

# New Perspectives on the Occupation of Hatuana Dune Site, Ua Huka, Marquesas Islands

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## ABSTRACT

New archaeological excavations were conducted in 2009 in the Hatuana dune site, Ua Huka, Marquesas archipelago (French Polynesia). The objectives of this research were to determine the complete stratigraphy of the western section of the site, and to obtain charcoal samples for radiocarbon dating. The results are presented here, updating previous dates by E. Conte, and enhancing our understanding of the place of the Hatuana coastal area in the island's prehistory. The main occupation occurred during a period of warfare, suggesting that the place was used to control and prevent enemy attacks.

*Keywords:* Archaeology, Marquesas, French Polynesia, Radiocarbon Dating

## INTRODUCTION

The Marquesas archipelago has always been in the centre of discussions regarding the colonization of East Polynesia. The first excavations in the 1950s (Suggs 1961) and succeeding fieldwork (Sinoto & Kellum 1965) contributed to the idea of the Marquesas as an early centre of dispersal (Sinoto 1970a, 1970b, 1979). Debates on human arrival on these islands, the antiquity of which was called into question in general models for East Polynesian prehistory, occurred some decades ago (Kirch 1986; Spriggs & Anderson 1993; Anderson 1994; Anderson et al. 1994; Kirch & Ellison 1994; Conte 1995), but were hampered by the lack of archaeological data validating the proposed hypotheses. Attempting to overcome this problem, new investigations were undertaken on different sites such as the re-excavation of Ha'atuatua (Rolett & Conte 1995) along with recent fieldwork in Hakaea beach site on Nuku Hiva (Allen & McAlister 2010), but also the reappraisal of the initial dates for Hane (Anderson & Sinoto 2002). The latter site, which was reinvestigated by E. Conte and P. Murail in 2009 and is located on the island of Ua Huka, offers interesting perspectives for dating the first occupation in Marquesas, and for addressing archaeological problems in East Polynesia (Figure 1).

A research program on Ua Huka has been led by E. Conte since 1991 (Conte 2002), with studies carried out on different sites, notably in search of early deposits that could provide stratigraphically controlled chronologies.

Hatuana dune site caught our attention because of one particularly old date (Beta-116139) obtained from a test-pit: AD 544–697, at  $2\sigma$ , (Conte & Poupinet 2002). In order to confirm the antiquity of this occupation, another test-pit was opened next to the previous one and a new sample of charcoal from the same layer was obtained, which dated AD 1407–1634 (Wk-8057) and AD 1440–1631 (OxA-9766),

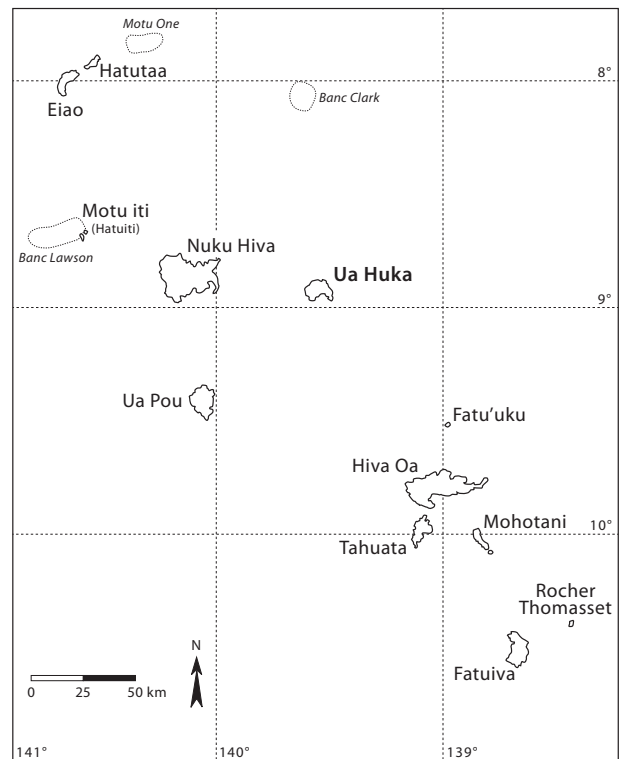


Figure 1. The Marquesas Islands

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considerably younger than the first date (Conte *et al.* 2001; Conte & Anderson 2003). These samples were not identified as to type of wood. Doubts remained, so we decided to continue the investigation by means of a larger excavation with stratigraphic studies and new charcoal sampling. This article presents the first results of 2009 fieldwork on Hatuana<sup>2</sup> (Molle 2010a, 2010b). We discuss the chronological sequence based upon our new dates and propose some interpretations regarding the place of Hatuana in Ua Huka's prehistory.

**THE 2009 FIELDWORK AND STRATIGRAPHIC OBSERVATIONS**

Hatuana Bay, on the southwestern coast of Ua Huka, has a large sand beach open to the south, with a dune system to the rear (Figure 2). Close to the bay, there is a headland regarded as an important place in ancient times, which was used to watch for enemies coming from Nuku Hiva. It is also described as the 'soul's jumping off spot' towards Hawaiki (Conte & Anderson 2003: 156). This function could be linked with the presence of many petroglyphs on the nearby plateau. Both traditional functions, strategic and religious, suggest that the vicinity was occupied

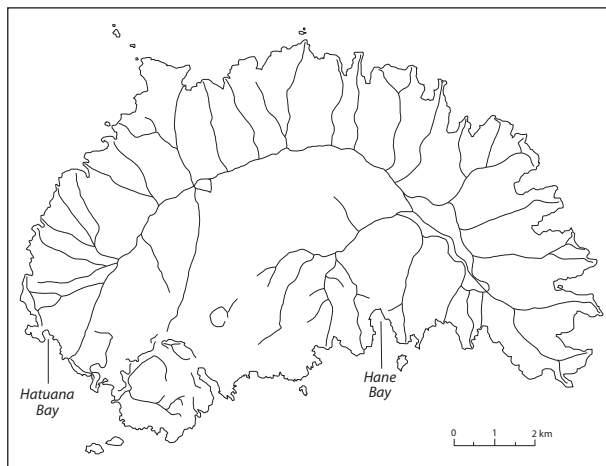


Figure 2. Map of Ua Huka island with location of Hatuana bay

during prehistoric times. Nevertheless, our survey of the whole interior valley demonstrated the absence of dwelling platforms known as *paepae hiamoe* and horticultural structures, even though fresh water was available. This led us to consider there was no permanent habitation, except on the coastal dunes.

The 2009 excavations consisted of two test-pits on the western dune (Figure 3) next to the sections studied by Conte in 1997 (Conte *et al.* 2001) and 1999 (Conte &

2 More precise information on each archaeological level and components, as well as a preliminary analysis of Hatuana's artefacts, were presented in the two fieldwork reports.

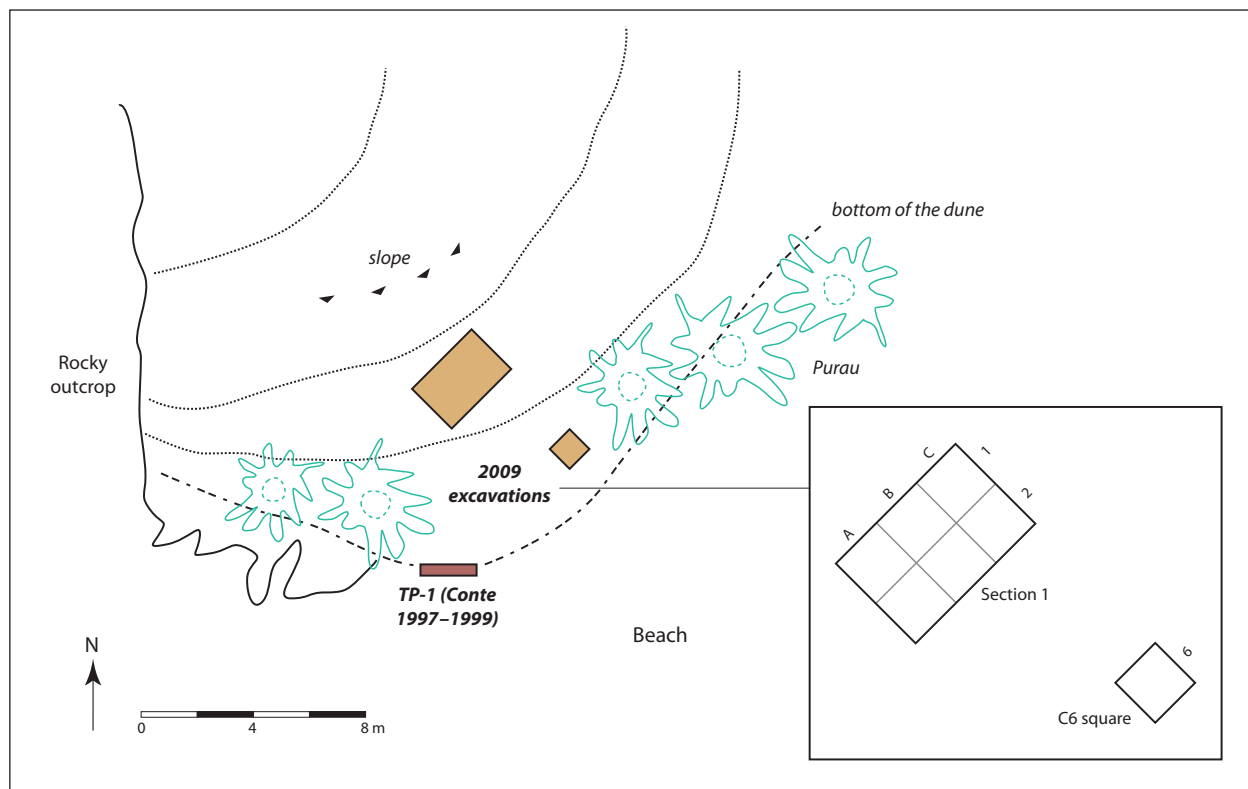


Figure 3. Location of 2009 excavations

Anderson 2003). One is a 6 m<sup>2</sup> pit on the top of the dune (Section 1). Another 1 m<sup>2</sup> (C6) was excavated lower down, at the edge of the beach in order to find connecting layers with Conte's stratigraphy.

For Section 1, seven layers are evident (Figure 4): A is a non-anthropogenic surface layer of brown humic sand with roots. Layer B has evidence of human occupation with an earth oven at 50–65 cm below datum, and contains faunal and shell remains. Layer C has an upper component with two ovens beginning at 80 cm and extending down in the lower part where we also found a series of charcoal beds around 100–110 cm. Between 113 and 130 cm depth, we distinguish a separate layer D of white sand with charcoal. It is the richest layer in terms of bird and fish bones, and shells. Many fish-hooks were also discovered in this layer. This occupation level was defined by a 'stone table' (a large stone with flat surface) half-lying in the south profile at 120 cm depth. The following layer E is composed of two different levels. The first (E1) has an entire stone pavement of which we excavated 4 m<sup>2</sup>, between 130 and 145 cm depth. It does not seem to be continuous but there is an oven associated with it. Under this pavement, we found an alignment of shaped basalt blocks. This stone edge, built on a NW-SE axis, could be the first phase (denoted E2) of a house construction. Finally, at the base of the test-pit, there is a sand conglomerate representing a fossil beach, under a final oven at 180 cm forming level F; this was only recognized in square C2.

The C6 test-pit is problematic. Because of the absence of changes in the layer texture and colour, it is hard to distinguish the real stratigraphy. Consequently, we do not have exactly the same profile as Conte's, even though the lower levels correspond.

Numerous artefacts were recovered in these two excavations. Most common are pearl-shell fish-hooks, in various stages of fabrication (Figure 5). The greatest number are finished (181), although we also found a few unfinished hooks (22). In comparison with the high representation of fish-hooks, we have only discovered five coral files, especially from levels A and B. This difference suggests that the fish-hooks were not made in this area but perhaps elsewhere in the vicinity of the dune, or brought by people coming intermittently from another valley. This location would have been reserved for food preparation or material disposal. One small sinker was also recovered from layer B. The high density of fish bone and the artefact assemblage indicate intense fishing activity at each occupation stage of this dune, even if the housing was temporary during the early periods of use.

**NEW DATING RESULTS**

Four charcoal samples from the 2009 excavations were radiocarbon dated by AMS at Waikato Radiocarbon Laboratory (Table 1, which also lists the earlier dates obtained by Conte). Calibrated ages were determined using the Ox-

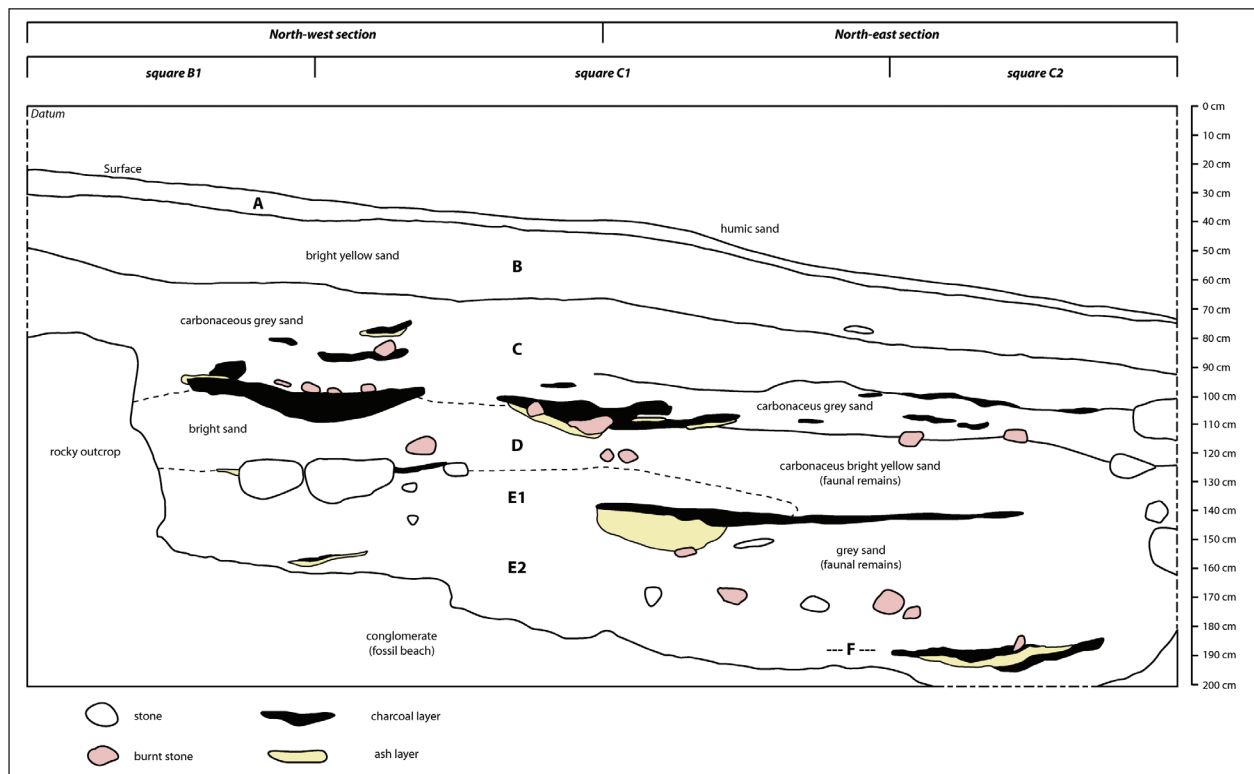


Figure 4. Stratigraphic profile of Section 1



Figure 5. Fish-hooks from 2009 excavations

Table 1. *Calibrated ages for charcoal samples from Hatuana dune site*

Sample	Material	Provenience	Depth (cm)	Conventional Radiocarbon date (BP)	Calibrated Age (AD) 2 $\sigma$ range
<b>Western dune</b>					
<i>Previous dates</i>					
Beta-116139	charcoal	Layer I, TP-1, 1997	150	1410 $\pm$ 50	544–697
Wk-8057	charcoal	Layer G/I, oven, TP-1, 1999	170	430 $\pm$ 55	1407–1529 (71.3%) & 1543–1634
OxA-9766	charcoal	Layer G/I, oven, TP-1, 1999	170	390 $\pm$ 31	1440–1524 (68%) & 1558–1631
Wk-8058	charcoal	Layer D, TP-1, 1999	110	380 $\pm$ 31	1445–1525 (61%) & 1557–1632
<i>New dates</i>					
Wk-27332	charcoal	Layer E/F, oven, Section 1, 2009	188	361 $\pm$ 30	1450–1530 (48.5%) & 1542–1635
Wk-27333	charcoal	Layer D/E, oven, Section 1, 2009	128	234 $\pm$ 30	1634–1683 (47.5%) & 1737–1804
Wk-27334	charcoal [Thespesia populnea]	Layer B, oven, Section 1, 2009	55	170 $\pm$ 30	1659–1699 & 1722–1818 (50.7%)
Wk-27335	charcoal	oven, TP-C6, 2009	139	366 $\pm$ 30	1448–1529 (52.5%) & 1551–1634
<b>Eastern dune</b>					
Beta-116140	charcoal	TP-4, 1997	90	1030 $\pm$ 90	805–1208 (94.4%)
Beta-116141	charcoal	TP-5, 1997	180	800 $\pm$ 50	1153–1287 (93%)

Calibrations by OxCal, IntCal09 curve (Reimer et al. 2009). Cal. AD 2 $\sigma$  range with highest probability intercept in parentheses.

Cal v.4.1 program (Bronk Ramsey 2009) with the IntCal09 Northern hemisphere calibration curve<sup>3</sup> and are given at  $2\sigma$  (95.4% probability). Botanical identification<sup>4</sup> was only possible on the Wk-27334 sample, identified as *Thespesia populnea*, a Polynesian-introduced tree very common in coastal vegetation.

Samples Wk-27332 and Wk-27335 give the same calibrated age range of AD 1448–1635, indicating that the lower layers in Section 1 and C6 are contemporaneous. They match almost perfectly with the 1999 results for layer G/I (Wk-8057 and OxA-9766) which were in the AD 1407–1634 range; these dates are more recent than those obtained by Conte in 1997. Considering that the 1999 and 2009 samples both came from stratigraphically controlled contexts, and were dated by AMS, the hypothesis of a sixth-seventh century initial occupation (Beta-116139) of the site must be discarded. Our results require a chronological revision, and indicate that human occupation of the dune commenced around the middle of the fifteenth century.

The upper layers of the site yielded consistent dates indicating continuous occupation of the dune over a period of three centuries. The Wk-27333 sample dates the use of the main E1-level pavement as AD 1634–1804. The most recent date is given by the Wk-27334 charcoal from layer B, the latest cultural level (AD 1659–1818). Both levels would be from the same period. We also have to deal with multiple intercepts on the calibration curves. The higher probabilities prompt us to consider an AD 1722–1818 range for Wk-27334 sample, implying a final occupation in the second half of eighteenth century.

#### **HATUANA IN UA HUKA PREHISTORY: FROM HYPOTHESIS TO PERSPECTIVES**

Contrary to the previous idea of a first millennium human colonization, the preliminary results of the 2009 fieldwork in Hatuana described above indicate a more recent occupation of the western dune site, from the end of the fifteenth century until the end of the eighteenth century. The site was occupied for a rather short period, but nonetheless appears to have been intensely used, as indicated by the multiple charcoal beds and fire pits discovered in the cultural levels. Despite this relatively brief occupation, the considerable depth of the stratigraphic section implies a rapid sedimentation process. This may have resulted from both slope effects and wind deposition. It seems that the dune was occupied intermittently, but sand built-up rapidly after abandonment.

From the fifteenth century, the location seems to have been used temporarily by people whose fishing activity

3 The Marquesas Islands are located in the South Pacific Convergence Zone, and the IntCal09 curve was used to calibrate these terrestrial samples (F. Petchey, personal communication 2010).

4 Botanical determination by Rod Wallace from Department of Anthropology, University of Auckland.

was important: living on Hatuana provides favourable access to marine resources. Archaeological data also show that in some levels of Section 1 there were large quantities of fish bones and marine shells, often burnt, and numerous small and medium-sized pearlshell fish-hooks, of the kinds used to take inshore species of fish. However, the scarcity of unfinished hooks and coral files suggests that people brought their own fishing equipment from elsewhere.

Human occupation seems to have been confined to the coastal dunes. Our settlement pattern survey of the valley found no dwelling sites such as *paepae hiame*, possibly because the valley sides are very steep and there is no suitable area for cultivation.

Our dates indicate that the stone house pavement of level E1 was built around the beginning of the eighteenth century. According to available ethnohistoric information, we know that this period corresponds to an era of warfare between opposing tribes from Ua Huka and Nuku Hiva (Kellum-Ottino 1971; Pechberty 1995). It appears that Hatuana was never described as a part of one particular territory. However, we can imagine that under such exterior pressure and danger, some tribes (as presumably the Naiki from Vaipae, a nearby inhabited valley, who used to fight the Nuku Hiva Taipi warriors) decided to install people in a permanent manner on the dune, in order to control and prevent enemy attacks. This correlates with the strategic function of the promontory mentioned by oral traditions, and might explain the more sustained later occupation of the dune with the setting up of a stone pavement. Thus, even if marine resource exploitation was a constant activity, the reason for living at Hatuana dune might have changed with the intensification of inter-tribal relations in the late pre-European period.

This model integrates complementary approaches from both archaeology and history, but we cannot ignore some other data relevant to analysis of the location. In 1997, Conte excavated four test-pits in the eastern dunes of Hatuana Bay (Conte & Poupinet 2002). Two charcoal samples dated by Beta Analytic Laboratory gave problematic results and, therefore, there are insufficient data to confirm continuity of dune occupation since the end of the first millennium, as indicated by the Beta-116140 sample. The eastern sections of the bay now require more attention, with larger excavations and stratigraphic analysis, to clarify further the role of the Hatuana coastal area in the prehistory of Ua Huka.

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