

EVALUATING NEW RADIOCARBON DATES FROM MIDDEN DEPOSITS NEAR MORIORI TREE CARVINGS, RĒKOHU (CHATHAM ISLAND)

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The Polynesian Moriori of the offshore New Zealand Chatham Islands are associated with a novel carving expression that is unlike any artistic tradition recorded for the indigenous peoples of Oceania. Moriori people indented living *karaka* (Māori) or *kōpī* (Moriori) trees (*Corynocarpus laevigatus*) with human and animal forms before the arrival of New Zealand Māori colonists in 1835 (Barber and Maxwell 2011, Jefferson 1956, King 1989, Richards 2007, Simmons 1980). These carved trees occur in lowland *kōpī* forests of Rēkohu (Chatham Island) primarily, the large northern island of the group (Fig. 1).

On current evidence the Chatham Islands were first colonised by 15th century A.D., if not earlier (McFadgen 1994, Wilmshurst *et al.* 2011). A number of researchers now believe that early Polynesian voyagers transferred New Zealand *karaka* as a fruiting food source to the cool Chatham Islands where tropical domestic plants would not grow (Barber and Maxwell 2011, Costall *et al.* 2006, Leach and Stowe 2005). There has been much conjecture over the antiquity and precise historical meaning(s) of carved *kōpī* trees and the motivation(s) of the carvers (e.g., Jefferson 1956, Kjellgren 2001, Richards 2007, Skinner 1923: 69-71). At the least, it seems reasonable to assume a developing cultural relationship between the practice of tree carvings and economically valuable *kōpī* stands.

Carved *kōpī* trees are designated *rākau momori* (lit. ‘memorial tree’) and valued highly by Moriori descendants today (Maui Solomon, pers. comm. January 2012). For contemporary Moriori, *rākau momori* trees and places provide a unique link or portal to the ancestral world (Solomon and Forbes 2010: 228 n5). Regrettably, the number of living *rākau momori* has reduced dramatically as a result of historical land clearance. The removal of buffering vegetation in particular has exposed diminishing *kōpī* stands to devastating winds, leading to the collapse of *kōpī* canopy and the death of mature trees. From a possible pre-1835 total of over a thousand carved trees, it appears that less than 200 *rākau momori* survive today. The future of the remaining carved trees is uncertain (Barber and Maxwell 2011, Maxwell 2010).

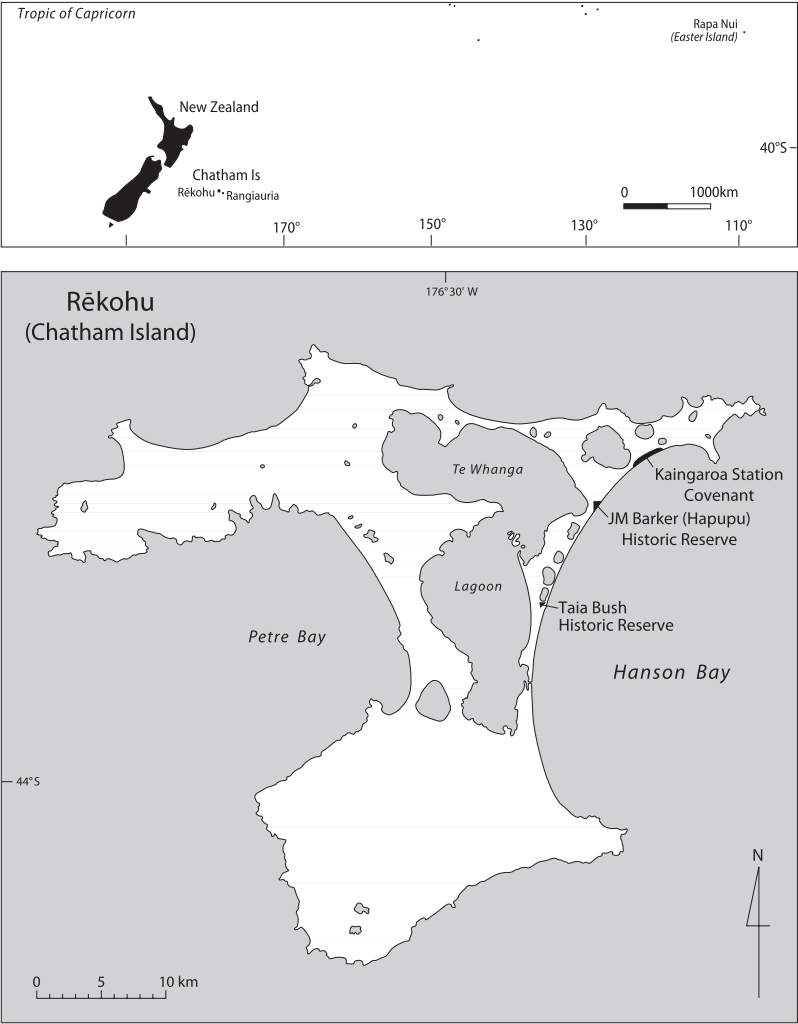


Figure 1. Rēkohu (Chatham Island) showing *kōpi* stands discussed in text.

A research project has begun in full partnership with Moriori authority Hokotehi Moriori Trust to assess the prospects for *rākau momori* conservation. The project is also framed so as to investigate the chronology, historical landscapes and meaning(s) of the carved tree tradition in the Chatham Islands (Barber and Maxwell 2011). This work is intended to contribute to, and support, the development of the Hokotehi cultural database managed by Moriori (Solomon and Forbes 2010). Assessment and recording work has been carried out over three field seasons to meet these ends.

From this work new paired radiocarbon results are available from the archaeological excavation of two small, isolated midden deposits found near or abutting discrete *rākau momori* associations. Of particular note, one of these dates is a terrestrial age on a carbonised *kōpī* seed. We report these dates as the first indications of an archaeological chronology of Moriori engagements with *rākau momori* stands and landscapes. We also consider whether these ages in site context might represent a *terminus ante quem* for the *rākau momori* carving tradition.

BACKGROUND: RĀKAU MOMORI ASSOCIATIONS AND DATING ISSUES ON RĒKOHU

The absolute chronology of *rākau momori* trees and stands is poorly resolved. In 1928 Skinner reported uncertainty over the age of the carvings, but opined nevertheless: “I do not think that any of the tree trunk figures seen are much older than a century” (Skinner and Baucke 1928: 346). Simmons (1980: 61) reported two radiocarbon dates “less than 200 years old” on unidentified materials from ovens excavated “between two [carving] groves” at Taia. We have also sampled a dead *rākau momori* trunk core at the J.M. Barker (Hapupu) National Historic Reserve for radiocarbon dating. From the wide calibrated range of this trunk date, we report “an almost 60% probability that the tree had grown as much as 200mm at some point between AD 1650 and 1810” (Barber and Maxwell 2011: 70). However, since this tree “is one of the smaller rakau momori at this locality” (Barber and Maxwell 2011: 71), the antiquity of the national reserve *rākau momori* tradition is still unclear.

Chronological resolution is complicated further because *kōpī* stems are characterised by “copious parenchymatous rays” and appear to lack consistent seasonal growth rings (Costall *et al.* 2006: 11). This proscribes dendrochronology as a reliable dating tool for *kōpī* trees. As well, it is not clear when *kōpī* were first introduced to the Chatham Islands, and therefore, how old any particular *kōpī* stand might be. Consequently, to investigate the absolute chronology of carved *kōpī* trees and forest, one is left with the option of resolving datable archaeological site associations and space.¹

Site association

The association of substantial marine shell midden deposits and carved *kōpī* stands was first recognised and quantified broadly by Jefferson (1956: 52-57, Appendix B) over the course of several field visits between 1947 and 1953. Jefferson's mid-20th century observations are important as the carved *kōpī* "arbours" she recorded then were far more numerous and covered a greater area than today (Barber and Maxwell 2011, Maxwell 2010). In brief summary, Jefferson (1956: 52) recorded 204 "single middens or groups of middens", with "each group or single midden denoting an arbour". Jefferson (1956: 52) also identified 119 existing "arbours" with "carvings near them". This last total almost certainly underestimates the number of "arbours" once associated with carvings and middens (see Skinner and Baucke 1928: 345).

At the least, radiocarbon ages from middens associated with *kōpī* stands can provide a chronology of Polynesian engagements with the larger *kōpī* resource. Dates from shell midden deposits abutting or near carved trees may be indicative of actual carving ages as well, although this interpretation requires careful spatial recording and evaluation to be plausible. Given the historical loss of carved trees noted above, one must consider that *rākau momori* clusters identified today may be relics of a more widespread distribution, rather than a primary, discrete relationship. There is also the problem that buried midden sites may not be recognised in many *kōpī* stands. Thus for 132 "arbour" sites, Jefferson (1956: 52-53) acknowledged that "grass or weed is growing over the middens and it is not possible now to see how many shell-heaps there were".

These problems have been considered in our Rēkohu research. The relative health of all remaining *kōpī* stands incorporating tree carvings has been assessed in 2010-12 monitoring work with further reference to historical data on canopy health and loss, tree condition and carving resolution. We have also measured *kōpī* tree size and mapped *rākau momori* positions in the course of our work, again with reference to earlier data sets where available (Barber and Maxwell 2011, Maxwell 2010). As a result we conclude that discrete *rākau momori* groups may be interpreted with some confidence as relic cultural patterns where the parent *kōpī* stands are relatively healthy and intact (see discussion of Kaingaroa Station Covenant distribution below). Midden distribution within *kōpī* stands is at one level a more difficult pattern to resolve. However, within the two most healthy *kōpī* stands identified in our survey work (Kaingaroa Station Covenant and Taia Bush Historic Reserve), the ground surface is also relatively clear of vegetation, consistent with a pattern identified by Jefferson (1956: 8) for middens in some "arbours". At Kaingaroa in particular, these clear areas have been disturbed extensively

by animals that have exposed and spread topsoil middens in places. In both of these stands, midden distribution has been tested further by probing. This does not address the possible presence of deep buried middens in these stands. However, at Kaingaroa and Taia at least, our survey records have allowed us to test midden and carved tree associations as discrete social space in a cultural landscape (see Kooyman 2006). Here we have been especially mindful of Jefferson's (1956: 54) observation that "in the larger harbours a smaller shell heap is sometimes to be seen a small distance away from the main group.... In one such case the carvings show a different and less elaborate character... and the off-shoot seems a separate entity".

Radiocarbon dating

A recent assessment of Polynesian colonisation dates highlights serious inadequacies in the existing archaeological radiocarbon database from the Chatham Islands (Wilmshurst *et al.* 2011). The identification of appropriate radiocarbon dating materials in stratigraphic context is an important fieldwork priority towards achieving a secure archaeological chronology for Rēkohu.

Short-lived carbonised plant materials such as seeds and twigs are preferred dating materials among standard midden components if they are recovered from secure archaeological contexts. Increasingly New Zealand archaeologists are also dating abundant shellfish from middens where the taxa concerned were sourced from dynamic coastal environments, such as open beaches or shallow inlets in medium to coarse sand with strong tidal flushing. Suspension feeding shellfish from these environments are less likely to have been in contact with older, depleted carbon food sources. The size and abundance of shellfish valves in middens also provides considerable choice and discretion in sample collection (Higham and Jones 2004: 220, Schmidt 2000).

Although marine shell may seem to be "the logical alternative" to charcoal for radiocarbon dating purposes in New Zealand (Petchey *et al.* 2008: 245), considerable local marine radiocarbon variability (δR) is reported in a small number of Rēkohu mollusc valves of known age from mid-western and south-eastern locations (see Petchey *et al.* 2008). If this variance characterises marine waters throughout the Chatham Islands, then shellfish ages from Rēkohu cannot be calibrated with confidence at present. However, our research suggests that the current New Zealand-wide δR average advised by University of Waikato Radiocarbon Dating Laboratory (-7 ± 45 , F. Petchey, pers. comm. 14 December 2011) is relatively accurate for calibrating radiocarbon dates on suspension feeding *tuatua* (*Paphies subtriangulata*) from northeastern Rēkohu archaeological sites as discussed below (see also Barber and Maxwell 2012).

KAINGAROA STATION COVENANT

The private, fenced *kōpi* stand at Kaingaroa Station is 247 hectares in area. It lies immediately behind Hanson Bay and is managed and protected under a covenant agreement. Here 22 *rākau momori* incorporating 24 carvings are distributed over about 2 km (see Fig. 2). Dead and dying *kōpi* trees are recorded along the inland margins of the stand. Some trees near the increasingly exposed inland edge are also displaying signs of stress. Within the relatively narrow stand itself, however, mature *kōpi* trees are generally healthy and the canopy is continuous, although the future health of the stand is clearly under threat.

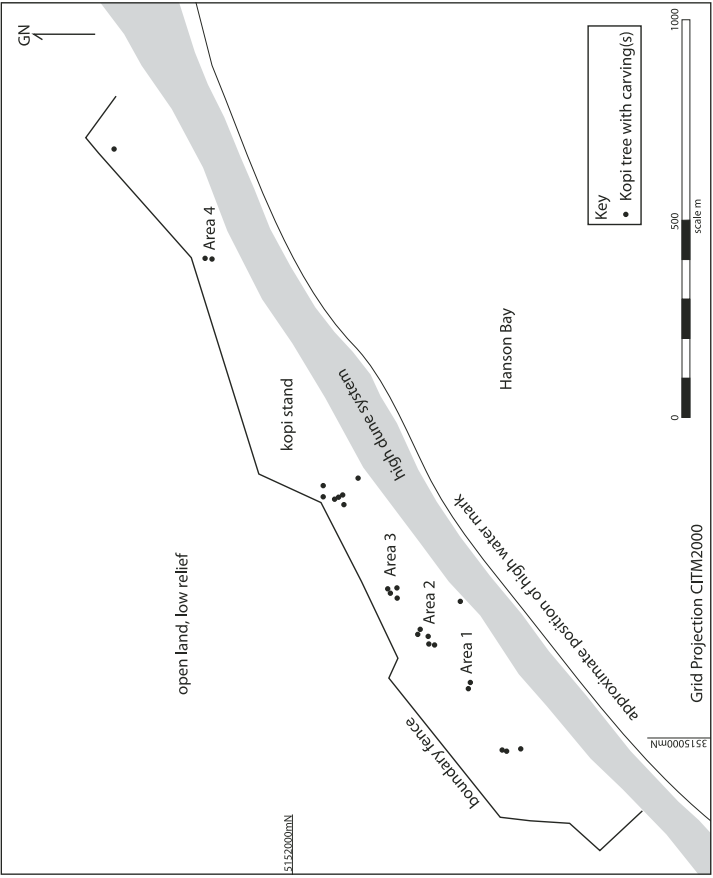


Figure 2. *Kōpi* stand, Kaingaroa Station Covenant, showing carved tree clusters.

At Kaingaroa, distances of between 80m to 250m separate discrete groups of 2-5 intervisible *rākau momori* (Figure 2). While additional carvings were recorded in 2010-2011, these tree numbers and groups are generally consistent with 1990s survey data (Barber and Maxwell 2011). Most of these *rākau momori* clusters are recorded in a southwest to northeast alignment. Two adjacent trees occur 600m north of this alignment. Given the relatively good health of this narrow, remnant *kōpī* stand with a range of tree sizes, we interpret the linear arrangement and separation of discrete *rākau momori* groups here as a cultural pattern.

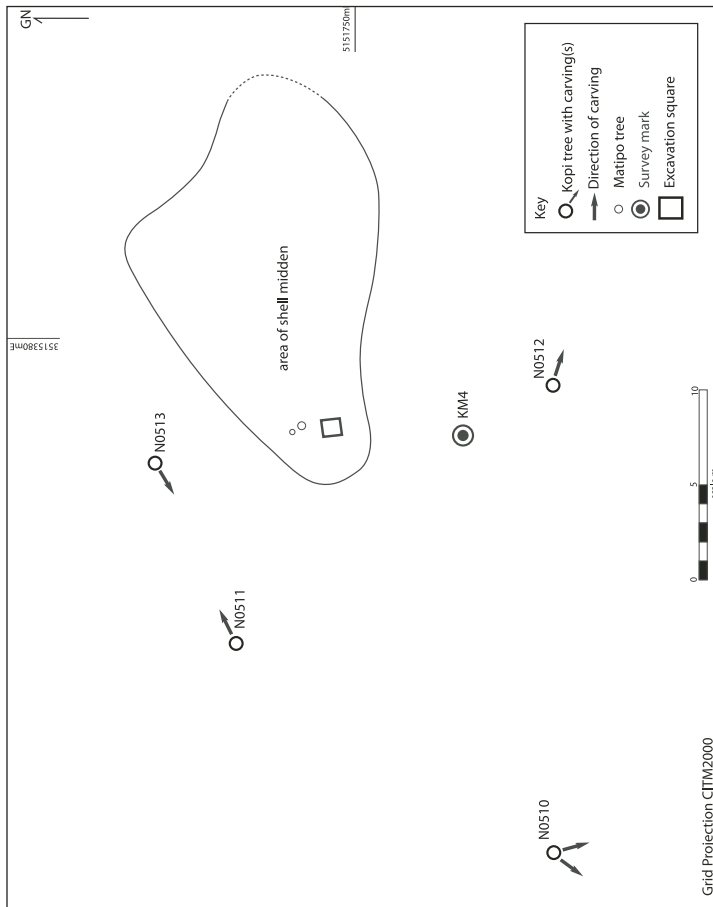


Figure 3. Carved tree association, midden and excavation unit, Kaingaroa Station Covenant (Area 3, Figure 2).

The ground surface over much of the Kaingaroa *kōpī* stand has been disturbed by animals, and is otherwise fairly free of obscuring vegetation other than regenerating *kōpī*. Consequently, we have mapped midden sites with some assurance here. In this work, shell midden deposits covering hundreds of square metres are often found around or within tens of metres of *rākau momori* in Areas 1, 2 and 4 (Fig. 2). These deposits may be over 50cm deep (Barber and Maxwell 2011). The wide distribution of midden deposits in these areas is such that it is challenging to resolve midden and *rākau momori* associations there.

Area 3 is unusual in that a single, small, discrete surface midden deposit lies within or about 10m distance of three out of four carved trees in this locality (Fig. 3). Less than 30m east of this midden, a further midden deposit of comparable size is recorded. No other midden deposits have been located within 150m of the Area 3 carving group. Two of these carved trees are anthropomorphic and face each other (N0511, N0513). N0511 presents a rare, large, symmetrical oval mouth (Fig. 4), while N0513 is relatively faint, with a diamond shape mouth.

N0512 is a long-necked bird in profile. N0510 as an outlier carving in this cluster presents a series of small leaf-like shapes on the trunk and an anthropomorphic figure. Trunk sizes in this group range between N0513 at 29.3cm DBH (diameter at breast height) and N0511 at 58.2cm DBH.² The latter is the largest carved tree recorded in Kaingaroa Station Covenant (Fig. 4).

The western Area 3 midden is exposed within a relatively open area that extends to the south beyond N0512 and to the east below tall *kōpī* canopy. The extent of the midden was confirmed by probing. The deposit is uniformly shallow, with a maximum thickness of about 25cm. Animals have disturbed and spread much of the upper midden at least, accounting we believe for the eastern extension of the deposit (see Fig. 3). A small, one square metre excavation was opened near two *matipo* (*Myrsine chathamica*) trees where it was assumed that the extensive rooting system would have held material in place and discouraged animal disturbance.

The integrity of the dense shell deposit became clear in excavation as numerous nested or articulated bivalves of *tuatua* in broadly horizontal alignment were recovered below the more broken, disturbed turf sediment (5cm deep). The midden matrix is black (10YR 2/1) medium grain loamy sand, 22cm deep, on very dark gray (7.5YR 3/1) sand. An intact horizon of about 8-16cm depth below surface of largely whole and occasionally nested *pāua* (*Haliotis* sp.) valves was also identified across the square extending into the sides (Fig. 4). Finfish elements were extremely sparse, and no bird or mammal bone was recovered.

The mix and arrangement of shellfish species at least is notable. *Tuatua* are soft shore, open beach bivalves while *pāua* are rocky shore univalves (Powell

1979: 36-37, 416). The dominance of *tuatua* in the square is consistent both with the proximity of soft shore Hanson Bay, and the components of other midden deposits excavated at Kaingaroa Station Covenant (Barber and Maxwell 2011, 2012). However, while occasional *pāua* clusters are reported from admittedly limited testing in other larger midden deposits at Kaingaroa Station, nothing like a discrete *pāua* horizon with numerous whole shells has been identified. The nearest hard shore is several kilometres distant along the northern Rēkohu coastline.³ It is reasonable to assume that the *pāua* were either discarded by a visiting group, or sourced especially from some distance. Some *pāua* fragments or valves appear to have been cut as well in this midden, suggesting that these shells were sourced with more than subsistence needs in mind.



Figure 4. Carved human figure on tree N0511, Kaingaroa Station Covenant, eastern side view. Height from ground level to base of head is 1490mm. Features in view include a large right eye (width 160mm), a symmetrical oval mouth (width 370mm), a raised right arm and a curved right leg in characteristic crouching position (see Jefferson 1956:25, Richards 2007: 47-48). N0511 is 9m west of the dated midden site (Figure 3). Photograph by Justin Maxwell, February 2011.

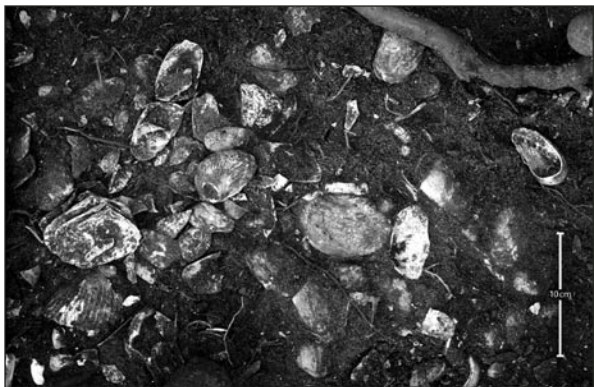


Figure 5. Midden excavation unit associated with Area 3 (cf. Figs 2 and 3), Kaingaroa Station Covenant, showing horizon of *pāua* and nested *tuatua* below *matipo* root.

Table 1. Conventional radiocarbon ages before present (CRA BP) and calibrated age ranges AD (CAL AD) at 1-sigma ($p=.68$) and 2-sigma ($p=.95$) for radiocarbon dates from Kaingaroa Station Covenant and Taia Bush Historic Reserve sites discussed in text. The marine calibration for Wk- dates is from Reimer *et al.* 2009 with delta R set at -7 ± 45 . Southern Hemisphere atmospheric data for the NZA terrestrial calibration are from McCormac *et al.* 2004.

SITE/LAB#	SAMPLE	CRA BP	$\% \delta^{13}\text{C}$	CAL AD 1 σ	CAL AD 2 σ
<i>Kaingaroa</i>					
Wk-30903	<i>tuatua</i> valves	592 \pm 34	1.8 \pm 0.2	1657-1806	1560-1885
Wk-30904	<i>pāua</i> valve	697 \pm 31	2.4 \pm 0.2	1542-1656	1488-1692
<i>Taia</i>					
Wk-30906	<i>tuatua</i> valves	637 \pm 35	1.4 \pm 0.2	1564-1709	1524-1815
NZA37128	<i>kōpī</i> seed	236 \pm 15	-21.7	1661-1673 (15%)	1652-1675 (24%)
				1744-1758 (17%)	1738-1798 (71%)
				1762-1771 (10%)	
				1780-1797 (26%)	

Two radiocarbon dates from this site were processed on nested, *in situ* *tuatua* valves (Wk-30903) and a single intact *pāua* specimen (Wk-30904), both recovered from the *pāua* horizon (see Fig. 5). At 1-sigma, these calibrated dates do not overlap (Wk-30904 *pāua*, AD 1542-1656 and Wk-30903 *tuatua*, AD 1657-1806), although both indicate a likely, pre-19th century site context. At the 2-sigma distribution, the dates overlap around the later 16th century to 17th century, within the calibrated ranges of 1488-1692 (*pāua*) and AD 1560-1885 (*tuatua*) (Table 1). For the *tuatua* date, the 1835-1885 distribution at least can be discounted given the site context. Until further dates are processed, our inclination is to follow the mid-17th century to 18th century age range for the locally sourced, open beach *tuatua*, insofar as the two dates diverge at 1-sigma.

TAIA BUSH HISTORIC RESERVE

The historic reserve at the south end of Lake Taia incorporates a wedge of *kōpi* “bush” that once extended north to south at least a kilometre and was up to 300m wide (Simmons 1980: 52). Today this *kōpi* reserve covers 1199 hectares. A pine tree (*Pinus radiata*) stand on the western margin has protected the remnant *kōpi* forest from westerly winds for over three decades (Park 1976: 5). Even so, significant carving associations have been lost, presumably before the pine trees provided protection. In the early 1960s Simmons (1980: 52) recorded 140 carvings from three “intact groves” at Taia (Simmons 1965). A single intact association of multiple carved trees (“Taia A” in Simmons 1965) survives today near the southeastern edge of the bush. This association includes 19 carved trees. In the main these carvings are anthropomorphic images. Some include heads alone.

The canopy above the remaining southeastern cluster is currently healthy, while the trees immediately around and including the *rākau momori* are generally in good condition. Within the cluster there is diversity in tree girth with N0403 at 28.5cm DBH and N0402 at 49cm DBH. Healthy trees without carvings extend for tens of metres to the north of this association.

Over an area identified as “Taia South Bush Edge”, Jefferson (1956: 66, Appendix B) recorded eight areas of “shell heaps” separated by distances in the range of 90-340 paces. Simmons (1965) mapped two surface “shell scatters” within “Taia A”. We have located and mapped the probed area of a single, ground level midden deposit within the remaining “Taia A” *rākau momori* cluster (Fig. 6). A carved tree is identified on the eastern side of this midden area (N0401, recorded as no. 314 in Simmons 1965: fig. and Plate III). The crouching human figure of N0401 is carved with a prominent headdress, probably a feather *kura* or *awanga* that may denote status (Fig. 7, see also Jefferson 1956: 31-32, figs 1-131; Richards 2007 and Simmons 1965: Plates II, III for headdress representations on selected carvings at Taia and

elsewhere). No other middens or carved trees were identified for well over 100m in any direction around this Taia carving association.

The *rākau momori* associated midden deposit itself shows evidence of deflation and surface disturbance. In general the *tuatua* valves exposed on the surface are broken. The shell midden is most concentrated and intact where the deposit has been secured around tree roots. Towards the southern margins

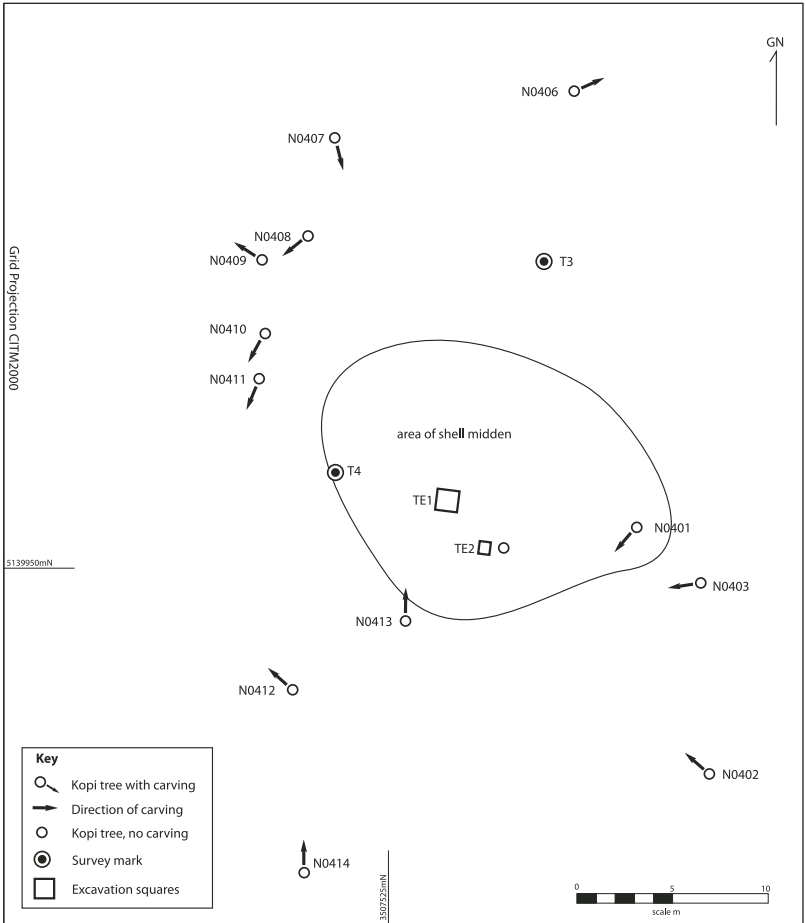


Figure 6. Carved tree association around excavation units and midden, Taia Bush Historic Reserve.

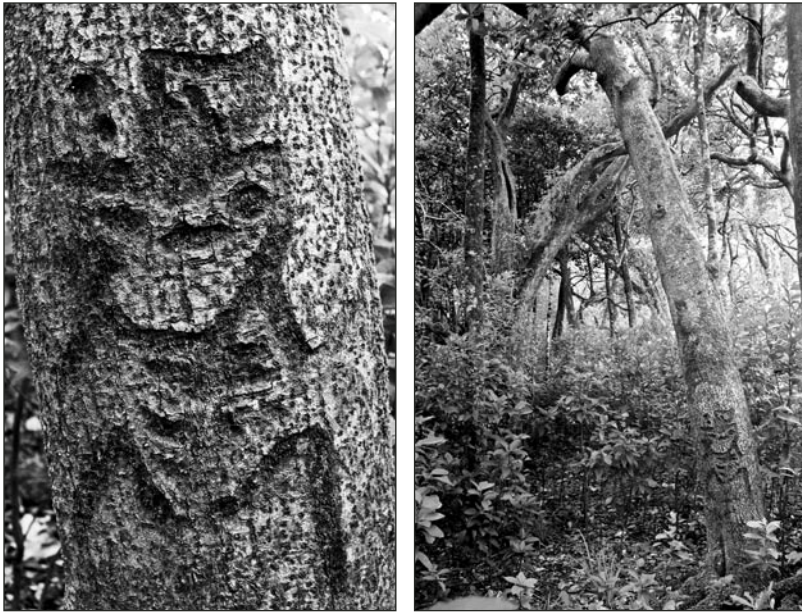


Figure 7. Carved human figure on tree N0401, Taia Bush Historic Reserve, with prominent headdress representation (full headdress height 140mm, maximum head height only 200mm). Height from ground level to base of crouching figure is 700mm. N0401 is on the eastern side of the probed and dated Taia midden area. Photographs by Ian Barber, January 2012.

of the midden area an un-carved *kōpī* tree with two primary trunks has an extensive root system that is elevated 40-60cm vertically above the current surface. Clearly soil if not midden sediments originally covered these roots.

Two excavation units were opened at the southeastern Taia midden. In a 1m x 1m unit the midden deposit (TE1) was relatively shallow (10-15cms) and confined to the near surface aspect of the black (10YR 2/1) loamy sand topsoil. *Tuatua* valves were largely broken, other than in the southern corner of the square. Several whale and bird bone fragments were recovered from the midden matrix. The midden sediment in this square appears to have been dispersed, and it is not clear that it is a primary deposit. A further, smaller test unit (TE2: 0.5m x 0.5m) was also opened at the base of the un-carved tree. Again, the primary *tuatua* shell component was broken and disturbed near the surface of this unit. However, dense, bedded, intact *tuatua* specimens,

including articulated valves, were identified 8-10cm below ground surface. In one corner of TE2 the depth of the midden below surface was 21cm. The basal part of the midden in the unit was characterised by undisturbed, intact sediment. This suggests that the midden was deposited before the rooting system had spread to the excavation area.

Two radiocarbon dates were processed on articulated *tuatua* valves (Wk-30906) and a single carbonised *kōpī* seed (NZA37128) respectively, both recovered from the lower, intact midden sediment of TE2. The calibrated marine age is AD 1564-1709 at 1-sigma, and 1524-1815 at 2-sigma (Table 1). If this single date is an accurate chronological result, then the age of the midden is most likely pre-19th century. It could be as early as the late 16th century to 17th century at 1-sigma. The *kōpī* seed sample has the advantage of no inbuilt age, and an association, obviously, with the local *kōpī* resource. At 2-sigma, the calibrated range of the *kōpī* date is intercepted between AD 1652-1675 (24%) and 1738-1798 (71%). These intercepts conform closely to the *tuatua* indications (at 2-sigma) of a 17th century or 18th century chronology at least for this midden.

DISCUSSION

At present, radiocarbon dates from midden deposits provide the only archaeological means to investigate the chronology of Moriori engagements with *rākau momori* stands. In reporting four such dates only we acknowledge that more radiocarbon ages on a wider range of marine and (especially) terrestrial materials are needed from these and other sites to fully compare and evaluate radiocarbon results on Rēkohu samples. From the comparison of these dates, however, we note tentatively that *tuatua* from eastern to northern Hanson Bay may be a relatively reliable marine shellfish for local radiocarbon dating purposes. Elsewhere we report a strong convergence around the mid-16th century through 18th century for calibrated *tuatua* dates from other midden deposits at Kaingaroa Station Covenant (Barber and Maxwell 2012).

At the very least we observe that these first radiocarbon ages point towards 18th century and possibly earlier Moriori engagements with *kōpī* stands in eastern to northern Rēkohu. The presence of a dated carbonised seed at Taia is a further indication that *kōpī* was of local subsistence value when this pre-19th century midden was deposited.

At Kaingaroa and Taia, the archaeological landscape indications are that the discrete association of midden deposits and carved trees for the two sites reported here represent non-random, social space. This could mean that Moriori chose to carve mature *kōpī* trees that had grown up around isolated

midden deposits. Alternatively, both middens may have been deposited in relation to *kōpī* trees that were being, or had been, carved. The site context suggests to us that the latter explanation is more likely. If social space is marked by the association of midden and carved trees here, it seems more plausible that highly visible *rākau momori* had primacy as identifiers of spatial significance over small, non-distinctive, ground level midden deposits. There are reasonable grounds, in short, to consider that the midden dates represent a *terminus ante quem* for the carving tradition at both places.

It is possible that other lost, carved trees in these two places pre-date the *rākau momori* that are now recorded there. Carvings and midden materials may have been added to each existing association over time as well. At Taia in particular, the relatively wide distribution of carvings that face in different directions could be the result of new *rākau momori* carvings indented on both bare and previously carved trunks at the location of an existing association (see Fig. 6). And at Kaingaroa, it may be that the single outlier N0510 was added to an existing group, or even marked a general place of (harvest?) importance at which other trees were later carved.

* * *

These preliminary interpretations will be tested and no doubt refined in further survey, excavation and dating work. At the least, however, the ages reported here begin to define the outlines of a testable, absolute chronology of Moriori engagements with managed *rākau momori kōpī* forest (see Solomon and Forbes 2010: 223). These results also flag an archaeological challenge to Skinner's earlier 20th century suggestion that none of the carved *kōpī* figures "were much older than a century" (Skinner and Baucke 1928: 346). In that regard, our research aligns with Moriori views of *rākau momori* as venerable cultural historical expressions of the unique Polynesian society that emerged on Rēkohu (Jefferson 1956: 11-13, Maxwell 2010, Richards 2007, Solomon and Forbes 2010).

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NOTES

1. Khaw (2000) has attempted to age Moriori tree carvings by measuring the fractional, differential growth rate of selected carving edges in relation to a generic *kōpī* growth model. We accept that this approach has promise, but believe that some of Khaw's data are too imprecise to allow the method to be applied with any confidence at present.
2. Here it is interesting to compare Jefferson's (1956: 11) observation that only two to six carved trees were found "at any harbour having a midden of only one heap of shells".
3. At Taia, Simmons (1980: 61) also observes that a "local" shell heap section had "paua from the north coast at the base".

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ABSTRACT

Images indented into living *kōpī* (*Corynocarpus laevigatus*) trees by Polynesian Moriori of the Chatham Islands are a novel, indigenous Oceanic carving expression. Currently the absolute chronology of the *kōpī* tree carving (*rākau momori*) tradition is poorly resolved. In a recent Rēkohu (Chatham Island) investigation, two isolated shell midden sites were recorded and excavated in the vicinity of *rākau momori* clusters. A cultural landscape assessment provides reasonable cause to identify each carved tree cluster and midden association as discrete social space. Radiocarbon dates on paired marine shellfish samples of different taxa from the Kaingaroa Station Covenant midden and on paired marine and terrestrial *kōpī* seed samples from the Taia Bush Historic Reserve midden are reported. At the least these dates identify probable, pre-19th century Moriori use of *kōpī* forest. On site context grounds we suggest that these dates may represent a *terminus ante quem* for the tree carving tradition as well.

Keywords: Moriori tree carvings, middens, social space, radiocarbon dates