

20 September, 2014

End of Field-Work Summary Report: Archaeological and Geological Research in Satitōa Village, Aleipata District, 'Upolu, Sāmoa, August-September 2014

Background

Collaborative archaeological and geological field research involving the National University of Sāmoa, The University of Auckland, and the University of Hawaii was undertaken in Satitōa Village from 1-18 September. The goal of this research was to describe the coastal environment of eastern 'Upolu approximately 5000 years ago to the present, and find and characterize archaeological deposits and other evidence of human occupation in the area. Previously, the earliest evidence of humans in Sāmoa is found at Mulifanua in an archaeological site dated to 2,800 years ago and containing intricately decorated Lapita pottery. Lapita pottery is a chronological marker for the first human occupations in the southwest Pacific and is found throughout Tonga, Fiji, New Caledonia and Vanuatu, in over 100 archaeological sites also dating between 3,000-2,800 years ago. In Sāmoa, however, aside from Mulifanua, no additional Lapita pottery sites have been found suggesting that either the first people in Sāmoa comprised very small groups that did not leave a large archaeological record, or that other Lapita archaeological sites in Sāmoa do exist, but have not been found due to their destruction over time and inaccessibility as a result of sea level change and island subsidence or emergence. The current Satitōa Village research was undertaken because, from a geological perspective, it is the mostly likely coastline on 'Upolu to contain Lapita pottery or other evidence of early human occupations of the island.

In addition to possible Lapita sites, there other significant archaeological resources in Satitōa and Aleipata more generally. There are previously documented archaeological sites inland of Lalomanu Village, including star mounds (tia se lupe), stone platforms, and a sunken path with stone walls on either side. Two days at the end of the current project were spent relocating and briefly describing these sites with the intention of possible future archaeological and cultural heritage research.

Field-work Activities

The field work was directed by Dr Ethan Cochrane (Anthropology, University of Auckland) in collaboration with Matiu Matavai Tautunu (Centre for Samoan Studies, National University of Sāmoa). Dr Charles Fletcher (School of Ocean and Earth Science and Technology, University of Hawaii) assisted with the geological fieldwork. Over the course of approximately three weeks four 2 x 1 m archaeological pits were excavated to between 130 and 280 cm deep. Additionally, twenty geological cores were made with a hand-driven auger, approximately 8 cm in diameter, and 200-250 cm deep. The approximate locations of the archaeological pits are shown in Figure 1 and the cores were interspersed between the archaeological pits. All archaeological test pits and geological cores were excavated with local land-owner permission and the permission of the Satitōa Village fonō.

Archaeological pits were excavated by standard methods, including the use of shovels and trowels with excavated sediment passed through 3 mm sieves to recover artefacts. The vast bulk of artefacts collected were shellfish food remains, although stone flakes from tool-making and broken stone tools were also recovered, as well as pottery (3 pieces), charcoal, small animal bone, sediment samples, and a single shell fishhook. All material recovered from the archaeological and geological excavations amounts to approximately 10 kg and is listed in Table 1. The geological samples consist of beach sands and shells.

One fire-feature (possible umu) was also encountered in one of the archaeological test pits and charcoal was recovered from this feature.

To understand the development of ancient beaches in the area a precise elevation map of the present ground surface is required. No such map currently exists, so another field task involved generating a surface elevation map for the Satitōa area using a total station (a survey instrument that generates distance and elevation measurements) and GPS base station. Data for this elevation map were generated and are currently being analysed to produce the elevation map.

Toward the end of field work two areas were investigated to determine the presence of archaeological sites. On a walking tour inland of Satitōa Village a previously unrecorded ditch-and-bank defensive site was discovered. This site is approximately 1 km inland from the coast and consists of a 75 m long earth wall, approximately 4 m high and 6 m wide at the base. The wall stretches across a ridge between two drainages. Similar defensive sites in Sāmoa and the region begin to appear about 1000 years ago. Future archaeological and cultural heritage work at this site may answer questions about the development of defensive sites in Sāmoa. The archaeological team also visited a series of previously recorded tia se lupe inland of Lalomanu village. Two of these sites were located and one cleared of vegetation to better describe its construction. Future work at these sites and others nearby may answer questions about the timing of tia se lupe construction and use.

Expected Analyses

After export of the recovered materials from Sāmoa they will undergo standard analyses overseen by Dr Ethan Cochrane at the University of Auckland. Selected charcoal and sand/shell samples will be submitted to the University of Waikato Radiocarbon laboratory for dating analysis where the necessary instruments are available. Shellfish samples will be analysed to determine species, abundance, and size. Stone flakes and tools will be described using standard procedures and subjected to non-destructive portable XRF analysis to determine chemical composition and possible geological source locations. The pottery and fishhook will also be analysed in standard, non-

destructive fashion. Some sediment samples will be examined by Dr Mark Horrocks of Microfossil Research, Ltd. (Auckland) to determine the presence of plant microfossils and potentially identify introduced cultigens such as taro, banana, and others. Sediment samples will also be described to determine mechanisms of deposition.

Expected Results and Timeline

The analyses described above will take place part-time over the next one and a half years. Other commitments (university teaching, administration, other concurrent research projects) preclude full-time analyses of the materials and the radiocarbon and sediment microfossil analyses will be undertaken by third parties. Results of the analyses will be published in peer-reviewed journals and presented at academic meetings. All results and generated data will be given to the National University of Samoa and other relevant institutions (e.g., The Museum of Samoa). A full report on the research (with summaries translated into Samoan) will be produced and multiple copies will be given to Satitua Village and land-owners. Along with the report, the findings of the research will be delivered in a presentation to Satitua Village in 2015 by Matiu Matavai Tautunu and Dr Ethan Cochrane.

Future Research

Future research in Satitua Village and Aleipata will continue to focus on finding Lapita-age deposits and understanding the geological development of the coastline and the characteristics of the ancient flora. Future research will also focus on documenting upland settlement in Aleipata. It is expected that funding will be obtained for this research near the end of 2015.

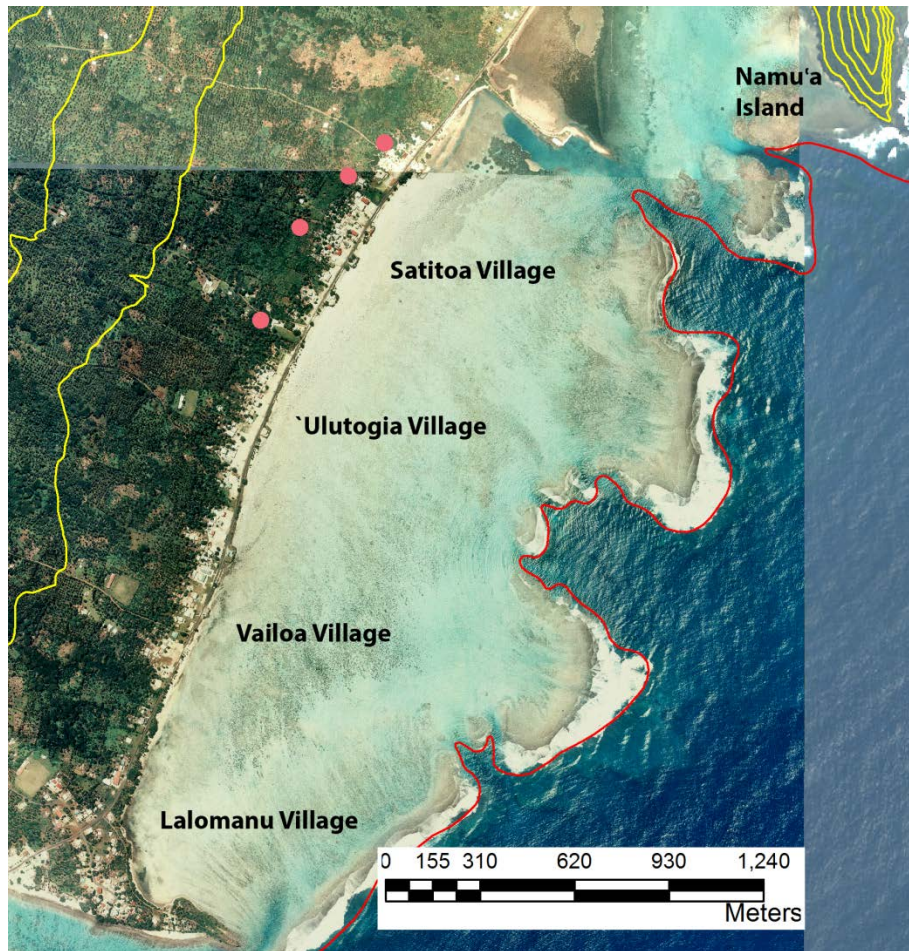


Figure 1. Approximate locations of 2014 archaeological test pits (pink circles).

Table 1. Catalogue of Recovered Archaeological and Geological Samples

Field Season	Catalog Number	Site No	Excav/Collect Unit Type	Excav/Collect Unit Number	Layer	Level	Depth (cmbd)	Excav Type	SFea	Contents	Date Recovered
2014	1000	SAT-1	TU	1	3	3		s		shell	2/09/2014
2014	1001	SAT-1	TU	1	3	3		s		charcoal	2/09/2014
2014	1002	SAT-1	TU	1	3	4		s		shell	2/09/2014
2014	1003	SAT-1	TU	1	3	4		s		charcoal	2/09/2014
2014	1004	SAT-1	TU	1	3	4		s		bone	2/09/2014
2014	1005	SAT-1	TU	1	4	5		s		shell	3/09/2014
2014	1006	SAT-1	TU	1	4	5		s		charcoal	3/09/2014
2014	1007	SAT-1	TU	1	4	5		s		bone	3/09/2014
2014	1008	SAT-1	TU	1	4	5		pp	1	charcoal	3/09/2014

Field Season	Catalog Number	Site No	Excav/Collect Unit Type	Excav/Collect Unit Number	Layer	Level	Depth (cmbd)	Excav Type	SFea	Contents	Date Recovered
2014	1009	SAT-1	TU	1	4	6		s		shell	3/09/2014
2014	1010	SAT-1	TU	1	4	7		s		shell	4/09/2014
2014	1011	SAT-1	TU	1	4	7	117	pp		charcoal	4/09/2014
2014	1012	SAT-1	TU	1	1	0		bb		sediment	4/09/2014
2014	1013	SAT-1	TU	1	2	0		bb		sediment	4/09/2014
2014	1014	SAT-1	TU	1	3	0		bb		sediment	4/09/2014
2014	1015	SAT-1	TU	1	4	0		bb		sediment	4/09/2014
2014	1016	SAT-1	TU	1	5	0		bb		sediment	4/09/2014
2014	1017	SAT-2	TU	1	2	2		s		shell	9/09/2014
2014	1018	SAT-2	TU	1	2	2		bb		sediment	9/09/2014
2014	1019	SAT-2	TU	1	2	2	263	bb		sediment	9/09/2014
2014	1020	SAT-2	TU	1	2	2	263	bb		sediment	9/09/2014
2014	1021	SAT-3	GP	1		0		grab		shell	10/09/2014
2014	1022	SAT-3	GP	1		0	80	grab		lithics	10/09/2014
2014	1023	SAT-3	GP	1		0		grab		bone	10/09/2014
2014	1024	SAT-3	TU	1	1	2		s		shell	12/09/2014
2014	1025	SAT-3	TU	1	1	2		s		lithic	12/09/2014
2014	1026	SAT-3	TU	1	1	2		s		bone	12/09/2014
2014	1027	SAT-3	TU	1	1	2		s		ceramic	12/09/2014
2014	1028	SAT-3	TU	1	1	2		s		charcoal	12/09/2014
2014	1029	SAT-4	TU	1	2	2		s		charcoal	15/09/2014
2014	1030	SAT-4	TU	1	2	2		s		pottery	15/09/2014
2014	1031	SAT-4	TU	1	2	3		s		shell	15/09/2104
2014	1032	SAT-4	TU	1	3	3		s		shell	15/09/2014
2014	1033	SAT-4	TU	1	2	2		s		lithic	15/09/2104
2014	1034	SAT-4	TU	1	2	2		s		bone	15/09/2014
2014	1035	SAT-4	TU	1	2	2		s		shell	15/09/2014
2014	1036	SAT-4	TU	1	3	3		bb		sediment	16/09/2014
2014	1037	SAT-4	TU	1	4	0	150-150	bb		sediment	16/09/2014
2014	1038	SAT-4	TU	1	3	4		s		shell	16/09/2014
2014	1039	SAT-4	TU	1	2	0		bb		sediment	16/09/2014
2014	1040	SAT-4	TU	1	3	0		bb		sediment	16/09/2014
2014	1041	SAT-3	TU	1	1	2		s		fishhook	12/09/2014

