Survey and Assessment of the *Ara Metua* (*Ara Nui o Toi*) and associated sites and monuments of Rarotonga, Cook Islands

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1. Introduction

Rarotonga is the largest of the Southern Cook Islands, which are located within central eastern Polynesia. The date of its initial colonization is far from clear. From oral accounts and genealogical sequences a date of around 1250 AD has been postulated (e.g. Campbell 2002, 148) for the earliest settlement by Polynesians arriving from Tahiti and Samoa. More recently, the settlement of the Cook Islands has been suggested to have been after the Polynesian expansion into the 'core' areas of Easter Polynesia (e.g. Society Islands), which seems to occur c. 900 AD. However, given the limited archaeological research conducted on Rarotonga, especially a lack of a clear radiocarbon chronology for settlement, the date of colonization and subsequent social development remains obscure.

Although characterised as a 'typical high island' (Campbell 2006, 103), the topography of Rarotonga is unusual in having a continuous low coastal belt encircling central highlands. It is around this coastal zone that one of the largest 'monuments' in Polynesia was constructed: the great road of Toi (Te a*ra nui o toi*). This road, also known as the *Ara Metua* (parent road), was described by Hiroa (1927, 211) as encircling the entire island. Actually, prehistoric encircling roads are present in other Eastern Polynesian contexts, for instance, the *Ala Loa* is known to have run around the coastline of the Big Island, Hawai'i, and its ritual circuit was a feature of the Makahiki ceremony (Mills 2002, 150). Traces of a coastal circuit road have been discovered in the Phoenix Islands, and Routledge (1919) describes a coastal circuit *ara* for Rapa Nui (Easter Island). However, what serves to make the *Ara Metua* on Rarotonga outstanding among Polynesian roads is the nature and scale of construction.

Campbell (2006) has described the layered character of the *Ara Metua* and how it not only served a primary ritual or cosmological role, as suggested by Parker (1974, 64), but also acted as a day to day means of movement, structuring and ordering the location of adjacent buildings, including *marae*, dwellings, *paepae*, *koutu*, and so forth. In short, as a monumental circuit road, the *Ara Metua* provided a degree of order to peoples place in the world, and the manner in which they encountered other people and places. Despite warnings that the *Ara Metua* can be 'over-analysed' (Campbell 2001, 210), there remains substantial gaps in our knowledge regarding its morphology and construction sequence, for example, was it built in a uniform manner or did it vary in different sections, and did it exist as a complete circuit? Questions of chronology and sequence are equally important, for instance, when was it built, and was it of unitary construction or composed of piecemeal 'projects' with sections being added through time? Also, we know nothing about how frequently (if at all) was it rebuilt, resurfaced or refurbished in one way or another. These structural questions translate into social questions as in being a monument, did the appearance of the *Ara Metua*, in terms of grandeur and the quality of materials, express differences in the social standing of different *vaka* on the island?

In order to address these questions a sustained programme of research on Rarotonga is required to investigate the composition and chronology of the *ara metua*, and associated structures. This report represents the preliminary results from the first season of research.

2. Fieldwork on the *Ara Metua* or *Te ara nui o toi*

2.1 Previous archaeological research

The first archaeological investigations of the *Ara Metua* were undertaken by R. H. Parker (1974), some forty years after the initial observations by Hiroa (1927), as part of a series of fieldwork seasons conducted throughout the 1960s on Rarotonga by teams from the Canterbury Museum, New Zealand. By this time very little of the great road, as reported by Hiroa after his visit in 1926, remained as a visible monument. The Canterbury Museum team identified a number of research questions concerning the *Ara Metua* to be addressed by fieldwork:

1. Whether or not the road at any period ran "completely round the island" (as identified by Hiroa in 1926).
2. Whether or not the road was paved throughout its circuit.
3. The date of its initial construction.
4. The purpose of its construction 'and its relations both in function and in order of building to the important *marae* which flank it and which it seems designed to link (Parker 1974, 63).

Because of time constraints and the limited or 'scant' evidence of the *Ara Metua*, none of the above questions were conclusively answered by fieldwork. Nonetheless, Parker felt able to make certain statements based upon their observations in the field:

1. It seems certain that the road did completely encircle the island and no evidence indicating substantial gaps was found except possibly in the instance referred to in the next paragraph.
2. With a much lower degree of certainty evidence was found indicating that the kerbing at least may have been continuous throughout the length of the road. In spite of the almost total destruction there were only relatively short sections in which no evidence for kerbing was found. The main gap was between the eastern end of the Arorangi district and the western end of the Takitumu district where a longish section of the presumed course of the old road crosses agricultural land. As might be expected, virtually no trace of the road was found here. At this point, the presumed course of the Ara Metua crosses a patch of deeply gullied and scrub covered land where it proved impossible to locate the road at all.
3. It was clear that the final form of road was contemporary with the final phase of the various *marae* which adjoin it. It is possible (but could not be conclusively established nor conclusively rejected) that the earliest reconstruction of the *marae* were similarly linked by earlier versions of the road.
4. It is highly plausible that the road was built to link the groups of *marae* which adjoin it and that its functions were ceremonial and related to the functions of the *marae*. This is suggested

by its physical relationships to the *marae* and the number of other probable ceremonial features associated with it, especially the seats and wells.

5. The most interesting conclusion suggested by the very existence of so elaborate a construction is the implication of a fairly substantial degree of political hegemony which seems virtually a necessary condition for its building. With a fuller knowledge of Rarotongan pre-history this may very well give reasonably firm indications of a probable date since there can have been relatively few periods during which such conditions existed.

Writing in early 20th century, Savage notes that 'it is a great pity that this road has, in many places, been totally destroyed' (2012, 39). By the time of the Canterbury Museum team's fieldwork in the 1960s, much of the *Ara Metua* was represented merely by three 'discontinuous sections of dirt road usable by motor traffic' (Parker 1974, 64). Consequently, far less damage had been incurred than is evident today where sections of road following the course of the *Ara Metua* are of upgraded metalled construction, with associated drainage ditches and services and utilities such as water and sewage pipes.

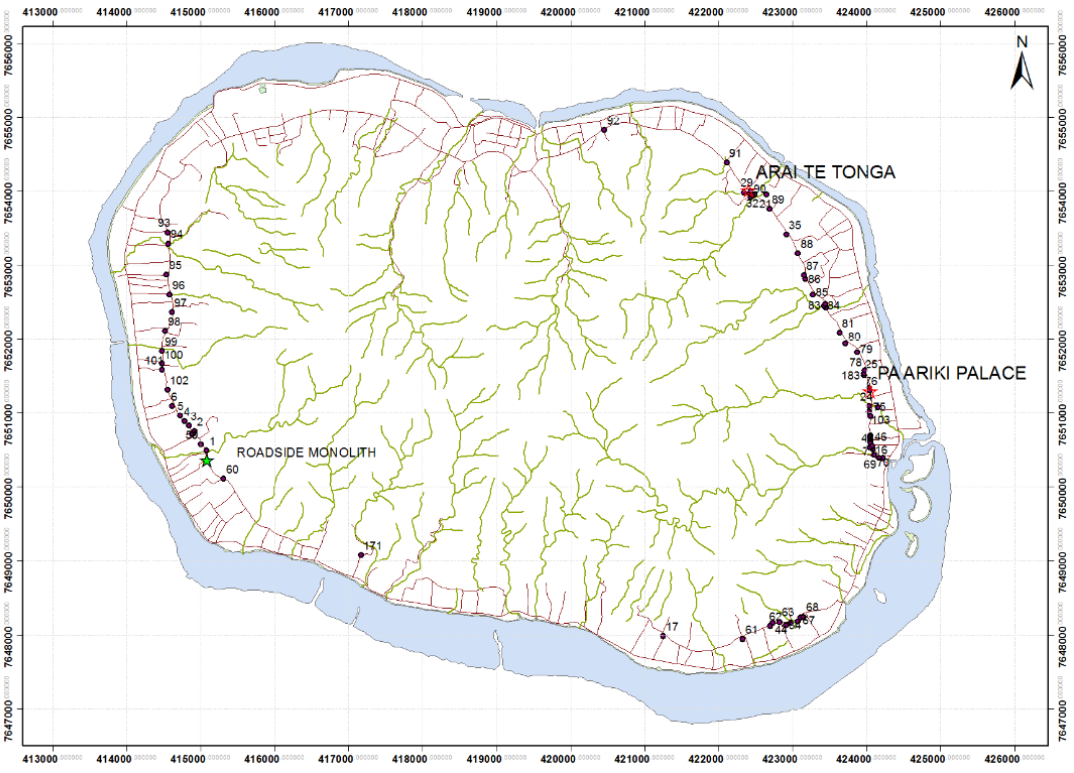

Figure 1. Map of Rarotonga showing the circuit of the *Ara Metua*, as represented by the contemporary inner road, note absent sections in the southern sector (from Campbell 2001).

It is in the context of this modern upgrading that the most recent survey of sections of the *Ara Metua* were undertaken, thirty years after the Canterbury team, by Matthew Campbell in 1997. Very little of the long stretches of kerbing reported by Parker remained visible, and it was concluded that 'it remains likely that many sites recorded by Duff have been destroyed,

and that the *Ara Metua* itself, as a prehistoric site, is also largely destroyed, although it continues as a fully functioning road' (Campbell 2001, 99). Nearly ninety years after the first detailed (but short) account by Hiroa in 1927, through the various surveys it is possible to trace the gradual deterioration and destruction of the *Ara Metua*.

As Matthew Campbell (2001, 45-6) notes in his commentary on two of the main phases of archaeological work on Rarotonga by the Canterbury Museum team (1962-9) led by Roger Duff (Trotter 1974), and Peter Bellwood between 1968-72 (Bellwood 1978), few excavations were undertaken and both archaeological investigations relied heavily on survey and recording. A third phase of fieldwork was undertaken by a team from Keio University, Japan, between 1991-97 (Chikamori 1995) that focussed mainly on two valleys (Turangi and Avana) in eastern Rarotonga, including investigations on the small island of Motu Tapu. As part of this project, Yamaguchi (2000) undertook a broader landscape survey which included a 'landscape-based' assessment of the 'political system and ceremonial structures along *Ara Metua*' (ibid. 135-7). Despite incorporating an excavation component, the Keio University project did not investigate the *Ara Metua* to any great extent, instead preferring a broader landscape (or *tapere*-based) strategy of fieldwork.

Matthew Campbell's (2001) research in the late 1990s also assumed a landscape perspective. However, in this instance landscape was merged with oral traditions, 'landscape is a story – dwelling, perceiving, remembering the past are one and the same process' asserts Campbell (ibid, 52). In contrast to Yamaguchi (2000), the *Ara Metua* featured strongly in this research and sections were walked and recorded (e.g. Campbell 2001, 98-9; 2006).

This history of research is extremely valuable and provides considerable insights into different aspects of the *Ara Metua*. Additional value lies in the fact that many observations, particularly by Hiroa and Parker, were made before substantial changes in building and infrastructure in Rarotonga had effectively eradicated the majority of traces of the original road. However, even as early as the first decades of the 20th century, Savage laments that 'it is a great pity that this road has, in many places, been totally destroyed' (2012, 39). Today, developments continue at a dramatic pace and given that the road has been described as one of the greatest monuments in Polynesia (Campbell 2006, 103) it is extremely important to record and evaluate the *Ara Metua* or *Te ara nui a Toi* before it is completely destroyed and lost forever.

2.2 Construction, extent and appearance

Our first line of investigation involves the architecture and materials employed in the construction of the *Ara Metua*. In the *Material Culture of the Cook Islands (Aitutaki)* Hiroa (1927) describes the *Ara Metua*:

> the subject of stone-work cannot be dismissed without reference to the famous road in Rarotonga known as Te Ara-nui-a-Toi, The Great Road of Toi. This road runs completely around the island, and stands further inland than the present Government road. Before the advent of Christianity all the villages were on the inland side of this road. In the neighbourhood of the villages the road is completely paved, with a raised edge of larger stones at both sides and flatter stones between. It is after the style of a cobbled road, except that the stones are not cut to fit against one another. In some places the stones have been removed for other purposes, but in spite of this a considerable portion of the stonework is intact, though overgrown with vegetation.
>
> Any part where the soil was wet was paved. Hollows and depressions were filled in and the road raised over them. Culverts were built by making two walls and laying flat stones over the top. At some points cobbled roads lead back to the house site of some important chief or priest (1927, 211).

The latter observation is demonstrated by an illustration by Hiroa of a section of the road near the *marae* of *Arai-te-tonga* (Fig. 2). Here the kerb of the *Ara Metua* creates a step, and the rear of the culvert is lined with coral slabs, beyond which a narrower paved road leads back towards 'the site of a house known as *Harerangi*' (ibid, 212). Hiroa also states that the road was paved and kerbed 'within the neighbourhood of the villages' (ibid, 211), implying that other stretches between and beyond villages were unpaved. This observation is at odds with Savage who describes the surface of the *Ara Metua* as being 'originally paved with stones the whole of its length' (2012, 39).

Figure 2. Photograph of a section of the *Ara Metua* near *Arai-te tonga* as shown in *Material Culture of the Cook Islands (Aitutaki)* (from Hiroa 1927).

The paving stones utilized are described as basalt and coral by Campbell (2006, 103). This is clearly an important issue since if we follow Hiroa (ibid), the *Ara Metua* would appear to be embellished at particular places, and becomes an architectural device or resource for material strategies to elevate the importance of places and people. Both the materials employed and extent of kerbing are also an important structural element as they serve to 'frame' the passage of the road.

Figure 3. The remains of shaped coral kerbing adjacent to the modern inner-road at Pa's Palace, Turangi.

Cautiously, Parker states, 'that the kerbing at least may have been continuous throughout the length of the road. In spite of the almost total destruction there were only relatively short sections in which no evidence for kerbing was found' (1974, 63). However, Campbell (2006, 103) considers kerbing to be restricted to where habitation was most dense, which echoes the observation of Hiroa (1927, 211), of villages being the focus for paving and kerbing.

A further factor to consider, which is neglected in the various past accounts and investigations, is whether the kerbing was shaped. This would also be a method of elaboration which could be employed to enhance particular sections and places. Parker, notes that in

Figure 4. Shaped basalt kerb stones piled up at the roadside to the north of Pa's Palace, Turangi (0423993/7651541).

Tuapapa 'the kerbing was composed of neatly fitted blocks of prismatic basalt, laid closely together, giving a level and relatively even top to the kerbing on both sides of the road' (1974, 65). In other places the kerb was composed of rounded boulders, and in a few places 'pointed boulders giving a 'saw-tooth' profile (ibid). While this provides valuable information

regarding kerbing, overall, these generally conflicting observations and assumptions by different researchers are not helpful in providing an accurate description of the *Ara Metua*, in terms of architecture and material constitution. Taking the kerbing first, from our observations it seems probable that the kerbing was both coral (*toka-a-punga*) and black basalt. Where small sections were observed, for instance at Pa's Palace, Turangi (0424056/7651282) (Fig. 3), in the west of the island, two pieces of coral kerbing appear to remain *in-situ*. Although unexcavated, interestingly, these blocks have the appearance of being shaped. However, north of this site, several rectangular lengths, up to 0.60m in length of basalt kerbing are heaped displaced at the side of the road (0423993/7651541) (Fig. 4).

Another pile of displaced basalt kerb-stones derived from field clearance, was observed adjacent to the road further north (0422796/7653629), several of these slabs show signs of having been shaped (Fig. 5).

Figure 5. Cleared kerb stones alongside the inner-road at (0422796/7653629).

At a possible surviving section of the *Ara Metua*, in the south-east of the island, at Maii, (0423658/7648502) where it crosses the Paringaru stream, the visible kerbing is unshaped coral blocks (Fig. 6). From this fragmentary evidence it appears that coral and prismatic basalt were employed as kerbing, and that at particular places both types of rock were shaped.

The width of the *Ara Metua*, has been described as being c. 3.2m (Parker 1974, 64), and to determine both the width, type of surfacing material and nature of kerbing, geophysical survey (fluxgate gradiometer) was undertaken at a number of locations including a stretch of preserved road at the front of *marae* Arai te Tonga, Tupapa (RAR. 19) (Fig. 7).

Fluxgate gradiometer survey at all sites was conducted using a Bartington Grad601b with readings taken at 0.125m intervals along north-south traverses spaced 1m apart, at a resolution of 1nT, range 1000nT, readings were taken in parallel. All data were subjected to minimal processing (e.g. zero median traverse, and clip) in Terra Surveyor v3.0.27.0, and imported into ArcGIS v10.2.2 for display and production of interpretation plots.

Figure 6. Unshaped coral blocks form the northern kerbing of an intact section of the *Ara Metua* at Maii (0423658/7648502).

At Arai te Tonga, the *Ara Metua* is represented by a gap between the front of the *marae* and a row of facing stone seats adjacent to the modern road (which was detoured around the monument) (Fig 7). The distance between these features is between 5 – 6m, much wider than the 3.2m width of the Ara Metua suggested by Parker (1974, 64). However, in the absence of kerbstones at this point an exact measurement across the road is impossible.

Figure 7. Geophysical survey of the preserved section of the *Ara Metua* adjacent to the marae of Arai te Tonga, Tupapa (RAR. 19).

To the east of Arai te Tonga number of basalt and coral blocks are apparent breaking through the ground surface just east of the *marae*, and judging from the results of the survey, which revealed a sub-surface line of magnetic anomalies, these appear to be the remains of the northern kerbing of the *Ara Metua* (Fig. 8). Interestingly, the southern section of kerbing, running along the front of the *marae*, was revealed by the geophysical survey to be of far lower magnetism, suggesting either the deployment of smaller stones or a different type of basalt or coral.

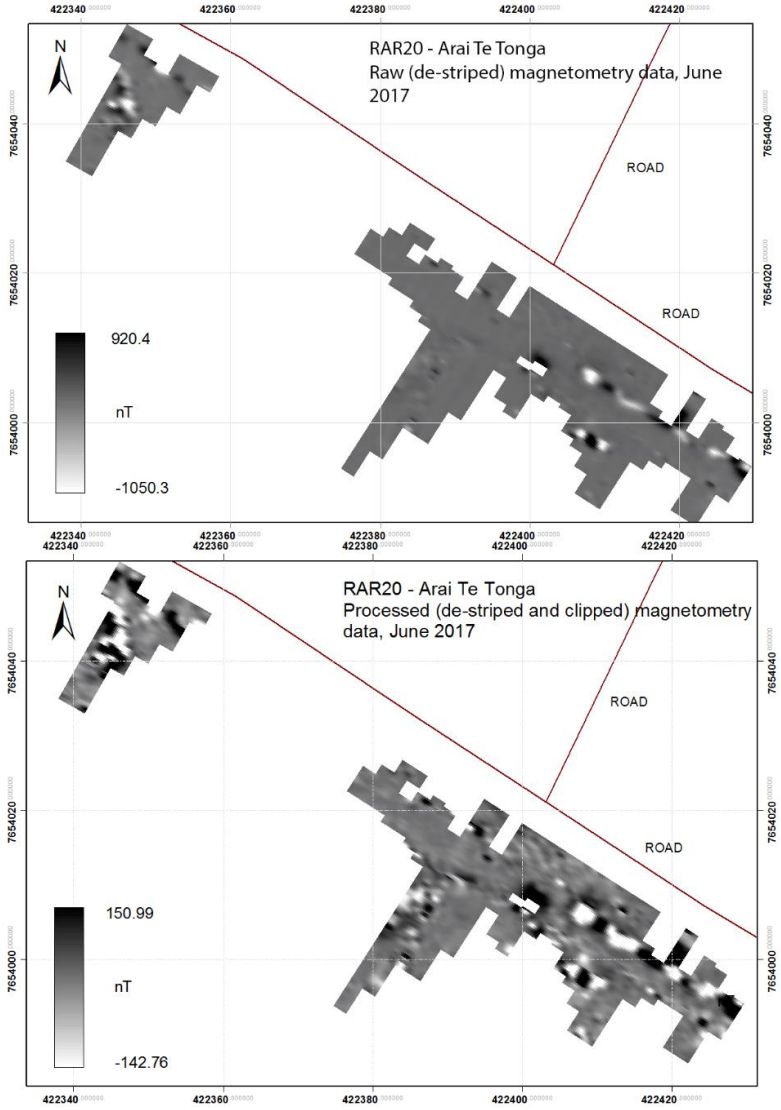

Figure 8. Results of the geophysical survey (fluxgate gradiometer) along the preserved section of the *Ara Metua* at Arai te Tonga (RAR. 19).

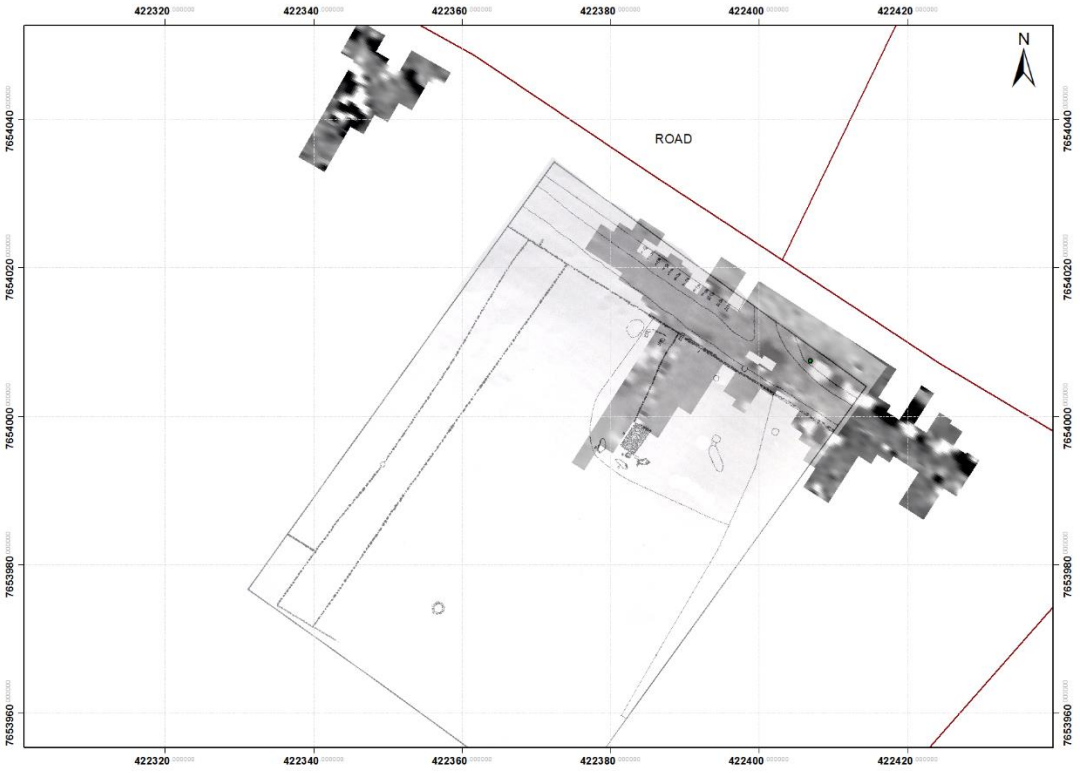

Figure 9. Geophysical results superimposed on plan of Arai te Tonga by Duff (1974).

From both field measurements and the geophysical survey data, the width of 5-6m is evident for the *Ara Metua* as it passes in front of Arai te Tonga. As noted above, this exceeds the width of c. 3.2m noted in other sections (ibid.), and may demonstrate a widening of the *Ara Metua* in places of particular importance. The low magnetism of the road surface would indicate either coral or that the road is actually unsurfaced at this point, which seems unlikely (see Figs. 8 & 9).

A broad area of grass is also present in front of Pa's Palace, Turangi, on the landward side of the modern road (covering the *Ara Metua*) in the south-west of the island. This too was selected for geophysical survey on the basis that another preserved section of the *Ara Metua* may present. The presence of the two coral kerbstones (Fig. 3), and a surface parch-mark (Fig. 10) adjacent to the modern route militated against this possibility, nevertheless a geophysical survey was undertaken (Fig. 11). The results of the survey were inconclusive, however, no magnetic anomalies were present that may indicate the presence of a sub-surface basalt kerbed and surfaced road.

Figure 10. View of the grassy area in front of Pa's Palace, showing the surface parch-mark revealing where stonework is present directly beneath the ground surface.

Despite the level of change and destruction incurred by the *Ara Metua* since the surveys of Parker (and to a degree Campbell 2001), there are some tentative conclusions that can be made regarding the architecture and material composition of the old road. From our observations the kerbing appears to have been of either basalt or coral blocks, and both materials were shaped in particular places. For the extent of the kerbing, we have to rely of Parker's conclusion that 'with a much lower degree of certainty evidence was found indicating that the kerbing at least may have been continuous throughout the length of the road. In spite of the almost total destruction there were only relatively short sections in which no evidence for kerbing was found' (1974, 63).

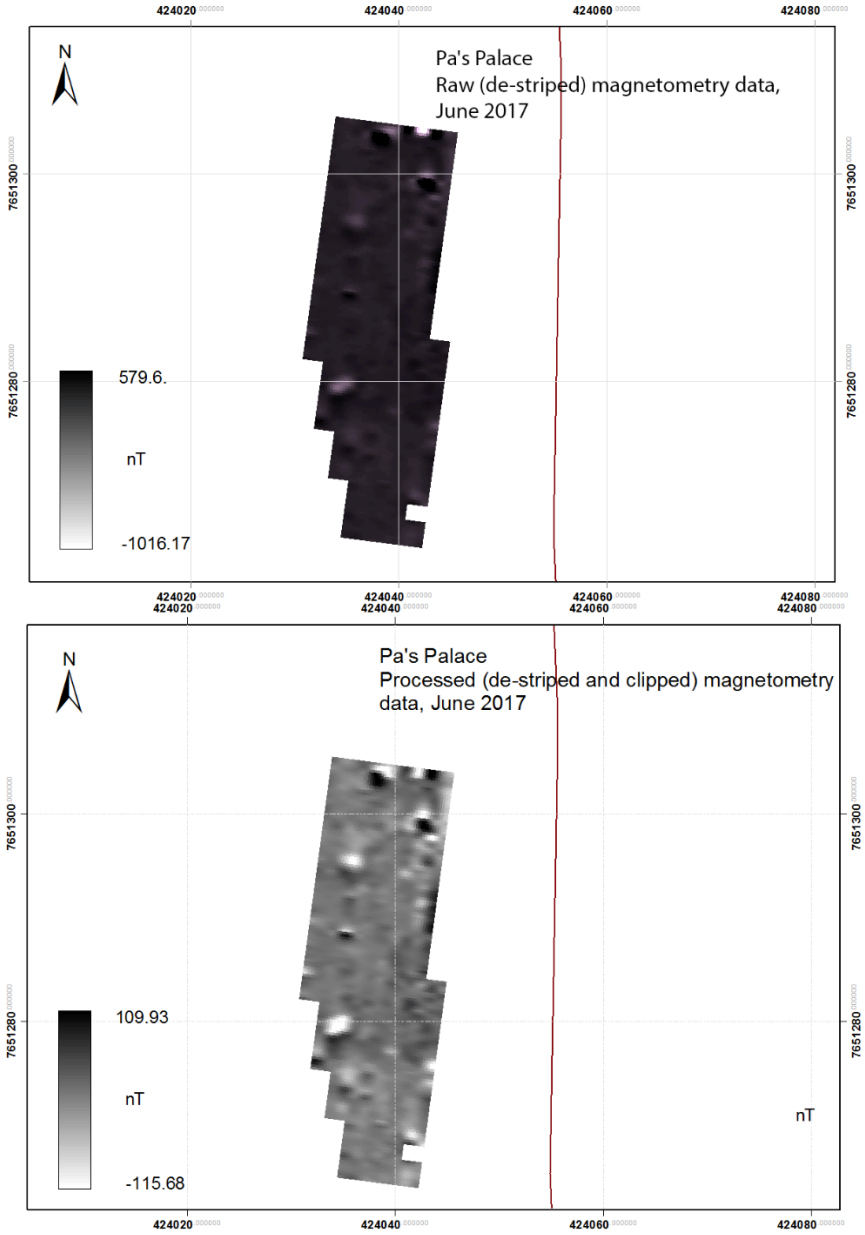

Figure 11. Results of the geophysical survey at Pa's Palace, which overall were inconclusive in detecting the presence of a sub-surface road.

From the geophysical survey results at Arai te Tonga, the low-magnetic readings from the road area suggest coral surfacing of the *Ara Metua* as it passes this site (see Parker 1974, 65). The width of the *Ara Metua* at Arai te Tonga appears to considerably supersede the 3.2m width proposed by Parker (1974), however, given variations in the importance and ranking of sites, and materials, we should be wary of expecting a uniform width for the entire circuit.

Finally, in this section, it is worth considering the overall route of the *Ara Metua* and whether it completed an entire circuit of the island. Parker follows Hiroa (1927) in positing that 'It seems certain that the road did completely encircle the island and no evidence indicating substantial gaps was found' (1974, 63). The caveat was that in the southern area of Rarotonga,

there were gaps in the route of the road. Today, these gaps remain in what is mainly agricultural land which will have destroyed any traces. One interesting section is in the Maii region (0423658/7648502), where a short length of the *Ara Metua*, c. 25m, with coral kerbing (see above) remains intact. This section includes a stone constructed 'bridge' (Fig. 12) over the Paringaru stream running down to the sea. To the southeast of the bridge this stretch of *Ara Metua* runs into a small cultivated field where its route remains partially visible as an elevated ridge running E – W across the field surface. The eastward direction of the *Ara Metua* at this point is towards a convergence with the modern coast road, which is consistent with another convergence of the *Ara Metua* with the modern coast road further to the east (see Fig. 13).

Consequently, it would appear that in the south-east of the island the *Ara Metua* ran close to the coast assuming the same route as the modern coast road. Intriguingly, this is exactly the position that Tangi'ia (Tara 'Are 2000, 155), is stated to have begun his anti-clockwise circuit of the island, establishing a number of *marae* on the journey (see below).

Figure 12. The short surviving section of the *Ara Metua* at Maii (0423658/7648502) which incorporates a stone 'bridge' over Paringaru stream.

2.3 Associated sites and monuments

As Campbell (2006, 104) has argued, the *Ara Metua* can be understood as fulfilling a number of different roles. First, it can be understood merely as a road that people passed along in the undertaking of daily activities, 'if the Ara Metua is a central aspect of the ritual, or *tapu*, landscape of Rarotonga, it is also an integral part of the settlement pattern' (ibid, 210). Second, as a physical manifestation of a process of cosmological ordering, for instance despite its likely earlier date, Tangi'ia is said to have proceeded along the *Ara Metua* around the island establishing c. 46 *marae* or related ceremonial sites (Tara 'Are 2000, 155; Campbell 2006, 103).

From the previous phases of fieldwork, it is possible to construct a relatively detailed distribution of *marae* and related sites and monuments along particular sections of the *Ara Metua* (Fig. 13). Unfortunately, many of these, particularly seats, no longer survived extant in 2017 due to road widening activities and various forms of construction and cultivation occurring adjacent to the road. In the late 1960s when the road still had visible lengths of kerbing, and even basalt surface paving visible in places, there were sections where few adjacent sites and monuments were identified (or recorded). One such section is in the southwest of the island running from Aretuna Road to the abrupt 'end' of the *Ara Metua* at Rutaki (see Fig. 13). These 'blank' sections were re-walked and any sites recorded.

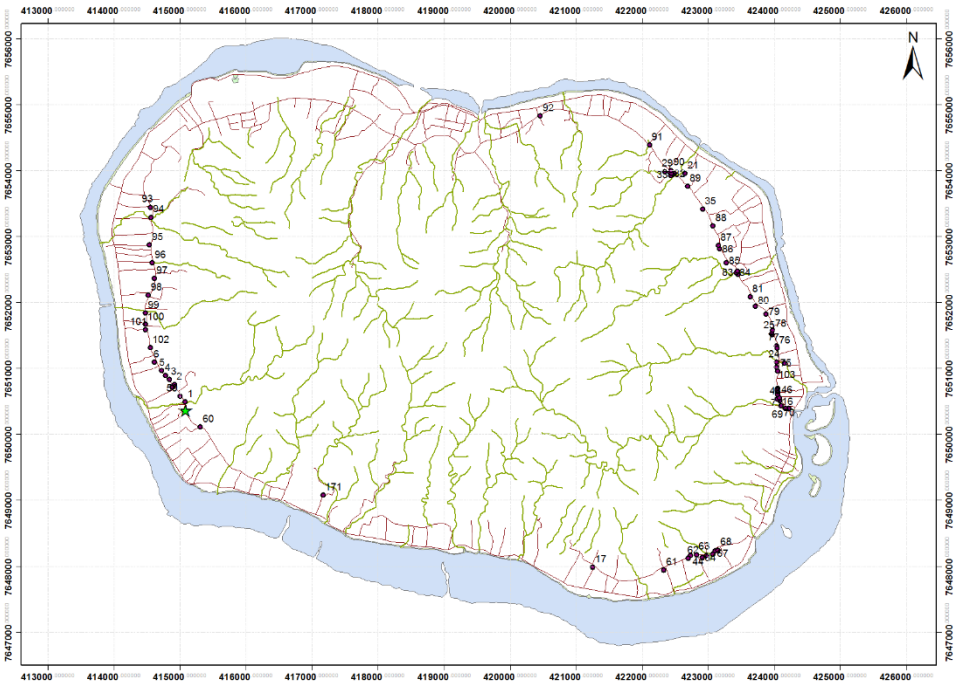

Figure 13. Map of Rarotonga showing the distribution of recorded sites along the route of the *Ara Metua* (from Campbell 2001 with additions).

In order to re-assess the *Ara Metua*, and its relationship to adjacent sites and monuments, a programme of fieldwalking and site location through local interviews were considered important. Unfortunately, time did not permit extensive fieldwalking to be undertaken during the 2017 season. For the survey, all site locations and geophysics grids were geolocated using a using a Leica Viva GS05 Zeno survey grade Global Positioning System (GPS) in the coordinate system UTM 4S. Plans were produced in ESRI ArcGIS v10.2.2 using base map layers provided by Land Information New Zealand (LINZ).

From the limited field survey undertaken, it is clear that the destruction of sites along the *Ara Metua* is continuing. For example, adjacent to a newly cultivated field (0422936/7653425) along the north-east section of the *Ara Metua*, a pile of coral and basalt blocks (including kerbstones – see above) were heaped up (Fig. 5). This pile of stone slabs is likely to be the remains of a destroyed site adjacent to the *Ara Metua*.

During his late 1990s fieldwork on Rarotonga, Campbell (2001, 203-4) identified eight of the 41 *marae* traditionally said to have been established by Tangi'ia during his circuit of the island (Tara 'Are 2000). Through information supplied by Thomas Wynne and Nooroa Tuoro, another of the *marae* (Marae ra) established by Tang'ia was located in the west of the island (Fig. 14).

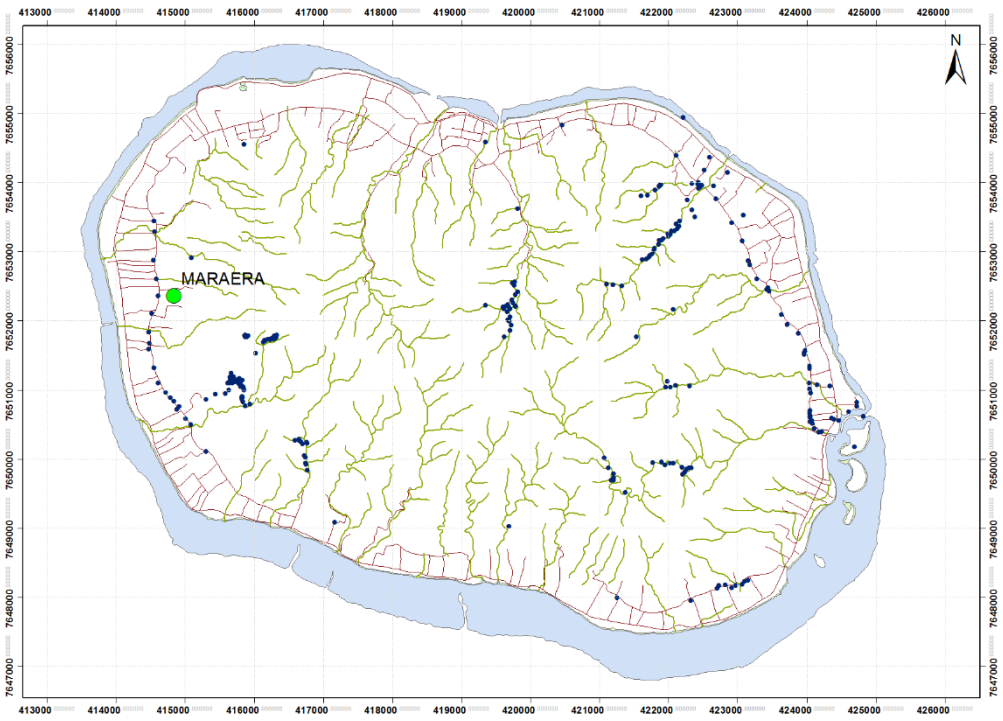

Figure 14. Map of Raratonga showing the location of *marae* Marae ra (after Campbell 2001).

Figure 15. Geophysical survey being undertaken at *marae* Marae ra.

The *marae* of Marae ra is unusual in being of a circular shape, equally, there are no large stone blocks present to suggest a strong structural component. The ground surface within the marae was spread with coral chips (*kirikiri*) and a pile of small basalt slabs was heaped around a recent lychee tree. In having an approximate diameter of 25m this monument shows similarities with the circular monuments recorded by Peter Bellwood (1978, 171) on Tongareva (Penrhyn). To investigate *marae* Marae ra further geophysical survey employing a fluxgate gradiometer was undertaken (Figs. 15 & 16). The results were somewhat inconclusive, however, there were certain magnetic anomalies present on the inland side (east) of the *marae* which may indicate that *marae* Marea ra once assumed a more circular shape.

Although of limited time and extent, the results of the archaeological geophysical and field surveys, in conjunction with local community engagement, shows that there is great potential

for constructing a more complete record of sites associated with the *Ara Metua*. This aspect of the project will be continued in further years.

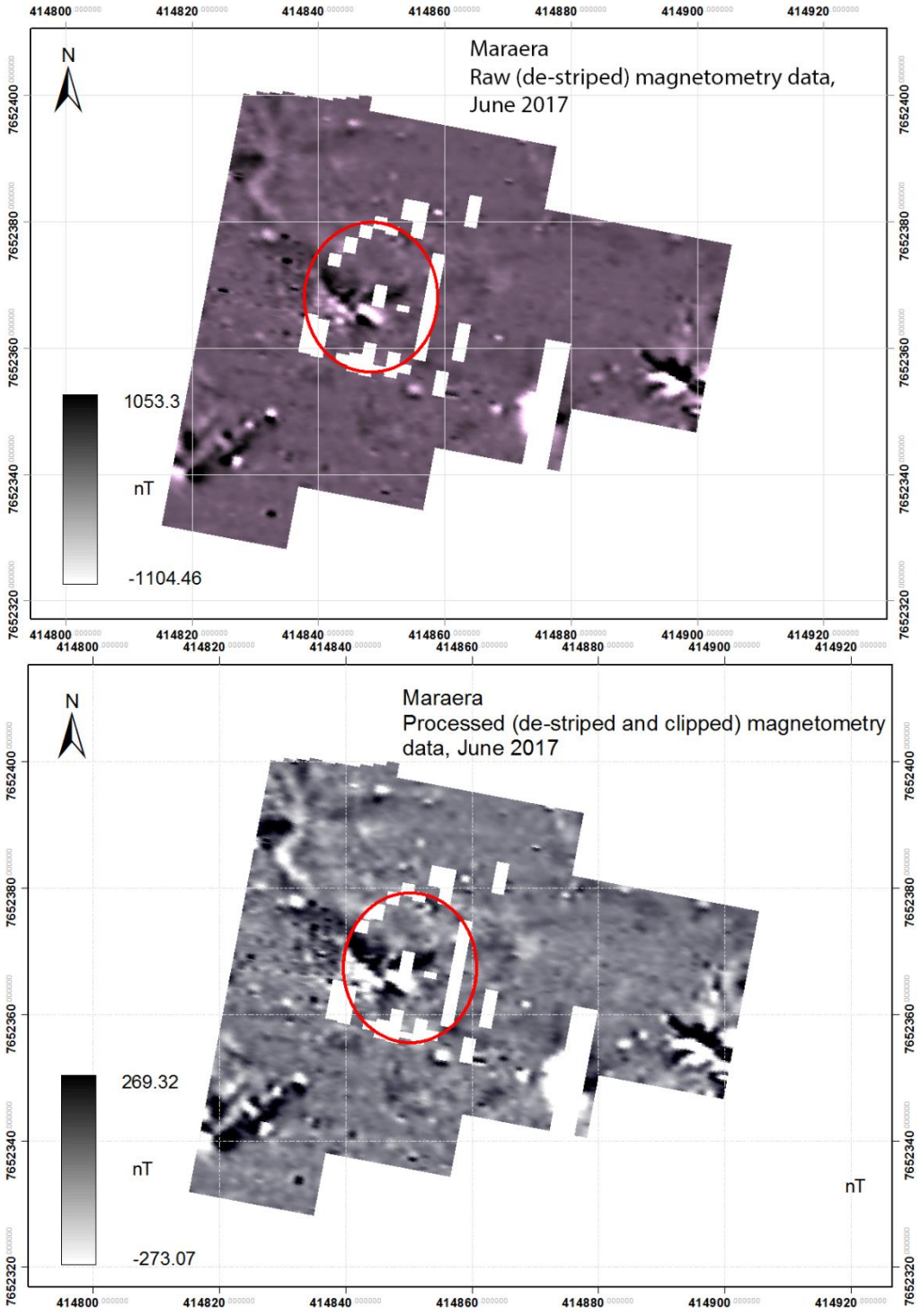

Figure 16. Plot of geophysical (fluxgate gradiometer) results at *marae* Marae ra.

3. Living Marae

In the course of undertaking the archaeological fieldwork of sites associated with the *Ara Metua* we were led to a number of previously unrecorded *marae* (and here we are using *marae* to include *marae*, *koutu* and *paepae*) by knowledgeable leaders and members of the community (to whom we are indebted). This was by no means an exhaustive survey of sites but indicated the great potential for further survey and mapping of this important cultural heritage. Some of these *marae*, for example the circular *marae*, Marae ra, Arerenga (see above), are of some antiquity and certainly pre-contact. Others are either recently built, such as the stonework at Pa's Palace, Turangi, which was put in place in the 1980s (Fig. 17), and Marae o pera mateara mataiapo, Kavera, (Fig. 18) which was instated in the 1960s or 1970s – both of these in relation to land and/or title claims.

Figure 17. Pa's Palace: terraced stonework is of recent origin.

Figure 18. Marae o Pera Mateara Mataiapo, built within the 1960s or 1970s.

Figure 19. Te Atukura Paepae Poto Marae, built in c. 2013.

Te Atukura Paepae Poto Marae, Kiikii, was built four years ago and was the site of an investiture at the time (Fig. 19). Older *marae*, such as Kaena Koutu, Aroa, (Fig. 20) and Marae otamaiva Muri Vae, Tupapa, have been restored and used recently for investiture.

Figure 20. Kaena Koutu, recently restored for investiture.

Many more *marae* have undergone restoration or modification. Some *marae* are tended and kept free from trees and undergrowth and this is seen by as an increasing trend. Other *marae* are engulfed by undergrowth, and some will have been damaged or destroyed by development.

The processes of modification and rebuilding, clearing of tress undergrowth would have occurred since the first *marae* were built, and it is notable that *marae* are still being built and rebuilt – living *marae* - although of course now and in the more recent past for social and political uses rather than ritual or religious. *Marae* which have been built in the more recent past have not been included in archaeological survey or records, but it would be beneficial to include them in a cultural heritage record, not least because they obviously have a 'value' to the present community. Neither is there a published record and map of *marae* created in the more distant past so at it is not known for example how many of the *marae* founded by Tangi'ia still survive. Further field study of the sites undertaken with the communities would be beneficial to better understand the development and chronology of *marae*, and to identify

marae that are of greater significance and vulnerable to threats such as housing and infrastructure developments.

4. Conclusion

The 2017 season represented the first phase of archaeological fieldwork on Rarotonga, which was primarily focussed on an evaluation of the *Ara Metua* and associated sites and monuments, and the potential for further work. Although many of the sites and monuments along the route of the *Ara Metua* listed by the Canterbury Museum team in the late 1960s (Duff 1974), especially stone seats and kerbing, have been destroyed the road itself is potentially preserved beneath the modern metalled road surface. Two stretches of the surviving *Ara Metua* were recorded, one at Arai te Tonga (Fig. 7), and the other in the south of the island at Maii (Fig. 12). Therefore, it is likely that further examples survive in small sections where the modern inner-road deviates from the original course of the *Ara Metua*. Consequently, the potential exists to investigate the construction and chronology of the *Ara Metua* at particular places. In respect to the chronology of the old road, an alternative name for the *Ara Metua* is the *Ara nui o Toi* (the great road of Toi). Toi is suggested by Smith (1907, 178) to have lived six generations before Tangi'ia, equating him with the widespread Polynesian ancestor of the same name. Savage agrees with this assessment claiming Toi 'came to the island of Raratonga some seven hundred years ago, long before the advent of Tangiia' (2012, 39). Te Ariki Tara 'Are also describes an earlier pre-Tangi'ia period of settlement (Tara 'are 2000, 151-3). Hence, when Tangi'ia arrived on Raratonga he encountered people living on the island who came from Iva, and *Kainuku Ariki* and the Avana people trace their descent from the original Ivan settlers. The *Ara nui o Toi* Is likely to have been an existing road or track that through time became embellished, re-surfaced, and so forth. Hence, the *Ara Metua* may have a substantial time depth that only excavation and the recovery of dating samples can resolve.

The role of the *Ara Metua* in influencing or structuring the location of early settlement on Raratonga is little understood. According to Hiroa (1927, 211), pre-contact (prehistoric) settlement was mainly inland of the road. After European contact and the arrival of the missionaries, settlement became more widespread incorporating the coastal zone:

> There is a good road around the island, which the natives call the *ara medua*, or parent path, both sides of which are lined with bananas and mountain plantains... The houses of the inhabitants were situated from ten to thirty yards or more from this pathway ... The path leading up to the house was invariably strewed with white and black pebbles ... Six or eight stone seats were ranged in front of the premises, by the side of the "parent pathway (Williams 1837, 205).

Figure 21. Spread of stone flakes and tools at the Nika'o settlement site.

Conversely, Maretu writing in 1871 speaks of people returning from the higher locations in the early 19th century to the *ara metua*: 'the old inland road (*arametua*) which encircled the island was heavily populated and no land was left unused (Crocombe 2016, 54). The use of the word 'return' suggests a degree of displacement in earlier times and that it had originally been a focus of settlement.

Archaeological surveys of sections of the *Ara Metua* have mainly been undertaken by the Canterbury Museum team (Duff 1974), Bellwood (1978) and Campbell (2001). Where associated sites have been located they are principally ceremonial in nature, such as *marae* and *paepae*. This situation may be misleading as both the aforementioned structures display a degree of monumentality and consequently will be of higher archaeological visibility. Other sites such as settlements, including timber built houses, will leave little trace and only remain visible today as surface scatters of artefacts, mainly stone tools.

Figure 22. Complete coral pestle discovered at the Nika'o settlement site.

A settlement of substantial size was brought to our attention some 40 – 100m inland of the *Ara Metua* at Nika'o (0415254/7654611 - 0415255/765442). The site covered an area of over 100m and was represented by stone-flakes, adze fragments and a coral pestle (Figs. 21 & 22). The size and location of this settlement reveal the presence of habitation sites along the *Ara Metua*, and the reason they have not been recorded is a result of their low archaeological visibility. This example reveals the huge potential of fieldwalking and surface survey, which if undertaken on a regular basis and in a systematic manner would radically alter the number of settlements associated with the *Ara Metua* and the time depth they represent.

Overall, despite the limited time of our first season of fieldwork on Raratonga, while a high degree of destruction has been incurred by the *Ara Metua* and associated sites, there remains great potential to investigate a number of key questions and issues. Working in conjunction with local communities and Government Departments, such as Infrastructure, can begin to collect information regarding the nature of the *Ara Metua* in different parts of the island. Equally, working with local communities can also lead to the discovery of low-visibility settlements along the *Ara Metua* that have been ignored and neglected by earlier archaeological surveys. Complementing this fieldwork, a programme of small-scale excavation targeting specific surviving sections of the road can provide key information regarding chronology and dating. The archaeological resource of Rarotonga may have been truncated and to a degree neglected, however, great potential to address key questions remains achievable through well-planned future archaeological fieldwork and excavation.

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