa FE011603; Fig. 4). Made from two layers of Vilene decorated with red-brick dust and black ironmonger's paint, the ngatu has wide white borders on all sides containing repeated motifs rather than the numbered sections common to a ngatu. These borders and motifs are markers of a special type of Tongan barkcloth called a fuatanga. Historically, these were high-ranking barkcloths pieced together and decorated differently to other ngatu.

Tongan barkcloths are pieced together and simultaneously coloured and decorated by groups of women at a koka'anga. This process takes its name from koka, the brownish-red dye most commonly used to make ngatu, and loosely translates as 'the adding of koka' (Tamahori 1963: 90). The work session convened to make a ngatu is called a koka'anga hangatonu (straightforward adding of koka), and that convened to make a fuatanga is a koka'anga fuatanga (adding of koka to a fuatanga). For both, kupesi rubbing tablets are attached to the surface of a long, usually convex worktable called a papa koka'anga, then feta'aki strips are laid over them, to make the base layer, or laulalo. Women sit on each side of the papa koka'anga, facing their work partners, with a woman at each end neatening the edge of the barkcloth as it is made. The surface of the feta'aki is pounded with parboiled root vegetables, and a wad of

feta'aki (tae) dipped in dye is rubbed across the cloth to reveal the raised kupesi patterns. The strips of feta'aki that will make the top layer, or lau'olunga, are then placed over the laulalo and at right angles to it, giving strength to the completed cloth, and the whole is rubbed with dye again. This section of barkcloth, equivalent to two langanga, is then lifted to one side of the papa koka'anga to rest in the laps of the women seated there while the next section is made and adhered to it.

When a koka'anga hangatonu is convened, this process is continued until the ngatu reaches the desired length; a standard length made in a contemporary koka'anga hangatonu is a launima comprising 50 langanga. The kupesi design tablets are arranged to leave a clear border at either end of the papa koka'anga, and it is this border that becomes the numbered sides of a completed ngatu. The strips of feta'aki that are pasted together to become the bottom layer of a ngatu are placed lengthwise along the papa koka'anga, while the strips placed on top are at right angles to these. No ngatu is wider than the papa koka'anga on which it was made, but there is no limit to its potential length.

In the koka'anga fuatanga a barkcloth is constructed using the same techniques and materials as in a koka'anga hangatonu, but the constituent layers and sections are at right angles to the orientation of those used to make a ngatu. The lower layer of feta'aki strips are placed *across* the papa koka'anga and the top layer is placed *along* its length, and langanga are made in this way until the desired *width* of the fuatanga has been achieved.<sup>5</sup> Whereas each pass over the papa koka'anga during a koka'anga hangatonu produces a ngatu section that is two langanga long and up to (but never more than) the width of the papa koka'anga, during a koka'anga fuatanga each pass over the papa koka'anga adds two ngatu langanga to the *width* of the fuatanga. One standard fuatanga langanga (measured, like a ngatu langanga, along the length of the completed barkcloth) is eight ngatu langanga wide and the length of the papa koka'anga on which it was made. This measurement is called fuatanga toku valu; in the past, fuatanga langanga have been made with sections up to 15 ngatu langanga wide, a measurement known as toka taha nima (Tamahori 1963: 193; Fanua 1986:16).

After each fuatanga langanga is completed, it is shifted off one *end* of the papa koka'anga. The process then begins again, with eight more langanga pasted together and simultaneously joined to the side of the fuatanga langanga already made. Fuatanga can thus be wider than the papa koka'anga on which they are made; indeed, there is no limit to their width or length. Four 125-section fuatanga, called lauteau,



Fig. 4 Ngatu pepa, 2000, Vilene, 6600 × 4600 mm. Artists from Kulupu Talianga (Tongan Langafonua Tamaki Community Centre) (Te Papa FE011603) (photo: Te Papa).

were made, respectively, by the women of Fu'amotu, Tatakamotonga, Lapaha and Holonga for the 1947 joint royal weddings of Fatafehi (later known by the title Prince Tu'ipelehake) and Melenaite Tupoumoheofo Veikune, and the Crown Prince (who came to the throne in 1965 as King Tāufa'āhau Tupou IV, but in 1947 was still called Tupouto'a Tungī) and Halaevalu Mata'aho 'Ahome'e; the combined length of these fuatanga lauteau was over a mile (Tamahori 1963: 195).

Alongside the historical differences in their production, ngatu and fuatanga are visually discrete categories. Ngatu designs run in rows across the width of the barkcloth, separated by the measuring lines that mark langanga. These langanga markers in turn intersect with lines running the length of the ngatu, separating the decorated body of the barkcloth, which contains the named motif, from the white border. In contrast, fuatanga designs run in rows down the length of the barkcloth, and series of lines across its width mark its langanga sections and measure its size. Where ngatu have distinctive numbered borders, fuatanga have wide white borders containing kupesi associated specifically with the fuatanga form.

Contemporary fuatanga are often made at a koka'anga hangatonu in the same way as ngatu, and therefore are only as wide as the papa koka'anga on which they are made, but the visual distinctions are maintained. The term fuatanga is now used to designate a ngatu that is square, with designs running in longitudinal rows and large borders containing fuatanga kupesi, demonstrating an expansion of the fuatanga category and term to accommodate contemporary forms. In this way, Tongan nomenclature is preserved through the classification of contemporary barkcloths by their appearance and functionality, using terms that were previously applied to discrete historical forms. This also keeps the knowledge of some barkcloth types alive, even if the historical forms themselves are no longer being made, or are manufactured using different techniques and materials. These fuatanga continue to rank more highly than ngatu and are appropriate gifts at weddings and funerals.

The ngatu pepa on display in *Tāngata o le Moana* has a central panel containing elongated diamonds called kalou, which represent seed pods; groups of dots called tukihea; and stylised plant motifs (Kooijman 1972: 326). Its border motifs are specific to the fuatanga form and include pairs of tall triangular motifs extending from the coloured centre of the piece, their top points each capped with a pair of spiral curls called mui moa ('chickens' tails'); and pairs of squat isosceles triangles joined together at their widest angle, called

vaka tou ('double-hull canoe'). These motifs allude to the linking of two families or lineages: the vaka tou represents the families, with the more highly ranked of the two featuring as the larger hull; and the mui moa are a heliaki, or metaphor, for female generativity.<sup>6</sup>

Quite aside from the story alluded to by its motifs, which are not the focus of this paper, this ngatu pepa speaks of Pacific continuity in new environments through art. As part of the broader narrative of the exhibition, the ngatu pepa focuses attention on the New Zealand experiences of Tongans: it is a picture of Tongan life in New Zealand. The wall label identifies the barkcloth as a 'Ngatu Pepa (Tongan "barkcloth" made with Vilene)', and explains:

Ngatu (Tongan barkcloth) is often given or exchanged on special occasions such as weddings, funerals, and 21st birthdays. Tongans in New Zealand continue to make ngatu but experiment with locally available materials. The lengthy process of pounding barkcloth is no longer necessary because of synthetic material. Here the Kulupu Talianga women's group have substituted the bark and natural dyes of ngatu with synthetic fabric and paints.

The label further explains the basic context in which ngatu are made, and refers to their plant-based construction through a description of how this synthetic version differs. It firmly locates the object in New Zealand.

Maile Drake sourced this ngatu pepa directly from its makers, who were proud to have their work chosen for acquisition and exhibition by New Zealand's national museum because they were cognisant of the status the purchase would impart to them there (M. Drake, pers. comm., May 2007). Its makers, Kulupu Talianga, engaged with the museum as an institution of considerable status in New Zealand, and chose to be represented by their ngatu pepa in this paradigm. Te Papa works towards its goal of being 'our place' in part through acquisitions such as this, which allow contemporary New Zealand-based Tongans to see their innovations and therefore themselves exhibited as part of New Zealand's national identity.

## Examples from Te Papa's collection rooms: two distinctly contemporary ngatu

In April 2002, I visited the Pacific Culture collections at Te Papa and viewed two large ngatu, one of which is due to be installed in *Tāngata o le Moana* when the exhibition is refreshed (the textiles were planned to be refreshed every six

months, but the ngatu pepa has been *in situ* for much longer (S. Mallon, pers. comm., April 2008)). Kolokesa Māhina-Tuai (then acting curator Pacific Cultures) showed me to a storeroom where two ngatu had been prepared for viewing. They had been unrolled from their storage rolls onto a wool-edged pandanus mat on the concrete floor, as they were too large to be displayed on a table.

The first contemporary ngatu I was shown seemed a very obvious example of a ‘reconditioned’ ngatu (Te Papa FE11605; Fig. 5). This ngatu is a plant-based ngatu‘uli (black ngatu) made in the fuatanga form, with white borders on all sides containing fuatanga motifs, including mui moa and vaka tou. Ngatu‘uli are Tongan barkcloths with distinctive panels of heavy black pigmentation. Where the more commonly made ngatu tahina, or ‘white barkcloth’ (usually shortened simply to ngatu), have central panels of decorative motifs in brown overlaid with darker embellishments, ngatu‘uli are usually rather austere. They are a chiefly form of barkcloth, historically made only for nobility and members of the Tongan Royal Family, and used primarily as wedding and funeral presentations. Ngatu‘uli are decorated with umea clay pigment overlaid with tuitui soot, the most labour-intensive and time-consuming pigment to produce in the Tongan ngatu-maker’s repertoire. Tuitui kernels are burned on a fire under a suspended pot, upon which the fine soot collects and hangs in strands. The formalities associated with the production of this soot are complex, and ngatu-makers believe that they must follow them in order for the process to be successful.<sup>7</sup> Tuitui soot is either dissolved in koka dye to make a black dye, or sprinkled onto barkcloth and rubbed in with a koka dye-soaked pad or a light application of coconut oil.

The difference between the Te Papa ngatu‘uli and many others I have seen concerns the way that the coloured centre of the fuatanga has been decorated: it is mottled from mid-brown to near-black, with a pre-existing pattern still visible through the dark pigment. According to the acquisition notes in the Pacific Cultures catalogue made by Janet Davidson, former senior curator of Pacific Cultures, and reproduced in Te Papa’s *Collections online* database, the piece was made as a fuatanga ngatu tahina (white fuatanga) and later converted to a ngatu‘uli (Museum of New Zealand Te Papa Tongarewa n.d.). This is therefore an example of the recycling or ‘upcycling’ of plant-based ngatu to meet changing obligations. Though ideally ngatu‘uli will be constructed from fresh fetaki and stored for use at occasions such as weddings and funerals, there are some instances when they must be prepared more quickly than time will allow.

One such occasion was the sudden death of the Honourable Heu‘ifanga ‘Ahome‘e in December 1996. To meet the requirements of her funeral, a very large ngatu‘uli was pieced together from sections of ngatu tahina joined at their ends and painted over with a uniform central panel of tuitui.<sup>8</sup> The borders of this ngatu‘uli are irregular, and the kupesi used to decorate the individual ngatu tahina can be seen through the black pigment, betraying the means by which it was hurriedly made (Figs 6 and 7).<sup>9</sup> The black pigment is shiny, and has little pieces of grit stuck to its surface, suggesting it was made by mixing tuitui and, probably, ground-up burned tuitui kernels with koka dye.

The ngatu‘uli of Heu‘ifanga ‘Ahome‘e is particularly interesting and important because it records a pragmatic solution to the problem of how to honour a deceased member of the Tongan hou‘eiki (nobility) appropriately. The ngatu‘uli is likely to have been used to demarcate a pathway along which her coffin travelled to her final resting place, to contain her mana and make the road safe to walk on after her funeral. In addition, the importance of warming this pathway with ngatu‘uli relates to the metaphorical association of Tongan people with the Earth (both known as fonua), and the need to facilitate the transition of the deceased into the realm of the ancestors: ‘As the saying goes, ‘Oku ‘eiki ‘ae taba hé ene mate: “at death, one becomes a chief”’ (Young-Leslie 1999: 79).

Te Papa’s upcycled ngatu‘uli also has an interesting background. It is recorded as having been given by a woman to her brother as a special gift. Anthropologist Heather Young-Leslie (1999: 259) observed that such gifts were sometimes exchanged between siblings to celebrate the New Year, when men gave their sisters a gift of food (ngaue) and women gave their brothers a mat or piece of ngatu. Davidson recorded that this type of gift was called a kafu (which translates as ‘blanket’), and is of special significance in Tongan society. This fuatanga was made in Tongatapu in 1990 and presented during a visit to New Zealand. In 1996, when the woman made a return visit to New Zealand, she took the fuatanga home with her and had it made into a ngatu‘uli by the Kautaha Hoosi Tea [*sic*] in Fua‘amotu. In 1997, the barkcloth, now a ngatu‘uli, was returned to New Zealand as a more valuable gift to her brother’s family. It was acquired by Te Papa in 2001. Though not visually impressive, owing to its untidy borders and the inconsistency of its black pigmentation, this is an interesting piece, demonstrative of Te Papa’s bold acquisition strategies. Like the upcycled ngatu made for the sudden death of Heu‘ifanga ‘Ahome‘e, it demonstrates the potential for ngatu to be remade in order



Fig. 5 Ngatu'uli (black tapa cloth), made 1990 (original artist(s) unknown), redecorated 1997 by Kautaha Hoosi Tea [*sic*] in Fua'amotu, barkcloth, 6400 × 5040 mm (Te Papa FE011605) (photo: Te Papa).



Fig. 6 Detail of Ngatu'uli of the Hon. Heu'ifanga 'Ahome'e, c. 1996, barkcloth, 19800 × 4200 mm. Artist unknown. *In situ* at FHE Galleries, Auckland, 2010 (photo: Billie Lythberg).



Fig. 7 Ngatu'uli of the Hon. Heu'ifanga 'Ahome'e, c. 1996, barkcloth, 19800 × 4200 mm. Artist unknown. *In situ* at FHE Galleries, Auckland, 2010 (photo: Billie Lythberg).

to shift their value and use. Significantly, there is no Tongan term for this; rather, the use of Tongan terminology shifts in response to changes in appearance and potential for use. What was formerly a fuatanga is now a ngatu'uli at Te Papa, and what were formerly several ngatu tahina sections are now a ngatu'uli at the Fogarty, Hojsgaard and Entwisle (FHE) Galleries in Auckland.

The second ngatu I was shown in Te Papa is one of the museum's signature pieces of synthetic ngatu. Made in Upper Hutt and called a ngatu tupenu Vilene (which translates loosely as 'decorated Vilene barkcloth') by its makers (Fig. 8), it features prominently in some of Te Papa's publications, an indication of its significance within the Pacific Cultures collection.<sup>10</sup> Acquired in 1997, it was the first of several synthetic ngatu that have been purchased by the museum. Maile Drake assisted with its purchase and recalled the interest that Te Papa's curators had in the new materials and technologies being explored by makers of ngatu in Upper Hutt, and the enthusiasm with which their purchase was met by the ngatu's makers (M. Drake, pers. comm., May 2007).

The ngatu tupenu Vilene is half the size of a normal launima, and was made in 1996 by members of the (now defunct) Ilo Me'a Fo'ou (New Creations) Tongan Women's Group, Upper Hutt, New Zealand. It is recorded as being made from Vilene, red-brick paint and black ironmonger's paint. It shows evidence of having been made with kupesi, but it has a peculiarly flat and uniform look to it; elaborately decorated, it nonetheless looks like a woven and printed textile rather than a hand-made and hand-decorated barkcloth. The flat appearance of its surface seems to have been produced by the peculiarities of its materials, and the slight incompatibility of Vilene and the pigments used on its surface.

The ngatu tupenu Vilene contains 25 numbered langanga decorated with various motifs: the stylised bat-like motif is a reference to Tonga's sacred flying fox colonies at Kolovai and Ha'avakatolo in Tongatapu; the three large dots with simplified leaves are known as tukiheia; the strips of the vane-swastika motif are known in Tonga as manulua ('two birds'); and the elongated diamond called kalou



Fig. 8 Ngatu tupenu Vilene, 1996, Vilene, 12210 × 4600 mm. Artists from Ilo Me'a Fo'ou (New Creations) Tongan Women's Group, Upper Hutt (Te Papa FE010743) (photo: Te Papa).

represents seed pods (Kooijman 1972: 326). Unusually for a ngatu, written across its top border is the word 'ANGA', meaning 'way of being', complemented by a personal name written in capitals on its bottom border, 'IOANE', which identifies it with a particular family.

This piece is especially interesting – and was possibly unique at the time – because of the aims of the women who made it. In 1996, a group of 12 Tongan women got together and began talking about what they could use to re-create a koka'anga in Upper Hutt. They trialled different synthetic fabrics and pigments, and drew on the experience of a young relative at Whitireia Polytechnic, who eventually supplied them with three custom-mixed commercial dyes.<sup>11</sup> The women then made a fuatanga for each member of their group during the first year of their koka'anga, and a launima each in the second year, using synthetic materials and flour and water paste, but incorporating plant-based design tablets known as kupesi tui. In this case, the recipient, who was also involved in making it wished to have two half-sized launima instead of one large one – one to keep and one to sell, ideally to Te Papa:

We want to be recognised, so we made it and took it to Te Papa. We made it because we wanted them to buy it. We believe in the history of what we did back then. We didn't use the other ngatu we made for exchanges, we kept them to give to our children. Most of my friends and family visit Te Papa whenever they are on display because it's like seeing ourselves.<sup>12</sup>

This is clearly a significant move away from the tradition of making ngatu as ceremonial objects and gifts. In this way,

the ngatu tupenu Vilene differs from the ngatu discussed above, as it was made self-consciously as art and for sale, and has a name on it that might effectively be identified as an artist's or owner's signature. Whilst ngatu are sometimes modified to increase their value or for sale to other Tongans, they are seldom made specifically for sale to a civic collection,<sup>13</sup> and the intangible value afforded them as items made and used for exchange is generally desired as part of their provenance. However, at Te Papa, where the focus is upon items 'created and/or used in New Zealand by New Zealanders of Pacific Island descent, including items which show innovative use of materials or designs' (Museum of New Zealand Te Papa Tongarewa 2004b: 3), this move away from production for exchange seems immaterial.

The ngatu tupenu Vilene is thus an exemplar of the engagement of Tongan women with a museum in the Tongan diaspora and the sense of community involvement and acknowledgement afforded by the politics of prestige as they play out at Te Papa. The relationship between the women of Ilo Me'a Fo'ou and Te Papa was, and is, immediate because of the ngatu tupenu Vilene. Ilo Me'a Fou'ou used their own funding to prepare their ngatu, unlike many of the groups operating under the auspices of the Langa Fonua 'a Fafine Tonga 'i Aotearoa [*sic*],<sup>14</sup> which receive grants from their local councils. A spokeswoman for the group explained that it was very expensive for them to prepare the ngatu and fuatanga they made, and that they valued them highly because of their personal investment in materials. The agency of the group expressed through their experimentation, and through the direct sale of their work to Te Papa,

Table 2 Stand-alone terminology.

Papalangi gnato	European linen (nineteenth-century term)
ngatu kaliko	decorated calico
ngatu tupenu Vilene	decorated Vilene cloth ngatu

is further expressed through their insistence that the ngatu they made be referred to not as ngatu pepa but as ngatu tupenu Vilene, so the quality of the materials is described but not denigrated as low-value ‘pepa’. Tupenu means ‘cloth’ in general, and can also be used to designate a Tongan wrap-around garment. The use of the term by Ilo Me’a Fo’ou Tongan Women’s Group recalls the functional use of ngatu as cloth and also refers to the use of Vilene and other spunbond materials in the manufacturing of clothing (see Table 2 for stand-alone ngatu terms that refer specifically to European cloth).

## Contemporary ngatu nomenclature

The Tongan terms now used to describe and differentiate between varieties of synthetic ngatu offer insights into how they are valued or conceptualised. Applying the theoretical basis of an ethnological study of Bolivia (Nash 1992) to Tonga, anthropologist Kerry James (1998: 113) has argued that, ‘in periods of social transformation the process of change itself might be contained in the interpretations of the actors as to what is happening’. Here, the actors are makers and users of ngatu, interpreting changes in the materiality of their barkcloth by classifying them in metaphorically descriptive ways. The resulting Tongan nomenclatures describe and categorise both plant-based ngatu-making and material and technological innovations. Where formerly ‘ngatu’ was sufficient to describe all Tongan decorated barkcloth (and certainly remains used in this way), there are several sets of terms concurrently in use to distinguish between ngatu made from plant-based materials and those made from synthetics, some of which index the geographical origins of contemporary ngatu materials.

When synthetic cloth was first introduced as a material from which to make the base layer of ngatu, the resulting textiles were simply called ngatu pepa by Tongans in both Tonga and New Zealand. The suffix pepa, meaning ‘paper’,

denotes the similarity between spunbond fabric such as Vilene and heavy paper. The term ngatu pepa was developed by Tongan ngatu-makers because they wanted this innovative cloth to have a ‘traditional Tongan name, rather than a transliteration of the name for the material they were using’ (M. Drake, pers. comm., May 2007). Spunbond materials are trademarked to different companies and therefore exist under a multitude of different names. ‘Pepa’ is applied to all of these, and the ngatu made from them. Thus, the first plant-based/synthetic distinction drawn by Tongans was between ngatu, made completely from hiapo, and ngatu pepa, made with a top layer of hiapo and a base layer of synthetic cloth. These are the classifications commonly used by researchers who present synthetic ngatu forms as viable koloa within the Tongan gift economy (Drake 2002; Addo 2004).<sup>15</sup>

When ngatu began to be made entirely from spunbond fabric, rather than the cloth being used only as a substrate for a layer of hiapo, these double-layered synthetic ngatu were also called ngatu pepa. Later, to distinguish between the two types of ngatu pepa, the terminology expanded to describe what were now three different types of ngatu according to their material make-up. In what might be considered the most literally descriptive set of terms, this system classifies plant-based ngatu as ngatu ngatu. When the old term for decorated barkcloth, ngatu, is repeated, it creates a word that literally describes ngatu made with two layers of hiapo. The same layering of words is used to describe ngatu made with synthetic materials. In Auckland and Wellington, the two most common varieties of synthetic ngatu are referred to as ngatu pepa laulalo (made with a hiapo upper layer and a synthetic lower layer or laulalo) and ngatu pepa katoa (made with both layers of synthetic material, katoa meaning ‘completely’) (Addo 2004). A further variety, not commonly made, consists of two layers of calico cloth pasted together and decorated with kupesi; this is known as ngatu kaliko. Tongan dance costumes in New Zealand, formerly made from ngatu, are sometimes made from ngatu kaliko, or from stencilled canvas, but despite the moniker neither of these is properly conceptualised as ngatu like the varieties under discussion here.

In contrast with those terms already explained above, some of the terminology that has developed in Tonga to differentiate the plant-based ngatu from those made with synthetic components deliberately connotes a valuation of plant-based ngatu over and above that given to the synthetic forms. In 2004, the prevalent terminology being used in

Tongatapu referred to just two forms of ngatu: ngatu mo'oni and ngatu loi. This terminology had been in use for at least a decade prior to that: when Adrienne Kaeppler, curator of Oceanic Ethnology at the National Museum of Natural History at the Smithsonian Institution and renowned Tongan material culture specialist, first saw ngatu pepa laulalo in Tonga in the mid-1990s, it was already being called ngatu loi (A. Kaeppler pers. comm., August 2006).

Within this system, plant-based ngatu are called ngatu mo'oni, which means 'real ngatu' (the term mo'oni may be translated as 'real, actual, genuine, pure, true, truth' (Tu'inukuafe 1992: 197)). In contrast, ngatu loi is commonly translated by Tongans as 'fake ngatu', with loi meaning 'lie, untruth, humbug' (Tu'inukuafe 1992: 183). Any ngatu made with a synthetic layer can be referred to as ngatu loi. 'I call it that way since it's not proper,' one woman in Tongatapu explained to me. This system ignores the distinction between ngatu pepa laulalo and ngatu pepa katoa, calling both 'fake'. Whereas ngatu with a top layer of hiapo might seem more 'real' than ngatu made entirely from synthetics, the Tongan nomenclature reveals the dishonesty perceived in a barkcloth that seems plant-based on the surface (especially when folded for presentation) but is hiding a base layer of synthetics.

Ngatu loi is used in New Zealand as an insult. To say something or someone is loi is to suggest that they are less than they appear to be. There is an equivalent use of loi used for people. If someone is said to be Tonga loi it means they are Tongan but don't speak Tongan. A Pālangi loi is a Tongan who acts like a fake Pālangi. These are complex terms, with derogatory meanings, and their application to ngatu is indicative of a general dissent about the authenticity of ngatu pepa and its use by Tongans. (M. Taumoeofau, pers. comm., April 2006)

Clearly, these terms go beyond the descriptive, assigning a value judgement to the material make-up of plant-based ngatu and newer forms of ngatu produced from synthetic materials.

Yet another set of terms is used to describe plant-based and synthetic ngatu. The terms ngatu fakatonga, ngatu fakapālangi and ngatu hafekasi, used primarily in Tongatapu, again denote the layers of cloth from which contemporary ngatu are constituted, but they do so in accordance with what might be considered geographical and even biological indexing. Ngatu fakatonga (meaning 'ngatu from Tonga') are made from hiapo and are therefore 'Tongan'; ngatu fakapālangi are made from two layers of synthetic material and are therefore 'Pālangi' or 'European'; and ngatu hafekasi

are made from a layer of hiapo and a layer of synthetic material, and are therefore 'half-caste' or 'half-Tongan and half-European'.

As an example of simple geographical indexing, the terms fakatonga and fakapālangi are relatively unproblematic, assigning descriptors to ngatu according to the source of the fabrics that make up their layers: synthetic materials are sourced in the diaspora and therefore indexed as Pālangi, while plant-based materials are sourced in Tonga and are therefore Tongan. Young-Leslie (1999: 175) observed that it is a 'common linguistic heuristic in Tonga to label things with geographical markers', and William Mariner (Martin 1981: 375, 446) preserved an early use of Pālangi in this way when he recorded that Tongans used the name 'Papalangi gnato' for European linen in the early nineteenth century. The term mahoa 'a fakapālangi ('European paste'), used for flour and water paste, is an example of simple geographical indexing. However, Young-Leslie (1999: 176) determined that geographical indexing does not always refer to a place of origin but can instead indicate a system of ranking things in order of preference, with the best things being categorised as fakatonga, or from Tonga. Young-Leslie (1999: 177) suggests that these sorts of terms should be interpreted as 'indices, not of exclusive, geographic origin, but of a sense of ownership and culturally based aesthetics', and that as a thing becomes conventional it 'collapses into the trope of other conventional aspects of everyday life: that which is *fakatonga*'.

The original source of synthetic materials is obviously the diaspora, the land of the Pālangi, yet a ngatu fakapālangi is not simply a ngatu from the diaspora, but also one that is less Tongan than a ngatu fakatonga. The use of the term in this way could be understood as indexing a 'distinctive, metaphorical manifestation of un-Tonganness' (Stevens 1996: 155). In fact, the expression commonly used to describe a Tongan who looks down on his or her heritage, favouring the European over the Tongan, is 'fie Pālangi' ('wanting to be a Pālangi') (Māhina 2004: 76). More than a simple observation, this may be interpreted as an insult, not specifically deriding Europeans but judging Tongans who choose a European lifestyle over what might be considered befitting of their Tongan hohoko (genealogy, ancestry), and who are thus 'doing away with tradition' (Mila 2008: 76). For women who make ngatu using synthetic fabrics precisely in order to maintain tradition, this is a powerful insult.

The term ngatu hafekasi is even more problematic. Hafekasi is the Tongan version of the Samoan word 'afakasi,

used to refer to someone of mixed Samoan and European parentage. As a simple descriptor, hafekasi refers to someone or something of mixed Tongan and European ancestry. A ngatu hafekasi is thus a ngatu with a mixed hohoko. But this is to take the least complicated definition of the term and avoid the derogatory nature of its conventional use: hafekasi is a term often used to describe something or someone that is not simply half-Tongan and half-European, but is somehow less than Tongan. When used to refer to people, it is an insulting term. Though it cannot be argued that Tongan ngatu-makers engage with synthetic materials to make a statement about the hafekasi experience, it is a recurring theme for young New Zealand-born Tongan artists. When Czarina Alisi Wilson held her first solo exhibition (Fresh Gallery Otara, 19 March–10 April 2010) she called it *PLASTIC*. Her exhibition explored her struggle with being hafekasi, ‘trying to hold on to what I can of what I can describe myself as – not what others label you by – as “plastic” ... *pālagi loi* [fake *pālagi*] ... *fia pālagi* [trying to be *pālagi*], and so on and so on’ (Manukau City Council 2010).<sup>16</sup> Tongan artist Terry Koloamatangi Klavenes says his experience of being hafekasi ‘has often been very challenging, at times awkward and uncomfortable, sometimes tainted by loathing and angst’ (Vivieaere 2007). Māori art historian Rangihira Panoho (1990: 306) has suggested that: ‘Pacific Islander migrants in countries such as New Zealand have a conflicted interest in the privileging of old and new “homes”, of here and there, that tends to make one country the site of their projects and notions of enterprise and the future, and the other the site of their traditions and more conservative values.’

Measuring up against ‘an apparent norm of Tonganness’ is thought to be more prevalent in the diaspora ‘naturally because for Tongans overseas this ideal is regarded more self-consciously and with greater anxiety’ (Morton 1998: 156). Yet the opposite seems to be true of synthetic ngatu, which are measured against a ‘norm of Tonganness’ in Tonga more so than in the diaspora, simply through the use of terminology. These terms have been in use since at least 2003, when a participant used the term ‘ngatu hafa-kasi’ on Tonga’s Planet Tonga Forum online chat room.

So, the moniker hafekasi, when applied to ngatu made with a top layer of hiapo and a bottom layer of synthetic material, suggests a system of value in which ngatu fakapālangi and ngatu hafekasi are measured against the preferred and the conventional, perhaps even the ‘authentic’:

that which is fakatonga. The complexity of these referents attests to the agency of Tongan women in contribution to the discourses that surround synthetic ngatu.

## Conclusions

This paper has focused on five ngatu at Te Papa made – with one exception – since 1990. It has considered ngatu made from plant-based and synthetic materials, ngatu made for members of the Tongan Royal Family and for commoners, ngatu made for customary gift exchange or for direct transaction into the museum’s collection, and ngatu remade to meet changing requirements. Each ngatu was discussed in relation to its materiality and history, how it found its way to the museum, and the stories it tells there. Underpinning all of these concerns is the agency of Tongans to determine how, when and which ngatu will enter the collection, and how Tongan identity will be imaged by them. As evidenced by some of the more recently acquired ngatu made from synthetic materials, this agency extends to the names by which the ngatu are known at Te Papa.

These case studies were followed by a close examination of the Tongan terms used to describe and differentiate between varieties of synthetic ngatu and the insights these terms offer into how the pieces are valued or conceptualised. Tongan women are managing the incursion of synthetic materials into ngatu by coining and using specific terminology for the objects. Some terms describe quite literally the interfacing fabric used and the constituent layers of the ngatu made with it; these are descriptive terms that do not carry any connotation of quality. Yet there are other terms that are explicit in their judgement of synthetic ngatu, constituted in accordance with what might be considered geographical and even biological indexing, and used to determine the ‘Tonganness’ of ngatu varieties.

Te Papa observes the wishes of the Tongans who engage with the museum as a venue for their ngatu by referring to each ngatu in the terminology determined by its makers or owners. Thus there is no place for derogatory or derisive terms, but there is a place for locally sanctioned coinages such as ngatu pepa and ngatu tupenu Vilene, and for the expansion of terms such as fuatanga and ngatu‘uli to include upcycled and recent variations upon long-established themes. Furthermore, by exhibiting contemporary ngatu according to Tongan modes of display and revelation, and in consultation with Tongan communities and curators, Te Papa facilitates their polyvocality, allowing ngatu to speak of

Tongan identity in New Zealand with many voices, and ensuring that Tongan voices are at the fore.

It is important to acknowledge that even those contemporary ngatu that attract the most disdain from Tongans themselves have a significant role to play in the maintenance of Tongan identity. It has been observed that 'the great works of Oceanic art are those that were created when the people made them for their own purposes, to help them understand their own world and their place in it' (Gunn 2006: 16). The ngatu at Te Papa, created and named by Tongans for their own purposes, have travelled along different pathways to engage with a wider audience and facilitate understanding of a Tongan world. They are pieces made for use and exchange by Tongans – whether in the Tongan gift economy or via museum transactions and exhibitions – that not only make sense of the Tongan world but also help to construct and maintain it.

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## Notes

- 1 Vivieaere was referring to the term Polynesianisation, first coined by *Metro* journalist T. Hyde in his 1993 cover story 'White men can't jump: the Polynesianisation of sport'. Sean Mallon remembers Vivieaere bringing the magazine with him to an interview session and making reference to it therein (S. Mallon, pers. comm., December 2012). 'Polynisation' has since been used and attributed to Vivieaere by numerous artists, curators and commentators, including Samoan artist Niki Hastings-McFall, who has produced a series of exhibitions using this title.
- 2 There is no standard paste recipe followed by Tongan barkcloth-makers, but the following is a recipe for a simple rice starch paste used to repair barkcloth or affix hinges to it. The recipe comes from the Bishop Museum in Hawai'i and is reproduced below in an abbreviated form:

100 ml rice starch  
600 ml distilled water

Prepare paste in an enamel, stainless steel, or glass double boiler. In a small bowl, add a small portion of the distilled water to the rice starch and stir thoroughly to combine. Heat the remainder of the water in the top of the double boiler until it begins to bubble around the bottom of the pan, but do not boil. Pour starch slurry into the heated water, stirring at the same time.

Continue to stir the mixture and cook for about 20 to 30 minutes over medium heat. The paste will become translucent and thicker and drop from the spoon in sheets. Remove from heat when sufficiently cooked and set into a container of cold water to cool. Change the water several times to aid in cooling. When the paste no longer feels warm to the touch, strain it through a fine-meshed Japanese horsehair strainer or equivalent utensil such as found in gourmet kitchen supply shops. Store in an airtight container. (Rose *et al.* 1988: 33)

- 3 This information was gained through interviews conducted in Tongatapu in 2004 (informants granted anonymity). Queen Halaevalu Mata'aho was the wife of the late King of Tonga, Sia'osi Tāufa'āhau Tupou IV (eldest son of the late Queen Sālote Mafile'o Pilolevu Veiongo Tupou III).
- 4 This was a joint touring exhibition between Queensland Art Gallery, Te Papa and Queensland Museum, shown at Te Papa 19 June–12 September 2010. The wall label for the launima read:

This ngatu launima was associated with two queens. Made in 1953 to commemorate the visit of Queen Elizabeth II to Tonga. It was later placed under Queen Sālote's coffin when her body was flown back from New Zealand in 1965. The tapa was given to Flight Lieutenant McAllister, the pilot of the plane that took Queen Sālote's body back to Tonga, and he in turn presented it to the Dominion Museum (Te Papa Tongarewa's predecessor) in 1968.

The launima did not appear in the Queensland Art Gallery version of the exhibition or in the exhibition catalogue; in Queensland, the exhibition was called *Paperskin: barkcloth across the Pacific*, and the catalogue bears this name.

- 5 For diagrams of these processes, see Kooijman (1972: 316) and Tamahori (1963: 91).
- 6 The kupesi meanings given here are based on interviews conducted in Tongatapu in August 2004. In 1989, the edited volume *Cloth and human experience* (Weiner & Schneider) drew attention to the ‘importance of cloth as a material expression of genealogy’ (Kuchler & Were 2005: xix).
- 7 Tuitui soot is made in a small house or shed constructed or reserved for this purpose, by women who work throughout the night until they have completed their task. First, a good quantity of tuitui nuts is boiled until able to be cracked open. The soft kernels are then threaded onto the firm midribs of coconut leaves, much like skewers. The skewers are burned on a fire over which an iron pot is suspended. The pot is characterised as an old lady (finemotu’a), and the rituals associated with it involve making food offerings to Hina, the Tongan goddess of ngatu-making. The pot undergoes special treatments in preparation for the soot-gathering process. First, it is ‘given a bath’ by rubbing the inside with the cut root of a banana tree. Next, the outside of the pot is oiled with coconut oil, before it is hung over the fire. Each tuitui soot-maker I spoke with in Tongatapu in 2004 stressed the importance of having the correct food to place in the pot as an offering to Hina; some use crabs, and others meat or fish. The food offerings, and the close attention paid by the women to the way they ‘cook’, seem to be a way of checking that the pot has reached the correct temperature. When the fire is burning freely underneath, and the crabs (if used) have popped open in the heat, the coconut riblets of tuitui can be placed on the fire and burned. As the tuitui burn, the women chant to Hina, asking for her blessing and for ‘hair’ to form on the pot. A successful attempt results in the accumulation of soot, hanging like hair from the pot.  
Tuitui soot is used to make ngatu’uli, chiefly ngatu associated with Tongan nobles and gifted to them at weddings and funerals. It is sprinkled over the surface of a ngatu, adhering by virtue of a light oiling, or suspended in a solution made from one of the other liquid dyes. According to Fanua (1986: 14), it takes about 200 kg of tuitui to produce enough soot to make one launima (50 numbered sections of ngatu); this is one reason sometimes given to explain the high value of ngatu’uli (Herda 1999: 157).
- 8 This ngatu’uli is in the collection of Fogarty, Hojsgaard and Entwisle (FHE) Galleries in Auckland, New Zealand. The Hon. Heu’ifanga ‘Ahome’e was mother to Queen Halaevalu Mata’aho, recipient of one of the first ngatu pepa made in New Zealand.
- 9 The main kupesi used on this ngatu is tokelau feletoa, a design that has its origins in Tongan lashing techniques. It encodes chiefly status through the representation of the

sennit house-post lashings of Finau ‘Ulukalala, a nineteenth-century chief of Vava’u. Tokelau means ‘north’ and feletoa is variously attributed as the name of ‘Ulukalala’s stronghold, a village in Vava’u where he fought a decisive battle (James 1998: unpaginated). The pattern also alludes to the cross section of the tuna, a fish considered to be chiefly. This kupesi is said to have been designed by Hulita Tu’ifua in the nineteenth century to honour ‘Ulukalala, who was her father Tupouniua’s half-brother (Mafi 1986: 16; James 1988). Tokelau feletoa is not traditionally used to make ngatu’uli but is a kupesi commonly used for ngatu tahina.

- 10 It is illustrated in Drake (2002: 60–61) and in Museum of New Zealand Te Papa Tongarewa (2004c: 62–63).
- 11 The information given here is based on interviews with the makers of the ngatu tupenu Vilene in August 2010.
- 12 This quote is taken from an interview with the recipient/maker, August 2010.
- 13 In 2011, Queensland Art Gallery commissioned New Zealand-based group Kulupu Falehanga ‘i Teleiloa (established 2010) to make a ngatu’uli using paper mulberry bark, but decorated with black synthetic polymer paint. It is known there as a ngatu tā’uli in accordance with naming protocols suggested by group member Kolokesa Māhina-Tuai.
- 14 This spelling is Samoan, not Tongan.
- 15 Veys (2009: 35) also mentions ngatu loi and ngatu haafekasi, but she does not explain or analyse these terms.
- 16 The spelling of ‘pālagi’ used here is Samoan, indicating a Samoan interviewer or transcriber.

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# Collecting, exhibiting and engaging with East Polynesia at the Museum of New Zealand Te Papa Tongarewa

Sean Mallon\* and Grace Hutton\*\*

\*Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand (seanm@tepapa.govt.nz)

\*\*Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand (graceh@tepapa.govt.nz)

**ABSTRACT:** The Pacific Cultures collection of the Museum of New Zealand Te Papa Tongarewa (Te Papa) holds significant artefacts from the islands of East Polynesia, including the Austral Islands, Society Islands, Marquesas Islands, Tuamotu Archipelago, Pitcairn Island and Rapa Nui (Easter Island). Some artefacts are important because of their historical association with the voyages of eighteenth-century English explorer James Cook. Others are less well documented but of outstanding aesthetic quality and once belonged to the early twentieth-century English collector William Oldman. In this survey article, we describe the holdings of East Polynesian material culture in Te Papa and argue for their relevance in the national museum of New Zealand. We also examine other holdings in Te Papa that have associations with East Polynesia, and outline a short history of outreach and engagement with communities from this region.

**KEYWORDS:** East Polynesia, material culture, Austral Islands, Society Islands, Marquesas Islands, Pitcairn Island, Rapa Nui (Easter Island), Te Papa, Tahiti, James Cook, William Oldman.

## Introduction

Given New Zealand's twentieth-century colonial ties to the relatively close islands of Samoa, Niue and the Cook Islands, it may appear that the other islands of East Polynesia would be peripheral to the future development of the Pacific Cultures collections at the Museum of New Zealand Te Papa Tongarewa (Te Papa). However, the recent history of collecting activity and the display of material culture from East Polynesian societies proves otherwise. East Polynesia has an important role in telling the New Zealand story as well as the familiar stories relating to the broader history of the arts, exploration and cultural encounter in the Pacific Islands.

This article is organised in two parts. First, we survey Te Papa's East Polynesia collection holdings by each individual island group.<sup>1</sup> The island territories and groups we cover in this article are French Polynesia (Austral Islands, Society Islands and Marquesas Islands), the Pitcairn Islands and

Rapa Nui (Easter Island). We do not cover the Tuamotu Archipelago or Mangareva (Gambier) Islands, as there are no cultural artefacts from these locations at Te Papa. Although East Polynesia also includes the Cook Islands, Hawai'i and New Zealand, an article surveying the Cook Islands collection has already been published (Hutton *et al.* 2010) and an article about the Hawai'i collection is in preparation for 2014. We examine the development of these collections across a chronology beginning in the late nineteenth century and ending in the twenty-first century. Key accessions and individual objects or groups of objects are highlighted – some for their formal qualities, others for their histories. We include an emphasis on accessions made between 1990 and 2012. This period coincides with the development of Te Papa and initiatives to increase contemporary collecting.<sup>2</sup> This focus allows us to present new examples of material culture to the academic literature and visual record.

Second, we examine Te Papa's deployment of these collections in the museum's activities. Our emphasis is on how the societies and cultures of East Polynesia have been represented in other Te Papa collections, the museum's events programmes, exhibitions, publications and community outreach activities. We argue that the collections from islands far to the east have been, and continue to be, important in the context of New Zealand's national museum. They play a critical role informing what we know of New Zealand's settlement, its long history of interaction with the region and its contemporary history. This article contributes to a literature that explores archaeological dimensions of that interaction, nineteenth- and twentieth-century connections, and contemporary social and cultural developments.<sup>3</sup>

It is only since 1993 that Te Papa has managed its Pacific treasures as a separate collection. For most of the institution's history (as the Colonial Museum from 1865 to 1907, the Dominion Museum from 1907 to 1972, the National Museum from 1972 to 1992, and Te Papa from 1993 to present), Pacific items formed a significant part of what was called the Foreign Ethnology collection. As currently defined, the Pacific Cultures collection consists of about 13,000 items, encompassing both historical and contemporary material from the Pacific Islands, including Papua New Guinea but excluding Indonesia, the Philippines and Australia. An exception is made for the Torres Strait Islands, which are part of Australia but culturally more aligned to Papua New Guinea. The Pacific Cultures collection has been shaped by changing institutional and curatorial priorities, which in turn have been influenced by the history of New Zealand as a Pacific nation, the roles that New Zealanders have played in the Pacific Islands and the migration of Pacific peoples to New Zealand in recent decades. What began in the nineteenth century as a comparative collection of ethnographic 'specimens' – objects collected during the scientific study of peoples and cultures – has broadened to include contemporary works by known artists. This expansion of the collection's scope has tended to blur the boundaries between the Pacific Cultures, Māori, History and Art collections. Since the late 1980s, there has been a sustained focus on collecting the art and material culture of Pacific peoples living in New Zealand (Davidson & Mallon 2004).

In 2008, the Pacific Cultures team commenced a survey of Te Papa's Pacific Cultures collection. This process included recording or upgrading object information such as

descriptions, measurements, provenance, storage locations, key terms of association to assist online and database searching, and the updating of accession lot records. In addition, a digital photographic record of each object was taken and added to the museum's *Collections online* database.<sup>4</sup> The Cook Islands collections were the first to undergo this process, followed by the Niue collections (Hutton *et al.* 2010; Akeli & Pasene 2011). This is the third article to be developed from this ongoing survey.

## Collecting East Polynesia

The most historically significant items of material culture from East Polynesia in Te Papa were collected by European seafarers in the eighteenth and nineteenth centuries. They found their way into private collections and institutions in the United Kingdom and returned to the Pacific and New Zealand in the twentieth century, when acquired by the museum. The key accessions of artefacts have come from England from Lord St Oswald (1912), William Oldman (1948) and the Imperial Institute (1955). The collections from Lord St Oswald and the Imperial Institute include material culture associated with the voyages of English explorer James Cook, who undertook three scientific expeditions into the Pacific. The first voyage was from 1768 to 1771, the second from 1772 to 1775, and the third from 1776 to 1780. The objects in Te Papa associated with these voyages are well documented by Kaeppler (1974, 1978), and in part by Livingstone (1998) and Davidson (1991, 2004, 2012). They include adornments, fishhooks, tools and textiles from the Pacific and its rim. The objects associated with Cook often attract the most international interest from researchers, curators and cultural groups. They are key artefacts both in the history of European exploration and in the cultural history of indigenous peoples.<sup>5</sup> The Oldman collection is less well documented.

Former Te Papa Pacific curator Janet Davidson<sup>6</sup> published a short history of the Pacific collections (Davidson 1991) that includes details about these accessions. In brief summary, she records that Lord St Oswald unexpectedly presented his family collection to the Dominion of New Zealand in 1912. As mentioned previously, a highlight of his collection are artefacts collected on the three voyages into the Pacific by James Cook. They include the 'ahu ula (cloak) and mahiole (helmet) presented to Cook by the Hawai'ian chief Kalani'opu 'u on 26 January 1779. The objects in the



Fig. 1 W.O. Oldman with his collection at his Clapham villa, London, England, c. 1940 (photo: Te Papa O.027324).

collection were gathered together by an English collector named William Bullock (Kaeppler 1974). Some of them he acquired directly from Joseph Banks, a scientist who was part of Cook's first expedition. He purchased others from private collectors, and from the sale of the Leverian Museum collection in London in 1806. Bullock displayed them in his own museum in London until 1819, when he sold his entire collection. The items now in Te Papa were bought by Charles Winn (1795?–1874) for his private collection. They stayed with the Winn family for nearly a century. In 1912, Charles Winn's grandson, Rowland Winn, 2nd Baron St Oswald (1857–1919), gave them 'to the Dominion of New Zealand'. The gift came as a complete surprise to the museum's director, Augustus Hamilton. He commented in a letter at the time, 'Goodness knows what the reason was that prompted Lord St Oswald to send them out to New Zealand' (Hamilton to Edge-Partington, 18 November 1912). Today, the objects in the Lord St Oswald collection

are regarded as treasures that connect us with the history of European exploration in the Pacific but also with our Pacific and Māori ancestors.

In 1948, the New Zealand government purchased the Māori and Pacific collection of the London dealer William Ockelford Oldman (Fig. 1). Today, the collection is known internationally as the Oldman collection and is recognised as world class by overseas collectors and connoisseurs. In the 1940s, New Zealand academics petitioned the government to buy the collection. Their vision was to make New Zealand the main centre for studying Māori and Polynesian artefacts. The government's decision in 1948, to purchase the 3100 items for the substantial sum of £44,000, signalled New Zealand's commitment to the cultural heritage of its nearest neighbours. When the collection arrived in New Zealand, it was divided on indefinite loan among the four large New Zealand metropolitan museums, with small groups of items going to smaller public museums.<sup>7</sup> The Dominion Museum

received most of the Māori, Marquesan, New Caledonian and Admiralty Islands components of the collection, together with small numbers of items from other island groups. These items were described at the time as being ‘on long-term loan’ (Neich & Davidson 2004: xxi). In 1992, Te Papa’s share of the collection became a gift of the government. The majority of the items in the Oldman collection have poor records. However, as Neich & Davidson (2004) noted in the introduction to the republished Oldman collection catalogues, the state of the documentation may reflect the fragmentation and loss of information associated with objects as they changed hands between collectors and passed through auction houses in Europe and the United Kingdom. In any case, ‘Oldman’s focus was, by and large, on artistic quality (as he perceived it)’ (Neich & Davidson 2004: xxix). Overall, the Oldman collection holdings are in good physical condition and outstanding in their appearance and quality of workmanship, a trait important to private collectors and their interests.

In 1955, the museum acquired a collection of items from the Imperial Institute.<sup>8</sup> Established in London in 1887, the institute conducted scientific research to benefit the British Empire. Many of the items in this accession were associated with the voyages of James Cook. They had once been in the possession of Queen Victoria and were given to the Imperial Institute by Edward VII. Kaeppler (1978: 286) has speculated that Cook himself may have given a collection of artefacts to George III after his second voyage.

The three major accessions of artefacts described above are the foundations of Te Papa’s East Polynesian collection. Overall, the objects are in remarkably good condition. They include finely crafted and rare items associated with the social and cultural elite of East Polynesia. Only some objects have provenance, but for many others their contexts of manufacture and use are retrievable from the ethnographic or historical literature. Collectively, they offer a tantalising glimpse of the region’s material culture in an important period of European encounter and significant cultural transformation.

In the following paragraphs, we survey some of the major accessions by island group of origin. We focus on collection highlights but also on objects where we have been able to expand upon museum records and bring new information to light. The order of the survey is organised geographically from southwest to north and east from the French Polynesian territories, beginning with the Austral Islands and expanding outwards to Rapa Nui (Easter Island).

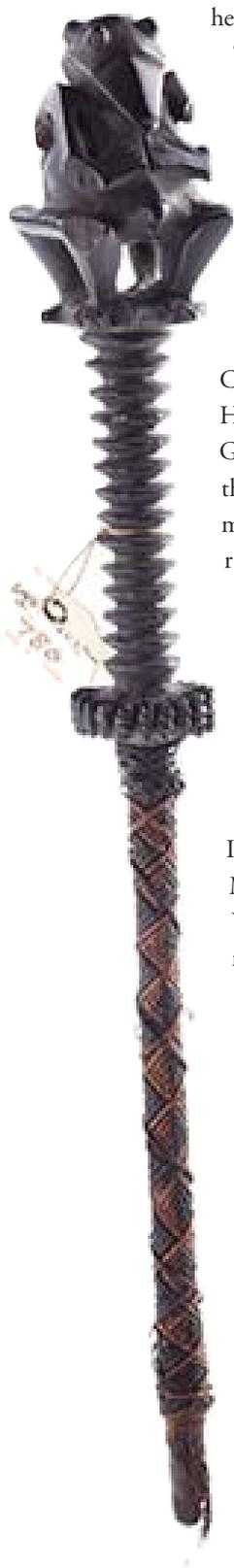
## French Polynesia

Politically, French Polynesia is currently an overseas territory of France. It comprises of a group of five archipelagos – the Austral Islands, the Society Islands, the Marquesas Islands, the Tuamotu Archipelago and the Mangareva (Gambier) Islands. There are 118 islands scattered over a vast region the size of Europe. Tahiti, in the Society Islands, is the largest, rising to 2241 m and with a land area of 1042 km<sup>2</sup>. The dates of first settlement of the Society Islands and the various East Polynesian island groups discussed in this article are the subject of fierce debate and controversy among archaeologists. Scholars are divided on the issue, with many of the older dates challenged by a recent review (Wilmschurst *et al.* 2011), which argues for initial colonisation of the Society Islands not more than 1000 years ago, followed by expansion throughout East Polynesia, including New Zealand, by between 800 and 700 years ago. Archaeological investigations suggest that in prehistorical times the islands in the modern territory of French Polynesia were connected through intermittent trade and exchange networks (Rollett 2002).

### Austral Islands

The Austral Islands are located 500 km south of Tahiti. They are the southernmost islands in the modern French Polynesia group. English explorer James Cook was the first European to find the island group, in 1769. Other Europeans followed, including mutineers from the HMS *Bounty*, who attempted to settle one of the islands. In the nineteenth century, the introduction of European diseases to the islands greatly reduced the local population.

A highlight of Te Papa’s Austral Islands collection is a flywhisk attributed to nineteenth-century Rurutu or Tubuai (Fig. 2). Flywhisks were made in sacred and utilitarian forms and used in religious and secular contexts (Rose 1979: 207). The whisk handle at Te Papa features two small carved Janus figures<sup>9</sup> with some fragments of braided fibre running along a spindle to where the coconut-fibre whisk would be attached. The attribution of the handle to the Austral Islands is based on the research of Roger Rose (1979), who surveyed 38 double-figured flywhisks and their histories. He proposes an Austral Islands origin for them, and identifies three main variants indicative of styles or schools of carving from specific islands within the group. He argues that the Janus whisks are stylistically distinct from those produced in the Society Islands (Rose 1979: 202). However,



he acknowledges that their carved figures 'belong to a general tradition of figural sculpture wherein certain artistic conventions are similar to the Austral and Society Islands, and to a lesser extent, the Cook Islands' (Rose 1979: 207).

Oldman's (2004) collection catalogue records that the whisk in Te Papa was 'Brought home by Capt. Lord Byron in H.M.S. *Blonde*'.<sup>10</sup> His annotation refers to Captain Lord George Ashton Byron (1789–1868) of the Royal Navy. In 1824, he sailed a mission to Hawai'i with the *Blonde* to return the remains of King Kamehameha II and Queen Kamamalu (Byron *et al.* 1826), who had both died of measles while visiting England. How Byron came by the whisk is a mystery. On leaving Hawai'i, the *Blonde* sailed for Tahiti but was unable to make headway. Instead, the ship stopped briefly at Ma'uke before sailing directly to Valparaíso, Chile. The expedition did not visit Tahiti, or any of the Austral Islands en route. However, it is possible Byron picked up the whisk while on Ma'uke. This island, now part of the Cook Islands, is relatively close to the Austral and Society islands and inter-island communication in the region had been long established, albeit intermittently (Rollett 2002). Indeed, the journal of the voyage records that the crew met two native teachers on Ma'uke who had been 'qualified' by the London Missionary Society based at Tahiti (Byron *et al.* 1826). They may have been the source of the flywhisk. Less likely is the possibility

Fig. 2 Flywhisk, Rurutu, Austral Islands, 1800s, wood, plant fibre, length 340 mm. Artist unknown. Oldman collection. Gift of the New Zealand government, 1992 (Te Papa OL000390).

that Byron acquired the whisk earlier in the voyage from another source in Hawai'i.

Te Papa's material culture from the Austral Islands is dominated by 48 wooden 'ceremonial paddles', whose entire surfaces are decorated with distinctive densely carved motifs (Fig. 3). The majority of these came to the museum in 1948 as part of the Oldman collection. There are also three examples that were part of the Lord St Oswald collection but lack other provenance details.<sup>11</sup> Researcher of Austral Islands' history Rhys Richards has made a close examination of historical records before 1850 in search of an indigenous- or non-European-oriented use for the paddles. His investigations revealed no 'eye-witness accounts of their use or function' (Richards 2012: 141). However, it is clear to even the untrained eye that Austral Islands 'ceremonial paddles' are not suitable for paddling canoes. The examples in Te Papa's collection are thin, fragile and often not well proportioned. According to Richards (2012: 143), Austral Islanders manufactured the paddles to use as trade items in their encounters with Europeans. Most of them were made in a period of intense production between 1821 and 1842. In 2001, Richards (2012: 143) undertook a global census of Austral Islands paddles, locating 850 examples and estimating that there are probably 1000 in museum collections around the world. Pacific art historian Steven Hooper suggests the paddles were 'perhaps the most collected objects in the Pacific in the first half of the nineteenth century' (Hooper 2006: 216).

Despite the absence of provenance and contextual information, some of the paddles are striking examples of woodcarving and indigenous

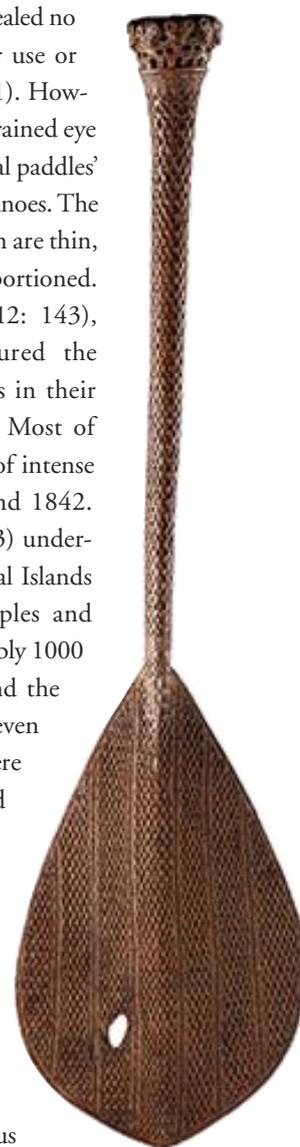


Fig. 3 Ceremonial paddle, Austral Islands, 1800s, wood, length 745 mm. Artist unknown. Oldman collection. Gift of the New Zealand government, 1992 (Te Papa OL002055/2).

principles of design and composition. If Richards' arguments are correct, the paddles mark a short but important period in the history of the Austral Islands and their neighbours. As the circumstances of the paddles' production becomes clear, so too do narratives of trade and commerce with the growing number of Europeans visting the region. The origins of the paddles highlight the early nineteenth-century transactions that perhaps marked the beginnings of the tourist trade. This area of activity becomes critical to the region's economy through the twentieth and into the twenty-first century.

### Society Islands

The Society Islands are north of the Austral Islands and played a major part in the history of European exploration and representation of the South Pacific. Dutch explorer Jacob Roggeveen sighted the islands in 1722. However, it was not until after the arrivals of English explorer Samuel Wallis in 1767, and French navigator Louis Antoine de Bougainville in 1768, that the region started to find a place on European maps and charts. The islands became a transit point for Europeans into the Pacific throughout the nineteenth century, developing into an important commercial hub and, in the twentieth century, a focal point for the region's tourism.

The oldest Te Papa accession from the Society Islands consists of stone implements purchased from Major F.G. Gentry in 1918, including sinkers, toki (adze blades) and a penu (food pounder) (Fig. 4). Unfortunately, these items have no provenance. The key historical-period holdings of material culture are mainly of eighteenth- and nineteenth-century origin, and arrived at the museum as part of the Lord St Oswald, Oldman and Imperial Institute collections. They include rare adornments, costumes and textiles of the social and cultural elite, and offer researchers a glimpse of indigenous cultures before sustained interaction with Europeans and their influences. However, the collection also contains items from the twentieth and twenty-first centuries that represent other histories of encounter and travel, both physical and virtual. The curiosity and imagination that inspired the voyages of Cook and others into the Pacific is the same imagination that inspires works created and collected today.

Several items in the Lord St Oswald accession are from the Society Islands and are associated with Cook's voyages. They include a mask and 'ahu parau (chest apron) from an eighteenth-century mourning costume used by the arioi, a



Fig. 4 Penu (food pounder), Society Islands, c. 1800s, stone, height 195 mm. Artist unknown. Gift of F. Gentry, 1947 (Te Papa FE008557).

special class of priest (Salmond 2012) (Fig. 5). The chief mourner of the arioi wore the costume of many parts, which completely covered his body. Accompanied by a host of attendants with blackened skins and wearing loincloths, the chief mourner and his procession would roam around making noise and terrorising people. The ritual and procession could continue for weeks or even months after the death of a prominent person. The costumes and ceremony were described in a journal kept by naturalist Joseph Banks during Cook's first voyage, when he actually took part in the ritual.

Such mourning costumes were extremely valuable. The stunning 'ahu parau in the museum would have required many hours of labour to shape and stitch together the hundreds of finely cut slivers of pearl shell. The European visitors were unable to acquire any examples of the costume on the first voyage; however, parts of at least 10 costumes were taken to England on Cook's second voyage. The pieces depicted here were probably collected at that time. They are thought to have been given by Joseph Banks to William Bullock, and therefore part of the collection purchased by Charles Winn at the sale of the contents of Bullock's Museum in London in 1819 (Kaepler 1974; Davidson 2004: 250).

Another Society Islands artefact from the Lord St Oswald accession is a taumi, an item worn in battle by tribal chiefs



Fig. 5 'Ahu parau (chest apron), Society Islands, 1700s, pearl shell, plant fibre, shell, length 560 mm. Artist unknown. Gift of Lord St Oswald, 1912 (Te Papa Collection FE000336/1).

and their principal lieutenants in Tahiti (Fig. 6). In the eighteenth century, much of the warfare in the region took the form of engagements between large double canoes, and the chiefs could be seen standing on the platforms of the canoes. William Hodges, an artist on James Cook's second voyage, depicted some of these impressive scenes when the expedition visited Tahiti.

Taumi were very valuable items, with high exchange value in Tahitian society. Their elaborate construction consists of a base of woven coconut fibre, to which are attached sharks' teeth, feathers and a fringe of white dog hair. Although they were mostly worn on the breast, a man might occasionally wear two: one on the back and one on the breast, joined at each shoulder. The taumi at Te Papa was



Fig. 6 Taumi (gorget), Society Islands, 1700s, feathers, plant fibre, shark teeth, dog hair, length 690 mm. Artist unknown. Gift of Lord St Oswald, 1912 (Te Papa FE000335).

listed in the first catalogue of Bullock's Museum in 1801. Again, this item was purchased by Charles Winn, who bought it for £1 2s at the sale of the Bullock's Museum contents in 1819 (Kaeppler 1974; Rose 1993; Davidson 2004: 250).

When the Oldman collection was distributed across New Zealand museums on its arrival in the country, most of the Society Islands material went to the Auckland War Memorial Museum Tamaki Paenga Hira (Auckland Museum). The holdings at Te Papa include a vivo (nose flute) (Fig. 7), four matau (fishhooks) and a penu (food punder). The vivo (Te Papa OL00452/1), made from bamboo, is one of two Oldman collected that were formerly in the Duke of Leeds

collection. On the other vivo in Auckland Museum is a label that reads 'Tahitian Nasal Flutes, G. B. 1823'. Oldman (2004) believes this is in the handwriting of George Bennet (1775–1841), who belonged to the London Missionary Society and spent three years (1821–24) in Polynesia amassing a large ethnographical collection (Hooper 2006: 270). There are several other items associated with Bennet in the Oldman collection but held in other museums in New Zealand.

Highlights from the Imperial Institute accession are a ta (tattooing implement) (Fig. 8) and a mallet. The mallet is shaped like a miniature paddle, with a narrow shaft and a spatulate blade. The ta takes the form of a small blade



Fig.7 Vivo (nose flute), Society Islands, c. 1820, bamboo, length 335 mm. Artist unknown. Oldman collection. Gift of the New Zealand government, 1992 (Te Papa OL000452/1).

attached to a short wooden handle with a fibre cord. The blade is made from small sections of boar tusk or bone, each section with a row of very fine, sharp teeth cut into it. A tattooist working on a tattoo dips the ta into a reservoir containing pigment, which is then drawn up into the toothed edge of the blade. Using the light mallet, the tattooist then places the ta on the skin and taps the back of it, perforating the surface of the skin and depositing the pigment beneath it.

It is possible that the tattooing tools were collected during the Cook's voyages. They were in the possession of Queen Victoria and given to the Imperial Institute in London, England, by Edward VII. We highlight the ta because in the twenty-first century tattooing has become a most visible part of contemporary Tahitian and other Polynesian cultures including Māori. The indigenous tool forms and how they are used are a point of similarity and shared culture for contemporary practitioners and tattoo enthusiasts from different ethnic origins.

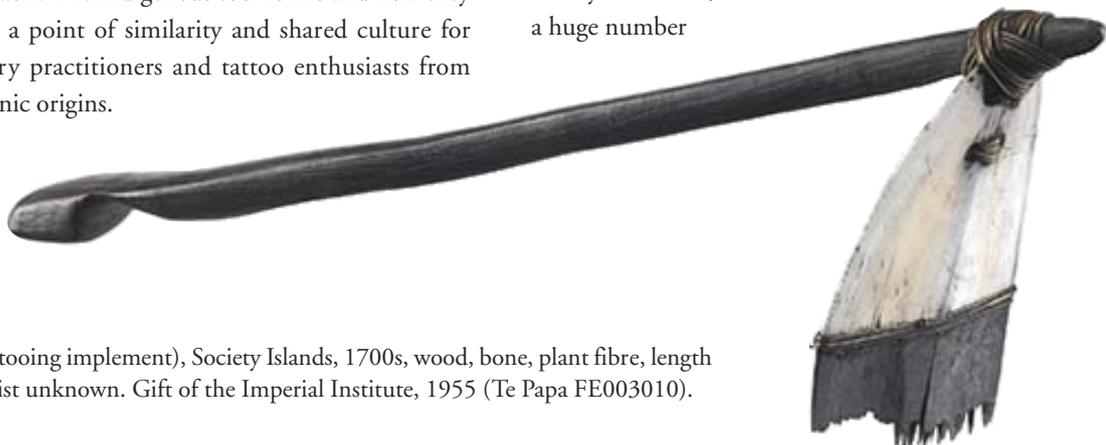


Fig.8 Ta (tattooing implement), Society Islands, 1700s, wood, bone, plant fibre, length 190 mm. Artist unknown. Gift of the Imperial Institute, 1955 (Te Papa FE003010).

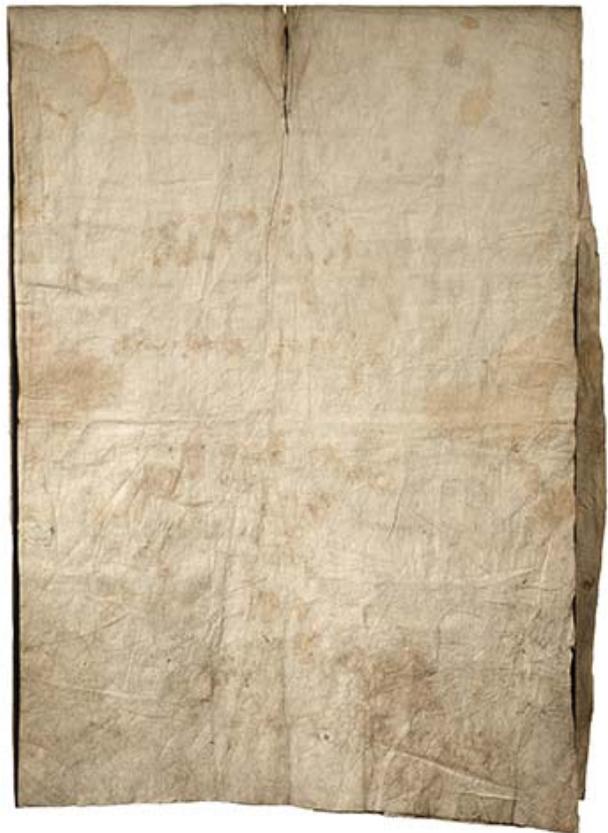


Fig.9 Tiputa (poncho), Society Islands, 1700s, bark cloth, length 1170 mm. Artist unknown. Gift of the Wellcome Collection, 1952 (Te Papa FE004054).

Aside from those that entered Te Papa through the accession of the three main collections, there are some eighteenth- and nineteenth-century Society Islands objects that came to the museum from public and private collections. A tiputa (bark-cloth poncho) attributed to the Society Islands is notable example (Fig. 9). It was originally in the Wellcome Museum in London, which acquired it at auction in 1932. The museum was associated with philanthropist Henry Wellcome, who amassed a huge number

of objects (Larson 2009), and in 1952 it gifted the tiputa to Te Papa.

Our attribution of the tiputa to the Society Islands is based on the absence of decoration on the cloth and the presence of a vertical slit for the head to go through rather than a circular opening. This feature is also found on a tiputa from the Society Islands made from purau (*Hibiscus tiliaceus*) plant fibres, now in the Cook-Forster collection of the Georg-August University of Göttingen, Germany (Kruger *et al.* 1998: 153; Weber & Watson 2006: 65). The Te Papa tiputa is one of eight examples from Polynesia in its collection. The museum also has examples from Niue, Samoa and the Cook Islands, where the influence of Tahitian or Tahitian-trained missionaries was significant in the nineteenth century, and where the tiputa was often a marker of an individual's conversion to Christianity (Kooijman 1972; Thomas 1999: 16; Pule & Thomas 2005: 58).

Other examples of textiles from the Society Islands include two pieces of undecorated 'ahu (tapa cloth). One of them (Te Papa FE002786) was collected by businessman Sir Joseph Kinsey and presented to the museum by Lady Sarah Kinsey; the other (Te Papa FE001473) was formerly owned by Alexander Turnbull, a New Zealand-based bibliophile and private collector. Turnbull also donated a costume mat, finely woven by hand from hibiscus-bark fibre and with a decorative knotted fringe along its four edges (Te Papa FE001476). (We use the terms woven and weaving throughout this article. The distinction between weaving, with a loom, and plaiting has a long history among ethnologists, and is rightly disputed by Polynesian women who work with fibres and consider themselves weavers and their work weaving; this article follows their view.) Mats of this kind served as either wrap-around skirts, or capes, particularly in wet weather when garments made from 'ahu could not be worn. Accessories and other items of adornment include six tipua, or eardrops (Te Papa FE003023/1–6).

Essential adornments in many Pacific cultures are hei and lei (necklaces or garlands). They are often used as part of dance costumes, given as gifts or worn for special occasions. Tahiti's popularity as a tourist destination is referenced through a remarkable set of hei (necklaces) made from shells (Fig. 10). They were given to the family of a young boy who, suffering from peritonitis during an ocean cruise through the islands in 1966, had to undergo an operation at the Clinique Cardella in Papeete. An English-speaking Tahitian, along with friends and nursing staff at the

clinic, presented the necklaces to Anton Coppens and his mother, Mary, when after a fortnight's stay they departed for New Zealand. The hei form a beautiful set, especially when arranged and viewed together. They are elegant in their composition and meticulous in their construction. Their specific period of production, as related through the Coppens family story, creates opportunities for locating the hei in narratives of tourism and travel, as well as interpersonal exchange. However, there are some other small accessions made in the twentieth and twenty-first centuries that reference the recent cultural history of the archipelago, and signal the increasingly transnational and multi-ethnic dimensions of the region's society.

Te Papa's collections represent twentieth-century Society Islands culture by highlighting tourism's influence and the creations of artists in a growing Tahitian diaspora. Today, there are artefacts in the museum made by people of Tahitian descent living in New Zealand in the late twentieth and early twenty-first centuries.<sup>12</sup> According to the 2006 New Zealand census, 1329 people marked Tahitian as one of their ethnic groups (Statistics New Zealand 2006). This is a larger number than other long-established ethnic groups such as the I-Kiribati community (Statistics New Zealand and Ministry of Pacific Islands Affairs 2010). The claiming of Tahitian identity is conspicuous and represented in New Zealand's Parliament through MP Charles Chauvel, who is of Tahitian, Scottish and French descent (Whimp 2012: 276). In local community life, Tahitian people in Auckland have formed a cultural group called Tahiti Ia Ora (Walrond 2012) and Tahiti has its own pavilion at the annual Pasifika Festival in the city. The Ma'ohi (Tahitian) cultural influences filter through to activities in New Zealand's social and cultural life, such as Pan-Polynesian tattooing and waka ama (outrigger canoe racing), which originated in modern Tahiti and Hawai'i (Mallon 2012b: 302).

Contemporary material culture made by people of Tahitian ancestry is acquired for Te Papa's collections not only because it has been made by Tahitians, but also because it is part of wider cultural developments in New Zealand and the Pacific Islands. People of Tahitian ancestry are part of connected transnational communities. The term transnational is often used by social scientists to refer to how communities can be made up of people connected to one place (in this case Tahiti), and who sustain connections with this place from a range of other places to which they have moved. They are considered a transnational population because they maintain ties and exchange goods, ideas and



Fig. 10 Hei (shell necklace), Society Islands, 1960s, seashell, fibre, length 1050 mm. Artist unknown. Gift of Anton Coppens, 2009 (Te Papa FE012425).

information across national borders that may or may not include the place of origin.

Transnational populations and their connections are represented in the Te Papa collection through the work of people such as tifaifai/tivaevae (quilt) makers Pauline Maono and Ngatuaine Utia, New Zealand-based fashion designer Jean Clarkson, and artist Michel Tuffery. The tivaevae manu (appliqué quilt) seen in Fig. 11 was cut, designed and started by Pauline Maono from Tahiti, and finished by her Cook Islander relative Ngatuaine Utia in New Zealand in the 1980s, and was made to acknowledge the connection between the Tahitian and Cook Islands families. The merio (mermaid) pattern is usually associated with Tahitian forms of tifaifai but makes a conspicuous appearance in this unusual work. This tivaevae manu, as it would be described in the Cook Islands, was acquired by Te Papa in 2012 from Mimetua Tupangaia, the niece of Maono.

Two garments made by a fashion and textile designer of the Tahitian/Pitcairn diaspora are 'Prince of Peace' (Fig. 12) and 'Silk and Banana Bark' ensemble (Te Papa FE012021/1–4). Jean Clarkson is a New Zealand-born fabric artist of



Fig. 11 Tivaevae manu (appliqué quilt), New Zealand, 1980s, cotton, 2540 × 2286 mm. Artists Pauline Maono and Ngatuaine Utia. Purchased 2012 (Te Papa FE012667).



Fig. 12 'Prince of Peace' (male costume), New Zealand, 1996, canvas – desutti, feather from the Norfolk Island feral rooster (*Gallus gallus*), PVA, dyes, screen printing. Artist Jean Clarkson. Purchased 2007 (Te Papa FE012022).

Tahitian/Scottish descent who takes inspiration from her heritage on her mother's side. Her mother was a Norfolk Islander and Jean is direct descendant of HMS *Bounty* mutineer Fletcher Christian and Mauatua, his Tahitian wife. Mauatua made block-printed tapa clothing on Pitcairn Island and Jean has based many of her contemporary designs on these patterns. She also employs the same direct leaf-print technique the Tahitians used in their early tapa.<sup>13</sup> Both of Clarkson's garments were modelled at the New Zealand-based Style Pasifika (now Westfield Style Pasifika) fashion show in Auckland in 1996 and 1999, respectively. 'Prince of Peace' won the Traditionally Inspired section and the Supreme Award in 1996, and 'Silk and Banana Bark' was runner-up in the Evening Wear section in 1999.

'Prince of Peace' comprises four parts, including a cloak, lavalava, headpiece and peace banner. A highlight of the garment is the lavalava, made from unbleached calico and

screen-printed with a nuclear-free image that incorporates the words 'Niuklia Fri Pasifik' (Nuclear-free Pacific), which as the designer states in the object catalogue record 'is in pidgin English the common language of the Pacific People'. A banner accompanying the garment has the peace sign at its centre. A woven headpiece is made from black recycled plastic and calico strips, imitating natural leaves.

The 'Silk and Banana Bark' ensemble has four components, including a skirt, a headdress, a woven bodice and a cloak. The skirt is made from light parachute silk that fills with air as the model walks down the runway. The headdress and bodice are made from banana bark. Screen-printed photographic images of the woven bark feature along the edges and down the middle of the back of the cloak, which is adorned with shells, textiles and feathers.

New Zealand-born artist Michel Tuffery describes himself as a Polynesian artist. He has a Samoan mother and



Fig. 13 *First Contact* (digital artwork), New Zealand, 2012. Artist Michel Tuffery MNZM, New Zealand International Arts Festival 2012 at Te Papa, Wellington, Aotearoa NZ (photo: Gareth Moon, Nektar Films; reproduced courtesy of the artist).



Rarotongan and Tahitian father. Te Papa has many of his works in its collection, including prints, a painting, and the sculptural works *Pisupo lua afe* (*Corned beef* 2000) (1994) and *Asiasi II* (2000). *Night Dance in Christkeke* (2007) is a painting that reimagines an image made during one of Cook's expeditions to the Pacific. It is one of a series of works by Tuffery exploring the history of cultural exchanges that took place during these momentous eighteenth-century voyages.

In 2012, Te Papa hosted the exhibition of a large-scale digital artwork created by Tuffery and projected upon Te Papa's western external wall. *First Contact* featured images from Te Papa's collections and those of other museums and libraries (Fig. 13). A significant part of the narrative relates to the story of Tupaia, a priest and navigator from Ra'iatea in the Society Islands who joined Cook's first voyage in 1769 (Salmond 2003, 2012). Promotional material for *First Contact* explained that "by bringing the "inside out" from Te Papa's extensive collections, Tuffery breathed new life into historical material recorded by the Pacific ambassador Tupaia, and the scientists and artists from Captain James Cook's three epic voyages – linking them with his own distinctive works and 21st-century visual and sound bites" (New Zealand International Arts Festival 2012).

Also captivated by Tupaia and his relationship to James Cook is New Zealand costume designer Jo Torr, who made

Fig. 14 *Tupaia's Paintbox – Barter*, New Zealand, 2005, machine-embroidered images on tapa cloth (barkcloth), 960×530 mm. Artist Jo Torr. Purchased 2006 (Te Papa FE011973).

a series of waistcoat patterns out of tapa cloth. They reference a similar tapa waistcoat now in the collections of the Mitchell Library in Sydney, Australia, which Cook's wife, Elizabeth, was embroidering for him before his death in Hawai'i. Torr has embroidered her version of tapa waistcoat patterns with reproductions of drawings made by Tupaia during his travels with Cook (Fig. 14), aligning the personalities and histories of these key cultural encounters through time, image and material.

As Torr is not Tahitian, her works may not interest the cultural essentialist, but they illustrate the type of cultural and historical entanglements that engage contemporary artists from a range of ethnic backgrounds. These histories have inspired non-indigenous historians and writers for generations. They have also inspired artists, not only in the moments of encounter as experienced by William Hodges and Sydney Parkinson on Cook's voyages, but across the decades and centuries beyond those moments. The work of contemporary artists continues a tradition very much rooted in the Pacific and the European imagination. Te Papa's collections are developing in ways that reflect this.

## Marquesas Islands

The Marquesas, comprising nine raised islands, are also part of French Polynesia and are located 1500 km northeast of Tahiti. Spaniard Álvaro de Mendaña was the first European to sight the islands in 1595, naming them Las Marquesas de Mendoza. Today, the indigenous people of the islands use the name Te Henua'enana, meaning 'The Land of the People' (Hooper 2006: 151).

The largest accession of material culture from this region came to Te Papa with the Oldman acquisition of 1948, although a small number of items were subsequently redistributed to the Auckland, Canterbury and Otago museums. The first objects related to the Marquesas and acquired by the Colonial Museum were a group of plaster casts taken of stone sculptures called tiki ke'a (human images) and painted to resemble the originals (Te Papa FE000302/1–4).

Tiki are found frequently in the carved historical stonework of the Marquesas Islands, and range in size from the monumental to the very small and portable. They featured on ancient me'ae (sacred ceremonial sites), where they could be presented to etua (ancestral deities). Tiki were also found in private households, where they were treasured personal items with sacred qualities (Kjellgren & Ivory 2005: 41). Images of tiki continued to be made in the Society and

Marquesas islands throughout the twentieth century and to the present day. Although their religious significance has diminished since the nineteenth century and with the introduction of Christianity, they remain powerful signifiers of contemporary cultural identities in the region. They decorate tourist resorts and are sold as souvenir items, and images of tiki are printed on pareu (wrap-around garment) and shirts, and appear on tattooed bodies.

The plaster tiki ke'a in Te Papa's collection were made in the 1880s. In the *Twenty-second annual report of the Colonial Museum and Laboratory*, mention is made of a collection of 'models, moulds and casts' produced for the *Indian and Colonial Exhibition* held in London in 1886. Four casts are listed, two described as 'Human Figure' and two as 'Two Human Figures, attached by their backs'. The records indicate that the originals were in the Sir George Grey collection and that 'extra copies can be made, which will be available for exchange' (Hector 1887: 33 and 36). It is not clear, but it appears that the moulds and subsequent casts were created at the instigation of the Colonial Museum director, Sir James Hector.<sup>14</sup> He was a principal organiser of the New Zealand contribution to the *Indian and Colonial Exhibition*, which included the Māori pataka (storehouse) Te Takinga, along with numerous other taonga Māori from the Colonial Museum.

In the museum's annual report for the following year (1887–88), two casts of basalt human figures from the Marquesas are listed as being sent by the Colonial Museum to Melbourne for display in the New Zealand court of the Centennial International Exhibition (1888) (Hector 1889: 6). Although they are casts, it is interesting to note their selection for the exhibition and their subsequent registration (around 1912) into the museum's collection. The Marquesan tiki ke'a may have been selected for exhibition because of their visual affinities to Māori hei tiki and other similar artefacts. This would have pointed to some kind of cultural connection between East Polynesia and New Zealand. However, the catalogues for the London and Melbourne exhibitions do not provide evidence to support this.

There is also a genuine stone tiki ke'a in the Te Papa collection (Fig. 15). It is a small double figurine carved from a heavy, close-grained volcanic stone. The figures have large round eyes in relief and arms across their chests. They are joined to each other through the back of their heads. The tiki ke'a is one of two items (the other is a tahi, or fan) that were collected during a 'yachting cruise' in 1881 by the grandfather of Mr C.J. Lambert of Tunbridge Wells, England. Both



Fig. 15 Left: tiki ke'a (carved human form), Marquesas Islands, 1800s, stone, height 130 mm. Artist unknown. Oldman collection. Gift of the New Zealand government, 1992 (Te Papa OL000185). Right: tiki ke'a (carved human form), Marquesas Islands, c. 1885, casting plaster, height 150 mm. Artist unknown (Te Papa FE000302/3).

items end up in the Oldman collection and subsequently at the Dominion Museum.

Another example of a stone tiki from the Oldman collection is much larger in size and could well have sat on an ancient me'ae (Te Papa OL000181). According to Oldman's catalogue records, it was collected on the Krajewski expedition of 1908. This annotation may be referring to André Krajewski (Krajewski), born in 1886 in Warsaw when this part of Poland was incorporated into the Russian Empire. According to historian Elena Govor (Govor to Mallon, 24 October 2012), Krajewski was a man of means and travelled extensively in the South Pacific between 1907 and 1913 and after the First World War. He was a banker, probably based in Papeete.<sup>15</sup> There is evidence in Oldman's (2004) catalogue that Krajewski also collected artefacts in Hawai'i, but this is where the paper trail goes cold. At time of writing, we were unable to uncover any further information about Krajewski or the nature of the 1908 expedition.

A more recent acquisition with a verifiable but unusual history is a painted plaster mannequin of a nineteenth-

century Marquesan toa (warrior) (Fig. 16). For nearly 45 years, the toa was a permanent fixture of the Dominion Museum Pacific displays and remains so now at Te Papa. It has served as the ideal model or prop to contextualise Marquesan headdresses, adornments and weapons in the museum's holdings. The mannequin was made in 1959 by museum display artist Gordon White in collaboration with Terence Barrow, museum ethnologist at the time (1948–65). It was built up from a shop-window dummy with the head of a young Samoan man cast from life (MacKay 1973: 2). A photograph of the mannequin appears in Barrow's *Art and life in Polynesia* (1972: 92).

Despite its long history in the museum the mannequin was registered into the collection only in 2007, as an example of 'classic' museum display techniques and an attempt at sensitive representation of a Polynesian body. It continues to provide a useful way of highlighting artefacts from the Oldman collection that relate to the presentation of the body and image of nineteenth-century Marquesan toa, as shown in Fig. 16 and described on p. 121:



Fig. 16 Mannequin (Marquesan warrior), New Zealand, 1959, casting plaster, height 1750 mm. Artist Gordon White (Te Papa FE012002).

- A The mannequin has worn three forms of headdress, including two feather headdresses and a pa'e kaha made from plates of turtle shell.
- B In the nineteenth century, pu taiana (ear ornaments) were worn through a hole pierced in the earlobe, with the decorated end projecting behind the ear. Pu taiana were made in several forms that are distinguishable by particular carved elements, including tiki forms. However, their basic construction consists of a cylinder of *Conus* shell from which a carved spur of whale bone or boar's tusk projects. Researchers believe that pu taiana were worn predominantly by women and only occasionally by men. Craftspeople used a range of materials to make these adornments but whale ivory was particularly highly prized. Whales were not captured in the Marquesas (Linton *in* Whimp 2008) but nineteenth-century European and American whalers provided a source of whales' teeth (Hooper 2006: 151).
- C Another form of personal adornment are ivi po'o, pieces of whale ivory that could be plain or intricately decorated. Examples featuring a carved human form are referred to as a tiki ivi po'o and are believed to represent ancestral deities. In the nineteenth century, people wore tiki ivi po'o around their necks on cord or in their hair. They also attached them to all manner of objects as decoration.
- D An accessory that is displayed with the toa is a container made from a large coconut with a thick domed wooden lid. It sits in a finely made plaited sennit carrier ornamented with ivi po'o and larger tiki ivi po'o. These ornaments were also tied to putona (shell trumpets) and incorporated into the design of fan handles and other treasured household items.
- E Putona were used throughout East Polynesia in the nineteenth century for signalling and summoning people together. *Charonia tritonis*, the shell from which this putona has been made, was preferred, although other shells were sometimes used. Putona are sounded by blowing into a hole at the pointed end of the shell or on the side, as in the case of the example in Te Papa (OL000199). Extremely fine plaited cords of coconut fibre provide lashings and a carrying strap. Attached to this is a carved bone toggle into which tufts of human hair are drawn together.
- F This warrior is carrying an u'u (club). These heavy clubs are carved with striking facial motifs on both sides. Several u'u in the museum's collection have handles with fine fibre bindings decorated with human hair. Hooper states

that u'u were collected in relatively large numbers in early nineteenth century and estimates that about 200 survive worldwide (Hooper 2006: 163). Carvers of u'u would create the characteristic dark patina by steeping the weapon in swamp mud and polishing it with coconut oil.

- G The mannequin was decorated with tattoo markings copied from the classic study of Marquesan art by Karl von den Steinen (1925–28). These images have faded with time but they help complete the whole ensemble.
- H Warriors wore body adornments made from twisted locks of human hair, bound at the bases with sennit and attached to a fibre cord.

Tapuvae (stilt steps) feature prominently in the collection and are examples of Marquesan carving as well as artefacts of indigenous sport. Former Te Papa ethnologist Robyn Watt has written about a pair of fake tapuvae in the collection that were forged in 1910 by English dealer James Edward Little and purchased by the museum (Watt 1982). Little was also a forger of Māori artefacts and apparently copied the tapuvae from an example in Oldman's collection that was still in England at the time. Watt's (1982) analysis has the aim of developing a set of diagnostic criteria for assessing other examples of forgery of wood carvings.

In 1984, the museum acquired a small collection of objects from Australia and the Pacific that belonged to former New Zealand Prime Minister Robert Muldoon (1921–92) and his wife, Thea. In 1979, Muldoon went on holiday to Tahiti, where he was gifted two staffs from people of the village of Pueu, in Tahiti Iti (Fig. 17).

They are carved in a Marquesan style and are probably typical of the type of product being made in Tahiti at the time mainly for foreign visitors. Muldoon's visit was well into a period where the tourist industry in Tahiti had grown dramatically following the opening of Faa'a Airport in 1961 and the development of the French nuclear

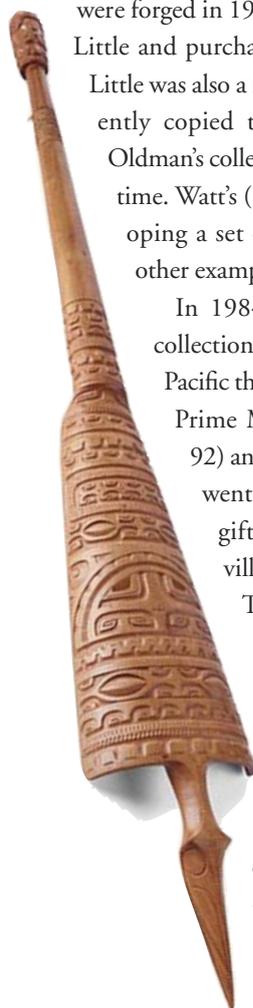


Fig. 17 Paddle staff, Society Islands/Marquesas, c. 1970s, wood, length 1190 mm. Artist unknown. Gift of Robert Muldoon 1984 (Te Papa FE007973).

testing programme. Between 1960 and 1970, visitor numbers went from 4000 to 50,000 a year (*Encyclopédie de la Polynésie française. Vol. 8* in Stevenson 1990), and tourism became a major influence on cultural production throughout the region. According to Carol Ivory (1999), most tourist articles for sale in Tahiti in the late twentieth century originated in other parts of French Polynesia. The expansion of the tourist market in Tahiti influenced the development of carving styles and products from the nearby Marquesas, Tuamotus, Austral and Gambier islands (Ivory 1999: 323). The two staffs collected by Muldoon were probably a product of these flourishing markets. Today, in woodcarving as in tattooing, there is almost a pan-East Polynesian style, in which Tahitian and distinctly Marquesan material can be difficult to differentiate.

In the last 20 years, Te Papa curators have not been actively collecting Marquesan material culture. In contemporary New Zealand society, the awareness and presence of Marquesan culture is not as prominent as, or discernible from, that from Tahiti. Historically, the collecting focus for Pacific Cultures curators has been on the communities with the greater population base in New Zealand. However, Marquesan culture has some contemporary visibility through tattoo designs influenced or copied from books or seen on television. There is a wide and growing international interest in Marquesan tattooing styles, and for several years in the 2000s the Tattoonesia tattoo festival was a regular occurrence in Tahiti that attracted the participation of Māori and other New Zealand-based tattooists. Until recently, the frequency of Te Papa staff contact with Marquesan people has been limited, as the difficulty of accessing the islands has been discouraging and expensive. However, with the development of better transport this situation could change.

## Pitcairn Islands

The Pitcairn Islands consist of Pitcairn Island, Henderson Island (a bird sanctuary), and Ducie and Oeno islands (both low-lying coral atolls). They are located between the Society Islands and Rapa Nui (Easter Island). In English maritime history, they are most famous as the home of the mutineers of the Royal Navy ship HMS *Bounty*, who settled on Pitcairn in 1790. The mutineers were joined by six Ma'ohi men, 12 women and a baby girl. Today, the descendants of the mutineers still live on the island. Politically, the islands are administered by a governor who is the British High Commissioner to New Zealand.



Fig. 18 Adze blade, Pitcairn Island, date unknown, basalt, length 200 mm. Maker unknown. Gift of H. Lukins 1946 (Te Papa FE006287).

The oldest items from Pitcairn in Te Papa's collection are a small selection of stone tools (Fig. 18). The island was once a significant quarry and source for stone tools for indigenous people in the region, and adzes and blades made from the local high-quality fine-grade basalt were part of an exchange network that included Mangareva and nearby Henderson Island (Turner 2010). The earliest items acquired from Pitcairn came to the museum in August 1868, with documents recording the receipt of a 'Piece of Tappa Cloth from Pitcairn Island', acquired from Mr E. Elliott (Hector 1869: 5). Another piece of barkcloth is attributed to Pitcairn on the basis of a label reading 'Tapa cloth (sheeting) from Pitcairn Is, 1855 M.W.'.

Pitcairn Island's isolated location means it is only occasionally visited by ships. In the period after the Second World War until the 1960s, ships would call up to 40 times a year. According to maritime historian Gavin McLean, 'Pitcairn is a roadstead port (that is, there is no harbour, so ships lie in the open sea, or roadstead). For two hours, on average, passengers hung over the railings while Pitcairners sold them stamps and souvenirs and loaded supplies into their wooden longboats' (McLean 2012: 124). The sale of painted seashells, carvings and weaving were an important source of income for Pitcairn Islanders. They also used them to barter with ship crews for luxury goods, and foods (McBean 1964: 39).

Te Papa's collection of Pitcairn objects includes examples of decorated shells, some woodcarving, and pieces of



Fig. 19 Painted seashell, Pitcairn Island, 1900s, spider conch shell, 280 × 175 mm. Artist unknown. Gift of Erskine College, 1986 (Te Papa FE008660).

weaving and barkcloth. They give an indication of what was made on the island over the course of a few decades but are also markers of the ships and people who were passing through the region. Two painted clam shells (Te Papa FE008709/1–2) were collected by Arthur Phillips, a marine engineer of the Port Line, a passenger and cargo shipping company. During the Second World War, he was often part of shipping convoys and voyages between Australia, New Zealand, the American west coast and the United Kingdom. The shells are decorated with hand-painted flowers and foliage, and the words ‘Pitcairn Is’. Another example of this kind of souvenir is a painted spider conch shell, originally from the collection of Erskine College in Wellington, New Zealand (Fig. 19). There is also a painted fan collected by a family of immigrants to New Zealand in June 1957. Professor Douglas and Margaret Kidd set out from England aboard the ship *MV Rangitane* of the New Zealand Shipping Company, and it made a stop at Pitcairn Island en route. In 2003, the fan was presented to Te Papa by their daughter Alison Lloyd Davies.

In the early decades of the twenty-first century, the arts and crafts on Pitcairn continue to play a small but important economic role for the island’s population. The same types of objects appear to have persisted for decades. These include indigenous and non-indigenous crafts such as weaving, tapa-making, carving, box-making, and wooden models of long-boats and the *Bounty*. The sale of postage stamps is another

source of income. However, in the age of the Internet and improved telecommunications, people no longer need to travel to Pitcairn to acquire these collectibles as they can now be ordered online through websites that Pitcairn Islanders have created.

In 2009–10, the Pacific Cultures team at Te Papa were fortunate to meet the ‘Ahu Sistas – a group of women descended from the eighteenth-century mutineers and the Ma’ohi men and women who accompanied them to Pitcairn Island. The group comprises Pauline Reynolds, Meralda Warren, Jean Clarkson and Sue Pearson, who are researchers, writers and artists. ‘Ahu refers to the barkcloth made on Pitcairn, of which Meralda Warren is the foremost practitioner. The making of ‘ahu stopped on Pitcairn around the 1940s, and Warren has been leading a small but determined revival of the craft there. Some of her decorated pieces have found a place in museum and private collections in Europe and America.

In July 2011, Warren was a keynote speaker at the Māori and Pacific Textile Symposium held at Te Papa, and she was joined there by the other ‘Ahu Sistas. Te Papa curators took the opportunity to acquire two pieces of ‘ahu made by Warren for the museum’s collection. One of the ‘ahu is undecorated, while the other is hand-painted and titled *Woven through time* (Fig. 20). It is made from six panels of cloth and depicts aspects of Pitcairn life. Included in the composition are images of hibiscus and frangipani flowers,



Fig. 20 'Ahu (tapa cloth), *Woven through time*, Pitcairn Island, 2011, bark cloth, dyes, 107 × 150 mm. Artist Meralda Warren. Purchased 2011 (Te Papa FE012634).



Fig. 21 Eei (tapa beater), Pitcairn Island, 1800s, whale bone, length 358 mm. Artist unknown. Collection development loan, 1964 (Te Papa TMP012489).

and of petroglyphs left on Pitcairn Island by earlier inhabitants, and at the centre is the ship *Bounty*. Other elements depicted include a fishhook, an una (coconut grater), an ometea (wooden dish), and a stick for husking coconut, a hatchet and an e'e (tapa beater). Te Papa also acquired examples of contemporary woven baskets. These were made by Meralda's mother, Mavis Warren, who had been weaving for 60 years. The selection includes several

lidded baskets and a mobile phone cover, all woven from dried pandanus leaf and piory thatch, which is grown and processed on Pitcairn Island.

The 'Ahu Sistas' research into their cultural heritage has shed light on a mysterious 'ahu beater made from whale bone on long-term deposit at Te Papa (Fig. 21). 'Ahu beaters were used to beat soaked bark into thinner pieces of cloth. In Tahiti, the 'ahu beater is named i'e, in Tubuai it is i'e tutu and on Pitcairn it is e'e or eei (Reynolds 2008: 15). The women on Pitcairn made and used both wooden and whalebone e'e. Reynolds (2008) has identified several examples of whalebone e'e in museums. These are identical in shape and size, have the same number and depth of grooves as the wooden e'e, and at the end of the handle is a Z or an N, which appears to be a mark of ownership; other small marks on the face of the beater also indicate possession. The e'e in Te Papa is marked in this way, as are two further e'e owned by Meralda Warren on Pitcairn Island (Reynolds 2011: 3).

## Rapa Nui (Easter Island)

Rapa Nui (Easter Island) is about 1500 km east of Pitcairn Island and was settled around 1600 years ago. In 1722, Dutch explorer Jacob Roggeveen was the first European to

make contact with the island, and in 1770 Felipe González de Anedo claimed it for Spain. Through the nineteenth century, the local indigenous population suffered and greatly reduced in size due to disease and the impact of black-birding raids for the Peruvian slave trade. Chile annexed the island in 1888 and today administers the island as one of its provinces.

The Rapa Nui collection at Te Papa is small. There is a group of artefacts from the nineteenth century, and recent artefacts from the 1990s that reflect a cultural renaissance among Rapa Nui people. A key artefact is a moai kavakava, one of the earlier documented figures of its type, having reached England in 1828 or 1835 (Davidson 2004: 252) (Fig. 22). It is thought to have been collected during Frederick William Beechey's expedition on the HMS *Blossom* in 1825. Expanding on Janet Davidson's research, we have found that while Beechey's engagement with Rapa Nui was brief and confrontational, he made some direct observations that suggest one or more figures may have been secured by members of the expedition. He writes that the shore party was inundated by people swimming out to their boat to offer them bananas, potatoes and yams, idols and nets in barter. He mentions that some of these items were actually 'thrown into the boat' by swimmers. Later, he records that 'One of the natives offered an image for sale, and being disappointed in the price he expected, refused to part with it; but a by-stander, less scrupulous, snatched it from him without ceremony, and parted with it for the original offer without a word of remonstrance from his country man' (Beechey 1832: 44).

There seem to have been few opportunities to develop Te Papa's holdings of Rapa Nui material culture beyond the acquisition of the Oldman collection. The Oldman items retained at the museum include a small obsidian tool (Te Papa OL000238/.S), an ao (dance paddle) (Te Papa OL001116) and two ua (clubs or staffs). The majority of Oldman artefacts from Rapa Nui were deposited in the Canterbury Museum in Christchurch when the collection was originally divided up. It was not until the mid-1990s and early 2000s that any new accessions were made by Te Papa.

The more recent items acquired over this period include four woodcarvings (Te Papa FE016055–58) by Bene Aukara Tuki Pate, an artist based on Rapa Nui. They were brought by Pate to the *Tu Fa'atasi* exhibition, part of the programme of the New Zealand Festival of the Arts held in Wellington in 1996. Te Papa purchased the pieces from the artist through



Fig. 22 Moai kavakava (human figure), Rapa Nui (Easter Island), 1800s, wood, bone, shell, obsidian, height 405 mm. Artist unknown. Oldman collection. Gift of the New Zealand government, 1992 (Te Papa OL000342).



Fig. 23 Left: *Ika Tangata (Fish Man)*, Rapa Nui (Easter Island), 1996, wood, length 410 mm. Artist Bene Pate. Purchased 1996 (Te Papa FE010657). Right: paoa (hand club), Rapa Nui (Easter Island), 1996, wood, length 500 mm. Artist Bene Pate. Purchased 1996 (Te Papa FE010656).

the exhibition organisers, Siva Lava Productions, and hosted him briefly at the museum. Pate's works are inspired by older, well-established carving forms such as the moai kavakava mentioned above, and feature what are now distinctive elements of indigenous style and imagery (Fig. 23). However, they also incorporate his own artistic innovations and interpretations, in the sense that there has always been variation in the seemingly homogenous style of Rapa Nui carved works (Heyerdahl 1979).

Pate's work complements examples of contemporaneous carvings from other Pacific Islands groups in the collections. The market for contemporary carvings from Pacific peoples is awash with product due to the influence of mass production (sometimes offshore and factory-based) aimed at

tourists, and it is often difficult to find well-established artists who are recognised as such in their own communities. This is an area of cultural production that Te Papa's Pacific Cultures curators would like to continue to collect selectively. The *Tu Fa'atasi* exhibition was an unexpected opportunity to acquire contemporary items from Rapa Nui. However, Pate's presence at the festival was part of a mid-1990s phenomenon where Rapa Nui people were increasingly being invited to international festivals, exhibitions and cultural events. Historian Steven R. Fischer notes that the 1990s was a period when Rapa Nui was controversially designated a World Heritage Site by UNESCO (1996); as a result, tourist visits doubled from 4961 in 1990 to 10,968 in 1996, and 'Easter Islanders themselves were experiencing the world' (Fischer 2005: 244).

As part of this re-emergence of Rapa Nui culture, Sean Mallon saw several examples of dance costumes worn by Rapa Nui performers at the 7th Festival of Pacific Arts in Samoa in 1996, and in 2004 at the 9th Festival of Pacific Arts in Palau. In 2005, Te Papa acquired dance costumes from Rapa Nui to feature in the exhibition *Culture Moves! Dance costumes from across the Pacific* (September 2005–August 2006). The groundwork for the acquisition was made possible by three developments: first, the establishment of contacts at the museum in Rapa Nui by the director of History and Pacific Cultures, Claudia Orange;<sup>16</sup> second, the availability of Internet and email communication; and third, the Spanish-language skills of Te Papa staff at the time. *Culture Moves! Dance costumes from across the Pacific* was curated by Kolokesa Māhina-Tuai (curator Pacific Cultures). She negotiated the acquisition of the costume initially through Maine Pakarati (third secretary consul at the Embassy of Chile in New Zealand), who used her contacts to identify a costume maker, Sara Roe, in Rapa Nui. The process was then assisted by Francisco Torres Hochstetter (director, Museo Antropológico P. Sebastián Englert), who acted on behalf of Mrs Roe, and assisted her in freighting the costumes to New Zealand.

Māhina-Tuai acquired three complete Rapa Nui dance costumes: a kahu pipi (female dance costume), a hami (male dance costume) (Fig. 24) and a kahu kakaka (male dance costume). The costumes are made from local materials, including kakaka (banana fibre) and shells, and imported materials, such as the feathers and nylon. When dressing a performer, body paints and pigments are often applied to complete the costume. Certain dance performances involve



Fig. 24 Hami (male dance costume), Rapa Nui (Easter Island), 2005, banana fibre, mahute fibre, chicken feathers, black shells, glue. Artist Sara Pakarati. Purchased 2005 (Te Papa FE011961/1).

the use of accessories such as *ao* and *rapa* (dance paddles) and *ua*. The *Culture Moves!* exhibition was the catalyst for Te Papa's Pacific Cultures curators to acquire several complete Pacific Islands dance costumes for the collections.<sup>17</sup> It was also an opportunity to explore questions about the ongoing representation of dance and other forms of intangible cultural heritage in the museum (Māhina-Tuai 2006).

## East Polynesia and other collections

It is important that researchers visiting Te Papa do not limit their enquiries about East Polynesia to the Pacific Cultures collection. The historical narratives relating to the region are mediated by objects in other collection areas of the museum. As our other articles developed from the survey of the Pacific collections have demonstrated, objects needn't be locked into being representative of some mythic classic culture. While it is true that the artefacts from East Polynesia speak most directly to their cultures of origin at specific historical moments, they also speak to the stories of cultural encounter, private collectors, museums and other institutions. As they circulate and change hands, they accumulate associations and become storied objects.

The few examples that follow highlight how East Polynesia, and particularly Tahiti and the Society Islands, are not just the preserve of the Pacific Cultures collection. Like histories, objects mediate encounters where material cultures overlap and intersect, often becoming entangled with each other in surprising ways. Together, the artefacts in collections stores across the museum remind us that the history of East Polynesia is intertwined with the material culture and artistic traditions of settlers and travellers from places both within and outside the Pacific. The Pacific Cultures collection can tell a small part of this story, but a wider view of the entire holdings of Te Papa opens up a rich spectrum of enquiry and opportunity.

## Botanical collections

A remarkable example of a plant specimen in the Botanical collection is *Tupeia antarctica* (G. Forst.) Cham. & Schltdl., a species named after Tupaia, the priest and navigator from Ra'iatea who joined the first expedition of James Cook to the Pacific in 1769. The specimen was collected during this voyage in 1770 at Totaranui (Queen Charlotte Sound, New

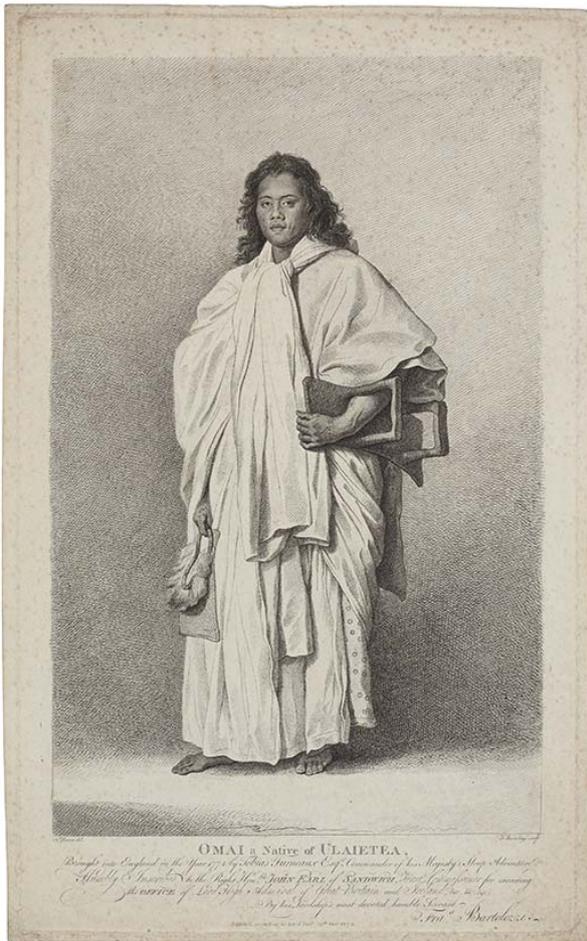


Fig. 25 Engraving, *Omai a native of Ulaietea*, England, 1774, ink, paper. Artist Francesco Bartolozzi. Gift of Horace Fildes 1937 (Te Papa Collection 1992-0035-1801).



Fig. 26 *Poetua [Poetua]*, daughter of Oreo, chief of Ulaietea, one of the Society Isles, 1785, oil on canvas. Artist John Webber. Purchased 2010 (Te Papa 2010-0029-1).

Zealand). Davidson (2004: 248) has referred to *T. antarctica*, with an illustration of the specimen held in Te Papa from the Banks and Solander collection (see also Brownsey 2012), and Tupaia's experiences on Cook's expedition are documented by Salmond (2012: 57–75). Although scholars have discovered and authenticated drawings made by Tupaia, there are no known portraits of him. This makes *T. antarctica* a rare memorial to the man and a tangible record of his visit to New Zealand.

### Art collections

In Te Papa's Art collection, East Polynesia is represented mainly by eighteenth- and nineteenth-century artworks (McAloon: 2009), which are important markers in European traditions of representation in, and of, the Pacific. A highlight is the portrait of Mai, or Omai as he was called by Europeans

(Fig. 25). He was a young man of Huahine, near Tahiti, who so charmed members of James Cook's second Pacific voyage that they took him to England with them. In 1774, he became the first person from the Pacific Islands to visit Britain. English people saw Mai as the very embodiment of the 'noble savage' – an ideal associated with French philosopher Jean-Jacques Rousseau (1712–78). Mai was presented to King George III and sat for portraits by leading artists of the day. In the Te Papa print, Mai holds a Tahitian tuarua (headrest), similar to one in the museum's collections. He returned to Tahiti in 1776, on Cook's third voyage, but died soon after.

In 2010, Te Papa acquired a portrait of Poetua by John Webber (1751–93), one of the artists on Cook's third voyage (Fig. 26). Poetua was a Tahitian princess who was kidnapped briefly by James Cook and held below decks, where the sketches for this portrait were made. Part of the portrait's



Fig. 27 Poster, 'Tahiti', New Zealand, 1950s, paper, ink, 970 × 630 mm. Artist Arthur Thompson. Purchased 2001 (Te Papa GH009292).

significance is its value as a painting connected with Cook's voyages, but it also holds an important place in the history of representation of Pacific peoples – indeed, the portrait may have set the conventions for images made in the region ever since (Christie's 2008: 12). Poetua is the perfect accompaniment for another large-scale portrait by Webber of James Cook, which is also at Te Papa. Together, they are key portraits in the history of art and cultural encounter in the Pacific.

In a contemporary vein, the painting *He purapura i ruia mai i Rangiatea* (*The seed scattered abroad from Rangiatea*) (1985) by Māori artist Robyn Kahukiwa is an image that speaks to the origin stories of the ancestors of Māori who settled New Zealand from East Polynesia. Rangiatea (Ra'iātea) is widely believed to be the home of the ancient voyager Kupe and the other Pacific people who followed his path to New Zealand; Māori often refer to this homeland as Hawaiki. Kahukiwa's painting expresses this link between

Māori and their homeland, using the forms of carved poutokomanawa (centre posts in meeting houses).

## Photography collections

East Polynesian-related photography holdings at Te Papa include postcards and photographs mainly taken in Tahiti and the Society Islands. There is a small collection of black and white lantern glass slides by late nineteenth-century Auckland-based photographer Josiah Martin (1843–1916). He was known predominantly for his portraits and landscapes of New Zealand, but his work includes a few East Polynesian locations, including Bora Bora, Moorea, Papeete and Ra'iātea. Also of note is a series of photographs of Pitcairn Islanders taken by Eric Lee-Johnson (1908–93) around 1938. Lee-Johnson and his family called in at Pitcairn during a journey from England to Wellington, and these portraits and scenes capture what were surely fleeting moments of barter and conversation during the stopover.

In 2001, a large collection of images by renowned New Zealand photographer Brian Brake (1927–88) were gifted to Te Papa by Raymond Wai-Man Lau (McCredie 2010). Many of these images appeared in *Art of the Pacific* by Brake *et al.* (1979), in which he included photographs of East Polynesian artefacts in Te Papa, and the Auckland and Otago museums.

## History collections

The New Zealand history collections have artefacts associated with tourism and protest movements against nuclear testing in East Polynesia. The poster 'Tahiti, Fly TEAL' (Fig. 27) is part of a collection of posters by commercial artist Arthur Thompson (1915–97) documenting the visual representation of New Zealand and the South Pacific as tourist destinations in the 1950s. The airline TEAL (Tasman Empire Airways Limited) was established in 1939 and flew routes through the South Pacific. Te Papa history curator Stephanie Gibson collected the posters for their potential to illustrate 1950s graphics and the commercial artwork of one of the main airlines operating in the South Pacific at the time. Gibson has also been active in collecting posters related to nuclear testing and its associated protest movements in the Pacific. Some of this material relates to French Polynesia and the testing programme that took place there between 1966 and 1996. The collection also includes anti-nuclear testing themed badges, T-shirts and other ephemera.



Fig. 28 Entrance to *Tangata o le Moana* exhibition, Museum of New Zealand Te Papa Tongarewa, 2007 (photo: Norman Heke; Te Papa MA\_I.115972).

## East Polynesia material culture on display

Since the opening of Te Papa in 1997, material culture from, or associated with, East Polynesia has been displayed in many exhibitions.<sup>18</sup> The objects and cultural treasures have provided a medium to tell stories about local and global processes and events, and ordinary and extraordinary objects. We briefly survey some of these exhibitions here, with an emphasis on the current long-term Pacific exhibition *Tangata o le Moana: the story of Pacific people and New Zealand* (2007–present) (Fig. 28).

In Te Papa's opening Pacific exhibition *Mana Pasifika: celebrating Pacific Cultures* (1997–2007), the ethnographic and largely comparative cultural displays included historical artefacts from the Society Islands, Marquesas Islands and Rapa Nui. For example, the Tahitian mourning costume was displayed in a case about costume and regalia, as was the fully adorned Marquesan toa. The moai kavakava from Rapa Nui was one of several ancestor figures in a section on

indigenous forms of religion, and a tatau (drum) from the Marquesas appeared in a display on musical instruments. A key aim of the exhibition was to put a significant number of the museum's most noteworthy cultural treasures on display in the confined space available to celebrate the survival of the artefacts but also the cultures that made them. *Mana Pasifika* achieved this to some extent, although the museum's subsequent short-term exhibition programmes allowed curators further opportunities.

One short-term exhibition after opening of *Mana Pasifika* that included East Polynesian artefacts was *Jewelled: adornments from across the Pacific* (2001–02 and 2005).<sup>19</sup> In the same period, in 2002, the large-scale temporary exhibition *Voyagers: discovering the Pacific* allowed for the display of indigenous and non-indigenous artefacts associated with the exploration of the Pacific Islands over 40,000 years. East Polynesian artefacts linked to the voyages of James Cook featured prominently, including original paintings of East Polynesian scenes by artist William Hodge, borrowed from overseas institutions. The exhibition offered a range of

perspectives on the history of voyaging and exploration in the Pacific. Starting with the first Polynesian navigators and continuing through to Cook and contemporary indigenous seafarers, *Voyagers* deployed natural history specimens, objects, artworks, films and interactives. It positioned and connected New Zealand as one of many destinations and departure points for voyagers in the Pacific.

As mentioned above, the exhibition *Culture Moves!* was the catalyst for acquiring and displaying examples of Rapa Nui dance costumes, something that may not have taken place without the development of new relationships and the added motivation of an exhibition opportunity. Marquesan adornments made from dolphin teeth were included in the international touring exhibition *Whales / Tohorā* (2007–08), which explored the biology of whales and their significance in Māori and other Pacific Islands cultures.

The historical and contemporary connections with East Polynesia are very important for museums in New Zealand. In the context of Te Papa, the idea of the nation and telling a national story are primary concerns. Collections from, or associated with, East Polynesia can play a significant part in these narratives. While some of the museum's collections are valued for their connections with the voyages of James Cook, or as art objects or ethnographic specimens, they do more than illustrate past artefacts or curiosities of Pacific peoples. They give material form to indigenous and non-indigenous histories of travel and settlement.

While New Zealand's twentieth-century connections with the Pacific often emphasise colonial ties to Samoa, the Cook Islands and Niue, around 1000 years ago the islands of influence were those in East Polynesia. Today, objects and stories connected to these eastern islands continue to shed light on this history. For example, in the exhibition *Tangata o le Moana: the story of Pacific people and New Zealand* (2007–present) museum visitors are presented with stories about the first settlers in New Zealand, the ancestors of contemporary tangata Māori (Māori people) (Mallon *et al.* 2012). A to'ō (staff) from the Marquesas Islands displayed in the exhibition illustrates the importance of genealogy in tracing ancestral connections to East Polynesia, and rests alongside a Māori tokotoko (staff). Some Pacific societies place special value on genealogies and histories that have been passed down orally. They use them to remember and reaffirm their relationships to other people and places, and to justify claims to leadership, land, culture and identities. The to'ō in *Tangata o le Moana* is constructed from plaited coconut fibre and is part of the Oldman collection. The knots in the strings of the

to'ō were probably used by Marquesas Islanders to help them recall people and events when reciting their genealogy and stories of their past, in much the same way as the Māori tokotoko was used.

The to'ō (Marquesas) and tokotoko (Māori) resemble each other in purpose and are connected linguistically in name, as are tiki (Māori), ti'i (Society Islands) and tiki (Marquesas), and vaka (East Polynesia) and waka (Māori). These material manifestations of linguistic connections or shared origins have been useful to highlight the historical depth of relationships between Māori and other Pacific peoples. Sometimes, contemporary cultural politics, ambivalence or ignorance can overshadow these connections (Teaiwa & Mallon 2005: 207).

The first Pacific people who settled in Aotearoa/New Zealand encountered a place vastly different from their tropical homelands in East Polynesia. It was full of new materials, including new types of wood, stone and shells, as well as plants for fibre. These materials inspired changes in how the settlers created tools and adornments. However, many elements of design remained largely the same – as the objects in *Tangata o le Moana* reveal. These design links have helped archaeologists to identify relationships between Māori and other Pacific peoples. Examples included in the exhibition include toki and to'i (hafted adzes), weapons, tiki and ti'i, reel adornments and pendants, tattooing tools and fishhooks.

Another object used to effect in the exhibition is a large-scale model of an eighteenth-century tipaerua (double-hulled sailing canoe) from the Society Islands (Fig. 29).<sup>20</sup> The high stern and low prow of the tipaerua are design features that persist in contemporaneous Māori waka taua (war canoes) and waka hourua (double-hulled canoes) in Aotearoa/New Zealand. Notably, it is through the revival of indigenous navigation and ocean voyaging that Māori and East Polynesian peoples are reconnecting with each other. *Tangata o le Moana* accounts for this history. The 1973 launch of the Hawai'ian double-hulled sailing canoe *Hokule'a* inspired a surge of interest in indigenous forms of navigation across the Pacific. Since then, voyagers from Hawai'i, Aotearoa/New Zealand and the Cook Islands have retraced the sailing routes of their ancestors across the Pacific. Two voyaging initiatives between New Zealand and East Polynesia stand out. The first is the voyage of Matahi Brightwell, who built the waka hourua *Hawaiki-nui* and in 1985 sailed from Tahiti to New Zealand in 33 days. The crew of five had no support boat, radio contact, maps or



Fig. 29 Model tipaerua (double-hulled sailing canoe), Society Islands, in the *Tangata o le Moana* exhibition, Museum of New Zealand Te Papa Tongarewa, 2007. Artists Izzat Design Ltd, Wellington (photo: Michael Hall; Te Papa MA\_I.115664).

modern navigation devices, instead relying on the sailing techniques of their East Polynesian ancestors. In 1991, Hekenukumai Busby built *Te Aurere*. This waka hourua has made a series of epic voyages, retracing the paths of Kupe and other Pacific navigators, and voyaging along two sides of the Polynesian Triangle marking the outermost reaches of eastern Pacific settlement – New Zealand, Hawai‘i and Rapa Nui. At the time of writing, *Te Aurere* and another waka, *Ngahiraka Mai Tawhiti*, were on the final stage of a voyage to complete the triangle by sailing from New Zealand to Rapa Nui and back again.

The histories of East Polynesia are evident elsewhere in the museum beyond the dedicated Pacific Cultures collections display space. In 2010, Te Papa opened the long-term New Zealand history exhibition *Slice of Heaven: 20th century*

*Aotearoa*. Its connection with East Polynesia is through the history of nuclear testing and protest in the Pacific the late twentieth century. From 1966 to 1996, France conducted 190 nuclear tests at Moruroa and Fangataufa atolls. By the 1990s, New Zealand was a leading voice against nuclear testing in the Pacific region, and in 1987 it passed anti-nuclear legislation. The exhibition features a display called Radioactive Pacific and uses film footage and artefacts to discuss this history, which has profoundly shaped New Zealand’s international cultural and political identity (Fig. 30).

In 2011, the major temporary exhibition *Oceania: early encounters* featured artefacts from East Polynesia to illustrate a series of narratives around indigenous and European encounters in the Pacific. They included a model canoe, a ti‘i and a tuarua alongside European etchings and engravings of Pacific peoples and scenes. The accompanying art exhibition, *Oceania: imagining the Pacific*, was developed by the City Gallery Wellington and ran concurrently. Most recently, the Māori iwi (tribal) temporary exhibition *Tai Timu, Tai Pari, Tainui: journey of a people* (2012–14) highlights a large colour image of Ra‘iatea near its entrance, immediately positing the iwi’s origin story firmly in the Society Islands.

These exhibitions highlight how artefacts from, and associated with, East Polynesia have helped curators tell a national story in a national museum. A key emphasis has been on stories of origin, genealogy and settlement, and the connections between Māori and Ma‘ohi through language and material culture. However, the artefacts have also facilitated the telling of regional and global narratives of exploration, migration and settlement; colonisation and militarism, decolonisation and self-determination; and material culture and aesthetics. The collections don’t exist in a vacuum; they have told the story of the nation and demonstrated how it is connected both to the stories of other nations and to the global flows of history.

## Outreach and community engagement

Outreach and community engagement around collections is a key focus and challenge of contemporary museum work. In-house activities and events, books, blogs, online publishing and television all take objects and stories from the collections to audiences outside the museum. The visits of researchers and cultural and community groups, and their





Fig. 32 Group Tauherenui from Parara, Tahiti Nui, during their visit to the Pacific Cultures collections storeroom, Museum of New Zealand Te Papa Tongarewa, 2012 (photo: Grace Hutton).

brought to television and online audiences (via YouTube) stories of the Tahitian mourning costume at Te Papa and the artworks of Michel Tuffery.

The development of the Internet has been a major influence and access point for information about the museum's collections. Newell (2009) argues that digital and online sources have great potential to open up Pacific collections to East Polynesian and other Pacific peoples. This is happening already: the number of enquiries about the Pacific Collections we receive via email has trebled in recent years. Te Papa's *Collections online* database has helped facilitate this. Museum websites, collection catalogues and exhibitions online make the museum storerooms more accessible than ever before (Mallon 2007: 301–303; Newell 2009).

Between 2007 and 2012, 'through the door' visitors to Te Papa from East Polynesia also noticeably increased. Some visited as museum professionals, touring the Pacific Cultures collections store and/or contributing to the museum's events programme as performers in dance troupes. According

to Newell (2009), Te Papa is one of only four institutions to have received visits to their collection stores by Tahitians. Indigenous visitors to the collections in the past five years have included Te Makatu o Oatea Nui Marquesas (2008), staff of the Musée de Tahiti et des Îles (2008), Groupe Evangeliste de Tahiti and Cook Islands, Mo'orea Hururu's French Polynesia Group (2011) and Group Tauherenui Tahitinui (2012) (Fig. 32). Researchers have also visited the storerooms, their interests ranging from Pitcairn Islands and Tahitian adzes, to Marquesan u'u and Austral Islands paddles.

However, Tahitians in particular are not visiting Te Papa to view their own cultural treasures in the collections, but to engage with Māori. This development may not always have been clear to Te Papa staff, as first points of contact have often directed Tahitian visitors immediately to the Pacific Cultures team. Like other tourists, Tahitians may not be interested in visiting new places to view their own cultural treasures. They may actually prefer a more touristic experience – one that allows them to see other indigenous

peoples and their cultures. This was the case in 2012, when a group of Rapa Nui people visited Te Papa and were actually more interested in seeing artefacts from other cultures than those from Rapa Nui. After a short viewing of the small Rapa Nui collection, they spent several hours in the Taonga Māori storerooms and visited the Natural History collections (Cairns 2012). Another factor that may influence Tahitians' engagement with overseas museums is that the largest collections of Tahitian material culture in the world (approximately 7000 objects) are at the Musée de Tahiti et des Îles on Tahiti Nui. With such a range of historical cultural resources at their immediate disposal, Tahitian artists, craftspeople and scholars are less likely to make the significant financial investment to visit international collections (Newell 2009).

Despite these circumstances, over the last 20 years Māori and East Polynesian peoples have enjoyed increased interaction through museum-related work and in conferences, cultural and sporting events across the region and internationally. The increased prominence of East Polynesia in Te Papa mirrors activity outside the museum, where cultural festivals, ocean voyaging, tourism and travel are bringing Pacific peoples together more frequently and deepening their knowledge and understanding of each other.

The history and cultures of East Polynesia have had an important role at Te Papa in telling the New Zealand story, as well as the stories relating to the history of the arts, exploration and cultural encounters across the Pacific Islands. Exhibitions at Te Papa have highlighted the deep genealogical relationships that communities in New Zealand and East Polynesia have in common. The ongoing engagement of contemporary Māori and other New Zealanders with the people of the region will strengthen ties. The exhibitions show visitors that East Polynesia was the departure point for Polynesian settlement of Aotearoa/New Zealand, and later a staging point for the European exploration of western Polynesia. However, the connections don't stop there, because East Polynesia's growing transnational communities, especially in New Zealand, provide impetus for ongoing work at Te Papa. This is work that requires further collecting and representation of the contemporary lives and experiences of East Polynesian peoples in ways that are relevant for visitors to the physical and online museum.

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## Notes

- 1 We have organised this article with the view that visitors and/or readers usually orient their enquiries by island groupings rather by object type or collectors.
- 2 From the late 1980s to her retirement in 2002, archaeologist and curator Janet Davidson led pioneering efforts at Te Papa to address the challenges of exhibiting, collecting and describing contemporary material cultures from the Pacific.
- 3 The literature is extensive, but recent survey articles and books include Addis (2012), Davidson (2012) and Howe (2006).
- 4 See *Collections online*, <http://collections.tepapa.govt.nz>.
- 5 A survey article on the collections from Hawai'i held at Te Papa is in preparation by Safua Akeli and Shane Pasene. Janet Davidson is preparing a book on the collections from Cook voyages, and therefore they are not discussed in detail in this article.
- 6 Janet Davidson was a staff member at the museum who filled various positions: vacation Assistant (summers of 1959–61, Dominion Museum); ethnologist (February 1987–October 1991, National Museum of New Zealand); senior collections curator History (November 1991–November 1993, National Museum of New Zealand); conceptual leader Pacific (November 1993–July 1996, Te Papa); curator Pacific collections (July 1996–July 2002, Te Papa).
- 7 Although these items are on indefinite loan to other museums, this article deals only with Oldman collection items physically held at Te Papa.
- 8 In 1958, the Imperial Institute changed its name to the Commonwealth Institute.
- 9 A Janus figure is one with two heads facing opposite ways.
- 10 This flywhisk is one of several collected by Oldman (2004: 6).
- 11 Te Papa FE000340, FE000341 and FE010541.
- 12 At present, these objects are the subject of a book in preparation by Janet Davidson.
- 13 Significantly, in 1994 Clarkson set up Style Pacific, a design printing group of young, mainly Polynesian ex-students. The group created the distinctive Pasifika festival logo,

- which was designed by Lesley Robb. Clarkson's commissions include leading the team that created the large hand-printed Pacific Panels on permanent display on the Galleria at Parliament Buildings, and the Pacific Sisters official lavalava for the Festival of Pacific Arts in Samoa in 1996. She has also created fabric designs for *Xena: Warrior Princess* (Pacific Renaissance) and Moontide International Ltd.
- 14 James Hector was a well-known naturalist and geologist, and first director of the Colonial Museum. He gave greater emphasis to collecting geological and biological specimens, although some cultural artefacts, mainly from Māori and Pacific peoples, were also acquired.
  - 15 We thank Elena Govor, Andrew Mills and Serge Tcherkezoff for their assistance with this query.
  - 16 Claudia Orange was part of a New Zealand delegation to a number of the Pacific Islands, including Rapa Nui.
  - 17 They included dance costumes from Samoa, Hawai'i, Palau, Banaba and Polynesian cultural groups from secondary schools in Auckland, New Zealand.
  - 18 Livingstone (1998) outlines the history and use of foreign ethnology collections in exhibitions at New Zealand's national museum before 1997. Her discussion includes material culture related to the voyages of James Cook.
  - 19 This temporary exhibition was curated by Janet Davidson. It toured to small New Zealand museums and was exhibited twice at Te Papa.
  - 20 The museum's model tipaerua was based on drawings and paintings from Cook's voyages, and sketches and paintings by Hawai'ian artist Herb Kawainui Kane (1928–2011). It was built in Wellington, New Zealand, by Izzat Design Ltd in 2006–07.

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# The ‘Smiling Boy’ Health stamps of 1931

Mark Stocker

Department of History and Art History, University of Otago, PO Box 56, Dunedin, New Zealand  
(mark.stocker@otago.ac.nz)

**ABSTRACT:** The ‘Smiling Boy’ pair of New Zealand stamps, named after the youth depicted on each value, was issued in 1931. The stamps carried a 1d (one penny) premium on their postage to raise funds for the burgeoning health camp movement. They bridge the gap between their charity stamp predecessors and the Health stamps of the future. The article considers their design, aesthetics and iconography, locating the stamps within their political and cultural contexts at a time of economic depression. The Museum of New Zealand Te Papa Tongarewa has significant holdings of ‘Smiling Boys’ material, including Royal Mint die proofs and official correspondence, as well as specimens of the stamps and the promotional poster. These are among the sources utilised in this paper.

**KEYWORDS:** ‘Smiling Boy’ Health stamps, philately, stamps, art, design, material culture, posters, children, health, history, Great Depression, health camps, New Zealand.

## Introduction: renowned but not respected?

The ‘Smiling Boys’ (1931), the ‘Full Face Queens’ (1855) and the ‘Penny Universal’ (1901) (Figs 1–4) are among New Zealand’s most renowned stamps. For several reasons, however, philatelists do not always accord the ‘Smiling Boys’ quite the same respect as their iconic predecessors. Aesthetically, they cannot fairly compare with ‘the Rembrandt of philately – the most beautiful stamp in the world’, as the ‘Full Face Queen’ design has been dubbed.<sup>1</sup> Nor do they match the historical significance of the ‘Penny Universal’. This stamp, symbolically launched on the first day of the twentieth century, enabled a letter to be posted anywhere in the world for one penny, subject to the reciprocal recognition of other countries (Gwynn 1988: 55). Conversely, the status of the ‘Smiling Boys’ as postage stamps sold at a premium for ‘charity’, as their inscription denotes, immediately compromised them for John Easton, author of the classic *British postage stamp design* (1943). He witheringly observed of the whole genre: ‘The Health stamps were designed as commercial posters, the most effective means of conveying propaganda, and although sanctioned for use on mails

they can hardly be regarded as postage stamps’ (Easton 1943: 301).

While this stance may seem purist and even precious today, the term ‘semi-postal’, commonly applied to denote a charity stamp, implicitly carries pejorative connotations, regardless of the worthiness of the cause or indeed the design. A somewhat defensive note was maintained relatively recently by the philatelist Robin Gwynn when he asserted: ‘No one would call the ‘Smiling Boys’ the most attractive of New Zealand’s Health stamps’, although he added: ‘they are the best known and much the most expensive – a set costs far more than all the other health issues put together’ (Gwynn 1988: 92). This still remains so and constitutes part of their appeal and mana, but will not be the focus of this article.<sup>2</sup>

## Precursors of the ‘Smiling Boys’: the 1929 and 1930 charity stamps

New Zealand Health stamps have long been part of the country’s philatelic distinctiveness and heritage, as an article in the American *Scott’s Monthly Journal* of May 1942 recognised. They were both attractive and, at that time at



*Left:* Fig. 1 Charity/Health stamp, 'Smiling Boy', 1d + 1d, 1931. Designer Leonard Cornwall Mitchell (Te Papa PH.000311).

*Right:* Fig. 2 Charity/Health stamp, 'Smiling Boy', 2d + 1d, 1931. Designer Leonard Cornwall Mitchell (Te Papa PH.000312).

least, affordable. Unlike similar charity stamps from Belgium and Switzerland, a complete New Zealand collection of Health stamps could be obtained for 'somewhere in the vicinity of \$7.00' (Miller 1942: 86).

The introduction of the Health stamp is traditionally credited to the Danish immigrant Kirstine Nielsen (1873–1937). Her country of origin had first issued charity seals (not postage stamps) as part of the fight against tuberculosis in 1904.<sup>3</sup> Some 20 years later, she proposed to Lady Alice Fergusson, wife of the Governor General, that a similar system should be adopted in New Zealand (Tennant 1994: 84). The Minister of Health, A.J. Stallworthy, incorporated provision for this in the 1929 Finance Act, and the first such stamps were issued on 11 December that year (Collins 1938: 402).

The first three annual issues (1929–31) were officially known as 'charity' rather than 'Health' stamps. This was consistent with the Cabinet's initial decision in October 1929 that proceeds of sales should go to the tuberculosis-prevention campaign. Stallworthy told the Crown Law Office that funds 'expended at my direction towards the cost of anti-tuberculosis measures' would benefit 'primarily the establishment of children's health camps' (Stallworthy



*Left* Fig. 3 Stamp, 'Full Face Queen' or 'Chalon Head', 2d, 1855. Designer William Humphreys (Te Papa PH.000734).

*Right:* Fig. 4 Stamp, 'Penny Universal', 1d, 1901. Designer Guido Bach (Te Papa PH.000601).

to Currie, 17 October 1929). This did not represent contradiction so much as conflation of the two causes. Margaret Tennant observed in her study *Children's health, the nation's wealth: a history of children's health camps* that 'by the later 1920s health camps were seen as the major weapon in the campaign against tuberculosis. Most particularly, they were promoted as a means of building up childhood resistance to the disease' (Tennant 1994: 69).



Fig. 5 Leonard Cornwall Mitchell, Filmcraft Studios, Courtenay Place, Wellington, c. 1927. Photographer unknown (reproduced courtesy of the Frank Mitchell collection).

The 1929 stamp – and its near identical successor of 1930 – help us to contextualise and at the same time distinguish the 'Smiling Boys'. The first stamp has, moreover, been persistently misattributed to Leonard Cornwall Mitchell (1901–71), designer of the 'Smiling Boys' (Fig. 5). The error was rectified by its perpetrator, R.J.G. Collins, in the second volume of his magisterial *The postage stamps of New Zealand*, but remarkably little heed of this has been taken since (Collins & Watts 1951: 152). The design should instead be credited to the sadly short-lived supervising artist of the New Zealand Railways Outdoor Advertising Branch, Stanley Davis (1892–1938). Davis's considerable talent, widely acknowledged in his lifetime, was long marginalised because of the canonical devaluation of commercial art, but his reputation has belatedly resurfaced with the recent publication of *Selling the dream: the art of New Zealand tourism* (Alsop *et al.* 2012: 42, 44).<sup>4</sup>

Davis's capable if unremarkable vignette depicts a newly qualified registered nurse in her uniform (Fig. 6). Produced by the Government Printer in Wellington, it employs the same line-etched relief process as the 1923 'Map' and 1925 'New Zealand and South Seas Exhibition' designs. The result, with its numerous small printing flaws, could hardly be considered refined, but it is precisely this quality that facilitates the philatelic reconstruction of a plate of 80 stamps. Subsequent health and charity issues up to the 1933 'Pathway to Health' design are likewise 'platable' (Collins 1938: 402).

In common with the George V definitive issues of 1915 and 1926, and the 'New Zealand and South Seas Exhibition' set, the design attractively incorporates decorative borders



Fig. 6 Charity stamp, 'Help stamp out tuberculosis', 1d + 1d, 1929. Designer Stanley Davis (Te Papa PH.000309).

of traditional Māori patterns, but the tukutuku motifs are now replaced with kōwhaiwhai.<sup>5</sup> The central motif, the double-barred patriarchal cross, or Cross of Lorraine – later adopted by the Free French Forces in the Second World War – is the symbol of the International Union Against Tuberculosis and Lung Disease, and would reappear in both the 1930 and 1931 issues ('The Cross of Lorraine' 2005). The bottom corner panels spell out the dual 1d postage (left) and 1d charity (right) functions, which, with the exception of the 'Smiling Boy' 2d plus 1d discussed below, would be standard for all charity and Health stamps until 1939. The Crown Law officer, A.E. Currie, warned shortly before the new issue that 'unless the position is made very clear many people will still treat the proposed stamps as a seal and use ordinary stamps as well' (Currie to Stallworthy, 19 October 1929). Clearly this was heeded in the early designs. The most memorable feature of the stamp, yet one that has been curiously overlooked by philatelists, is its punning slogan, 'Help stamp out tuberculosis', which the future Labour Prime Minister Peter Fraser would quote approvingly in a Parliamentary question the following year.<sup>6</sup> The impact was probably lessened, however, by the modest size of the stamp, which is identical to that of the definitives of the period.

In retrospect, it is evident that the Secretary of the General Post Office, George McNamara, had grossly overestimated the likely demand, fearing 'it would be dangerous to make the initial printing less than two million'. He promptly doubled this order, stressing 'extreme urgency', a few days before the stamp was released (McNamara to

Commissioner of Stamp Duties, 27 November 1929). In the event, the total number sold was 592,848, raising a relatively modest £2470 from the 1d premium ('Health stamp' 2012). At the time of their destruction, 2,633,840 stamps were still on hand (Somerville to Controller of Accounts, GPO, 17 September 1931). The timing of the issue, exactly two weeks before Christmas Day, intentionally capitalised both on the Christmas postal rush and attendant sentiments of seasonal goodwill. In subsequent years, the stamp would be launched each October, with postage of overseas Christmas mail in mind. This explains why even in 1931, newspapers still commonly referred to 'Christmas seals or charity stamps' to mean the same thing, giving some weight to Currie's legal opinion quoted above ('Christmas seal, health for children' 1931).

## A delayed design

The Post and Telegraph Department originally planned to issue a 1930 charity stamp in an entirely new design, using the 'Smiling Boys' a year earlier than they actually appeared (Collins 1938: 402). However, due to printing problems experienced by Perkins, Bacon & Co., discussed in more detail below, a stopgap plate was therefore prepared by the Government Printer. A vignette design identical to that of 1929 was deployed, the same scarlet colour retained (again the norm until 1939) (Fig. 7). There was, of course, a change of date and a new slogan: the more generic 'Help promote health' was inserted (Collins 1938: 403). McNamara again miscalculated the demand, and this despite W.A.G. Skinner of the Printing and Stationery Department having warned that 'The number of stamps to be printed will not be very large' (Skinner to Commissioner of Stamp Duties, 3 April 1930). A million were printed (McNamara to Government Printer, 14 October 1930), but only 215,543 were sold. Several factors explain this: the deepening economic depression, which would in turn severely impact 'Smiling Boy' sales a year later; the use of a near identical design to that of 1929, thus offering negligible novelty value; and what Edwin Myers of the Department of Health would later recall as 'a total ignorance of what the whole thing was about' on the part of the public (Myers to Watt, 22 July 1935).

It was precisely this attempt at consciousness raising that explains an innovation accompanying the 1930 stamp: the official promotional poster, commissioned from the Government Printer and prominently displayed in post offices and other government buildings during the limited

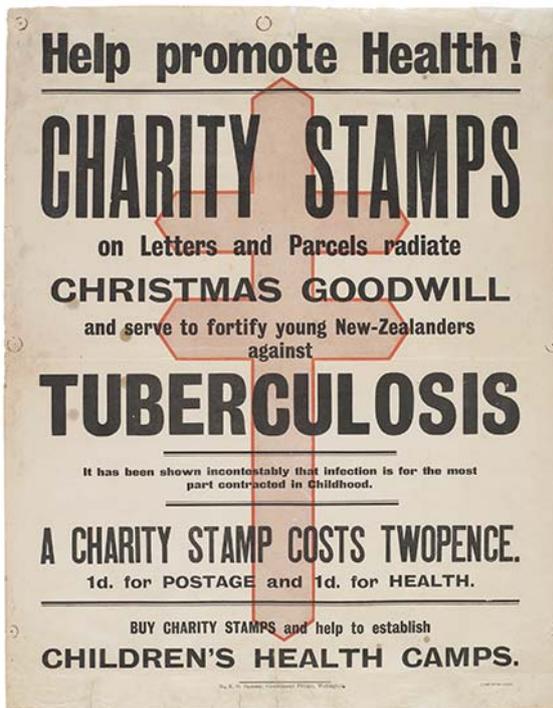


Fig. 7 Charity stamp, 'Help promote health', 1d + 1d, 1930. Designer Stanley Davis (Te Papa PH.000310).

period of sale (Fig. 8). The poster relies exclusively on the words and the symbolic double-barred cross. It is plain to the point of banality. The fight against tuberculosis, together with Christmas goodwill, are clearly spelled out, as is the role of health camps in fortifying young New Zealanders. The Government Printer poster to promote the 'Smiling Boys' the following year, with its reproductions of the stamps and reduction in verbiage (Fig. 9), marks modest progress but in neither poster is there any hint of what a vibrant artform the Health stamp campaign poster would become during the course of the decade (Fig. 9). Marmaduke Matthews's design for 1932 (Fig. 10), discussed in more detail below, is a turning point, but the artform culminates with Frank Kee's quasi-psychedelic and wittily entitled 'Make Health "Catching"' of 1940 (Fig. 11) (Tennant 1994: cover; Thompson 2003: 88).

Leonard Mitchell's original design for the 'Smiling Boys' probably dates from late 1929 or early 1930 (Figs 12–13). At the time, he was working at the pioneer Wellington film-making studio Filmcraft Ltd. According to his sons Frank and Allan Mitchell (pers. comm., 26 October 2012), Leonard was grateful to be in such employment to support his growing (and extended) family during the Great Depression period.

The postal authorities evidently envisaged a grander stamp than the 1929 issue. McNamara stipulated that the size (24 × 40 mm) should be identical to the 1882 Queen



*Above left:* Fig. 8 Poster, 'Help promote Health! Charity stamps', 1930, lithograph, 570 × 445 mm. Printed by W.A.G. Skinner, Government Printer, Wellington (Te Papa GH.009878).

*Above right:* Fig. 9 Poster, 'Health for the children! Will YOU help', 1931, lithograph, 570 × 445 mm. Printed by W.A.G. Skinner, Government Printer, Wellington (Te Papa GH.009879).

*Below left:* Fig. 10 Poster, 'Buy Health stamps for health camps', 1932, lithograph, 570 × 382 mm. Designer Marmaduke Matthews. Printed by E.V. Paul, Government Printer, Wellington (Te Papa GH.009880).

*Below right:* Fig. 11 Poster, 'Make Health "Catching!"', 1940, lithograph, 560 × 440 mm. Designer Frank Kee. Printed by E.V. Paul, Government Printer, Wellington (Te Papa GH.009886).



*Left:* Fig. 12 ‘Smiling Boy’, 1d, 1931, photographic print of artist’s drawing supplied by Government Printing Office. Original drawing *c.* 1929–30, designer Leonard Mitchell (New Zealand Post Museum collection, Te Papa PH.000711).

*Right:* Fig. 13 ‘Smiling Boy’, 2d, 1931, photographic print of artist’s drawing supplied by Government Printing Office. Original drawing *c.* 1929–30, designer Leonard Mitchell (New Zealand Post Museum collection, Te Papa PH.000711).

Victoria fiscals, which were then nearing the end of their lengthy reign (McNamara to Commissioner of Stamp Duties, 24 March 1930). Possibly because of the rather homespun printing quality of the recent charity stamp, quotes for the supply of the die and plate for its successor were now sought offshore from Perkins, Bacon & Co., the Royal Mint and Waterlow & Sons.<sup>7</sup> Their respective tenders were for £65, £99 and £229 2s 6d (Post and Telegraph Department to New Zealand High Commission, London, 2 June 1930).

Predictably, the Perkins, Bacon & Co. tender was accepted, and at that stage there were not unrealistic hopes that the stamp would be ready in time for Christmas, hence the dating of the early designs as 1930. By September, however, the High Commission in London cabled the Post and Telegraph Department: ‘die proof submitted three occasions found unsatisfactory. Hopeful settle matter forthwith and ship about six weeks. Should year be altered to 1931’ (New Zealand High Commission, London, to Post and Telegraph Department, 18 September 1930). The following day this alteration was confirmed, and the recycling of Davis’s 1929 design for the imminent 1930 issue proceeded accordingly.

The Perkins, Bacon & Co. order was cancelled in early November 1930. By then, over two months after its deadline, clearly ‘the firm had much difficulty in preparing the die’ (Anonymous 6 November 1930). Collins (1938: 403) rather more graciously explained that the company’s failure in late 1930 was ‘owing to pressure of work already in hand’. Perkins, Bacon & Co. die proofs in black, all dated 1930, are considerable rarities (Fig. 14); in May 2012, a collection of 10 die and plate proofs was sold at auction by H.R. Harmer of New York for US\$7375. The proofs included a ‘mock up’ prepared for the engraver by photographing Mitchell’s drawing and making alterations in the width of the eyebrows, reducing the chin and shading in the face (Harmer 2012). At the national stamp exhibition Palmplex ’82, the organisers issued a limited-edition proof print in red from a Perkins, Bacon & Co. die of 1930. Gwynn (1988: 92, pl. XVI) describes these as ‘attractive and well worth incorporating in any collection of health stamps since they help explain the events of 1930–31’.

Fortunately for the New Zealand authorities, despite having lost the earlier tender, the Royal Mint had in the interim produced of its own accord a proof from a steel die,



*Left:* Fig. 14 'Smiling Boy', 1d + 1d, 1930, die proof, 1930. Printed by Perkins, Bacon & Co. (reproduced with permission from R. Gwynn (1988), *Collecting New Zealand stamps*, Auckland: Heinemann Reed, p. 92).

*Middle:* Fig. 15 'Smiling Boy', 1d + 1d, 1930, die proof, 1930. Printed by Royal Mint, London (New Zealand Post Museum collection, Te Papa PH.000716).

*Right:* Fig. 16 'Smiling Boy', 1d + 1d, 1931, die proof, 1930. Printed by Royal Mint, London (New Zealand Post Museum collection, Te Papa PH.000710).

made in order to provide its craftsmen with work experience (Collins 1938: 404). At the invitation of the High Commission, the Controller of the Post Office Stamp section at Somerset House compared the Perkins, Bacon & Co. and Royal Mint proofs, and deemed the latter much superior (Fig. 15). Hence the Royal Mint was now commissioned at its original quote of £99 (Anonymous 6 November 1930).

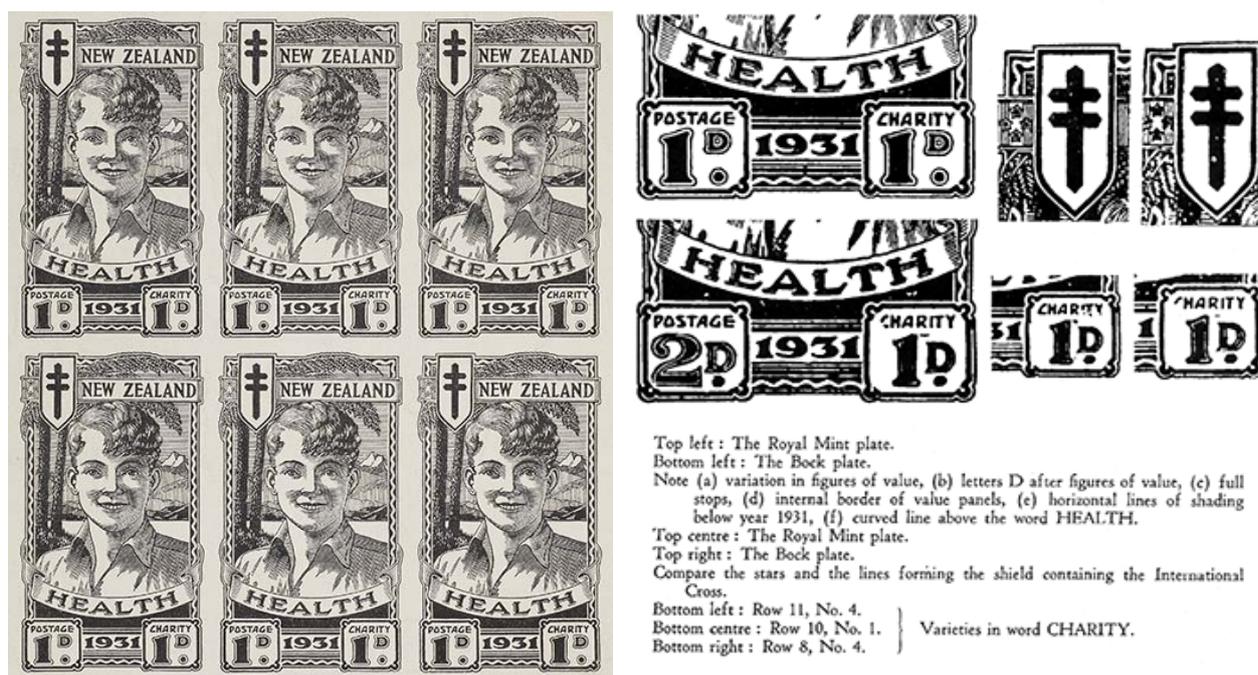
With more time now being available and the commission guaranteed, the Royal Mint engravers, like Perkins, Bacon & Co. before them, made numerous alterations besides the obvious one to the date (Fig. 16). Their improvements are evident in the two proof sheets in the Museum of New Zealand Te Papa Tongarewa (Te Papa) collection, dating from November and December 1930 (Fig. 17). The boy's smile is rendered considerably more naturalistically and the shark-like, almost caricature aspect of his Perkins, Bacon & Co. predecessor is now considerably diminished; his face, neck and shirt are more softly and subtly modelled in their chiaroscuro effects; the sky is shaded, providing greater uniformity with the mountains; the gap between the ponga (tree ferns) trunks and the border is more satisfactorily resolved; and the wavy lines of the frame – always more

generic rather than those of the *kōwhaiwhai* of 1929 and 1930 – are now more sharply defined (Collins 1938: 405; Gwynn 1988: 92).

Yet the new design nevertheless continued to be beset with problems. In April 1931, when the die and plate had arrived in New Zealand, the impressions on the plate were found to be spaced too closely together vertically, which meant that trial sheets could not be satisfactorily perforated. The solution was to cut the plate in three places and insert strips of metal spacers. Although this now made perforation possible, it also meant that the 1d stamp was seldom well centred (Collins 1938: 406; Gwynn 1988: 92).

## A second stamp

A further challenge came in June 1931, when the universal penny postage rate for letters weighing up to 1 oz was doubled to 2d. McNamara promptly recommended that a second stamp of the new value should be issued in preference to an unsightly overprint. A clause was therefore added to the 1931 Finance Bill to amend the value of a 'charity' stamp from 1d to be henceforth 'of such amount



Left: Fig. 17 'Smiling Boy', 1d + 1d, 1931, proof sheet of 120 stamps (detail), 1930. Printed by Royal Mint, London (New Zealand Post Museum collection, Te Papa PH.000713).

Right: Fig. 18 Royal Mint 1d + 1d plate and William Rose Bock 2d + 1d plate (reproduced from R.J.G. Collins (1938), *The postage stamps of New Zealand. Vol. 1*, Wellington: Royal Philatelic Society of New Zealand, p. 408).

as the Postmaster-General determines' (Anonymous 29 June 1931). The move came as a consequence of the Great Depression, which was then at its most intense. The government was desperate to raise revenue – which had halved since the late 1920s – whilst limiting public spending (King 2003: 346). A cartoonist such as Gordon Minhinnick would have enjoyed a field day had the 'Smiling Boys' been produced a year earlier. An important point inadequately explained in philatelic accounts is that the penny rate remained valid for Christmas card, small packet and newspaper post, though the latter two rarely bore charity or Health stamps ('Christmas seal, health for children' 1931). This explains the retention of the 1d design and, indeed, the reversion to stamps of this value in subsequent years, with no new 2d appearing until 1939, when postage rates were again increased.

There was insufficient time for the new plate to be prepared in London, and so the veteran Wellington-based engraver William Rose Bock (1847–1932) was commissioned to make one of similar design to that of the Royal Mint, with the postage value altered to 2d, while the premium remained 1d (Gwynn 2010). Bock therefore prepared an etched-line die in zinc, which involved cutting

away both values in the lower corner panels and reinserting new, relatively uniform ones, decreasing the size of the numerals whilst increasing the size of the characters (Collins 1938: 408) (Fig. 18). He produced a second plate after his first one was deemed defective. Bock was certainly engraving down to the wire. Proofs were submitted to the Post and Telegraph Department on 22 October 1931, and just nine days later the new scarlet and deep blue stamps were on sale.

Notwithstanding the Royal Mint's 'highest satisfaction' with the 'accuracy and uniformity of detail' of its own recent stamp plates (Deputy Commissioner of Stamp Duties to Commissioner of Stamp Duties, 21 March 1930), that for the 1d abounds in printing flaws, as does the locally produced 2d plate (Collins 1938: 407). That said, Collins noted that since the latter was composed of copper and prepared in relief, any surplus metal left level with the plate surface 'could easily have been removed prior to the printing of the stamps. From an examination of the plate it does not appear as though any attempt was made to "clean" it up prior to use' (Collins 1938: 408). This is no negative reflection on Bock, whom Gwynn justly salutes for his 'remarkable contribution to New Zealand stamp production ... Often he was employed because there was no time for orders to be



Left: Fig. 19 Health stamp, 'Hygeia', 1d + 1d, 1932. Designers W.J. Cooch and R.E. Tripe (Te Papa PH.000277).

Middle: Fig. 20 Health stamp, 'Pathway', 1d + 1d, 1933. Designer James Berry (Te Papa PH.000278).

Right: Fig. 21 Health stamp, 'Crusader', 1d + 1d, 1934. Designer James Berry (Te Papa PH.000279).

placed overseas, so he had to work under considerable time pressure' (Gwynn 1988: 92). The 1931 2d was no exception, and his loss – Bock died in August 1932, aged 85 – is immediately apparent when the shoddy workmanship of the plates made by his successor, H.T. Peat, for the 1932 'Hygeia' and, particularly, the 1933 'Pathway' Health issues is beheld (Figs 19–20). Only with the 1934 'Crusader' Health stamp (Fig. 21) do we really witness engraving and printing – undertaken by De La Rue in London – that are of international quality (Collins 1938: 409–418; Wolfe 2010: 75–79).

## Charity, Health and Christmas stamps

Luit Bieringa has hailed the 'Smiling Boys' as the 'first fully-fledged health stamp' (Bieringa 1990). While this is not entirely historically accurate, even in 1938 the punctilious Collins referred to the '1931 Health stamp' (Collins 1938: 404). Perhaps the design is best seen as occupying a transitional role between charity and health, prefiguring subsequent issues that unequivocally belong to the latter category. Although the message of funding the anti-

tuberculosis campaign is retained with the double-barred cross icon, the more generic sign 'Health' is now dominant, printed in a large font and brandished on a ribbon – almost a banner – that wraps around the frame. In the bottom right panel 'Charity' is used for the final time in this context.

'Charity' stamps would remain the standard appellation in government memoranda until at least late 1932 (McNamara to Commissioner for Stamp Duties, 30 November 1932). The official promotional poster, moreover, refers four times to a 'charity' stamp or stamps. Collins recalled that there was 'a good deal of objection' to the term (Collins 1938: 404). At the height of the Great Depression, 'charity' carried demeaning Victorian connotations, incompatible with New Zealand's cherished but battered self-image as 'God's Own Country', a situation exploited by the Labour opposition (King 2003: 346). This probably explains why the newly appointed Minister of Health, James Young, referred to the 1931 issue as 'Christmas stamps' even at the time of their launch; by December, he was calling them 'Health stamps' ('Christmas seal, health for children' 1931; 'Health camp, minister's appeal' 1931). Consistent with this, the *Auckland Star* explained that 'the object is to give the children not charity but a chance' ('Help the children' 1931).



Fig. 22 Health stamp, 'Dr. Elizabeth Gunn: Founder of Children's Health Camps 1919', 4¢ + 1¢, 1969. Designer Maurice Conly (Te Papa PH.000734).

### 'Health stamps for health camps'

The catchy slogan 'Health stamps for health camps' emerged at this point and, as Tennant observes, 'the link was never broken' (Tennant 1994: 85). While her study admirably analyses and chronicles the subject, it is necessary here to summarise the still precarious position of children's health camps in 1931. Barely a handful of them then existed. They ran heroically on a diet of sunshine, fresh air, canvas and the proverbial smell of an oily rag, to which might be added the modest proceeds of charity stamp sales. Although it may appear historically unfashionable in methodological terms, it is difficult not to credit much of the success of the nascent movement to two remarkable women doctors, Elizabeth Gunn (1879–1963) (Fig. 22) and Ada Paterson (1880–1937).

Gunn was a formidable, extrovert pioneer who had served as an officer in the First World War (Tennant 1994: 38–61), while Paterson was a more tactful, sensitive and popular administrator, director of the Health Department's Division of School Hygiene from 1923 until her premature death in 1937 (Tennant 1994: 62–65, 79). Gunn had established the first health camp at Turakina, near Marton, in 1919, which ran each summer through most of the following decade. Other camps sprang up in Awapuni, Motuihe and Port Waikato, serving the catchment areas of Palmerston North, Auckland and Hamilton, respectively. The South Island lagged behind, with an ill-fated solitary



Above: Fig. 23 Unadopted design for 2d + 1d Health stamp, 1932. Designer James Berry (New Zealand Post Museum collection, Te Papa PH.000715).

Below: Fig. 24 Health stamp, 'Lifebuoy', 1d + 1d, 1936. Designer James Berry (Te Papa PH.000332).

camp held at Andersons Bay, Dunedin, in 1922. Later, Cora Wilding, who was subsequently known for her Sunlight League health camps, organised a pilot version at Geraldine in September 1931. Much discussed in that same year was the proposed flagship of the movement, Raukawa (later known as the Otaki Children's Health Camp), the first permanent, year-round camp, behind which Paterson was the driving force (Tennant 1994: 76–83) (Fig. 23).

Raukawa opened on 18 February 1932, just 11 days before the 'Smiling Boys' were withdrawn from sale. Its success marked a critical stage in the evolution of the health camp movement from the 'rugged individualism' and voluntarism of Gunn, to becoming part of the more sophisticated, government-funded and government-regulated welfare state by the end of the decade. Exponential growth of health camps and their resident populations would characterise the years ahead. Their future was secured in the Federation of Children's Health Camps (1936) and the 1938 King George V Memorial Fund Act, which gave the voluntary movement a statutory basis (Tennant 1994:

263). This welfare (and bureaucratic) revolution was accompanied by a veritable explosion in the popularity of Health stamps. The 186,731 'Smiling Boys' were swamped by 1,449,980 'Lifebuoy' or, as this author prefers to call them, 'Smiling Girl' Health stamps of 1936 (Fig. 24), providing a financial bonanza inconceivable in 1931 ('Health stamp' 2012).

### 'No pay; no puff'

Press coverage of the designs of the 'Smiling Boys' is far from extensive. The stamps did not enjoy instant classic status; rather, their status developed from their comparative scarcity as later collectors eagerly sought them out. They generated nothing like the excitement of either the 'Penny Universal' or, indeed, the 1936 'Chamber of Commerce' series – also designed by Mitchell – when queues of collectors and speculators formed outside post offices at opening time (Franks 1981: 51). Edwin Myers, a Department of Health civil servant and later national director of pharmacy, was the mainstay of the Health stamp campaign (Tennant 1994: 89). He recalled how he had assumed this role – which evidently carried no official title – in November 1931, a matter of days after the release of the 'Smiling Boys'. This was at a time when 'the general elections [were] only a month away and a slump at the front door. My first set back was to find the Newspaper Proprietors' Association had discussed Health stamps at a then recent meeting and had decided that the future policy would be – briefly – "no pay; no puff"' (Myers to Watt, 22 July 1935). Armed with a minuscule national advertising budget of £88 3s 4d, Myers's plight was all too understandable (Anonymous 1935). Yet his recollections, written in July 1935, conveyed a clear sense that the corner had been turned, thanks not least to his 'can do' attitude. Although he was sometimes prone to exaggeration, Myers's infectious enthusiasm merits quotation:

I felt at the beginning that the stamp idea must be built on a foundation that would not have to depend on spectacular selling stunts, and it was impressed on me that for steady selling year after year there must be some incentive. This incentive lay in Health Camps, and such was the plan I followed. By talking Health Camps to the right people one has something tangible to put up, and when the idea has sunk in, the Health Stamp is brought to light as a means for procuring the sinews of war. Today instead of having to urge upon existing Health Camp organisations to put their shoulders to the wheel when the stamps are out we now find them complaining that the stamps are not

produced soon enough to enable them to reap the benefit before Christmas, when the business tapers off to practically nothing. (Myers to Watt, 22 July 1935)

Myers insisted from the outset that the revenue derived from sale of stamps in any district should be reserved for its benefit: 'This policy is the only fair one, it encourages local effort, and removes from any organisation the prospect of getting a greater share of the fund by using particular pressure' (Myers to Watt, 22 July 1935). Consistent with this was the importance of impressing on 'local people that this is not a Government affair' (Myers to Bateman, 10 August 1934). In late 1931, Myers undertook a whistle-stop national tour, and claimed credit for getting the 'dormant' Wellington Health Camp Association – whose success has long been credited to Ada Paterson – 'started as an active body' (Myers to Watt, 22 July 1935; Tennant 1994: 65). Myers addressed the Auckland Community Sunshine Association in a 'hurried visit North'; he put proposals before the Waikato Children's Camp Committee; turning southwards, he visited the Sunlight League in Christchurch; and he delivered an address in Invercargill, whose immediate aftermath was the formation of a health camp association. He continued: 'Propaganda through Radio, the Schools, Picture Theatre Screens and various organisations was arranged. These avenues have been re-used each year since with variations in the attack in other directions, including the use of a few original "wheezes"' (Myers to Watt, 22 July 1935).

### Phar Lap and Father Christmas

The 'wizard wheeze' of 1931, endorsed if not actually conceived by Myers, was the commission of racehorse Phar Lap (Fig. 25), by this time an Australian expatriate, to 'mark his approval' of the sale of postage stamps for children's health camps ('Phar Lap's autograph' 1931). Phar Lap's hoof 'stamp' – was auctioned for an undisclosed sum at a community singing event, held at Wellington Town Hall on 17 December. Both Myers – who 'joined with the song leader [Owen Pritchard] in bright patter and anecdotes' – and the Health Minister James Young were in attendance. Young assured the audience of how 'the health of the children had shown material improvement after a few weeks of the fresh air, sunshine, and routine of the health camp'. Admission to the function was free on production of Health stamps at the door, which could be retained for postage afterwards. Despite this, the *Evening Post* reported the turnout as 'somewhat disappointing', a poignant reflection



Fig. 25 Phar Lap, 1920s. Photographer unknown (Te Papa O.009451).

on the depth of the Great Depression ('Health camp, minister's appeal' 1931).

Although Myers complained of 'no puff', the stamp campaign received conscientious and entirely positive press coverage. Faced with a still largely unfamiliar public, the same message needed repetition and consolidation. At the outset, Young set the tone: 'Each charity stamp means the gift of one penny to the funds for establishing children's health camps; and it is believed that people will again welcome the opportunity of assisting in this way towards brightening the lives and improving the health of the children whom it is proposed to benefit.' The minister identified the benefits that the camps brought of 'adequate food, rest, sunlight and fresh air'. Everyone who bought a 'Christmas stamp' would assist in 'giving health to a child in need of it'. Young's colleague Adam Hamilton, the Postmaster-General, entreated: 'Only a little was asked, but that little was asked of everyone' ('Christmas seal, health for children' 1931). A charming photographic feature published in a mid-November *Evening Post* depicts the Kirkcaldie & Stains department store resident Father Christmas sending his Christmas parcels to England, naturally 'using the health charity stamps' ('Health stamps for health camps' 1931) (Fig. 26). Beside him is an array of toys and a copy of the promotional poster.

In Wellington, a publicity committee was formed to promote the use 'of Christmas seals or charity stamps'; its members included Myers and Paterson ('Health camps for delicate children' 1931). A 'large sale of stamps was expected' for the Christmas season by the ladies' auxiliary of



Fig. 26 *Publicity photograph for Health stamps*, 1931. Photographer Gordon H. Burt Ltd. (Te Papa C.002731).

the Auckland Community Sunshine Association ('Social gatherings' 1931). In Dunedin, Myers was reported as having 'stimulated the interest of the people in the Health Stamps, the sale of which is so important' ('Here and there' 1931). Without specifying quantities – which were probably disappointing for the campaigners – newspapers reported which postal districts had bought the most stamps. Wellington headed the list in the first week of December, while Hamilton knocked Auckland into second place ('Health stamps, Wellington heads list' 1931), perhaps because of the high profile of the thriving Waikato Children's Camp League and its leaders, W.H. Paul and Hilda Ross (Tennant 1994: 82–87). In mid-December, the Wellington Manufacturers' Association issued its members with copies of the poster. Each member was supposed to have 'this placard placed in his staff dining-room and factory, and it is expected that every member employed will purchase at least one stamp' ('Christmas seal, success of movement' 1931). Myers colourfully described such activities as 'beating up the business community' but, as he later recalled, 'with the imposition of increased postal charges, the commercial well was fast drying out' (Myers to Watt, 22 July 1935).

On 17 December, when the Wellington East post office in Cambridge Terrace was opened, Government Architect J.T. Mair's art deco design was admired for 'typifying the onward march of progress'. In his ceremonial speech, Young stressed his 'special interest in the function' of the new building 'because the post offices at the present time were

selling health stamps ... Every person who bought one of these stamps was contributing to the happiness of children who needed a holiday but could not afford it.' Hamilton symbolically enacted the first transaction, 'the sale of some of the Christmas health stamps' to his cabinet colleague Young. Another such stamp was attached to the first letter sent from the office, which was appropriately addressed to the Wellington Children's Health Camp Association ('New post office' 1931). Press coverage ended at about this point, confirming Myers's earlier comment that after Christmas 'business tapers off to practically nothing' (Myers to Watt, 22 July 1935).

## Fortune does not smile

The stamps were withdrawn from sale on 29 February 1932. Sales amounted to 74,802 of the 1d value and 111,929 of the 2d. Relevant files in the New Zealand Post and Department of Health archives do not provide statistics of the quantities actually printed, although in early October 1931, three weeks before their issue, McNamara requested 2500 sheets of the 1d, which totalled 300,000 stamps (McNamara to W.A.G. Skinner, 10 October 1931). The following October, he ordered remaining stocks to be destroyed (McNamara to Commissioner of Stamp Duties, 30 November 1932). The proceeds made available to health camps were £778 0s 11d, compared with £898 1s 11d raised by the 1930 charity stamp, itself a marked decline from 1929 ('Health stamp' 2012).

Although Myers provided several plausible explanations for this precarious beginning as discussed above, the overwhelming and insurmountable one was the impact of the Great Depression. Collins eloquently confirmed this: 'It has to be remembered that at the time these stamps were placed on sale ... the economic conditions prevailing were abnormal. The spending power of the general public had been considerably lessened through reduced incomes and by increased general and emergency taxation imposed by the Government.' The doubling of postal rates was a case in point. Collins continued: 'The forced need for general economy prevented many people from subscribing even small sums to any worthy cause. There is not the slightest doubt that the poor sales of the 1931 issue were definitely due to times of financial adversity, and the general improvement in the sales of subsequent issues bears ample proof in support of this contention' (Collins 1938: 406).

It wasn't, then, the stamps' fault. Or was it? Their critical reception has not generally been positive, although Wolfe

(2010: 77) has recently noted how their 'smiling subjects radiated a sense of good health', thereby fulfilling their prime function. Robin Gwynn and Laurie Franks are more critical, the latter stating: '[t]his set is the most famous of all our health stamps, not because it is the best design, but because it is the rarest and most valuable' (Franks 1981: 44). Douglas Muir, curator at the British Postal Museum and Archive, and a specialist in the stamp design of the inter-war period, is blunter still: 'I always thought they were hideous' (pers. comm., 10 September 2012). Unlike, for example, the near contemporary 1935 'Waitangi Crown' coin, the rarity of the object has not led collectors to discover any latent beauty in the 'Smiling Boys' (Stocker 2010: 187).

## The world's worst stamps?

With one conspicuous and verbose exception, there appears to have been negligible published critical feedback on the stamps at the time of their issue. An article in the *Australian Stamp Monthly* on the stamps was quoted verbatim in the *Evening Post* on 15 December 1931. Perhaps because this was during the later stages of the promotional campaign and Christmas postal rush, it drew no apparent response either from interested parties such as Myers or from any readers. As was common practice at the time, the article was unsigned, and it was accompanied in the same journal by two further anonymous – and equally uncomplimentary – contributions to the 'New Zealand Notes' section, also quoted at length in the *Evening Post*. The original headline read 'New Zealand does it again – and again', and what followed berated the quality of a number of the country's recent issues. The harshest words were reserved for the 'Smiling Boys':

In the sacred cause of charity, two stamps have arrived which must be seen to be believed. Like the old lady at the zoo who exclaimed at her first sight of the giraffe, we feel tempted to assert, 'There ain't no such animile.' Against a pictorial background, which we hope is not typical of New Zealand ... appears the head of a curly-headed boy (or is it a marcelled young lady?). No, for the sake of New Zealand's reputation for chivalry, we must decide on the boy, for he is adorned with one of the most beautiful black eyes we have ever seen. He is also a typical boy in the way his ears stick out, while one of these has undoubtedly suffered in the same bout as his eye. His teeth appear to be intact, but there are distinct evidences of contusions in the upper lip and nose. Undoubtedly overflowing with animal spirits, our young friend bears a prominent label, 'Health.' Maori carvings [*sic*], the New Zealand arms [*sic*],<sup>8</sup> the



Fig. 27 Type fiscal stamp, 'Arms', 1s 3d, 1931. Designer H. Linley Richardson (Te Papa PH.000763).



Fig. 28 Stamp, 'Pro Juventute', Switzerland, 20 centimes, 1933. Designer Jules Courvoisier (author's collection).

'anti-tuberculosis' cross, and appropriate inscriptions complete the design. The whole is just twice the size as it need be, and very badly surface printed. It is a little worse than the worst advertising label we have seen, and would disgrace the least self-respecting quack. ("World's worst" 1931).

The 'Smiling Boys', together with H. Linley Richardson's 1931 1s 3d 'Arms Type' fiscal stamp in lemon yellow (Gwynn 1988: 102) (Fig. 27), led the author to claim that 'New Zealand can now justly claim first and second prizes for the world's worst stamps – while some of her other recent issues are well in the running for third place ... An enviable record – perhaps.' A contributor to 'New Zealand Notes' was similarly scathing, calling the stamps 'the ugliest labels I have ever seen – so ugly that they'll spoil the look of any collection'. The author continued, presciently as it proved:

Still, market advisers cannot take that into consideration – except insofar as that fact means, undoubtedly, increased demand. Consequently, I advise readers not to overlook these two stamps. They may not be beauties (they certainly are not that), but they will turn out well. Why cannot the New Zealand authorities wake up to the fact that they are doing these charities a grave disservice in issuing these ugly labels? A well produced and attractive issue would sell in thousands. ("World's worst" 1931)

The invective of the main article is more than a little reminiscent of Charles Dickens's infamous critique of the

early Pre-Raphaelite painting *Christ in the House of His Parents* (1849–50) where, with journalistic gusto, he derided the 'hideous, wry-necked, blubbering boy ... who appears to have received a poke in the hand' (Rosenfeld 2012: 116). Both in J.E. Millais's classic painting and Mitchell's humbler stamp, there was an element of 'the shock of the new' that caused unsuspecting critics to lash out. There was no obvious philatelic precedent for the 'Smiling Boys' and, although a Swiss 'Pro Juventute' 20-centimes photogravure stamp depicting a smiling girl of Ticino set against the landscape was issued in 1933 (Fig. 28), there has really been nothing quite like them since.<sup>9</sup> There is a case, then, for a more even-handed appraisal, and with it a more searching contextualisation of the 'Smiling Boys' than they have so far been accorded.

## Why the 'Smiling Boys' smiled

The impact of charity and Health stamps in raising public consciousness has been cogently summarised by Margaret Tennant. They brought the camps to the attention of many New Zealanders, 'performing to this day [1994] a vitally important publicity function'. Furthermore, for stamp collectors worldwide, they 'helped to bolster New Zealand's image as a supposedly healthy, humanitarian country, with a concern for its future citizens' (Tennant 1994: 83). The 'Smiling Boy' was the first such stamp to do this and is thus

something of a pioneer. Although it is not recorded whether he saw the stamp, its image nicely vindicates George Bernard Shaw's affectionate complaint on his 1934 visit that 'the trouble with New Zealand is that it is rather too pleasing a place.' Apposite too was his observation that 'even you reporters ... look cheerful enough'. The health camps themselves were prime examples of what Shaw provocatively hailed as 'your communistic institutions', which were 'to some extent leading world civilisation today' (Orsman & Moore 1988: 586).

'Glowing with health', 'brown and bonny', 'bubbling with enthusiasm' and even 'hysterical with delight': these were how children on health camps were expected to feel, look and be (Tennant 1994). Above all, the camps and their residents were meant to exude 'cheerfulness', a favourite word of Ada Paterson (Tennant 1994: 65). The documentary film *Health stamps for health camps*, made at the apogee of the movement in 1949, does not show any detailed philatelic footage, but the viewer is introduced to a joyful boy munching his daily apple at Campbells Bay Children's Health Camp, whereas two less fortunate urchins, left behind in tumbledown Auckland, glower at us. A.R.D. Fairbairn, the narrator, observes: 'Some are healthy in spite of lack of places to play. Some are not. Buying stamps gives kids happy days' (*Health stamps for health camps* 1949).

## The dental dimension

The 'Smiling Boys' reveal the benefits of dental care, which was an important aspect of camp culture from Elizabeth Gunn's foundation at Turakina in 1919 onwards. Among her innovations reported in the *Wanganui Chronicle* was the synchronised, twice-daily 'toothbrush drill', where children were lined up and supplied with mugs of water and their own toothbrushes and paste, proceeding to brush, spit and brush again in cheerful unison ('Children's health camp' 1919; Tennant 1994: 178). But for the vast majority of children, no amount of toothbrush drill – or still more important, its maintenance on their return home – could ever hope to produce such perfect teeth as those of the 'Smiling Boys'. Indeed, they would be uncommon for any nine or ten-year-old boy such as is seen here. Far more likely, he would be in the process of losing his milk teeth at the time. Mitchell's image is thus necessarily an idealised one, whereas gap-toothed ultra-realism would have looked inappropriate and undignified.<sup>10</sup> More importantly, perfect teeth such as these reflect the healthiness as well as the

happiness central to the stamps' message. Scott (1995), who has pioneered the sub-field of philatelic semiotics, notes the cleverness of Mitchell's design whereby the largest symbolic sign of the stamp, 'Health', itself forms into a smile that echoes that of the grinning boy. Still subtler is the placing of the 'Postage' and 'Charity' panels, which approximate to the level of his hands – which may well be, were they visible, outstretched palms. Scott (pers. comm., 22 October 2012) suggests a plausibly ingratiating message: 'give me a penny sir, and I will be healthy and smiling'. In retrospect, it is perhaps surprising that Myers did not make more of this in the promotional campaign.

Angus Trumble's lively microhistory, *A brief history of the smile*, makes a number of observations germane to the 1931 stamps. He notes that 'teeth are fiendishly difficult to draw' and that 'most artists have found it more trouble than it was worth' (Trumble 2004: xxii). The improvements to the smile made by the Royal Mint when compared with the original proof amply testify to this difficulty; victory was literally snatched from the jaws of defeat. Trumble (2004: 56) characterises the smile as 'a highly sophisticated concept, an expression of the emotions, a mode of communication, a beacon of desire, a ritual – an occasion, in other words of intense psychological, anthropological and social interest, the product of acute observation, cognition and interpretation'. This may well be so; but closer in mood to the stamps are the altogether simpler lines from the song 'When you're smiling', made famous by Louis Armstrong in 1929: 'When you're smiling/The whole world smiles with you.'<sup>11</sup> It is clear what the 'Smiling Boys' represent, and how the viewer is expected to respond. There is a wholesomeness, candour and innocence about them, and a refreshing absence of the 'lewdness', 'desire' or 'deceit' that Trumble (2004) explores in the smile. It requires a separate discussion, but it would not be far-fetched to detect a sense of national self-image in the stamps.

Even were they more purely formal and less iconographically contingent 'texts', the 'Smiling Boys' could only date from a particular moment in history. Trumble (2004) notes the comparative rarity of the smile in art prior to the introduction of motion pictures, which 'in so many respects revolutionised the way people looked at the world and at each other in the twentieth century'. With his employment at the time by Filmcraft Ltd., not to mention a personal enthusiasm for movie-going shared by so many of his generation, Mitchell was in an ideal vantage point to respond to this. Film frames permitted precise moments of

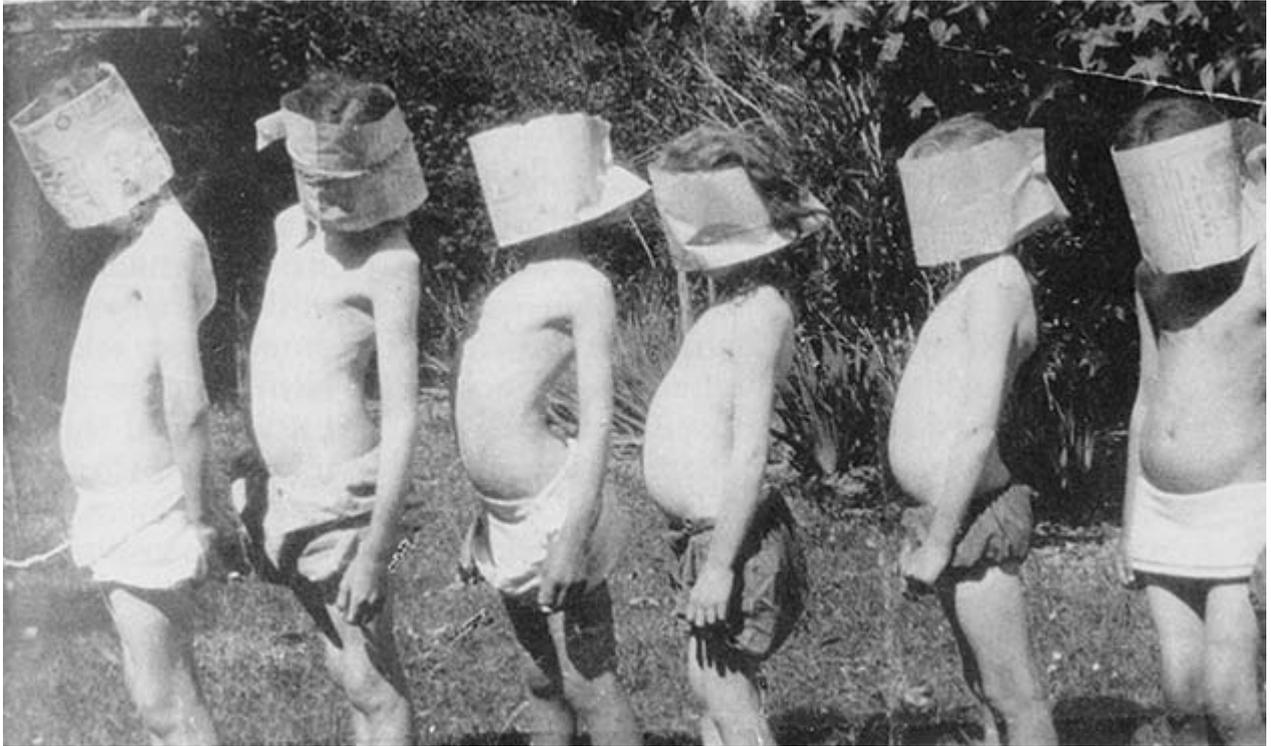


Fig. 29 *Malnutrits' (girls) lined up to publicise their deficient condition, c. 1930.* Photographer unknown (Children's Health Camps Board collection, reproduced from M. Tennant (1994), *Children's health, the nation's wealth: a history of children's health camps*, Wellington: Bridget Williams Books, p. 45).

spontaneity to be frozen, something 'that had eluded artists in the past ... The open smile in this way emerged from the sphere of domestic privacy and adopted its present position as an apparently universal symbol of health and happiness' (Trumble 2004: 154). Mitchell was wise to this early on. The 'Smiling Boys' precede by over a generation the famous series of late-1950s designs for Crest toothpaste advertisements by Norman Rockwell – an artist whom Mitchell much admired – which bear the common title: 'Look, Mom – no cavities!' (Frank and Allan Mitchell, pers. comm., 25 October 2012).

### Illusion and reality

Although only the head and shoulders of the 'Smiling Boy' are depicted in the stamps, the viewer is encouraged to construct from this fragment his lithe, healthy, suntanned body and impressively growing physique. This could be rendered far more graphically in the larger poster format. Marmaduke Matthews's official 1932 campaign poster shows a full-length boy of a similar age to his 1931 brother, flexing his biceps to a pair of suitably awe-struck girls and

another smiling boy, as they build sandcastles (Thompson 2003: 80) (Fig. 10). For the first time the poster is a full-fledged example of art deco, both pictorially and in graphic design, with the hitherto dominant verbiage reduced to the by now familiar slogan: 'Buy Health stamps for health camps'. 'Charity' was buried in the sand.

Yet there is a poignant and pathetic slippage between the propagandist illusion perpetuated alike by the 1931 stamps and – more comically – by the 1932 poster, when we contrast it with harsher 'reality'. The latter is evident, for instance, in a photograph of so-called 'malnutrits', who are lined up at a camp to publicise their deficient condition (Tennant 1994: 45) (Fig. 29). The girls are suffering from rickets and other malnutritional conditions, manifest in their skinny legs and swollen bellies.

One of Gunn's ideals was to fatten up 'more valuable stock' on her Turakina farm campsite 'than it had ever fattened before in pastoral records' (Tennant 1994: 52). In his speech launching the 'Smiling Boy' stamps, Health Minister James Young referred to the 'ill nourished and delicate children' whose health would be safeguarded by a stint in a health camp. He put the case simply and movingly:



Fig. 30 Commemorative half-crown coin reverse, 'New Zealand Centennial', 1940. Designer Leonard Cornwall Mitchell (author's collection).

'Children's health camps deserve Dominion-wide support. Many sickly children are made well and happy by them' ('Christmas seal, health for children' 1931). The 'Smiling Boys', triumphant 'poster boys' of the health camp movement, in retrospect arouse scepticism about their delicacy and sickness in the first instance. They represent, however, a potent ideal, which was nicely articulated in 1937 when the New Zealand Rugby Union declared its support of the King George V Memorial Fund: 'From the children of today we recruit the rugby players of tomorrow, and nothing would please us more than to see every child with the physique and the opportunity to take his place on the football field' (Tennant 1994: 125).<sup>12</sup> Health camps would assist precisely that.

## Who was the Smiling Boy?

It would be a highly appealing story had the model for the 'Smiling Boys' grown up to be an All Black, a hero in the North African campaign, or perhaps even both. But like Michelangelo's *David*, he almost certainly existed purely in the artist's mind and visual databank.

Although several other charity and Health stamps can be directly traced to photographs of individuals, for example the 1929 and 1930 'Nurse', the 1935 'Key to Health' and the 1937 'Rock-climber', this does not apply to the 'Smiling

Boys'. Frank and Allan Mitchell do not believe that he was based on any identifiable individual, although they plausibly maintain that having three small sons around him subliminally influenced Leonard's creation. The eldest son, Leonard ('Lenny') Victor Mitchell (1925–80), would have been no more than five years old at the time of the design, and his facial features did not accord with those on the stamps. Lenny's chronically shy temperament, rather than family illness or indeed poverty, probably led to his being sent to Otaki Children's Health Camp, an experience that he evidently loathed (Frank and Allan Mitchell, pers. comm., 26 October 2012).

The term 'portrait' is ultimately inappropriate for the stamps, as this presupposes a sense of personality and characterisation as well as likeness. By contrast, the attractive, symmetrical features of the 'Smiling Boys' make them constitute a 'type', at once a composite, construct and ideal.

## Conclusion: a semiotically efficient stamp?

The criticism of the *Australian Stamp Monthly* notwithstanding, Allan Mitchell – himself a stamp designer – admires the soft, rounded and modelled features of the 'Smiling Boys', conveying the lines of his father's pen drawing and, like this author, believes the stamps to be more successful than has traditionally been maintained (pers. comm., 26 October 2012). Where their design can surely be admired is in what David Scott terms the 'semiotic efficiency' of a stamp, where typographical and iconic (emblematic national identity) components are effectively synchronised to reinforce the desired message. The 'Smiling Boys' at once exude and extrude a particularly 'concentrated ideological density' within their necessarily small frames (Scott 1995: 14). A design crammed with icons, symbols and words (the Southern Cross, the double-barred cross, 'Postage', 'Charity' and 'Health'), a miniature New Zealand landscape tableau of mountains, lake and punga, framing the pièce de résistance of the 'Smiling Boy' himself, placed close to the picture plane and engaging in eye contact with the viewer, would all seem to spell near certain thematic confusion and visual disaster. To his credit, and a feat that he would repeat with his complex design for the 1940 commemorative half-crown coin reverse (Fig. 30), Leonard Mitchell treads the tightrope precariously but successfully (Stocker 2011: 216–221). The 'Smiling Boys' smile on, and the spectator smiles back at them.

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## Notes

- 1 Gordon Kaye, quoted in Gwynn (1988: 4). Easton (1943: 46) states that in the 'Full Face Queens', 'the New Zealand design has come alive ... one feels that one is interested in New Zealand, rather than in the fact that the postage rate for New Zealand is one penny.'
- 2 Gwynn (1988: 137) notes that the Stanley Gibbons catalogue value of the 1931 1d mint had increased from £13 to £160 between 1972 and 1981. The current Len Jury catalogue values unmounted mint specimens of the stamps at \$700 each (July 2012).
- 3 Winifred Macdonald, a former employee at Otaki Hospital, made a rival claim in a letter to *The Dominion* (Macdonald 1935: 8). She went on to complain about the 'dismal failure financially' of Health stamps up to that point, which she attributed to 'an overdose of officialdom'. Macdonald dated her original 'plan, complete with examples' to 1927, but even if this is correct, Nielsen had preceded her by one year. In turn, opinions differ about the world's first charity stamp. This is sometimes credited to Denmark (1904), whose seals inspired Nielsen, although New South Wales and Victoria (both 1897) have their champions. See Altman (1991: 28) and Tennant (1994: 83).
- 4 See also Thompson (2003: 75, 96). Davis was acclaimed in an obituary by Leo Fanning in the *New Zealand Railways Magazine* as an 'Artist and idealist ... His bold, striking treatment of many subjects has been highly praised by well-qualified critics of the British Empire and America' (Fanning 1938: 15). He is not mentioned, however, by Dunn (2003) or by Pound (2009).
- 5 For a useful discussion of kōwhaiwhai and koru motifs on New Zealand stamps, see Pound (1994: 192).
- 6 According to Alister McIntosh (1976: 7), Fraser had 'a strong sense of humour'.
- 7 For Waterlow & Sons as printers of British stamps in the 1920s, see Muir (2010: 215, 225, 248).
- 8 The Southern Cross is the first quarter of the shield of the New Zealand coat of arms itself; see Mackenzie-White (2012).
- 9 A dubious descendant, however, is the 33¢ 'Smiley' stamp, based on Harvey Ball's *Smiley* (1963), issued by the US Postal Service in 1999 (Woo 2001).
- 10 Gerard Kiljan's designs for the 1931 Dutch 'Kinderzegels' (Child Welfare) stamps provide a startlingly modernist contrast to the contemporaneous 'Smiling Boys'. Scott (1995: 42, 44) observes: 'Kiljan's photographic images of clearly disabled children in bold colour against a white background, were revolutionary in their realism and directness ... The oblique typography of the commemorative text is deliberately out of synchronisation with the rest of the typographic elements, enhancing the feeling of unease created by the image.' Further, Scott recognises that 'the image has suffered from a reduction in scale and from typefaces that are swamped by their white backgrounds ... The crux of the problem is that of legibility and scale' (Scott 1995: 44). No such problems arise with the far more conservative 'Smiling Boys' design.
- 11 Frank Mitchell informed the author that his father loved Louis Armstrong 'not only for his music but for the enthusiasm he put into making it' (pers. comm., 6 November 2012).
- 12 For an excellent discussion of physical welfare as the people's entitlement in New Zealand during the 1930s and 1940s, see Macdonald (2011: 70–98).

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# Population sizes of shearwaters (*Puffinus* spp.) breeding in New Zealand, with recommendations for monitoring

Susan M. Waugh<sup>1</sup>, Alan J.D. Tennyson<sup>2\*</sup>, Graeme A. Taylor<sup>3</sup>  
and Kerry-Jayne Wilson<sup>4</sup>

<sup>1</sup>Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand (susan.waugh@tepapa.govt.nz)

<sup>2</sup>Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand (alant@tepapa.govt.nz)

<sup>3</sup>Department of Conservation, PO Box 10420, Wellington, New Zealand (gtaylor@doc.govt.nz)

<sup>4</sup>PO Box 70, Charleston, New Zealand (kerryjayne1@hotmail.com)

\* Corresponding author

**ABSTRACT:** We reviewed population data for the nine taxa of shearwaters *Puffinus* spp. that nest in the New Zealand region. Data for about 350 current breeding colonies were found, and each taxon nested at between three and about 180 localities. We reviewed the information to assess time-series of information for each population and, where possible, to determine trend and total population size. However, few of the species had robust enough information to allow those assessments to be made. We recommend high-priority sites for future monitoring, and encourage other researchers to publish or make available findings from previous work to assist in building a comprehensive picture of the status of shearwater populations.

**KEYWORDS:** New Zealand, shearwaters, *Puffinus*, population sizes, monitoring, review.

## Introduction

Seabirds form an important part of the marine ecosystem, and are responsible for the transfer of a large quantity of nutrients between trophic levels and between marine and terrestrial systems. New Zealand has a high diversity of petrel and albatross taxa (order Procellariiformes), which includes many threatened or rare species, e.g. Chatham Island taiko (*Pterodroma magentae* (Giglioli & Salvadori, 1869)), as well as species that are hugely abundant, e.g. sooty shearwater (*Puffinus griseus* (Gmelin, 1789)) (Taylor 2000a,b).

Marine policy analysts are increasingly turning to indicator species to help them define changes in the well-being of marine systems. For example, Antarctic krill (*Euphausia superba* Dana, 1850) abundance is used as an

indicator of the richness and health of marine systems in the area managed by the Convention for the Conservation of Antarctic Marine Living Resources. Species at high trophic levels in marine systems can be powerful indicators of change, and long-term datasets on their population changes and individual behaviours have been used to indicate important changes in global systems such as ocean energy transfer, circulation and temperature rises. For example, the numbers of breeding emperor penguins (*Aptenodytes forsteri* G.R. Gray, 1844) were a key variable in analyses showing the influence of climate change and sea-ice extent on the Antarctic marine ecosystem (Barbraud & Weimerskirch 2001, 2006; Jenouvrier *et al.* 2009).

Petrels and albatrosses are typically long-lived and many have delayed maturity, breeding for the first time only at

5–10 years of age (Schreiber & Burger 2002). They are superbly adapted to marine environments where resources are sparse, and for using oceanographic features that assist in concentrating food into dense patches. For example, foraging of shearwaters and albatrosses along upwellings, and in relation to movements of top marine predators such as whales and dolphins, is well documented (Evans 1982; Au & Pitman 1986).

However, petrels and albatrosses are less well adapted at responding to rapid – often human-induced – changes in their environment. Such influences may affect them at their breeding sites, for example through predation by introduced mammals or habitat loss; or through interaction with industrial and artisanal fisheries. It is estimated that more than 300,000 seabirds are killed annually in fisheries globally (BirdLife International 2012). For New Zealand, documented mortality in commercial longline and trawl fisheries comprised 2520–4412 individuals in 2008–09 (Abraham & Thompson 2011) of more than 30 species of Procellariiformes (Waugh *et al.* 2008). Climate change and sea water-warming may also affect some seabird populations (e.g. Newman *et al.* 2009).

New Zealand is known for its diversity and abundance of Procellariiformes. This has been explained by the ecological richness of the New Zealand Exclusive Economic Zone. Another explanation has been the large extent of the New Zealand continental shelf, providing a high degree of both ocean productivity and potential niche segregation. The many small islands forming the New Zealand archipelago may be another driver because of the tendency for Procellariiformes to nest near their natal site, with more restricted dispersal to alternative breeding sites than for some other bird groups. New Zealand is one of the nations with the highest number of nesting species and is the country with the greatest number of endemic and threatened taxa (Croxall *et al.* 2012).

We conducted an extensive review of both published and unpublished literature to bring together records of breeding seabirds throughout the New Zealand region, and here present data for the shearwaters (*Puffinus* spp.).

The objectives of this paper are:

- 1 To summarise the data available on breeding distribution and abundance at each breeding site for the nine shearwater taxa nesting in New Zealand.
- 2 To interpret data to provide information on species trends and changes in range, and to better define the state of our

knowledge about each species. However, except in a few cases, data are inadequate to allow these analyses.

- 3 To recommend sites for future monitoring of shearwater populations.
- 4 To encourage researchers to make available unpublished information through subsequent publication or data-sharing to enable an increasingly comprehensive picture of shearwater population status.

Shearwaters are one of the most abundant groups of seabirds in the New Zealand region, with populations numbering in the millions of breeding pairs. Although they are not a highly threatened group of species (Croxall *et al.* 2012), there is very poor information on several taxa, and for some there is no recorded quantitative population estimate. Nineteen shearwater taxa are known to occur in the New Zealand region, of which nine breed there (Gill *et al.* 2010). The taxa we discuss fall into three main groups based on geographic spread:

- 1 Those with subtropical breeding distributions (two taxa) – wedge-tailed shearwater (*Puffinus pacificus pacificus* (Gmelin, 1789)) and Kermadec little shearwater (*Puffinus assimilis kermadecensis* Murphy, 1927). The later taxon breeds only at the Kermadec Islands.
- 2 Those breeding in temperate areas (five taxa) – Buller's shearwater (*Puffinus bulleri* Salvin, 1888), flesh-footed shearwater (*Puffinus carneipes* Gould, 1844), fluttering shearwater (*Puffinus gavia* (J.R. Forster, 1844)), Hutton's shearwater (*Puffinus huttoni* Mathews, 1912), and North Island little shearwater (*Puffinus assimilis haurakiensis* C.A. Fleming & Serventy, 1943). These taxa are endemic to New Zealand, except for the flesh-footed shearwater, which also breeds elsewhere in the Pacific and Indian oceans.
- 3 Species found mainly in cool temperate waters and sub-Antarctic waters (two taxa) – sooty shearwater and subantarctic little shearwater (*Puffinus elegans* Giglioli & Salvadori, 1869). The sooty shearwater also occurs in smaller numbers in warm temperate waters and has a southern oceanic distribution, breeding in Chile, the Falkland Islands, Australia and New Zealand. Subantarctic little shearwaters are known to breed only on the Chatham Islands (Aikman & Miskelly 2004) and the sub-Antarctic Antipodes Islands within the New Zealand region, and elsewhere only on a small number of islands in the South Atlantic and Indian oceans (Gill *et al.* 2010).

## Methods and conventions

A literature review was conducted using published scientific studies, some unpublished reports, and the authors' own field diaries. These data were compiled in a database with the aim of making them available to the research community through this paper and online resources. Our review builds considerably on other recent reviews of shearwater colonies (Marchant & Higgins 1990; Hamilton *et al.* 1997; Taylor 2000a,b; Newman *et al.* 2009; Baker *et al.* 2010; Gill *et al.* 2010) but we acknowledge that we have not made an exhaustive review of the literature.

We followed the taxonomy, nomenclature and sequence of species as in Gill *et al.* (2010), with species presented in that order in the text and tables.

Only breeding records were collated, and included 'presence' records (where the occurrence of breeding individuals or progeny was noted) as well as counts or estimates of breeding populations or individuals. The date and methodology of each record was recorded.

We attempted to classify the methodologies according to the guidelines presented by the Species Status and Trends working group of the Agreement on the Conservation of Albatrosses and Petrels (e.g. Agreement on the Conservation of Albatrosses and Petrels 2012). However, this proved problematic, as for most records methodology was not documented. We retained notes in the tables only for those with clearly defined methods and describe these according to the ACAP categorisations, thus: ACAP1 – census with errors estimated; ACAP3 – survey of quadrats or transects of representative portions of colonies/sites with errors estimated; ACAP4 – survey of quadrats or transects without representative sampling but with errors estimated; ACAP5 – survey of quadrats or transects without representative sampling or errors estimated. Surveys without methodological information have been classified as 'unknown'; we have not made any assessment of the reliability of those counts.

All records with reliable information on species identity, location and date were included. Locations that we consider unproven breeding sites were not listed. Even if the precise date and location were unknown, some records were included where they added useful information.

The method used for each observation was assigned to one of three types: ground observation, where no actual count was made or where abundance was estimated to an order of magnitude only; ground count, where an actual figure for abundance, or both maximum and minimum

figures, were given (but even 'counts' are mostly estimates rather than exact numbers); observed from a distance, where counts or observations were made from offshore, e.g. from boats or nearby islands.

We assessed possible trends in population numbers only where two high-quality, recent (post-1990) surveys from major breeding sites were available for comparison. Where possible, we estimated the total numbers of breeding pairs for each taxon.

We followed the guidance of the *New Zealand gazetteer of official geographic names* in describing sites (Land Information New Zealand 2012). Accepted names followed by alternative names in parentheses are used. Dual names are separated by a forward slash. The name of island group is listed first, separated from the island name, or further subdivision, by commas. The singular noun 'Island' is abbreviated to 'I.' and the plural 'Islands' to 'Is'.

## Results

Shearwater species currently nest at about 350 known colonies (extinct colonies not included) around New Zealand, although some records are for generic locations (e.g. an island group). Count data were recorded for only about 190 of these colonies. The greatest number of records were found for sooty shearwater (*c.* 180 sites), followed by fluttering shearwater (90 sites), North Island little shearwater (30 sites) and flesh-footed shearwater (20 sites). For other shearwaters there were 12 or fewer sites per species.

Tables 1–9 set out the population data in relation to each site. For each species, we summarise the state of information at each site. We note sites that we consider priorities for future monitoring of population trends.

### Wedge-tailed shearwater

In the New Zealand region this species breeds only on the Kermadec Islands. There is a population estimate available for all but one of 10 colonies (Table 1). The three sites with greatest numbers of birds are: Macauley I., where 20,000 pairs were estimated in 1970 and 40,000 pairs estimated in 1988; Meyer Is, where 10,000 pairs were recorded in 1966–67; and Curtis I., which had 2500 pairs in 1989. Numbers at Macauley I. probably increased after goats were eradicated there in 1970 (Veitch *et al.* 2004) but there is no other population trend information. Repeat surveys at these larger colonies are a priority, and Raoul I. should also be monitored

Table 1 Population data for wedge-tailed shearwater, *Puffinus pacificus pacificus*. Sites are listed in roughly north–south order (KMI = Kermadec Islands; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Raoul I. (Rangitahau I.)	KMI	1907–08	–	Burrows	Breeding	Ground observation	Iredale 1910
		1964	–	Individuals	Common	Ground observation	Edgar 1965
		1966–67	–	Burrows	Uncommon	Ground observation	Merton 1968, 1970
		2008	<50	Breeding pairs	–	Ground observation	Gaskin 2011
Napier I.	KMI	1966–67	2	Burrows	–	Ground count	Merton 1970
Meyer Is, North and South Meyer Is	KMI	1907–08	–	Burrows	Breeding	Ground observation	Iredale 1910
		1966–67	10,000	Breeding pairs	–	Ground observation	Merton 1970
Meyer Is, North Meyer I.	KMI	1964	–	Individuals	Breeding	Ground observation	Edgar 1965
Meyer Is, South Meyer I.	KMI	1966–67	–	Breeding pairs	–	Ground observation	Merton 1970
Herald Is, Dayrell I.	KMI	1966	–	Burrows	Common	Ground observation	Merton 1970
Herald Is, northern Chanter I.	KMI	1967	3	Burrows	–	Ground count	Merton 1970
Macauley I.	KMI	1970	20,000	Breeding pairs	–	Ground observation	Veitch <i>et al.</i> 2004
		1988	40,000	Breeding pairs	–	Ground observation	Veitch <i>et al.</i> 2004
L’Esperance Rock	KMI	1970	50	Breeding pairs	–	Ground observation	Veitch <i>et al.</i> 2004
Curtis I.	KMI	1989	2500	Breeding pairs	–	Ground observation	Veitch <i>et al.</i> 2004
Cheeseman I.	KMI	1970	500	Breeding pairs	Up to 500	Ground observation	Veitch <i>et al.</i> 2004

to assess a potential population recovery after the recent eradication of mammals there. The total New Zealand wedge-tailed shearwater population size is in the order of 50,000 breeding pairs.

### Buller’s shearwater

Six of the seven identified Buller’s shearwater breeding localities are in the Poor Knights Is group (Table 2). The state of the information and loose estimates make an assessment of the status of the population and its total size difficult.

Outside the Poor Knights, only a single burrow has ever been reported, on Simmonds I. (Motu Purihi I.). While we consider this to be a one-off record, the status of the species there needs reassessing.

Visits by G.A.T. and others to Aorangi I. in 2011–13 suggest that the island may have similar numbers of burrows to those reported by Bartle (1968), with the largest concentrations on the higher ridges and southern slopes, but only a low density of burrows in most of the island’s interior. Estimates were made in 1943 at Tawhiti Rahi I. of 250,000 breeding pairs and 500,000 individuals, but no repeat count at this site has been made. Tawhiti Rahi and Aorangi I. are the largest islands in the Poor Knights group and provide the most viable population-monitoring localities for this species. There is ongoing work by the authors at Aorangi I.

At a superficial level, the population at the Poor Knights Is seems to have increased from about 100 burrows on Aorangi in 1938 (when there was no estimate for Tawhiti Rahi I.), to hundreds of thousands of pairs on the Poor

Table 2 Population data for Buller's shearwater, *Puffinus bulleri*. NLE = Northland East; – = no data or comments; for sampling protocol, see 'Methods and conventions'.

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Poor Knights Is (7 of 12 islands)	NLE	1963–81	2,500,000	Individuals		Ground observation	Harper 1983
Poor Knights Is, Tawhiti Rahi I.	NLE	1924–25	–	Individuals	Breeding, small colony	Ground observation	R. Falla <i>et al.</i> in Wilson 1959
		1940	–	Burrows	Breeding in large numbers	Ground observation	Buddle 1941; Wilson 1959
		1943	250,000	Breeding pairs	–	Ground observation	Buddle 1946
		1943	100,000+	Burrows	Breeding, well over 100,000	Ground observation	Wilson 1959
		1980	–	Burrows	Breeding	Ground observation	McCallum 1981
Poor Knights Is, Aorangi I.	NLE	1938	100	Burrows	–	Ground observation	Buddle 1941; Wilson 1959
		1940	–	Burrows	Breeding, in large numbers	Ground observation	Buddle 1941; Wilson 1959
		1958	152+	Individuals	More than 152 breeding	Ground observation	Kinsky & Sibson 1959
		1963–64	100,000	Burrows	–	Ground observation	Bartle 1968
		1980s	200,000	Breeding pairs	–	Ground observation	Harper 1983; Taylor 2000b
		2010–13	100,000	Burrows	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Poor Knights Is, Motu Kapiti I.	NLE	1940	–	Burrows	Breeding	Ground observation	Buddle 1941
			–	Chicks	Very abundant	Ground observation	R. Parrish <i>in</i> Taylor & Parrish 1992
Poor Knights Is, Archway I.	NLE	1990	1	Burrow	–	Ground observation	R. Parrish <i>in</i> Taylor & Parrish 1992
Simmonds Is, Motu Puruhi I.	NLE	1990	1	Adult and chick	Breeding	Ground observation	R. Parrish & B. Waddell <i>in</i> Taylor & Parrish 1991

Knights group in the 1940s to 1960s, to 2,500,000 individuals in 1981 (Harper 1983). However, the accuracy of these counts is unclear. Robertson & Bell's (1984) estimate of 50,000–100,000 breeding pairs for the total population conflicts with the information in Harper (1983) and is likely to be an underestimate. Based on limited data, we suggest a more likely figure of 300,000–400,000 breeding pairs. No counts have been done on the other islands of the group since the 1980s.

## Flesh-footed shearwater

From 20 current flesh-footed shearwater nesting localities, 18 colonies have counts and several sites have repeat counts, although the quality of most of the counts prior to 2003 is poor or unknown (Table 3). It appears that small colonies on Hen I. (Taranga I.), Red Mercury I. (Whakau I.), Hongiora I. and Whakaari I. (White I.) have become extinct (Baker *et al.* 2010; this paper). Reports of breeding at Manawatawhi Is (Three Kings Is) (Oliver 1930; Falla 1934)

Table 3 Population data for flesh-footed shearwater, *Puffinus carneipes*. Sites are listed in roughly north–south order (NLE = Northland East; AKW = Auckland West; CDL = Coromandel; BOP = Bay of Plenty; EHC = East Coast, Hawke’s Bay; WTT = West Coast North I. Waikato–Taranaki–Whanganui; MLS = Marlborough Sounds; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Marotere Is (Chicken Is), Gunsight Rock	NLE	1939	2	Pairs	Probably this island	Ground observation	McCallum <i>et al.</i> 1984
		1982	1	Burrow	Incubating bird	Ground observation	McCallum <i>et al.</i> 1984
Marotere Is (Chicken Is), Muriwhenua I.	NLE	1939	1	Burrow	–	Ground observation	C. Fleming <i>in</i> Skegg 1964
Marotere Is (Chicken Is), West Chicken I. (Mauitaha I.)	NLE	1982	–	Burrows	Common	Ground observation	McCallum <i>et al.</i> 1984
		1994	4	Burrows	–	Ground count	Tennyson & Pierce 1995
		2008	15	Burrows, occupied	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
Marotere Is (Chicken Is), Araara I.	NLE	1982	–	Burrows	Several pairs	Ground observation	McCallum <i>et al.</i> 1984
Marotere Is (Chicken Is), Lady Alice I. (Mauimua I.)	NLE	1916	–	Burrows	Present	Ground observation	E. Stead <i>in</i> Skegg 1964
		1939	–	Unknown	Rare	Ground observation	Wilson 1959
		1953	100s	Breeding pairs	–	Ground observation	Chambers <i>et al.</i> 1955
		1962–64	100s	Breeding pairs	–	Ground observation	Skegg 1964
		1982	1000s	Individuals	–	Ground observation	McCallum <i>et al.</i> 1984
		2007–09	2763	Burrows	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
		2007–09	921	Burrows, occupied	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
Marotere Is (Chicken Is), Whatupuke I.	NLE	2008	2941	Burrows	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
		2008	1210	Burrows, occupied	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010

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remain unverified (Turbott & Buddle 1948). The breeding record for East I. (Whangaokeno I.) (Marchant & Higgins 1990) is considered an error (the record is presumed to refer to fluttering shearwaters) – no flesh-footed shearwaters were present on the island in 2001 (G. Taylor, pers. obs.), although there is an unconfirmed record of this species nesting there in 1931 (Bell & Blackburn 1960). The species was ‘common’ on West Chicken (Mauitaha) I. in 1982, and had an estimate of four burrows in 1994 and 15 burrows in 2008. Coppermine I. had in excess of 10,000 breeding pairs in 1965 (based on extrapolation from representative plots),

fewer than this number in 1992, and 1425 occupied burrows in 2008–09 (a high-quality estimate).

Sites that could be considered for further counts, with one high-accuracy count in the post-2003 period, are: Karewa I. with 2561 occupied burrows in 2010; Atiu I. (Middle I.) with *c.* 3000 breeding burrows in 2003; and Green I. with 74 occupied burrows in 2009. However, these three sites are very fragile. More easily monitored would be Ohinau I. with 2071 occupied burrows in 2009; Titi I. with 337 occupied burrows in 2009; Lady Alice I. (Mauimua I.) with 921 occupied burrows in 2009; Whatupuke I.

Table 3 Population data for flesh-footed shearwater, *Puffinus carneipes*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Marotere Is (Chicken Is), Coppermine I.	NLE	1962	1000s	Breeding pairs	–	Ground observation	Skegg 1964
		1965	10,000	Breeding pairs	–	Ground count (ACAP5)	Merton & Atkinson 1968
		1982	–	Burrows	Abundant	Ground observation	McCallum <i>et al.</i> 1984
		1992	–	Burrows	Present but fewer than 10,000 pairs	Ground observation	A. Tennyson, pers. obs.
		2008–09	2290	Burrows	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
		2008–09	1425	Burrows, occupied	–	Ground count (ACAP5)	Baker <i>et al.</i> 2010
Taranga I. (Hen I.)	NLE	1937–54	–	Adults and burrows	Very few	Ground observation	Skegg 1964
		1960–64	0	Burrows	–	Ground observation	Skegg 1964
		1991	0	Burrows	–	Ground observation	Taylor 2000a; G. Taylor, pers. obs.
Te Henga (Bethells Beach), Kawahaia I.	AKW	1990	8	Breeding pairs	–	Ground count (ACAP1)	Taylor 2008; G. Taylor, pers. obs.
		2012	23	Breeding pairs	–	Ground count (ACAP1)	G. Taylor, pers. obs.
Mercury Is, Atiu I. (Middle I.)	CDL	2003	3000	Burrows	–	Ground count (ACAP5)	G. Taylor, pers. obs.
Mercury Is, Green I.	CDL	1966	–	Burrows	Common	Ground observation	Thoresen 1967
		2009	132	Burrows	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
		2009	74	Burrows, occupied	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
Mercury Is, Korapuki I.	CDL	1974	2	Adults	–	Ground observation	Hicks <i>et al.</i> 1976
		2003	10	Burrows, occupied	–	Ground count	G. Taylor, pers. obs.
Mercury Is, Kawhitihi I. (Stanley I.)	CDL	1998	1	Burrow, occupied	–	Ground count	G. Taylor, pers. obs.
		2003	1	Burrow, occupied	–	Ground count	G. Taylor, pers. obs.
Mercury Is, Kawhitihi I. (Stanley I.), stack to the north	CDL	1998	1	Burrow, occupied	–	Ground count (ACAP1)	G. Taylor, pers. obs.

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with 1210 occupied burrows in 2008; and Coppermine I. For this species, data are of sufficient quality to provide a reasonable estimate of the total New Zealand population of *c.* 10,000–15,000 pairs breeding annually in 2003–12. The authors are conducting further counts at Lady Alice I. (Mauimua I.), Titi I. and Ohinau I. in 2012–13.

Robertson & Bell's (1984) estimate of 50,000–100,000 breeding pairs and Taylor's (2000a) estimate of 25,000–

50,000 pairs were either overestimates or numbers have declined. Although numbers apparently grew rapidly on Lady Alice I. (Mauimua I.) during the twentieth century up until 1982 (after the cessation of most human activities there) (McCallum *et al.* 1984), more recent counts on other islands, e.g. Coppermine I. and Karewa I., combined with the evidence of extinctions of small colonies noted above, suggest that the overall population is currently in decline.

Table 3 Population data for flesh-footed shearwater, *Puffinus carneipes*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Mercury Is, Double I. (Moturehu)	CDL	1988–90	10	Burrows, occupied	–	Ground count	I. McFadden, pers. comm. 1990
Mercury Is, Red Mercury I. (Whakau I.)	CDL	c. 1930	–	Unknown	Breeding	Ground observation	Falla 1934; Fogarty & Douglas 1972
		1990	0	Burrows, occupied	–	Ground count	G. Taylor <i>in</i> Taylor & Parrish 1992
Ohinau I.	CDL	2009	3883	Burrows	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
		2009	2071	Burrows, occupied	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
Ohinauiti I.	CDL	1926–1950s	–	Individuals	Breeding in numbers	Ground observation	R. Falla <i>in</i> Blackburn 1970
The Aldermen Is, Hongiora I.	CDL	1920s	100	Burrows	–	Ground observation	Sladden & Falla 1927, 1928
		1994	0	Burrows, occupied	–	Ground count	G. Taylor & A. Tennyson, pers. obs.
Whakaari I. (White I.)	BOP	Late 19th century	1	Breeding pair	–	Ground observation	Buller 1887–1888
		1980s–2000s	0	–	No recent reports	–	A. Tennyson & G. Taylor, pers. obs.
Karewa I.	BOP	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
		1993	6553–8427	Burrows	–	Ground count	McClellan 1996
		1993	2477–4820	Breeding pairs	–	Ground count	McClellan 1996
		2010	5929	Burrows	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
		2010	2561	Burrows, occupied	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
Nga Motu (Sugar Loaf Is), Morumahanga I. (Saddleback I.)	WTT	1963	1	Burrow	–	Ground observation	Williams 1964
		1989	100	Burrows	c. 100 breeding	Ground observation	G. Taylor, pers. obs.
		1998	–	Breeding pairs	Small colony	Ground observation	Taylor 2008
Trio Is (Kuru Pongi), Middle Trio I.	MLS	1964	1	Adult and burrow	Rare	Ground observation	Campbell 1967
Titi I.	MLS	2009	2814	Burrows	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010
		2009	337	Burrows, occupied	–	Ground count (ACAP3)	Baker <i>et al.</i> 2010

## Sooty shearwater

For this species, about 180 current breeding sites were identified (Table 4), although we suspect there are many more sites we are unaware of. Among them, about 100 current sites have numerical data on population size, but only about 22 of these had more than one dated count. Most numerical data are from small colonies, whereas most of the birds nest in huge colonies. Listed roughly from north to south, these sites are:

### Northern New Zealand

Lady Alice I. (Mauihua I.), hundreds of individuals were noted in 1962 but only two burrows were seen in 2012. On Kauwahaia I. at Te Henga (Bethells Beach), 45 pairs were noted in 1990, and 27 pairs in 2012.

### Coromandel region

Kawhitihu I. (Stanley I.) had 24 breeding pairs in 1965 and at least five breeding pairs in 1988. Ruamahuanui I. had 12 burrows in the 1920s and 10–100 breeding pairs in 1994.

### Bay of Plenty

Only Moutohora I. (Whale I.) had repeat counts, where less than 12 burrows were estimated in the 1930s and 625 pairs were counted in the 1968–70 period.

### East Coast region

Bare I. (Motu-o-Kura I.) had 100 burrows in 1960, and 5–20 in 1988.

### Wellington

Kapiti I. had 400+ burrows in the late nineteenth century but only 15 burrows in 2006.

### Canterbury

Motunau I. had 80 burrows in 1958 and 230 were noted in 1996. These counts were both of a high accuracy, using the same methodology.

### Westland

Two sites had repeat counts, with Wanganui River Mouth (Mt Oneone) having 16 burrows in 1956, increasing to 50 in the 1994–97 period, and reducing to 17 in 2009. At Taumaka I. in the Open Bay Is, 75 burrows were estimated in 1973 and in 1980.

### Otago

Several mainland sites were identified, such as Bushy Beach (Oamaru), with 56 burrows increasing to 143 between 1992

and 1997. Kakanui had 27 burrows in 1994–96 and 18 in 1997. Shag Point (Matakaea) had 11 burrows in 1992 and in 1997. At Taiaroa Head (Pukekura) a colony on private land increased from 400 burrows in 1970, to 620 in 1992 and 2164 in 1996, then dropped slightly to 2100 in 1997. Similarly, in the reserve area at this locality, numbers of burrows increased from 26 in the 1992–96 period to 70 by 1997. At Sandymount, burrows increased from 49 in 1992 to 62 in 1997. At Taieri I. (Moturata I.), 100+ burrows were marked in 1943 and 100 active burrows were found in the 1980s. At Nugget Point (Tokata), numbers remained fairly stable, with 370 burrows in the early 1980s, 287 in 1992 and 316 in 1997. At Tahuwaiki I. (Jacks I.), numbers remained fairly stable, with 1406 burrows in 1985, 1050 in 1992 and 1192 in 1992–96.

### Southland

Raratoka I. (Centre I.) had 147 burrows in 1975 and 80 in 1989. At Poutama I., 387,508 burrows were estimated in 1994 and 337,732 in 1995.

### Subantarctic Islands

The greatest numbers of sooty shearwaters nest on these islands, but there are very few counts, with the only repeat counts being estimates of 2,750,000 pairs at The Snares Is (Tini Heke Is) in 1969–71 (3,287,000 burrows), and 2,061,000 burrows in 1996–2001, perhaps equivalent to 1,100,000 breeding pairs.

On face value, there appears to be a mix of both increases and decreases for burrow numbers across the range of sites, but it is probably unwise to compare numbers given by different researchers for any one site, as the methodologies used are seldom described. Colonies at Pipinui Point (Wellington), Puangiangi I. (Marlborough) and on Chatham I. have become extinct, presumably due to predation. Many of the mainland Otago colonies listed in this paper became extinct during the late twentieth century (Jones 2000). It is unknown whether the apparent losses of small colonies from northern islands, such as the Cavalli Is, Taranga I. (Hen I.), Cuvier I. (Repanga I.) and Red Mercury I. (Whakau I.), are due to their ephemeral nature or reflect broader population declines. The largest Northland population – on Lady Alice I. (Mauihua I.) – may have decreased in the last few decades but few data are available. At Whero Rock, repeat counts were made (400 burrows in 1941, increasing to 625 in the period up to 1957), but this colony has since been destroyed by an expanding colony of

Stewart Island shags (*Leucocarbo chalconotus* (G.R. Gray, 1843)) (Watt 1975; Peat 2011). At Otago, significant increases in colonies numbering several hundreds of birds have been noted, presumably as a result of predator management. Undoubtedly pest eradications on some island breeding colonies will benefit the species also (Newman *et al.* 2009). The change in numbers at the largest colony, The Snares, is hugely significant, with a likely decrease of *c.* 37% at the site in 27 years (Scott *et al.* 2008). Other indicators support the decline in numbers of birds at The Snares (Scofield & Christie 2002; Scott *et al.* 2008; Newman *et al.* 2009) and at six other southern islands (Moller *et al.* 2009).

Owing to the large number of colonies of this species, it is difficult to recommend priority sites for monitoring. Some large populations that should be monitored have only one count available. Therefore, our recommendation includes a mix of sites with existing time-series of information, numerical importance and regional representation. Colonies in the regions of Northland and Coromandel are so small that monitoring would be difficult, but Lady Alice I. (Mauimua I.) and Ruamahuanui I. should be reassessed. Fiordland is presumed to have many nesting sites and possibly significant numbers of birds, but there is virtually no data, so basic surveys are required to determine suitable monitoring sites. We encourage further counts to be focused at the following sites:

- Northern New Zealand – Lady Alice I. (Mauimua I.), Kauwahaia I. and Moutohora I. (Whale I.).
- East Coast – East I. (Whangaokeno I.) and Bare I. (Motu-o-Kura I.).
- Wellington and Cook Strait – Mana I., Kapiti I. and Titi I. At Titi I., Marlborough Sounds, a series of counts is being conducted by the authors.
- Canterbury – Motunau I. and Stony Bay.
- Westland – Wanganui River Mouth (Mt Oneone) and Taumaka I. (Open Bay Is).
- Otago – Kakanui, Shag Point (Matakaea), Taiaroa Head (Pukekura), Nugget Point (Tokata) and Tuhawaiki I. (Jacks I.).
- Southland – Raratoka I. (Centre I.), Omaui I., Bench I., Unnamed I., Dryad I. and Codfish I. (Whenuahou). Poutama I., Putauhinau I. and Taukihepa (Big South

Cape I.) have been the subject of various studies, and further monitoring on these sites would be beneficial.

- Chatham Is – Mangere I. and Rangatira I. (South East I.).
- Subantarctic Is – The Snares Is (Tini Heke Is) and Campbell I. (Motu Ihupuku). The latter site is included as mammal eradications have been achieved and it is likely that a significant population will develop here.

The sooty shearwater is New Zealand's most numerous species of *Puffinus*. Taylor (2000a) estimated the total New Zealand population to be about 5 million pairs (15–30 million birds), while Newman *et al.* (2009) estimated about 4.4 million pairs (19.0–23.6 million birds). These estimates still seem accurate according to our analyses. Newman *et al.* (2009) provides a detailed and important analysis of sooty shearwater numbers, however there are some errors in the paper that should be noted. In particular, reporting of estimates for The Aldermen Is, after Hicks *et al.* (1976), should be for Korapuki I., although Hicks *et al.* (1976) refer to only four birds at the latter site. Similarly, for Araara I. (Hen and Chickens Is), although McCallum *et al.* (1984) noted the species breeding, this tiny stack cannot possibly contain the 5000 pairs listed. The Motumuka citation (5000 pairs) also seems to be an error, as are the Cuvier I. (Repanga I.) numbers (P. Scofield, pers. comm., 2013). Newman *et al.* (2009) report a high number of burrows (225) of this species at Red Mercury I. (Whakau I.), whereas the original reference (Taylor & Parrish 1992) reports only a few pairs, but includes numbers of birds seen offshore (probably migrating south). Newman *et al.* (2009: appendix 1) listed 'Greymouth' as a breeding site, but this is not mentioned in the reference referred to and may instead be Twelve Mile Bluff (see Hamilton *et al.* 1997); also listed are Te Hauturu-o-Toi/Little Barrier I. and Ko Oreao, Chatham I., but we do not consider these to be breeding sites. The same paper lists Open Bay Is. (off Haast, not Fiordland) twice.

During the last few decades, the sooty shearwater is the only shearwater species to have been harvested by people (muttonbirding). Chicks are collected from many southern breeding colonies (e.g. Anderson 1997; Lyver 2000). From the Stewart I./Rakiura area alone, an estimated 360,000 chicks are harvested annually (Newman *et al.* 2009).

Table 4 Population data for sooty shearwater, *Puffinus griseus*. Sites are listed in roughly north–south order (TKI = Manawatawhi Is (Three Kings Is); NLW = Northland West; NLE = Northland East; AKW = Auckland West; CDL = Coromandel; BOP = Bay of Plenty; EHC = East Coast, Hawke’s Bay; WWL = Wellington–Wairarapa; MLS = Marlborough Sounds – Nelson/Tasman; CTC = Canterbury Coastal; WSC = West Coast South I.; OTC = Otago Coastal; STC = Southland Coastal; FLD = Fiordland; STW = Stewart I./Rakiura; CIS = Chatham Is; SNI = The Snares Is (Tini Heke Is); ANT = Antipodes Is; AKI = Auckland Is; CBL = Campbell Is; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Manawatawhi Is (Three Kings Is)	TKI	Before 1934	12	Burrows	Fewer than a dozen	Ground observation	Falla 1934
Manawatawhi Is (Three Kings Is), Great I./Ohau I.	TKI	1934–46	1	Chick, probably	–	Ground observation	Turbott & Buddle 1948
		1982	–	Adults and eggs	Breeding	Ground observation	McCallum <i>et al.</i> 1985
Manawatawhi Is (Three Kings Is), South West I.	TKI	1985	40	Burrows	–	Unknown	McCallum <i>et al.</i> in Newman <i>et al.</i> 2009
Motuopao I.	NLW	1988–92	20	Burrows	–	Ground observation	Pierce & Parrish 1993
Cavalli Is	NLE	Before 1934	<12	Burrows	Fewer than a dozen	Ground observation	Falla 1934
		1951	0	–	None reported	Ground observation	Sibson 1953; Millener 1980
Poor Knights Is, Aorangi I.	NLE	1958	1	Adult and egg	Breeding	Ground observation	Kinsky & Sibson 1959
Mokohinau Is	NLE	Before 1889	12	Burrows	Fewer than a dozen on three different islands	Ground observation	Sandager 1889; Falla 1934
Mokohinau Is, Burgess I. (Pokohinu I.)	NLE	2011	<50	Individuals	Fewer than 50 individuals	Ground observation	G. Taylor, pers. obs.
Mokohinau Is, Stack D	NLE	1973	–	–	Breeding	Ground observation	McCallum 1980
Mokohinau Is, Maori Bay Is	NLE	1973	–	–	Breeding	Ground observation	McCallum 1980
Taranga I. (Hen I.)	NLE	Before 1934	<12	Burrows	Fewer than a dozen	Ground observation	E. Stead in Falla 1934; Skegg 1964
		1962–63	–	Eggs	Small numbers	Ground observation	J. Bartle in Skegg 1964; P. Harper in Warham <i>et al.</i> 1982
		1991	0	Burrows	Absent	Ground observation	G. Taylor, pers. obs.
Marotere Is (Chicken Is), West Chicken I. (Mauitaha I.)	NLE	1982	–	Burrows	Common	Ground observation	McCallum <i>et al.</i> 1984
		1994	3	Burrows	–	Ground count	Tennyson & Pierce 1995

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Marotere Is (Chicken Is), Lady Alice I. (Mauimua I.)	NLE	1953	–	Burrows	In ‘numbers’	Ground observation	Chambers <i>et al.</i> 1955
		1962	100s	Individuals	–	Ground observation	Skegg 1964
		1982	–	Burrows	Common	Ground observation	McCallum <i>et al.</i> 1984
		2012	2	Burrows	–	Ground observation	J.-C. Stahl, pers. comm. 2012
Marotere Is (Chicken Is), Araara I.	NLE	1982	–	Burrows	Breeding	Ground observation	McCallum <i>et al.</i> 1984; Tennyson & Pierce 1995
Te Henga (Bethells Beach), Kauwahaia I.	AKW	1990	45	Breeding pairs	–	Ground count (ACAP1)	Taylor 2008; G. Taylor, pers. obs.
		2012	27	Breeding pairs	–	Ground count (ACAP1)	G. Taylor, pers. obs.
Cuvier I. (Repanga I.)	CDL	1974–80	–	Burrows	A few pairs	Ground observation	Bellingham <i>et al.</i> 1981
		2001–08	0	Burrows	Absent	Ground observation	G. Taylor, pers. obs.
Mercury Is, Korapuki I.	CDL	1974	4	Adults	–	Ground observation	Hicks <i>et al.</i> 1976
Mercury Is, Kawhitihu I. (Stanley I.)	CDL	1965	24	Breeding pairs	–	Ground observation	Skegg 1972
		1988	5+	Breeding pairs	Burrows, occupied	Ground observation	A. Tennyson, G. Taylor & P. Scofield, pers. obs.
Mercury Is, Red Mercury I. (Whakau I.)	CDL	1991	2	Adults and burrows	–	Ground observation	G. Taylor <i>in</i> Taylor & Parrish 1992
		2000–10	0	Burrows	Absent	Ground observation	G. Taylor, pers. obs.
Mercury Is, Double I. (Moturehu)	CDL	1988	4	Breeding pairs	4 or more	Ground observation	A. Tennyson & G. Taylor, pers. obs.
Poikeke I.	CDL	1989	1	Chick	–	Ground observation	G. Taylor, A. Tennyson & P. Scofield, pers. obs.
The Aldermen Is, Ruamahuanui I.	CDL	1920s	12	Burrows	Adults incubating	Ground observation	Sladden & Falla 1927, 1928; Falla 1934
The Aldermen Is, Hongiora I.	CDL	1994	10–100	Breeding pairs	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Motuotau I.	BOP	1999	<10	Burrows	Fewer than 10	Ground observation	G. Taylor, pers. obs.
Rurima I.	BOP	Before 1888	–	–	Large numbers	Unknown	Buller 1887–1888

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Moutohora I. (Whale I.)	BOP	Before 1934	<12	Burrows	Fewer than a dozen	Ground observation	Falla 1934
		1968–1970	625	Breeding pairs	–	Ground observation	Imber 1975
		1990s	–	Unknown	Breeding	Ground observation	Bay of Plenty Conservancy 1999
Whakaari I. (White I.)	BOP	Before 1934	<12	Burrows	Fewer than a dozen	Ground observation	B. Sladden <i>in</i> Falla 1934
East I. (Whangaokeno I.)	EHC	1979	–	Breeding pairs	Breeding	Ground observation	Moors 1980
		2001	50–150	Breeding pairs	–	Ground observation	H. Jonas & G. Taylor, pers. obs.
Bare I. (Motu-o-Kura I.)	EHC	1960	100	Burrows, occupied	–	Ground count	Merton 1961
		1988	20	Burrows, occupied	–	Ground count	Walls 1998
		1998	5	Burrows, occupied	–	Ground count	Walls 1998
Kapiti I.	WWL	Late 19th century	400+	Muttonbirds	400 taken one year	Unknown	Buller 1887–1888; Phillipps 1958
		1942	–	Breeding pairs	Breeding	Ground observation	Stidolph 1948
		1984–85	–	Burrows	Breeding	Ground observation	Howell 1985
		2006	15	Burrows	–	Ground observation	S. Waugh, pers. obs.
Mana I.	WWL	Before 1970s	–	Burrows	Breeding	Ground observation	Warham & Wilson 1982
		2012	100	Breeding pairs	–	Ground observation	C. Miskelly, pers. comm. 2012
Pipinui Point, Wellington	WWL	1960s	–	Burrows	Breeding	Ground observation	Bartle 1974; J.A. Bartle, pers. comm. 1995
		1995	–	Absent	–	Ground count	J.A. Bartle & A. Tennyson, pers. obs.
Stephens I. (Takapourewa I.)	MLS	Before 1980	–	Unknown	Breeding	Ground observation	Warham & Wilson 1982
		No date	100s	Breeding pairs	A few 100s	Unknown	Gaze 2000
		No date	200	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Puangiangi I.	MLS	1998	–	Individuals	Breeding	Ground observation	Nicoll 2012
		No date	20	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
		2012	0	–	Absent	Ground observation	Nicoll 2012
Trio Is (Kuru Pongi), Middle Trio I.	MLS	1964	100s	Adults and burrows	A few 100	Ground observation	Campbell 1967; Gaze 2000
		No date	200	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Long I.	MLS	No date	60	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
		1995	1	Burrow	–	Ground observation	A. Tennyson, pers. obs.
Fossil Point, Golden Bay	MLS	No date	16	Burrows	–	Unknown	Newman <i>et al.</i> 2009

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Tunnel I.	MLS	No date	50	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Nguroa I.	MLS	No date	100	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Kokomohua I.	MLS	No date	20	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Motuanauru I.	MLS	No date	100	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Motungarara I.	MLS	No date	100	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Otuhaereroa I.	MLS	No date	20	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Penguin I.	MLS	No date	20	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Pepin Stack	MLS	No date	10	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Stewart I.	MLS	No date	20	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Takawhero I.	MLS	No date	20	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Tonga I.	MLS	No date	50	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Victory I.	MLS	No date	100	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Titi I.	MLS	1987–98	–	Burrows	Moderately common	Ground observation	Gaze 2000
		No date	800	Burrows	–	Unknown	Newman <i>et al.</i> 2009
Chetwode Is, Nukuwaiata I.	MLS	2011	–	Chicks	10s breeding	Ground observation	C. Miskelly, pers. comm. 2012
Motuara I.	MLS	Before 1985	–	Burrows	Breeding	Ground observation	Wragg 1985
		1993	100s	Breeding pairs	100s of pairs	Ground observation	A. Tennyson, pers. obs.
		No date	60	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009
Motunau I.	CTC	1958	80	Burrows	–	Ground count (ACAP5)	Cox <i>et al.</i> 1967
		1983–84	20	Breeding pairs	Breeding	Ground observation	Wragg 1985
		1996	230	Burrows	–	Ground count (ACAP5)	Beach <i>et al.</i> 1997
Banks Peninsula, Le Bons Bay	CTC	1960s	–	Burrows	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Banks Peninsula, Tumbledown Bay	CTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1990s	0	Burrows	–	Ground count	K.-J. Wilson, pers. obs.
Banks Peninsula, Stony Bay	CTC	1995–2008	11	Burrows	–	Ground count (ACAP1)	Wilson 2000; K.-J. Wilson, pers. obs.
		No date	17	Breeding pairs	–	Unknown	Newman <i>et al.</i> 2009

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Banks Peninsula, Akaroa Heads, Island Bay Islet	CTC	1993	–	Burrows	Numerous burrows assumed to be this species	Ground observation	P. Langlands <i>in</i> O'Donnell 1995
Cape Foulwind, headland	WSC	2009	12	Burrows	–	Ground count	K.-J. Wilson, pers. obs.
Charleston, Joyce Bay	WSC	2009–10	2	Breeding pairs	–	Ground count	R. Lane, pers. comm. 2010
Seal I.	WSC	1988	2	Chicks	Several other burrows and 27 adults	Ground observation	K. Scollay <i>in</i> O'Donnell & West 1989
Perpendicular Point	WSC	1956	7	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
Twelve Mile Bluff, Motukiekie Rocks	WSC	1956	30	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		No date	50	Breeding pairs	–	Unknown	P. Scofield <i>in</i> Newman <i>et al.</i> 2009
Wanganui River Mouth, Mt Oneone (Doughboy Knoll)	WSC	1956	16	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1988	20	Burrows	–	Ground count	C. O'Donnell <i>in</i> O'Donnell & West 1989
		1995	11	Breeding pairs	–	Ground count	K.-J. Wilson, pers. obs.
		1994–97	50	Burrows	–	Ground count	Wilson 1999
		2008–09	17	Burrows	–	Ground count	K.-J. Wilson, pers. obs.
Okarito	WSC	Early 1940s	–	Burrows	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Makawhio Point	WSC	1950s	–	Burrows	Decreasing colony	Ground observation	R. Jackson <i>in</i> Sibson 1958
Arnott Point	WSC	2010	1	Egg	–	Unknown	Te Papa specimen NMNZ OR.29169
Open Bay Is, Taumaka I.	WSC	1973	75	Adults and burrows	–	Ground observation	K.-J. Wilson, pers. obs.
		1980	75	Adults and burrows	–	Ground observation	K.-J. Wilson, pers. obs.
Iota Bluff	WSC	No date	69	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
Oamaru, Oamaru Yacht Club	OTC	1997	15	Burrows	–	Ground count	Jones 2000
Oamaru, Boatmans Harbour	OTC	1997	28	Burrows	–	Ground count	Jones 2000
Oamaru, Bushy Beach	OTC	1992	56	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1997	143	Burrows	–	Ground count	Jones 2000
Cape Wanbrow	OTC	1984	50	Breeding pairs	Breeding	Ground observation	Wragg 1985

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Kakanui	OTC	1994–96	27	Burrows	–	Ground count	Lyver <i>et al.</i> 2000
		1997	18	Burrows	–	Ground count	Jones 2000
Moeraki Peninsula, Maukiekie I.	OTC	1980s	–	Individuals	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Moeraki Peninsula, Katiki Point	OTC	1997	17	Burrows	–	Ground count	Jones 2000
Shag Point (Matakaea)	OTC	1992	11	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1997	11	Burrows	–	Ground count	Jones 2000
Bobby's Head	OTC	1997	12	Burrows	–	Ground count	Jones 2000
Otago Harbour, Quarantine I.	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Otago Harbour, Goat I.	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Otago Harbour, Pudding I.	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Otago Harbour, Wharekakahu I.	OTC	1985	1	Burrow	Active burrow	Unknown	Hamilton <i>et al.</i> 1997
Tairaroa Head, Pukekura Private	OTC	1970	400	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1984	500+	Breeding pairs	More than 500 breeding pairs	Ground observation	Wragg 1985
		1992	620	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1996	2164	Burrows	–	Ground count	Lyver <i>et al.</i> 2000
		1997	2100	Burrows	–	Ground count	Jones 2000
Tairaroa Head, Pukekura Reserve	OTC	1992–96	26	Burrows	–	Ground count	Lyver <i>et al.</i> 2000
		1997	70	Burrows	–	Ground count	Jones 2000
Cape Saunders	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Mt Charles	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Grassy Point	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Highcliff	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Double Bay	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
The Chasm	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Cape Saunders	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Titikoraki	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Penguin Beach	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Ohinepuha	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Pipikaretu	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Victory Beach	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Sandymount	OTC	1992	49	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1997	62	Burrows	–	Ground count	Jones 2000
Dunedin, Tunnel Beach	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Dunedin, Lawyer's Head	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Dunedin, Maori Head	OTC	1940s–1950s	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
		1997–98	0	–	–	Ground observation	Jones 2000
Green I.	OTC	1983	150	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
Taieri I. (Moturata I.)	OTC	1943	100+	Burrows	100 burrows marked	Ground count	Hamilton <i>et al.</i> 1997
		1980s	100	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
Nugget Point (Tokata)	OTC	Early 1980s	370	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1992	287	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1997	316	Burrows	–	Ground count	Jones 2000
Nugget Point (Tokata), Roaring Bay, Colony A	OTC	1992–96	136	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997; Lyver <i>et al.</i> 2000
Nugget Point (Tokata), Colony B	OTC	1992–96	38	Burrows	–	Ground count	Lyver <i>et al.</i> 2000
Nugget Point (Tokata), Colony C (3 and 4)	OTC	1992–96	79	Burrows	–	Ground count	Lyver <i>et al.</i> 2000

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Nugget Point (Tokata), Colony D	OTC	1992–96	64	Burrows	–	Ground count	Lyver <i>et al.</i> 2000
Jacks Bay, Tuhawaiki I. (Jacks I.)	OTC	1985	1406	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1992	1050	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
		1992–96	1192	Burrows	–	Ground count (ACAP1)	Lyver <i>et al.</i> 2000
Jacks Bay, Tunnel Rocks, Jacks Blowhole	OTC	1992	105	Burrows	–	Ground count	Hamilton <i>et al.</i> 1997
Wilkie Falls	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Cannibal Bay	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Rainbow Isles	OTC	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997
Cosgrove I.	OTC	1984	–	Burrows	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Irihuka (Long Point)	OTC	1997	30	Burrows	–	Ground count	Jones 2000
Ruapuke I.	STC	1963	–	Individuals	Uncommon	Ground observation	Watters 1963
Ruapuke I., Hazelburgh Group	STC	1963	–	Individuals	Common	Ground observation	Watters 1963
Ruapuke I., Bird I.	STC	1965	–	Individuals	Moderately common	Ground observation	Blackburn 1965
Ruapuke I., South I.	STC	1999–2005	–	Muttonbirds	Breeding	Ground observation	Newman <i>et al.</i> 2009
Ruapuke I., Topi I.	STC	1999–2005	–	Muttonbirds	Breeding	Ground observation	Newman <i>et al.</i> 2009
Green I.	STC	1941	–	Unknown	Common	Ground observation	Wilson 1959
Omaui I.	STC	1991	30	Burrows	–	Ground count	Cooper & McClelland 1992
Raratoka I. (Centre I.)	STC	1975	147	Burrows	–	Ground observation	Cooper 1991
		1989	80	Burrows	–	Ground observation	Cooper 1991
Solander I. (Hautere I.)	STC	1947	–	Burrows	Breeding	Ground observation	Falla 1948
		1973	–	Individuals	Common	Ground observation	K.-J. Wilson, pers. obs.
		1996	–	Burrows and chicks	Common, but weka predation	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Little Solander I.	STC	1976	–	Individuals	Breeding	Ground observation	Cooper <i>et al.</i> 1986
Te Kakahu	FLD	No date	500	Burrows	–	Unknown	D. Scott <i>in</i> Newman <i>et al.</i> 2009

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Breaksea I.	FLD	Before 1990s	–	Unknown	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Breaksea Sound, Hawea I.	FLD	1986	–	Burrows	Small colonies	Ground observation	Hamilton <i>et al.</i> 1997; G. Taylor, pers. obs.
Dusky Sound, Petrel Is	FLD	1884	–	Individuals	Breeding	Ground observation	Medway 2011
Chalky Inlet, Garden Is	FLD	1992	1	Egg	Old egg	Ground count	McLean <i>et al.</i> 1993
North I. (Pikomamakau-iti I.)	STW	2006	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Womens I. (Pikomamakau-nui I.)	STW	No date	–	Muttonbirds	Breeding	Ground observation	Kitson & Moller 2008
		2006	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Motunui I. (Edwards I.)	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Jacky Lee I. (Pukeokaoka I.)	STW	1932	–	Muttonbirds	Breeding	Ground observation	Wilson 1959
Herekopare I. (Te Marama I.)	STW	1911	–	Muttonbirds	Breeding	Ground observation	Guthrie-Smith 1914
		2001	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Bunker Islets	STW	1971–73	–	Burrows	Common	Ground observation	K.-J. Wilson, pers. obs.
Bench I.	STW	1971	25	Adults and burrows	–	Ground count	K.-J. Wilson, pers. obs.
		1979	–	Burrows	Uncommon	Ground observation	K.-J. Wilson, pers. obs.
Whero Rock	STW	1941	400	Burrows	–	Ground count	Richdale 1942
		1938–57	625	Individuals	–	Ground observation	Richdale 1963
		2010	0	–	–	Ground observation	Peat 2011
Halfmoon Bay, Ackers Point	STW	1985–86	6	Adults and burrows	–	Ground count	K.-J. Wilson, pers. obs.
		No date	200	Burrows	–	Unknown	B. Bevan <i>in</i> Newman <i>et al.</i> 2009
Stewart I./Rakiura East Coast, Starling Head	STW	No date	–	Unknown	Breeding	Ground observation	Hamilton <i>et al.</i> 1997
Stewart I./Rakiura East Coast, Chew Tobacco	STW	No date	–	–	Colony	Unknown	Hamilton <i>et al.</i> 1997

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Pihore I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Weka I.	STW	1971	1750	Burrows	–	Ground observation	K.-J. Wilson, pers. obs.
Tia I. (Entrance I.)	STW	1972–74	–	Adults and burrows	Abundant	Ground observation	K.-J. Wilson, pers. obs.
Breaksea Is, Joss's I. (Rukawahakura I.)	STW	2001–06	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Breaksea Is, Potuatua I. (Pohotuata)	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Breaksea Is, Takawiwini I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Breaksea Is, Pomatakiarehua I. (Te Pohomatakiarehua)	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Breaksea Is, Wharepuaitaha I. (Te Wharepuaitaha I.)	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Breaksea Is, Kaihuka I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Kitson & Moller 2008
Horomamae I. (Owen I.)	STW	No date	–	Muttonbirds	Breeding	Unknown	Kitson & Moller 2008
Kopeka I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
The Brothers	STW	1974	1750	Burrows	–	Ground observation	K.-J. Wilson, pers. obs.
Port Pegasus (Pikihatiti), Unnamed I.	STW	1974	30	Burrows	–	Ground observation	K.-J. Wilson, pers. obs.
Port Pegasus (Pikihatiti), Pearl I.	STW	1974	–	Adults and burrows	Uncommon	Ground observation	K.-J. Wilson, pers. obs.
Port Pegasus (Pikihatiti), Islet Cove	STW	1974	10	Adults and burrows	–	Ground count	K.-J. Wilson, pers. obs.
Port Pegasus (Pikihatiti), Hebe I.	STW	1974	–	Burrows	Moderately common	Ground observation	K.-J. Wilson, pers. obs.
Port Pegasus (Pikihatiti), Dryad I.	STW	1974	175	Adults and burrows	–	Ground observation	K.-J. Wilson, pers. obs.

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Ernest I.	STW	1974 and 1979	–	Adults and burrows	Abundant	Ground observation	K.-J. Wilson, pers. obs.
Broad Bay	STW	1974	–	Individuals	Rare	Ground observation	M. Scofield, pers. comm. 1974
Broad Bay, Kaninihi I.	STW	1974	–	Unknown	Common	From boat	K.-J. Wilson, pers. obs.
Poutama I.	STW	1994	387,508	Burrows	–	Ground count (ACAP3)	Lyver 2000
		1995	337,732	Burrows	–	Ground count (ACAP3)	Lyver 2000
Taukihepa (Big South Cape I.)	STW	1965	–	Individuals	Abundant	Ground observation	Blackburn 1965
		1999–2005	1,120,000	Burrows	–	Ground count (ACAP3)	Newman <i>et al.</i> 2008, 2009
Pukeweka I.	STW	2006	–	Adults	Abundant	Ground observation	M. Charteris, pers. comm. 2011
Pukuparara I.	STW	1999–2005	–	Muttonbirds	Breeding	Ground observation	Newman <i>et al.</i> 2009
Rerewhakaupoko I. (Solomon I.)	STW	1965	–	Individuals	Abundant	Ground observation	Blackburn 1965
		2006	–	Adults	Common	Ground observation	M. Charteris, pers. comm. 2011
Pohowaitai I.	STW	1965	–	Burrows	Common	Ground observation	Blackburn 1965
Tamaitemioka I.	STW	1965	–	Burrows	Common	Ground observation	Blackburn 1965
Kaimohu I.	STW	2006	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Tupari Bay	STW	1971	–	Adults	Breeding	From boat	K.-J. Wilson, pers. obs.
Mokinui I. (Big Moggy I.)	STW	No date	–	Muttonbirds	Common	Ground observation	Kitson & Moller 2008
Timore I. (Chimney I.)	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a
Big I. (Stage I.)	STW	1965	–	Individuals	Abundant	Ground observation	Blackburn 1965
Betsy I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Bragg <i>et al.</i> 2008
Kundy I. (North I.)	STW	1929	–	Unknown	Common	Ground observation	Stead 1932; Wilson 1959
		2000s	–	Muttonbirds	Common	Unknown	Kitson & Moller 2008
Mokoiti I.	STW	1999–2005	–	Muttonbirds	Breeding	Ground observation	Newman <i>et al.</i> 2009
Rat I.	STW	No date	–	Muttonbirds	Breeding	Unknown	Department of Conservation 2011a

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Putauhinu I.	STW	2005	520,000	Breeding pairs	–	Ground count	Bragg <i>et al.</i> 2009; Newman <i>et al.</i> 2009
Putauhinu I., Nuggets	STW	1999–2005	–	Muttonbirds	Breeding	Ground observation	Newman <i>et al.</i> 2009
Codfish I. (Whenuahou I.)	STW	1934	–	Individuals	Common	Ground observation	Wilson 1959
		1966	–	Burrows	Common	Ground observation	Blackburn 1968
		2001–06	173,000	Breeding pairs	–	Ground count (ACAP3)	Scott <i>et al.</i> 2009
		2001–06	170,000	Breeding pairs	–	Re-estimated	Newman <i>et al.</i> 2009
Codfish I. (Whenuahou), Sealer's Bay Nugget	STW	1991	100	Burrows	–	Ground observation	G. Taylor & A. Tennyson, <i>in</i> O'Donnell & West 1998
Codfish I. (Whenuahou), Trig I.	STW	2011	<10	Burrows	Fewer than 10	Ground observation	C. Miskelly, pers. comm. 2012
Chatham I.	CIS	1981–85	190	Burrows	Many burrows deserted, evidence of predation by cats	Ground observation	Imber 1994
Chatham Is, Houruakopara I.	CIS	1981	–	Individuals	Breeding	Ground observation	Imber 1994
Pitt I. (Rangiauria I.)	CIS	<i>c.</i> 1990	–	Burrows	Uncommon	Ground observation	Imber 1994
Pitt I. (Rangiauria I.), Kokohe	CIS	<i>c.</i> 1990	–	Individuals	Breeding	Ground observation	Imber 1994
		1997	Up to 50	Breeding pairs	–	Ground observation	A. Tennyson, pers. obs.
Rangatira I. (South East I.)	CIS	1989	17,000	Burrows	–	Ground count	West & Nilsson 1994
Mangere I.	CIS	1987–88	5000	Breeding pairs	–	Ground count	Tennyson 1989
Little Mangere I. (Tapuaenuku)	CIS	1868	–	–	Extraordinarily numerous	Unknown	H. Travers <i>in</i> Tennyson & Millener 1994
		<i>c.</i> 1976	5000	Breeding pairs	–	Unknown	J. Flack <i>in</i> Newman <i>et al.</i> 2009
Murumurus, Western Nugget	CIS	1987	6	Breeding pairs	Six located	Ground observation	Tennyson <i>et al.</i> 1993
Rabbit I.	CIS	1980–81	100s	Breeding pairs	Many 100s of pairs	Ground observation	Imber & Lovegrove 1982
The Sisters (Rangitatahi Is), Big I.	CIS	<i>c.</i> 1990	–	Individuals	Breeding	Ground observation	Imber 1994
The Sisters (Rangitatahi Is), Middle I.	CIS	<i>c.</i> 1990	–	Individuals	Breeding	Ground observation	Imber 1994

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Table 4 Population data for sooty shearwater, *Puffinus griseus*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Star Keys (Motuhope)	CIS	1977	–	Individuals	Breeding	Ground observation	Imber 1978, 1994
The Snares Is (Tini Heke Is)	SNI	1969–71	3,287,000	Burrows	–	Ground count (ACAP5)	Warham & Wilson 1982
		1969–71	2,750,000	Breeding pairs	–	Ground count (ACAP5)	Warham & Wilson 1982
		1996–2001	2,061,000	Burrows	Burrow entrances	Ground count (ACAP5)	Scott <i>et al.</i> 2008
		1996–2001	1,100,000	Breeding pairs	–	Re-estimated	Newman <i>et al.</i> 2009
Western Chain, Tahī I	SNI	1990s	–	Adults	Breeding	Ground observation	Miskelly <i>et al.</i> 2001
Antipodes Is	ANT	1969	–	Adults	Uncommon	Ground observation	Warham & Bell 1979
		1978	–	Adults	Uncommon	Ground observation	Imber 1979
		1995	1000	Breeding pairs	–	Ground observation	Tennyson <i>et al.</i> 2002
Adams I.	AKI	1972	–	Adults	Breeding	Ground observation	K.-J. Wilson, pers. obs.
Enderby I.	AKI	1976	–	Burrows	Common	Ground observation	Bartle & Paulin 1986
		1988	–	Burrows	Locally common	Ground observation	G. Taylor pers. obs.
Ewing I.	AKI	1973	–	Adults	Breeding	Ground observation	K.-J. Wilson, pers. obs.
Ocean I.	AKI	1943	1	Egg	–	Unknown	Te Papa specimen NMNZ OR.19118
		1972	4	Adults	–	Ground observation	K.-J. Wilson, pers. obs.
Disappointment I.	AKI	1976	–	Burrows	Abundant	Ground observation	Bartle & Paulin 1986
		1988	–	Chicks	Common	Ground observation	G. Taylor, pers. obs.
Campbell I. (Motu Ihupuku)	CBL	1940s	–	Burrows	Common	Ground observation	Bailey & Sorensen 1962
		1984–87	1000–10,000	Burrows	–	Ground observation	G. Taylor, pers. obs.
		1997	–	Burrows	Common	Ground observation	S. Waugh, pers. obs.
Jacquemart I.	CBL	1980	–	Adult in burrow	Burrows common	Ground observation	Foggo & Meurk 1981
Dent I.	CBL	1975	–	Burrows	Breeding	Ground observation	Robertson 1980
		1984–87	–	Individuals	Abundant	Observed from a distance	G. Taylor, pers. obs.
		Unknown	5000	Breeding pairs	–	Unknown	J. Timms <i>in</i> Newman <i>et al.</i> 2009
Monowai I.	CBL	1985	<2000	Burrows	Fewer than 2000 breeding	Ground observation	G. Taylor, pers. obs.

Table 5 Population data for fluttering shearwater, *Puffinus gavia*. Sites are listed in roughly north–south order (TKI = Manawatawhi Is (Three Kings Is); NLW = Northland West; NLE = Northland East; AKE = Auckland East; CDL = Coromandel; BOP = Bay of Plenty; EHC = East Coast, Hawke’s Bay; WTT = West Coast North I. Waikato–Taranaki–Whanganui; WWL = Wellington–Wairarapa; MLS = Marlborough Sounds; NLS = Nelson; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Manawatawhi Is (Three Kings Is)	TKI	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
		1959	–	Burrows	Abundant	Ground observation	Wilson 1959
Manawatawhi Is (Three Kings Is), Great I./Ohau I.	TKI	1945–46	–	Chicks	Common	Ground observation	Turbott & Buddle 1948
		1970	–	Burrows	Abundant	Ground observation	Ramsay & Watt 1971
		1985	–	Breeding pairs	Widespread, low density	Ground observation	McCallum <i>et al.</i> 1985
Manawatawhi Is (Three Kings Is), West I.	TKI	1951	1	Egg	–	Ground observation	Johnson 1952
		1985	500+	Burrows and chicks	Largest colony in island group, more than 500	Ground observation	McCallum <i>et al.</i> 1985
Manawatawhi Is (Three Kings Is), North East I.	TKI	1947	–	Chicks	–	Ground observation	Turbott & Buddle 1948
		1985	20–50	Chicks	10s breeding		McCallum <i>et al.</i> 1985
Manawatawhi Is (Three Kings Is), Hinemoa I.	TKI	1985	1	Chick	Breeding	Ground observation	McCallum <i>et al.</i> 1985
Manawatawhi Is (Three Kings Is), South West I.	TKI	1947	–	Chicks	Many	Ground observation	Turbott & Buddle 1948
		1985	<1000	Breeding pairs	Fewer than 1000 breeding	Ground observation	McCallum <i>et al.</i> 1985

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## Fluttering shearwater

Ninety discrete islands or localities have been reported as current breeding sites, however less than half have quantitative data (Table 5). Ongoing monitoring is recommended at two sites, Maud I. (Te Hoiere) and Mana I., where the populations were established from translocations. Thirty-seven other current breeding sites had some numerical information, but only *c.* 24 of these have more than 10 pairs nesting, of which some would be suitable candidates for ongoing monitoring (see Table 5), and others less promising owing to their remoteness or fragility. Potential sites for monitoring identified here include: Terakautuhaka I. (Kowhai Islet), Simmonds Is; Tawhiti Rahi I., Poor Knights Is; Muriwhenua I., Chicken Is, Northland; Wooded I., Hauraki Gulf; Saddle I., off Great Barrier I.

(Aotea Is); Ruamahuanui I. and Ngahoro I., The Aldermen Is; Motuheka I., East Coast; Middle Trio I., Trio Is (Kuru Pongi); and Long I., Marlborough Sounds. The total population size is unknown but is clearly at least some tens of thousands. Robertson & Bell (1984) estimated 100,000 to 1,000,000 breeding pairs, but the lower end of this estimate seems more reasonable. Most breeding sites have never been surveyed but the species is known to be common on many islands, some of which may also be suitable candidates for long-term monitoring. There is no substantial information on population size trends, however historical accounts document extinctions, presumably due to predation, on Te Hauturu-o-Toi/Little Barrier I., Middle Chain I. and Moutohora I. (Whale I.) At Carr’s Road, Taranaki, the entire islet collapsed, destroying the colony.

Table 5 Population data for fluttering shearwater, *Puffinus gavia*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Motuopao I.	NLW	1988–92	–	Burrows	Breeding	Ground observation	Pierce & Parrish 1993
Simmonds Is, Terakautuhaka I. (Kowhai Islet)	NLE	1965	15	Burrows	–	Ground count	Wagener 1966
Simmonds Is, Motu Purihi I.	NLE	1990	1	Individual	1 ashore, 2 flying	Unknown	R. Parrish & B. Waddell <i>in</i> Taylor & Parrish 1991
Moturoa Is, Moturoa I.	NLE	1968	–	Burrows	Extremely abundant	Ground observation	Adams 1971
		1985	–	Adults and burrows	Large numbers	Ground observation	Miller 1986
Moturoa Is, Motutapu I. (Green I.)	NLE	1968	–	Burrows	Extremely abundant	Ground observation	Adams 1971
		1985	–	Adults and burrows	Large numbers	Ground observation	Miller 1986
Moturoa Is, Sugarloaf I.	NLE	1968	–	Burrows	Extremely abundant	Ground observation	Adams 1971
		1985	–	Adults and burrows	Large numbers	Ground observation	Miller 1986
Moturoa Is, Tuputupungahau I. (Whale I.)	NLE	1968	–	Burrows	Low numbers	Ground observation	Adams 1971
		1985	–	Adults and burrows	Large numbers	Ground observation	Miller 1986
Wekarua I.	NLE	1991	100+	Breeding pairs	More than 100	Ground observation	R. Parrish & P. Miller <i>in</i> Taylor & Parrish 1992
Stephenson I. (Mahinepau I.)	NLE	No date	–	Unknown	Breeding	Unknown	Checklist Committee 1990
Cavalli Is, Motuharakeke I.	NLE	1951	–	Chicks	A considerable breeding colony	Ground observation	Sibson 1953
		1988	–	Burrows, empty	Numerous, probably this species as medium-sized burrows	Ground observation	G. Taylor, pers. obs.
Cavalli Is, Motutakapu I.	NLE	c. 1969	–	Unknown	Breeding	Unknown	G. Adams <i>in</i> Millener 1980
		1988	–	Burrows, empty	A few, probably this species as medium-sized burrows	Ground observation	G. Taylor, pers. obs.
Cavalli Is, Te Anaputa I.	NLE	c. 1969	–	Unknown	Breeding	Unknown	G. Adams <i>in</i> Millener 1980
		1988	–	Burrows, empty	Occasional, probably this species as medium-sized burrows	Ground observation	G. Taylor, pers. obs.

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Cavalli Is, Motukawanui I.	NLE	c. 1975	–	Unknown	Breeding	Unknown	D. Crockett <i>in</i> Millener 1980
Poor Knights Is	NLE	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
Poor Knights Is, Tawhiti Rahi I.	NLE	1980	1000s	Breeding pairs	Many 1000s	Ground observation	McCallum 1981
Poor Knights Is, Aorangi I.	NLE	1940	–	Individuals	Common	Ground observation	Wilson 1959
Bream Is (2 islets)	NLE	No date 1968	–	Unknown Adults and eggs	Breeding Numbers of burrows on both islands	Unknown Ground observation	Falla 1934 Cheyne 1968
Marotere Is (Chicken Is), Whatapuke I.	NLE	1982	1	Burrow	–	Ground observation 1984	McCallum <i>et al.</i>
Marotere Is (Chicken Is), Middle Rock	NLE	1939	4	Burrows	Occupied burrows	Ground observation	Skegg 1964
		1982	25	Burrows	Chicks present	Ground observation	McCallum <i>et al.</i> 1984
		1994	–	–	Chicks present	Ground observation	G. Taylor, pers. obs.
Marotere Is (Chicken Is), Pupuha I.	NLE	1992	4	Adults and burrows	Uncommon	Ground observation	M. Imber <i>in</i> Taylor & Parrish 1994b
Marotere Is (Chicken Is), Muriwhenua I.	NLE	1982	1000s	Breeding pairs	Several 1000	Ground observation	McCallum <i>et al.</i> 1984
		1992	1000s	Breeding pairs	A few 1000 burrows	Ground observation	A. Tennyson, R. Pierce & R. Parrish <i>in</i> Taylor & Parrish 1994b; A. Tennyson, pers. obs.
Marotere Is (Chicken Is), West Chicken I. (Mauitaha I.)	NLE	1994	2	Burrows	–	Ground count	Tennyson & Pierce 1995
Marotere Is (Chicken Is), Lady Alice I. (Mauimua I.)	NLE	1880	–	Breeding pairs	–	Ground observation	A. Reischek <i>in</i> Skegg 1964
		1962	10+	Individuals	–	Ground observation	Skegg 1964
		1992	1	Incubating adult	Rare	Ground observation	M. Imber <i>in</i> Taylor & Parrish 1994b
Marotere Is (Chicken Is), Coppermine I.	NLE	1965	1	Individual	Moderate numbers heard, 1 seen	Ground observation	Merton & Atkinson 1968
Taranga I. (Hen I.)	NLE	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
		1960–64	–	Individuals	Large numbers	Ground observation	Skegg 1964
		1991	–	Adults and burrows	Small numbers	Ground observation	G. Taylor, pers. obs.

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Mokohinau Is	NLE	Before 1889	–	Burrows	'Breeds on one island' only, and not in great numbers	Ground observation	Sandager 1889
Mokohinau Is, Burgess I. (Pokohinau I.)	NLE	2011–12	10+	Breeding pairs	Uncommon, at least 10 pairs	Ground observation	G. Taylor, pers. obs.
Mokohinau Is, Lizard I.	NLE	1944	2	Burrows	Breeding	Ground observation	C. Fleming <i>in</i> Marples & Falla 1946
Mokohinau Is, Trig I.	NLE	c. 1973	–	–	Low numbers breeding	Unknown	D. Veitch <i>in</i> McCallum 1980
Mokohinau Is, Maori Bay I.	NLE	c. 1973	–	–	Low numbers breeding	Unknown	D. Veitch <i>in</i> McCallum 1980
Mokohinau Is, Stack H	NLE	c. 1973	–	–	Low numbers breeding	Unknown	D. Veitch <i>in</i> McCallum 1980
Te Hauturu-o-Toi/ Little Barrier I.	AKE	1882	–	Chicks	–	Unknown	Wragg 1985; Reichek Collection Vienna Museum, A. Tennyson, pers. obs.
		Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
		1988–90	0	–	–	Ground observation	A. Tennyson, pers. obs.
Te Hauturu-o-Toi/ Little Barrier I., Lots Wife I.	AKE	1989	1	Breeding pair	Incubating adult	Ground observation	A. Tennyson & T. Lovegrove <i>in</i> Taylor & Parrish 1991
Great Barrier I. (Aotea I.), stack southwest of Opakau I.	AKE	1990	–	Burrows	Abundant	Ground observation	T. Lovegrove, G. Taylor & A. Tennyson <i>in</i> Taylor & Parrish 1991
		1994	–	Chicks	Breeding	Ground observation	A. Tennyson & K. McConkey, pers. obs.
Great Barrier I. (Aotea I.), Saddle I.	AKE	Before 1934	–	Unknown	Breeding	Unknown	Falla 1934
		1960	–	Burrows	Breeding	Ground observation	Bell & Braithwaite 1964
		1990	3	Individuals	Many disused burrows, ship rats on site	Ground observation	T. Lovegrove, G. Taylor & A. Tennyson, <i>in</i> Taylor & Parrish 1991
		1994	100s	Individuals	Rats present	Ground observation	A. Tennyson & K. McConkey, pers. obs.
Great Barrier I. (Aotea I.), Close I.	AKE	1980–81	1	Chick	Other burrows probably this species also	Ground observation	Bellingham <i>et al.</i> 1982

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Wooded I.	AKE	1989	200	Breeding pairs	–	Ground count	Taylor & Tennyson 1999
The Noises, Maria I.	AKE	1989	1	Individual	1 caught, other heard	Ground observation	G. Taylor & R. Pierce <i>in</i> Taylor & Parrish 1991
Horuhoru Rock/ Gannet Rock	AKE	1988	10	Breeding pairs	c. 10 breeding pairs	Ground count	A. Tennyson & G. Taylor, pers. obs.
Channel I.	CDL	Before 1934	–	Unknown	Breeding	Ground observation	Falla 1934
Cuvier I. (Repanga I.)	CDL	2005	–	Individuals	Small colony	Ground observation	G. Taylor, pers. obs.
Cuvier I., Scotts Monument	CDL	2005–08	10	Individuals	Small colony	Observed from a distance	G. Taylor, pers. obs.
Mercury Is, Green I.	CDL	1966	–	Burrows	Uncommon	Ground observation	Thoresen 1967
Mercury Is, Korapuki I.	CDL	1961 1974	– –	Burrows, empty Burrows	Breeding Common	Ground observation Ground observation	Edgar 1962 Hicks <i>et al.</i> 1976
Mercury Is, Kawhitihu I. (Stanley I.)	CDL	1966	–	Burrows	Uncommon	Ground observation	Thoresen 1967
Mercury Is, Kawhitihu I. (Stanley I.), stack to the north	CDL	1988	–	Eggs and chicks	Common	Ground observation	A. Tennyson, G. Taylor & P. Scofield, pers. obs.
Mercury Is, Double I. (Moturehu I.)	CDL	1988	10–100	Burrows	–	Ground observation	A. Tennyson & G. Taylor, pers. obs.
Mercury Is, Red Mercury I. (Whakau I.)	CDL	1961 1971 1990 2001–03	>24 – 10–100 <20	Individuals Individuals Burrows Individuals	More than 24 Uncommon – Fewer than 20	Ground observation Ground observation Ground observation Ground observation	Edgar 1962 Fogarty & Douglas 1972 G. Taylor, pers. obs. G. Taylor, pers. obs.
Ohinauiti I.	CDL	1970	–	Individuals	Uncommon	Ground observation	Blackburn 1970
Centre I. (Motukorure)	CDL	1989	100+	Burrows	100 or more	Ground observation	A. Tennyson, G. Taylor & P. Scofield, pers. obs.
Moturoa (Tower I.)	CDL	1989	1	Burrow	–	Ground observation	A. Tennyson & P. Scofield, pers. obs.

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Needle Rock	CDL	1989	–	Burrows	Many, probably breeding, medium-sized burrows	Ground observation	Taylor 1989
The Aldermen Is, Ruamahuanui I.	CDL	1994	3000–5000	Breeding pairs	Eggs and chick	Ground observation	G. Taylor & A. Tennyson, pers. obs.
The Aldermen Is, Ruamahuaity I.	CDL	1920s	–	Burrows	–	Ground observation	Sladden & Falla 1927, 1928
		c. 1973	8+	Individuals	–	Ground observation	Fogarty & Douglas 1973
The Aldermen Is, Middle Chain I.	CDL	1920s	–	Burrows	–	Ground observation	Sladden & Falla 1927, 1928
		1994	0	–	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
The Aldermen Is, stack north of Middle Chain I.	CDL	1994	100–200	Burrows	About 100–200 burrows	Ground observation	G. Taylor & A. Tennyson, pers. obs.
The Aldermen Is, Ngahoro I.	CDL	1994	100–200	Breeding pairs	Egg and chick	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Slipper I.	CDL	Before 1934	–	Unknown	Breeding	Unknown	Falla 1934
Penguin I.	CDL	1973	–	Burrows	Breeding	Ground observation	Douglas & Grubb 1974
Karewa I.	BOP	Late 19th century	–	Unknown	Breeding ground	Unknown	Buller 1887–1888
Motunau I. (Plate I.)	BOP	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934
		1988	–	Adults and empty burrows	Locally common	Ground observation	Taylor 1991
Moutohora I. (Whale I.)	BOP	Late 19th century	–	Unknown	Breeding ground	Ground observation	Buller 1887–1888
		No date	–	Burrows	Breeding	Ground observation	Falla 1934
		1968–70	–	Unknown	Absent	Ground observation	Imber 1975
Motoki I.	BOP	Late 19th century	–	–	Nesting ground	Unknown	Buller 1887–1888
Taumaihi I.	BOP	1992	–	Burrows	Breeding	Unknown	K. Owen <i>in</i> Taylor & Parrish 1994a
Rurima I.	BOP	No date	–	Unknown	Breeding	Unknown	Wragg 1985; Checklist Committee 1990

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Motuhina I. or Moturipa I.	EHC	1959	–	Burrows	Large numbers	Ground observation	Bell & Blackburn 1960
		1983	500+	Breeding pairs	More than 500	Unknown	Wragg 1985
Motuheka I.	EHC	1959	100	Burrows	1 chick found	Ground observation	Bell & Blackburn 1960
Motuahiauru I.	EHC	1959	–	Individuals	Considerable numbers	Ground observation	Bell & Blackburn 1960
East I. (Whangaokeno I.)	EHC	1979	–	Chicks	Breeding	Ground observation	Moors 1980
		2001	500–1000	Breeding pairs	–	Ground observation	Taylor 2008; G. Taylor, pers. obs.
Stack off Carr's Road, Urenui	WTT	1988–89	>20	Burrows	More than 20, prospecting	Observed from a distance	OSNZ <i>in</i> Taylor 1990
		1990	>5	Burrows	–	Observed from a distance	D. Medway <i>in</i> Taylor & Parrish 1992
		1992	1	Burrow	–	Observed from a distance	D. Medway <i>in</i> Taylor & Parrish 1994b
		1991–95	0	–	Stack collapsed, colony gone	Ground observation	B. Williams & G. Taylor, pers. obs.
Mana I.	WWL	2012	18	Breeding pairs	Translocation	Ground count	Department of Conservation 2010; Friends of Mana I., H. Gummer pers. comm. 2013
Stephens I. (Takapourewa)	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985; Checklist Committee 1990
Rahuinui I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Nelson's Monument	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Anatakupu I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Stewart I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Trio Is (Kuru Pongi), Middle Trio I.	MLS	1964	625	Burrows	–	Ground observation	Campbell 1967
Chetwode Is, Te Kakaho I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985

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Table 5 Population data for fluttering shearwater, *Puffinus gavia*. Continued from previous page

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Chetwode Is, Nukuwaiata I.	MLS	1936	–	Unknown	Breeding	Ground observation	Wilson 1959
		1976	–	Burrows	Uncommon	Ground observation	Meads 1977
Chetwode Is, 'The Haystack'	MLS	1958	–	Eggs	–	Ground observation	P. Harper <i>in</i> Wragg 1985
Duffers Reef	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Bird I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Maud I. (Te Hoiere)	MLS	1996	2	Breeding pairs	Translocation	Ground count	Bell <i>et al.</i> 2005
		2004	15	Breeding pairs	Translocation	Ground count	Bell <i>et al.</i> 2005
Titi I.	MLS	1987–88	–	Individuals	Breeding	Ground observation	Glaze 1985
Motuara I.	MLS	No date	–	Burrows	–	Unknown	B. Bell <i>in</i> Wragg 1985
		1993	100s	Breeding pairs	100s of pairs	Ground observation	A. Tennyson, pers. obs.
Kokomohua I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Long I.	MLS	1983	5000	Pairs	Extensive colony	Ground observation	Wragg 1985
		1995	1000s	Burrows	–	Ground observation	A. Tennyson, pers. obs.
		1990s–2000s	–	Fledglings	Common	Ground observation	Bell <i>et al.</i> 2005
The Twins	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Motungarara I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Amerikiwhati I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
South Brother I.	MLS	No date	–	Unknown	Breeding	Unknown	B. Bell <i>in</i> Wragg 1985
Glasgow I.	MLS	No date	–	Burrows	–	Unknown	Wragg 1985
		1990	–	Unknown	Small colony	Unknown	D. Brown <i>in</i> O'Donnell & West 1991
Archway I.	NLS	2000s	–	Individuals	Breeding	Observed from a distance	Department of Conservation 2011b

Table 6 Population data for Hutton's shearwater, *Puffinus huttoni* (MLK = Marlborough–Kaikoura; – = no data or comments; for sampling protocol, see 'Methods and conventions').

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Wharikiri Stream (Shearwater Stream)	MLK	1967–70	–	Breeding pairs	Common	Ground observation	Harrow 1976
		2006–08	8000	Breeding pairs	–	Ground count	Sommer <i>et al.</i> 2009
Upper Kowhai River	MLK	1964	675	Burrows	–	Ground count	Harrow 1965
		1960s	75,000	Burrows	–	Ground observation	Harrow 1976
		1986–89	133,400	Burrows	–	Ground count	Sherley 1992
		1989	94,000	Breeding pairs	–	Ground count	Taylor 2000a
		2006–08	106,000	Breeding pairs	–	Ground count	Sommer <i>et al.</i> 2009
Snowflake Stream	MLK	1960s	–	Burrows	Uncommon	Ground observation	Harrow 1976

### Hutton's shearwater

Two active colonies for this species at Wharikiri Stream (Shearwater Stream) and at the Upper Kowhai River remain in the Kaikoura Ranges of the South Island, and have had their population sizes assessed (Table 6). We have not listed historical breeding sites such as at Mt Tapuaenuku (Harrow 1976; Wragg 1985) because they are now extinct, presumably due to predation, and no counts were made (Sherley 1992), and we found only a single count from Snowflake Stream. At Wharikiri Stream (Shearwater Stream), only one published estimate of breeding pairs is recorded, with 8000 pairs in 2008 (Sommer *et al.* 2009). However, there are two population estimates for the Upper Kowhai River colony, with 133,400 burrows in the 1986–89 period (Sherley 1992) and 94,000 pairs in 1989 (Taylor 2000a), and 106,000 pairs in 2008 (Sommer *et al.* 2009), all having a high level of accuracy. Ongoing monitoring of the populations at Wharikiri Stream (Shearwater Stream) and the Upper Kowhai River would be beneficial. Monitoring of the population growth at the newly established (using translocations) shearwater colony on Kaikoura Peninsula will add further useful information (Ombler 2010). The most recent figures indicate a total population of around 114,000 breeding pairs, and Cuthbert found the overall population size to be stable

from 1989 to 1999 (Taylor 2000a). However, Sommer *et al.* (2009) and Cuthbert & Sommer (2009) concluded that the population increased from 1989 to 2008 at a rate of 1.7 % per year. It appears that Robertson & Bell's (1984) estimate of 10,000–50,000 breeding pairs was an underestimate.

### Kermadec little shearwater

For this subspecies, 10 breeding islands are recorded and there are population estimates for four significant colonies, but none is of high quality. The main breeding site is Curtis I., with about 100,000 breeding pairs. An estimate of 100+ pairs was recorded at the Herald Islets, 500 pairs were estimated to nest on Macauley I. and up to 1000 pairs were estimated at Cheeseman I. (Table 7). The large population on Curtis I. requires monitoring. Monitoring at North Meyer I. may be an option, although a sea-based index count method could be considered, given that this site is fragile and relatively inaccessible. Raoul I. and Macauley I. should be monitored to assess potential population recoveries after the recent eradications of mammals from both. The total population may be about 100,000 breeding pairs or slightly larger, and is clearly much greater than the 1000–5000 breeding pairs estimated by Robertson & Bell (1984). There is no information on population trends.

Table 7 Population data for Kermadec little shearwater, *Puffinus assimilis kermadecensis* (KMI = Kermadec Islands; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Napier I.	KMI	1966–67	–	Breeding pairs	Small number	Ground observation	Merton 1970
Meyer Is, North Meyer I. and South Meyer I.	KMI	1907–08	–	Burrows	Breeding	Ground observation	Iredale 1910
		1929	–	Adults and burrows	Breeding	Ground observation	Guthrie-Smith 1936
		1944	–	Burrows	Breeding	Ground observation	Sorensen 1964
Meyer Is, North Meyer I.	KMI	1966	–	Chicks	Several	Ground observation	Merton 1970
		1977	2	Burrows	–	Ground count	Morrison 1979
Meyer Is, South Meyer I.	KMI	1966–67	–	Burrows	Several	Ground observation	Merton 1970
Herald Islets	KMI	1966	100+	Breeding pairs	100 or more	Ground observation	Veitch <i>et al.</i> 2004
Herald Islets, Dayrell I.	KMI	1966	–	Breeding pairs	Small number	Ground observation	Merton 1970
Herald Islets, northern Chanter I.	KMI	1967	–	Breeding pairs	Small number	Ground observation	Merton 1970
Herald Islets, southern Chanter I.	KMI	1967	–	Breeding pairs	Small number	Ground observation	Merton 1970
Macauley I.	KMI	1988	500	Breeding pairs	–	Ground observation	Veitch <i>et al.</i> 2004
Haszard I.	KMI	1988	–	–	Breeding	Ground observation	Gaskin 2011
Cheeseman I.	KMI	1989	<1000	Breeding pairs	–	Ground observation	Gaskin 2011
Curtis I.	KMI	1989	100,000	Breeding pairs	–	Ground count	Veitch <i>et al.</i> 2004

### North Island little shearwater

Population estimates for the North Island little shearwater are patchy (Table 8). Although the subspecies currently nests at 30 sites, numerical data exist for only 13 sites. Among them, seven have more than 10 pairs reported. Hundreds of breeding pairs occur on Tawhiti Rahi I. (Poor Knights Is) and Taranga I. (Hen I.). At two islands in the Mercury group, the records are: Red Mercury I. (Whakau I.), *c.* 1000 pairs in 1990; and Kawhitihu I. (Stanley I.), hundreds of pairs in the 1990s. At The Aldermen Is in 1994, 1000–3000 pairs were estimated at Hongiora I. and 1000–2000 pairs were estimated at Ruamahuanui I. At Burgess I (Pokohinu I.). (Mokohinau Is) at least 50 pairs nest. Tawhiti Rahi I. and Hongiora I. may be too fragile to monitor routinely.

Therefore, Taranga I. (Hen I.), Ruamahuanui I., Red Mercury I. (Whakau I.), Kawhitihu I. (Stanley I.) and Burgess I. (Pokohinu I.) appear to provide the best monitoring potential for this subspecies, owing to the relatively large size of the populations and availability of basic numerical information. The subspecies is uncommon at most breeding sites, so the majority of these contribute little to the overall population size, which appears to number only in the low thousands of pairs, primarily at The Aldermen Is. Robertson & Bell (1984) estimated 5000–10,000 breeding pairs, and our calculations support this estimate. There is no information on population trends but the colony on Te Hauturu-o-Toi/Little Barrier I. is known to have become extinct in historic times, presumably due to predation.

Table 8 Population data for North Island little shearwater, *Puffinus assimilis haurakiensis*. Sites are listed in roughly north–south order (TKI = Manawatawhi Is (Three Kings Is); NLE = Northland East; AKE = Auckland East; CDL = Coromandel; – = no data or comments; for sampling protocol, see ‘Methods and conventions’).

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Manawatawhi Is (Three Kings Is), Great I./Ohau I.	TKI	1945	–	Burrows	Empty burrows	Ground observation	Turbott & Buddle 1948
		1995	2	Chicks	–	Unknown	R. Parrish <i>in</i> Parrish & Lock 1997
Manawatawhi Is (Three Kings Is), North East I.	TKI	1999	–	Individuals	A few ashore	Unknown	R. Parrish <i>in</i> Parrish 2000
Moturoa Is, Moturoa I.	NLE	1968	–	Burrows	Scarce	Ground observation	Adams 1971
Moturoa Is, Motutapu I. (Green I.)	NLE	1968	–	Burrows	Scarce	Ground observation	Adams 1971
Moturoa Is, Sugarloaf I.	NLE	1968	–	Burrows	Scarce	Ground observation	Adams 1971
Moturoa Is, Tuputupungahau I. (Whale I.)	NLE	1968	–	Burrows	Scarce	Ground observation	Adams 1971
		1985	1	Individual		Ground observation	Miller 1986
Stephenson I. (Mahinepua I.)	NLE	1959		Burrows	Incubating adults	Ground observation	Bell 1960
Cavalli Is, Motuharakeke I.	NLE	c. 1969	–	Unknown	A few breeding	Unknown	G. Adams <i>in</i> Millener 1980
		1988	2	Individuals	Small colony	Ground observation	G. Taylor, pers. obs.
Poor Knights Is, Tawhiti Rahi I.	NLE	1980	100s	Breeding pairs	Several 100	Ground observation	McCallum 1981
Poor Knights Is, Aorangi I.	NLE	1958	–	Individuals	Heard, not seen	Ground observation	Kinsky & Sibson 1959
		1981	–	Chicks	Breeding	Ground observation	Harper 1983
		2011	–	Chicks	Uncommon	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Mokohinau Is	NLE	Late 19th century	–	Burrows	Not very numerous but breeding on ‘all’ the islands	Ground observation	Sandager 1889
Mokohinau Is, Burgess I. (Pokohinau I.)	NLE	2012	50+	Burrows	50 or more breeding	Ground observation	G. Taylor, pers. obs.

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Table 8 Population data for North Island little shearwater, *Puffinus assimilis haurakiensis*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Mokohinau Is, Motuharakeke I. (Flax I.)	NLE	No date	–	Breeding pairs	Breeding	Ground observation	Taylor 2000b
Mokohinau Is, Stack D	NLE	c. 1973	–	Unknown	Breeding	Unknown	D. Veitch <i>in</i> McCallum 1980
Mokohinau Is, Stack H	NLE	1979	–	Unknown	Breeding, but rare	Ground observation	McCallum 1980
Mokohinau Is, Lizard Isle	NLE	1979	–	Unknown	Breeding, but rare	Ground observation	McCallum 1980
		1990	–	Individuals	Breeding	Ground observation	Taylor 2000b
		2011	–	Burrows	Uncommon	Ground observation	G. Taylor, pers. obs.
Taranga I. (Hen I.)	NLE	Before 1934	–	Burrows	Breeding	Ground observation	Falla 1934; Skegg 1964
		1930s–1950s	–	–	Small number breeding	Ground observation	Skegg 1964
		1960–64	100s	Burrows	Hundreds breeding	Ground observation	Skegg 1964
Marotere Is (Chicken Is), West Chicken I. (Mauitaha)	NLE	1994	<10	Burrows	–	Ground count	Tennyson & Pierce 1995; A. Tennyson, pers. obs.
Marotere Is (Chicken Is), Lady Alice I. (Mauimua)	NLE	1880	–	–	Ashore	Ground observation	A. Reischek <i>in</i> Skegg 1964
		1962	1	Individual	Ashore	Ground observation	Skegg 1964
		1992	–	Chicks	Common	Ground observation	R. Pierce, G. Taylor, M. Imber & R. Parrish <i>in</i> Taylor & Parrish 1994b
Marotere Is (Chicken Is), Coppermine I.	NLE	1965	2	Individuals	Moderate numbers heard, 2 seen	Ground observation	Merton & Atkinson 1968
Te Hauturu-o-Toi/ Little Barrier I.	AKE	1883	–	Chicks	–	Unknown	Buller 1887–1888; Reischek Collection Vienna Museum, A. Tennyson, pers. obs.
		1980s	0	–	–	Ground observation	A. Tennyson, pers. obs.
Mercury Is, Atiu I. (Middle I.)	CDL	1987	–	Breeding pairs	–	Ground observation	Taylor 2000a
		2003	–	Chicks	–	Ground observation	G. Taylor, pers. obs.
Mercury Is, Green I.	CDL	1966	–	Individuals	Uncommon	Ground observation	Thoresen 1967

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Table 8 Population data for North Island little shearwater, *Puffinus assimilis haurakiensis*. *Continued from previous page*

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Mercury Is, Korapuki I.	CDL	1961	1	Breeding pair	–	Ground observation	Edgar 1962
		1974	–	Burrows	Uncommon	Ground observation	Hicks <i>et al.</i> 1976
		2003	<10	Burrows and chicks	Fewer than 10 pairs	Ground observation	G. Taylor, pers. obs.
Mercury Is, Kawhitihu I. (Stanley I.)	CDL	1966	–	Individuals	Uncommon	Ground observation	Thoresen 1967
		1980s	100s	Burrows	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
		1993	100–500	Burrows and chicks	–	Ground observation	G. Taylor, pers. obs.
		2003	–	Burrows and chicks	Common	Ground observation	G. Taylor, pers. obs.
Mercury Is, Double I. (Moturehu I.)	CDL	1980s	–	Burrows	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
Mercury Is, Red Mercury I. (Whakau I.)	CDL	1961	42	Individuals	Breeding, 42 banded	Ground observation	Edgar 1962
		1963	–	Burrows	Breeding	Ground observation	Skegg 1963 <i>in</i> Fogarty & Douglas 1972
		1971	–	Individuals	Uncommon	Ground observation	Fogarty & Douglas 1972
		1974	20–30	Breeding pairs	–	Ground count	Hicks <i>et al.</i> 1976
		1990	1000	Breeding pairs	<i>c.</i> 1000 breeding pairs	Ground observation	Taylor 2000a; Taylor & Parrish 1992; G. Taylor, pers. obs.
Ohinauiti I.	CDL	1970	–	Individuals	Common	Ground observation	Blackburn 1970
The Aldermen Is, Hongiora I.	CDL	1994	1000–3000	Breeding pairs	Chicks	Ground observation	G. Taylor & A. Tennyson <i>in</i> Taylor 2000b
The Aldermen Is, Ruamahuanui I.	CDL	1994	1000–2000	Breeding pairs	–	Ground observation	G. Taylor & A. Tennyson, pers. obs.
The Aldermen Is, Ruamahuaitei I.	CDL	<i>c.</i> 1973	–	Probably breeding	–	Ground observation	Fogarty & Douglas 1973
Penguin I.	CDL	No date	–	Unknown	Breeding	Unknown	Taylor 2000a
Rabbit I.	CDL	No date	–	Unknown	Breeding	Unknown	Taylor 2000a

Table 9 Population data for subantarctic little shearwater, *Puffinus elegans* (CIS = Chatham Is; ANT = Antipodes Is; – = no data or comments; for sampling protocol, see 'Methods and conventions').

Locality name	Area	Dates	Counts	Status	Occurrence comments	Sampling protocol	Reference
Star Keys (Motuhope)	CIS	1975	100	Burrows	–	Ground count	Imber 1978, 1994
Antipodes Is	ANT	1969	–	Adults	Present	Ground observation	Warham & Bell 1979
Antipodes Is, Bollons I., Archway I., Inner Windward I.	ANT	1978	10,000–100,000	Breeding pairs	–	Ground observation	Tennyson <i>et al.</i> 2002
		1995	10,000–100,000	Breeding pairs	–	Ground observation	Tennyson <i>et al.</i> 2002
Antipodes Is, Archway I.	ANT	1978	–	Breeding pairs	Common	Ground observation	Imber 1979
Antipodes Is, Windward Is, Inner Windward I.	ANT	1978	–	Burrows	Common	Ground observation	Imber 1983

## Subantarctic little shearwater

This species has been recorded breeding at five sites but none of the population estimates has a high level of accuracy (Table 9). Imber's (1978) estimate of 100,000s of pairs at the Antipodes Is was an error, and was corrected by Tennyson *et al.* (2002) to 10,000–100,000 pairs – which was also the population estimate made in 1995. No individual island population estimates are available for the Antipodes Is group, although most of the birds nest on Bollons I. (A. Tennyson, pers. obs.). Breeding is suspected but has never been proven on Little Mangere I. (Tapuaenuku I.) in the Chatham Is (Imber 1994), and only one other breeding site is known in the New Zealand region: the Star Keys (Motuhope) in the Chatham Is (with 100 burrows in 1975). The Star Keys population should be monitored as it is relatively accessible. A long-term commitment to follow density plots on Bollons I. (as the most accessible breeding site in the Antipodes Is group) should be a high priority for this species. Clearly, almost the entire New Zealand breeding population occurs at the Antipodes Is, so the total population for the region is 10,000–100,000 pairs, in line with Robertson & Bell's (1984) estimate of 50,000–100,000 breeding pairs. There is no population trend information.

## Species population status summary

A summary of quantitative data on populations across the nine taxa of shearwaters breeding in New Zealand is given in Table 10. This shows that the overall quality of data is poor for all but two taxa, flesh-footed shearwater and Hutton's shearwater, and we have only an idea of population trends for these two species and the sooty shearwater. Current research will provide better information for flesh-footed and Buller's shearwaters. Overall population sizes are poorly estimated, and remain 'ball-park' figures for the majority of species.

### Dates of counts

We examined the age of the data we collated and graphed these by decade of observation for all species (Fig. 1). This showed that since the 1960s some effort has been made to estimate the size of shearwater colonies; that the median age of data, both numerical and qualitative, was 1985; and that most data were collected before 2000.

Table 10 Summary of population size, trend and data quality for nine taxa of shearwaters breeding in New Zealand in 2012.

Species	Total population size (breeding pairs)	Current trend	Quality of overall data
Wedge-tailed shearwater	50,000	Unknown	Poor
Buller's shearwater	300,000–400,000	Unknown	Poor
Flesh-footed shearwater	10,000–15,000	Decreasing	Good
Sooty shearwater	5,000,000	?Decreasing	Medium
Fluttering shearwater	100,000	Unknown	Poor
Hutton's shearwater	114,000	?Increasing	Good
Kermadec little shearwater	100,000	Unknown	Poor
North Island little shearwater	5000–10,000	Unknown	Poor
Subantarctic little shearwater	10,000–100,000	Unknown	Poor

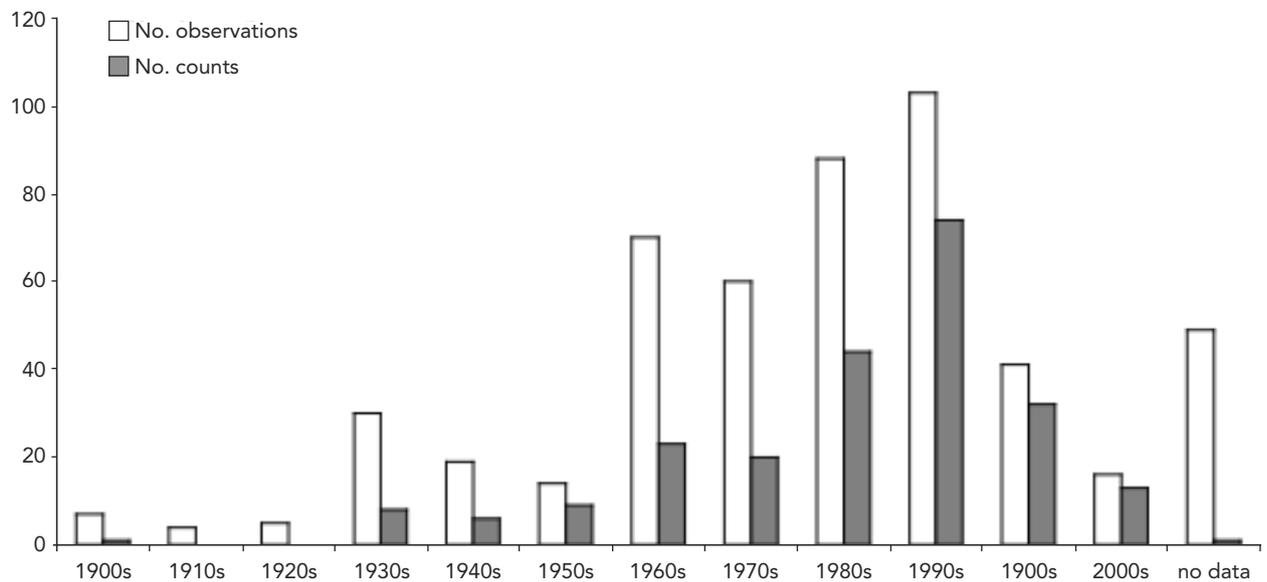


Fig 1 Dates of population information recorded for shearwater species at New Zealand breeding sites. Records with count data ( $n = 230$ ) are presented as grey columns; data for all records ( $n = 456$ ) are presented as white columns. Counts for the 2010s are incomplete because they include data taken only up to 2012.

## Discussion

### Information on species distributions and abundance

The data relating to the nine taxa of *Puffinus* shearwaters breeding in New Zealand provide a reasonable summary of breeding distributions and probably identify most key breeding sites for each species, but they give only a rough indication of the population sizes of most taxa. Most species are poorly studied and most data are more than 20 years old. Only for flesh-footed and Hutton's shearwaters is the information about most primary breeding sites less than 10 years old and quantitative. Total numbers of the other species are little better than educated guesses and there is almost no useful information on their overall population trends. The populations of one of the subtropical shearwaters – the wedge-tailed shearwater – are moderately well known, to the extent that there are population estimates for nearly all breeding sites, which allowed us to estimate the relative proportions of breeding birds at each colony. However, these counts date mainly from the late 1980s, so are nearly 25 years old in most cases. Population sizes of Kermadec little shearwater colonies are poorly documented. The current status of both of these species and their trends are poorly known, and repeat surveys at key sites are a high priority.

Data for Buller's shearwater, which is known to nest at only one island group, are very poor, with conflicting estimates of population size and with much data more than 30 years old. The large populations at Aorangi I. and Tawhiti Rahi I. urgently require quantitative surveys.

Regarding the other temperate breeding species, fluttering shearwater and North Island little shearwater, data are very poor, with 'ball-park' figures only for some of the key breeding populations. There are no reliable population estimates at the main breeding sites, hence it is impossible to detect trends in these populations. Data for flesh-footed shearwaters are improving rapidly at present, with research programmes underway to enumerate the main populations in Northland, Coromandel and Marlborough (Baker *et al.* 2010; Waugh & Taylor 2012).

For the cool-temperate breeding subantarctic little shearwater, there are no quantitative estimates of numbers at their main breeding sites.

The widely distributed sooty shearwater has been the subject of detailed studies at some key localities, with quantitative surveys conducted across several regions. This species is likely to have greater biomass than any other top predator

in the New Zealand marine ecosystem and to be a key agent of nutrient transfer in marine systems. For this reason alone there is a need for more detailed study of population size and trends. The two estimates for The Snares Is (Tine Heke Is) show a significant decline, provisionally attributed to pelagic net fisheries in the North Pacific (Scofield & Christie 2002; Scott *et al.* 2008). Veit *et al.* (1996) noted that sooty shearwater numbers in the California Current had fallen by 90% in 20 years. Aside from The Snares Is (Tini Heke Is) and Poutama I., where quantitative research has been done, little is known of the status and trends of large populations in the Southland area (many on beneficiary-owned muttonbirding islands), so the relative importance of different sites to the total New Zealand population is not well understood. The species is significant for southern Māori as a cultural, food and economic resource, warranting greater detailed study to help manage threats to the populations. Given the long periods between estimates, and the difficulty of estimating population sizes for such a numerous and widely distributed species, further efforts are required to quantify changes for this species at key sites. Consistent efforts are required to focus quantitative surveys at sites at which there have been at least one, or preferably several, higher-quality counts.

### Status of populations

Based on the data reviewed here, it is not possible to provide broad assessments of the status of shearwater populations in New Zealand. For most species, neither total population sizes nor trends are possible to determine with any degree of accuracy. The number of sites with two or more counts is low for all species. For sooty shearwater, some data may allow a reasonable time-series to be obtained. We consider that further counts at key sites indicated in the Results section are warranted in order to draw conclusions about population changes. It is important to note that a number of recent counts are of small colonies, which have been shown to be more vulnerable to fluctuations than larger colonies (Hamilton *et al.* 1997; Jones 2000).

One New Zealand breeding shearwater (Scarlett's shearwater, *Puffinus spelaeus* Holdaway & Worthy, 1994) that once nested at sites in the northwest of the South I. became extinct in prehistoric times, but information on the prehistoric distribution of other shearwater taxa is very poorly known (Holdaway *et al.* 2001; Worthy & Holdaway 2002). Fossil remains of shearwaters are found commonly in Holocene coastal deposits but it is usually not known if

these represent nearby breeding populations or if they were just strays cast ashore. It is assumed that many New Zealand shearwater populations became extinct following the introduction of mammalian predators, but there is not a great deal of direct evidence for this other than the absence of shearwaters from sites with predators where the birds might otherwise have been expected to occur (Worthy & Holdaway 2002). In a few instances, fossils reveal that species used to breed more widely, e.g. sooty shearwater fossils from a cave at Napenape, North Canterbury (Worthy & Holdaway 1996); fluttering shearwater remains from presumed breeding sites on both the mainland of the North I. and South I. (Holdaway *et al.* 2001; Worthy & Holdaway 2002); and a single North I. cave record of a little shearwater (presumably a North Island little shearwater) (Holdaway *et al.* 2001).

These few records, combined with the historical declines (described under the individual species accounts), document where predation is presumed to have caused extinctions, e.g. sooty shearwaters at Pipinui Point, along the Otago coast, and on Puangiangi I. and Chatham I.; fluttering and North Island little shearwaters on Te Hauturu-o-Toi/Little Barrier I.; fluttering shearwaters on Middle Chain I. and Moutohora (Whale I.); and Hutton's shearwaters on Mt Tapuaenuku. An expanding colony of shags destroyed the sooty shearwater colony at Whero Rock. In contrast, the loss of shearwater colonies from sites with no introduced mammalian predators or where only *Rattus exulans* was present, suggests a possible at-sea cause. The sites where species have disappeared include flesh-footed shearwater from Hen I. (Taranga I.), Red Mercury I. (Whakau I.), Hongiora I. and Whakaari I. (White I.); and sooty shearwater from the Cavalli Is, Taranga I. (Hen I.), Cuvier I. (Repanga I.) and Red Mercury I. (Whakau I.). These local population losses add weight to the idea that the overall populations of both flesh-footed and sooty shearwaters have declined in the last few decades.

### Survey methodologies

In various forums, there are concerted efforts to standardise and promote suitable methods of population estimation for burrowing seabirds. For example, the ACAP Population and Conservation Status Working Group is encouraging researchers to standardise their research methodologies and reporting (Wolfaardt & Phillips 2011). They recommend five methods of direct counts for albatrosses and petrels, and strongly encourage researchers to estimate errors as well as to be mindful of the influence of survey timing on the outputs

of their research. We encourage researchers to study the methods reported in Wolfaardt & Phillips (2011) and to select one suitable for the species and site they are working on. Further analyses on optimising survey efforts for burrowing seabirds by Schumann *et al.* (2013) showed that transect surveys could yield robust results, and even multiple-species survey information if the variability of species density and habitat stratification was taken into account.

### Conclusions on information relevancy

While reviewing the collated data, it has become clear that the information on which we are basing current-day assessments of the occurrence, range and population size of shearwaters in New Zealand is mostly out of date. The median date for the numerical estimates of all species combined was 1990. Half of the counts available (including qualitative information) are 30 or more years old, and there are relatively few data from the period since 2000. Even for Hutton's shearwater, where detailed counts from the late 1980s were reported, comparative data are now more than 20 years old. Only about 40 population estimates were recorded since 2000, or less than 20% of the total species-locality numerical estimates recorded in this paper. Considering the importance of marine birds, and shearwaters in particular, as predators in marine ecosystems, as well as the high endemism of shearwater taxa in New Zealand, the very poor status of information on this group of species undermines our ability to manage threats and other issues relating to them.

It is clear that there has been increasing focus on quantitative estimation of populations with time, and more recent estimates appear to provide more robust population size estimates than was attempted previously. Since the mid-1990s, the ability to obtain reliable population estimates has been greatly enhanced by the advent of burrowscopes to examine nest contents, accurate hand-held GPS units to locate sample plots, and new GIS software tools to stratify and map habitat types. Before this modern era most seabird workers concentrated on establishing the presence/absence of breeding species and estimated population sizes from a limited number of sample plots to determine 'typical' burrow densities. In the 1980s, many shearwater population estimates were made by staff of the New Zealand Wildlife Service and the Department of Conservation (DOC), as well as students from Auckland University. Since 1990, ongoing research programmes coordinated by DOC, the

Ministry of Fisheries and the Titi Project (Otago University) have obtained robust population estimates for several shearwater species. However, there is still an urgent need to develop agreed appropriate methodologies, especially for large colonies, in order to provide more robust and comparable estimates of the status and trends of these important populations of birds.

Finally, our aim was to document accessible information to make it easier for researchers to target their ongoing efforts with best effect. We hope that others will make available their findings, and assist with information-sharing to enable a better picture to be developed of the status of these *Puffinus* species. We are aware that our study is likely to have notable gaps, particularly for sooty shearwaters, and we hope that these are seen as challenges to fill, rather than inadequacies.

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