

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION



**Annual
Conference**

2-5 July 2024

Nelson

Cover image. Pakohe, courtesy of Naomi Aporo-Manihera

Our Sponsors



TIMETABLE

Monday July 1

Pre-conference field trip 12:30–4:30

Trip to wāhi pakohe Rush Pool Quarry (O27/22) led by local pakohe expert Ruihana Smith, Te Pou Hapai Taiao for Te Runanga o Ngati Kuia (Ngati Kuia, Ngāti Apa ki te Rā Tō, Rangitāne, Ngāi Tara, Tūmatakōkiri). The wāhi pakohe is one of the most well-known and spectacular argillite quarry sites in the Nelson region. The korero will examine the adaptation of Polynesian toolmaking to local materials, specifically Pakohe, how it was done, why, and the whakapapa connection between tangata whenua and our atua, and the stone that descends from them. It will combine Mātauranga Māori, archaeology and geology.

The trip leaves from the Maitai Dam. Transport can be arranged from the airport and central Nelson if required. Please register your attendance and if transport is required on your ticket purchase.

This is a free event, we ask attendees to please contribute to a cash koha

Tuesday July 2

8:30–10:00 Registration

10:00–11:00 Mihi whakataua

Please gather by 9:50 at Beachside Nelson Conference Centre

Waiata to support NZAA speakers:

Mā wai rā

Mā wai rā e taurima

Te marae i waho nei?

Mā te tika

Mā te pono

me te aroha e

Te aroha

Te aroha

Te whakapono

Me te rangimārie

Tātou, tātou e

11:00–11:30 Morning tea break

11:30–12:30 Panel Discussion

Whakauru

Makere Rika Heke, Dr Amber Aranui, Te Kororia Netana Rakete

12:30–1:30 Lunch, including student lunch

The student lunch is sponsored by InSitu Heritage

1:30-3:00 Session 1

Session Chair Louise Furey

Stone artefact assemblages from Ahuahu

Rebecca Phillipps, Stacey Middleton, Joshua Emmitt, Simon Holdaway

Contextualising Movement Using Stone Artefacts

Stacey Middleton, Rebecca Phillipps, Simon Holdaway, Joshua Emmitt

Adze manufacture in Tikapa Moana: A view from Rakino Island

Brendan Kneebone, Andrew McAlister, Alex Jorgensen, Dante Bonica

Awls, needles, and the Hikurangi Trough

Dan Witter

3:00-3:30 afternoon tea break

3:30-5:00 Session 2

Session Chair Chris Jennings

Machine learning and 3d modelling of stone artefacts: Current research and future directions

Joshua Emmitt, Rebecca Phillipps, Stacey Middleton, Alex Dixon, Robin Laven, Simon Holdaway, Poul M.F. Nielsen

Exploring Te Pākeka

Leela Moses, Ruihana Smith

A Bayesian Approach to Sourcing Poor Knights obsidian: New Zealand's most recently identified obsidian source

James Robinson, Andrew McAlister

Technological and social implications of hand knife use on an offshore island in Foveaux Strait/Te Ara a Kiwa

Brooke Tucker, Dan and Alison Witter, Atholl Anderson

5:00-6:00 Workshop

A practical session on traditional stone tool manufacture using pakohe and local materials

Ruihana Smith

Wednesday July 3

8:30-10:00 Session 3

Session Chair Stuart Hawkins

Ika Moana, Ika Whenua

Amber Aranui, Monica Tromp, Sophie White, Karen Greig, Alana Alexander, C. Scott Baker, Kristine Richter, Ashley Scott, Camilla Speller, Christina Warinner

Applying novel time-series techniques to unlock new information from sclerochronology data

Armagan Sabetian, Matthew Campbell, Jingjing Zhang, Julian Lilkendey, Richard Walter

Fish from the Ōtata midden: change and continuity in pre-European Māori fisheries

Caitlin Haylock, Matthew Campbell, Louise Furey, Emma Ash

What the Flock is This? Birding Strategies in Foveaux Strait/Te Ara a Kiwa, New Zealand

Brooke Tucker

10:00-10:30 Morning tea break

10:30-12:00 Session 4

Session Chair Monica Tromp

The same old rubbish: an analysis of local variation within the global material culture of 19th century Christchurch

Jessie Garland

Introducing the Museum of Archaeology Ōtautahi: challenges and opportunities

Hayden Cawte, Jessie Garland, Katharine Watson

Landscape Survey and Community Engagement: The Central Otago Heritage Site Review

Sarah Dugdale, Shar Briden

How come the spars from an 1884 shipwreck are still in use in a farm woolshed?

Mike Johnston

12:00-1:00 Lunch

1:00-1:30 Poster session

1:30-3:00 Session 5

Session Chair Gerard O'Regan

Māori and Moriori treasures and ancestors in the collections of Imperial Russia

Elena Govor, Hilary Howes

Collating repatriation provenance research and archaeological records of kōiwi

Lana Arun

A Māori burial site is an archaeological site. Let's discuss

Des Kahotea

Matauranga and its place in final reporting

Darran Kerei-Keepa, Huia Pacey

3:00-3:30 afternoon tea break

3:30-5:00 Session 6

Session Chair Jessie Garland

“A Capital Death” – the Mount Street Cemetery, Wellington

Mary O’Keeffe

Who put that there? Tracing the life trajectories of Dunedin’s inner-city residents

Bree Wooller

Life in nineteenth century Christchurch: a comparative study of domestic archaeological sites

Clara Watson

Introducing the Archaeological Authority Portal: A new tool to assist Heritage New Zealand Pouhere Taonga with ensuring compliance with authority conditions

Vanessa Tanner

Te Tuhi o te Whenua: Pakohe Unearthed 5:30-7:30

Nelson Provincial Museum Pupuri Taonga o Te Tai Ao is staying open until 7:30 for conference attendees to view the Pakohe exhibition free of charge.

Public Talk, Suter Art Gallery 7:30-8:30

Sponsored by CFG Heritage

Pakohe, he taonga tuku iho

Ruihana Smith

A kōrero on Māori stone tool technologies from Hawaiki to Te Taihū o te Waka a Maui, tracing the journey of our ancestors and the tools that sustained their lives and enabled travel across the largest body of water on earth, Te Moana Nui a Kiwa. This kōrero will examine the adaptation of Polynesian toolmaking to local materials, specifically pakohe, how it was done, why, and the whakapapa connection between tangata whenua and our atua, and the stone that descends from them.

Bus transport from the conference venue to the museum leaves at 5.15, and returning from the Suter Gallery at 9.00.

Thursday July 4 Field trip

Conference field trip to Abel Tasman via boat 9:00-3:00

A bus will take participants from Tāhunanui to Kaiteriteri. At Kaiteriteri the Sea Shuttle boat will be boarded to cruise up the Able Tasman coastline. Places of cultural, historical and archaeological interest will be pointed out as well as tourist highlights such as Split Apple Rock and Tonga Island seal colony. Shore stops will be made including at Medlands Beach / Bark Bay and at Tonga Quarry (to look at the remains of the early twentieth century quarry). The boat will return to Kaiteriteri at about 3.30. A picnic lunch will be provided.

Bus transport will run from the conference centre from 8:00, returning from boat wharf at 3.45.

Friday July 5

8:30-10:00 Session 7

Session Chair Matthew Campbell

Navigating Infrastructure & Archaeology: the road to least resistance in heritage protection

Diane Bradshaw, Shane Miru, Stuart Moulding

Te Kōhai ki Uta ki Tai – Archaeology supporting kaitiaki relationships to wāhi tūpuna

Lyvia Fitzgerald, Haki Toka, Thelma Curtis, Shane Miru, Meghan Wright

In the footsteps of our Ancestors

Michelle Wanoa, Hal Hovell, Danielle Trilford, Pam Bain

Critical Thinking in a Cultural Landscape, 101

Craig Reidy, Te Haana Jacob, Huia Pacey

10:00-10:30 Morning tea break

10:30-12:00 Session 8

Session Chair Amber Aranui

Kā Pūtahi Stream – an archaeological landscape on a Canterbury waterway

Tristan Wadsworth

Preliminary research into niche construction and indigenous Māori plant economy in southern Te-Ika-a-Māui before 1800 CE

Latisha Lee

Buffeted by the wind: the Tiritiri Matangi Island ‘Archaic’ site

Robert Brassey

Pongakawa Houses Revisited

Caroline Phillips

12:00-1:00 Lunch

1:00-2:30 Session 9

Session Chair Pam Bain

How Can Archaeology Inform Climate Policy? Using policy citations and bibliometric analysis to measure the current and potential application in New Zealand

Bernardo S. Buarque, Kyle Higham, Troy Baisden

The Ōmaro Spit midden, T10/986: responses to site damage and the climate emergency

Matthew Campbell, Brendan Kneebone, Jaiya Bharti, Ella Ussher, Sarah Phear

Forecasting the impact of an Alpine Fault Earthquake on Archaeological Sites

Jasmine Weston

**Collective Action Problems link Ancient Demography, Landscape and
Paleoenvironment to Explain the Cultural Transformation of Samoa 800 Years Ago**
Ethan Cochrane

**The recent discovery of the Kolana cemetery site, Alor Island, East Nusa Tenggara,
Indonesia**
Stuart Hawkins, Pratiwi Yuwono

2:30-3:00 Afternoon tea break

3:00-4:30 AGM

6:30-11:00 Gala Dinner at The Jellyfish, Mapua

Bus transport will leave from conference centre at 6:00, returning at 10:30 and
11:00

ABSTRACTS

Ika Moana, Ika Whenua

Amber Aranui, Museum of New Zealand Te Papa Tongarewa

Monica Tromp, Southern Pacific Archaeological Research, University of Otago

Sophie White, University of Otago

Karen Greig, Southern Pacific Archaeological Research, University of Otago

Alana Alexander, University of Otago

C. Scott Baker, Marine Mammal Institute, Oregon State University

Kristine Richter, Harvard University

Ashley Scott, Harvard University

Camilla Speller, University of British Columbia

Christina Warinner, Harvard University

The relationship between Māori and ika moana (whales and dolphins) is a sacred and significant one that has persisted through time. Our project will examine the changing use, abundance, and diversity of ika moana through time using a combination of mātauranga Māori and archaeological science to create a better understanding of human-ika moana relationships. To do this, we will analyse both archaeological assemblages containing marine mammal bone, and taonga tūturu made from ika moana bone using collagen peptide mass fingerprinting (Zooarchaeology by Mass Spectrometry or ZooMS) to better understand which species were found where through time. Species identification of ika moana is often impossible visually, and ZooMS allows for inexpensive and rapid taxonomic identification of collagenous materials such as bone. Traditional sampling, used for fragmentary bone, requires a piece of bone to be cut off and destroyed, but we will also use a minimally invasive sampling technique – a small piece of fine grit polishing film - to collect a small sample for analysis, allowing the taonga tūturu mauri and visible appearance to remain intact. These data will be analysed through a te ao Māori lens alongside our tohunga tōhora Dr Ramari Stewart and other iwi partners. Our project has just begun, so we do not yet have any results, but we will present an overview of the project, where we have gotten so far and where we hope to be by the next conference.

Collating repatriation provenance research and archaeological records of kōiwi *Lana Arun, Tūhura Otago Museum, Ngāpuhi, Te Rarawa*

Our museums and universities are actively repatriating kōiwi tangata which have been historically recovered from burials across the country. Key to this process is quality provenance research drawing on museum archival records, historic field notes and accounts in journal publications. However, the museum records often lack the archaeological context necessary to determine the exact recovery location of kōiwi or associated taonga. For this we turn also to the archaeological information in the site recording scheme but that does not always have the overall narrative of people and places, limiting the correlation of that data with museum records. Of note, kōiwi in museum collections also represent burials that may be not have been noted in the site record scheme. Following on from previous research by Dr Amber Aranui and Beatrice Hudson and drawing on the current experience at Tūhura Otago Museum, this paper brings to attention the need for continued improvements in the collation of data from the growing repatriation research with the New Zealand archaeological record. This is important for ensuring that iwi have the fullest information possible for both the management of wāhi tupuna landscapes and the return of kōiwi.

Navigating Infrastructure & Archaeology: the road to least resistance in heritage protection

Diane Bradshaw, MacDiarmid Institute for Advanced Materials and Nanotechnology, GNS Science; Te Uri o Hau, Te Rarawa, Waikato Tainui
Shane Miru, Earthtest 357; Te Uri o Hau, Te Rarawa
Stuart Moulding, Civiltrain (NZ) Ltd

Tiakina te whenua ō tūpuna, he pukenga wai, he pukenga tāngata. Ko te whenua he mea nui ki te tuakiri o Te Uri o Hau, ko tō mātou tūrangawaewae. Tama tu, tama moe, tama ora.

Mine is the land of my ancestors, a flood of water, a flood of bones' Whenua is central to Te Uri o Hau identity as people, it is our tūrangawaewae, and reinforces "He who stands, he who sleeps, he who survives." This proverb implies that being alert, being prepared, and being active are essential for survival.

The Kaipara Harbour offers unique landscapes and pathways for individuals to connect with their cultural heritage and ancestral resting places. Its catchments feature low-lying land bordered by higher elevations, showcasing a blend of swampy areas, saltwater marshes, and marine deposits intertwined with underlying limestone formations. Building upon these natural features, efforts have been made to integrate Māori wisdom and cultural ethos into road infrastructure and drainage systems. This presentation explores innovative approaches utilizing traditional methods and materials for road improvement, not only enhancing infrastructure but also preserving access to archaeological sites. Collaboration between tangata whenua, government agencies, and infrastructure developers is crucial for fostering community resilience and protecting cultural heritage; however, such collaboration has often been lacking and overlooked. Inclusion of health and safety indicators and channel modification using traditional techniques and materials can improve road development and provide enhanced resilience in rural communities and elsewhere.

Buffeted by the wind: the Tiritiri Matangi Island ‘Archaic’ site

Robert Brassey

Tiritiri Matangi Island in the inner Hauraki Gulf/Tīkapa Moana, has since 1984, been the focus of a long-term revegetation and habitat restoration programme. The Tiritiri Matangi archaic site (R10_279), now substantially destroyed, was a deeply stratified site used over an extended period of time commencing around the time of Rangitoto eruption in ca 1400 CE. It was the subject of an archaeological investigation during redevelopment of a new wharf and arrival facilities on the island in 1997. Analysis of assemblages and data and report preparation have progressed sporadically since that time and are now close to completion.

I consider how the results of the investigation have contributed to our understanding of the natural and cultural history of the island, and of the wider context. A particularly interesting aspect of the site is evidence of a significant storm surge or other inundation event between cultural layers. This potentially has archaeological value as an isochron, as well as for evaluating the risk of coastal hazards that may affect coastal development in the Gulf.

How Can Archaeology Inform Climate Policy? Using policy citations and bibliometric analysis to measure the current and potential application in New Zealand

Bernardo S. Buarque, Motu Economic and Public Policy Research, Te Pūnaha Matatini

Kyle Higham, Motu Economic and Public Policy Research, Te Pūnaha Matatini

Troy Baisden, Motu Economic and Public Policy Research, Te Pūnaha Matatini

We explore the current and potential applications of disciplines that study the past, such as history and archaeology, for the national environmental authorities. To achieve this, we conduct a bibliometric analysis by examining the citations to scientific literature from publicly available policy documents in Overton. Focusing on New Zealand as a case study, we collect 1,406 PDFs from the online archives of three national institutions - the Ministry for the Environment, the Ministry for Primary Industries, and the Parliamentary Commissioner for the Environment. We then retrieve, from these PDFs, nearly 23,000 citations to published scientific research. Namely, we collect from Overton the DOIs of every citation and use these to query its metadata from OpenAlex - including journals, titles, abstracts, keywords, topics, and concepts. Altogether, the data gives us a “cognitive map” of the scientific research used by the local environmental offices. In other words, the data gives us the tools to identify the prevalent topics and themes in the scientific literature that shape environmental policy in the country. Because OpenAlex attributes topics and concepts to every publication, we can use these to identify all those citations containing “History” or “Archaeology” related topics. We can measure the relevance of these disciplines for building environmental policy in New Zealand or look for gaps where future research can add insights to policymakers. Therefore, combining network science and complex system analysis, we seek to create a map illustrating how the New Zealand environmental offices apply science in their everyday work and how researchers can contribute to its goals. This map will help interdisciplinary studies and direct research that is valuable for policymakers in the context of environmental offices.

The Ōmaro Spit midden, T10/986: responses to site damage and the climate emergency

Matthew Campbell, CFG Heritage Ltd; Anthropology Department, University of Auckland

Brendan Kneebone, CFG Heritage Ltd

Jaiya Bharti, Anthropology Department, University of Auckland

Ella Ussher, Piha Archaeobotanical Services

Sarah Phear, Underground Overground Archaeology

Site T10/986 on the Ōmaro Spit, Coromandel Peninsula, was badly damaged by a series of extreme weather events in 2022 and 2023. A small excavation was undertaken in 2023 which showed that the midden, or at least the part excavated, was deposited in a single day, probably by a large group processing and preserving shellfish on an ‘industrial’ scale. We discuss these findings and how they fit into the broader picture of occupation on the spit, and make some brief comment on midden sampling strategies. We conclude by discussing what is the appropriate archaeological response, or range of appropriate responses, to what is likely to be an increasingly common scenario of climate change induced site destruction.

Introducing the Museum of Archaeology Ōtautahi: challenges and opportunities

Hayden Cawte, Christchurch Archaeology Project

Jessie Garland, Christchurch Archaeology Project

Katharine Watson, Christchurch Archaeology Project

Christchurch Archaeology Project was founded with the mission to preserve, share and research Ōtautahi Christchurch’s archaeological past. A key part of our vision has always been to make the wealth of archaeological data recovered during post-earthquake archaeological work in and around the city accessible to both the general public and heritage practitioners via an online platform. In mid-2023 we received funding from Manatū Taonga Ministry for Culture and Heritage to build a database to contain the information, and a website to make it publicly available. There have been numerous challenges along the way, not least of which is the innate complexities of archaeological and historical data, trying to wrestle this into a form that a database can work with, and making sure all the connections between the data are captured, in order to maximise its usefulness. Other challenges included capturing data recorded using a range of systems that changed over time and then presenting the data in ways that were useful to both the general public and heritage practitioners. The end result is the Museum of Archaeology Ōtautahi, a database of freely available archaeological and historical information.

Collective Action Problems link Ancient Demography, Landscape and Paleoenvironment to Explain the Cultural Transformation of Samoa 800 Years Ago

Ethan Cochrane, University of Auckland, Anthropology

In this research we identify the evolutionary-ecological processes that explain 1000 years of behavioural change recorded in landscape modifications and geoscience data from the Polynesian islands of Samoa. Our analyses combine lidar mapping and ground survey to reveal an extensive landscape of archaeological features: rock walls, ditches, and platforms, linked in a robust feature chronology. Soil nutrient analyses and geoarchaeological coring indicate spatial differences in the agricultural potential of the valley, and human modification of the environment over time. Our results demonstrate that the construction of large rock walls, some several hundred meters long, began approximately 900-600 years ago, shortly after dramatic population rise in Sāmoa. This was

followed by the building of small rock walls, often enclosing rectilinear fields or platforms. Densities of both rock wall types are associated with areas of higher agricultural potential. The earliest wall construction was penecontemporaneous with partial forest removal that created a more productive wetland environment in the southeastern region of the valley, an area later a focus of agricultural ditching. We propose that with population rise the variable fertility of agricultural land became a significant resource gradient, influencing the population in two ways. First, areas of more fertile agricultural land promoted territorial behaviour, including large rock walls, and led to a familiar collective action problem. Second, niche construction in the form of human-mediated forest removal created a productive wetland agricultural system that was enhanced with a reticulate ditch network, the maintenance of which also led to a collective action problem. We conclude that in Sāmoa, collective action problems were the cause of increased social hierarchy and may underlie the origins of complex society throughout Polynesia.

Landscape Survey and Community Engagement: The Central Otago Heritage Site Review

Sarah Dugdale, Otago Goldfields Heritage Trust
Sarah Briden, Absolute Archaeology Ltd

Central Otago has benefited from several large scale archaeological survey programs in the last 60 years, notably the Clutha Valley Archaeological Project led by Neville Ritchie.

Due to development pressures in the region, funding has been provided to the Otago Goldfields Heritage Trust to conduct targeted archaeological surveys in the Central Otago Heritage Site Review (COHSR). These surveys are designed to gauge change in site condition since the initial efforts last century and the impact of huge landscape change on the archaeological resource present in Central Otago. COHSR also records sites outside of previous survey scope, and aims to develop and implement mitigation plans for site damage and condition change. Since project inception in 2020, nine survey weeks have been completed in seven target areas, with 250 sites recorded. The project has added 140 new sites to ArchSite, and updated a further 110 existing site records, of a variety of site types and time periods.

This paper will review the progress of the COHSR, particularly around methods for large scale landscape survey and community engagement across the project's stages. Thirty-three archaeology student volunteers have attended a project week to date, receiving training in methods of survey, recording and data management, and have been an essential element of the process. Some local volunteers have also been taught field recording methods while attending a survey day – a few on their own properties. As we move forward, the COHSR intends to further engage these local volunteers in methods of site damage mitigation and stabilisation.

Machine learning and 3d modelling of stone artefacts: Current research and future directions

Joshua Emmitt, Auckland Museum
Rebecca Phillipps, University of Auckland
Stacey Middleton, University of Auckland
Alex Dixon, Auckland Bioengineering Institute
Robin Laven, Auckland Bioengineering Institute
Simon Holdaway, University of Auckland
Poul M.F. Nielsen, The University of Auckland

Stone artefacts are often the most abundant class of objects found in archaeological sites and their use in making inferences about the human past is wide-ranging. Because

of this, many thousands of artefacts remain in collections, unanalysed. Conventional analysis relies on the ability of observers to identify landmark features of conchoidal fracture on an artefact, and consistent identification is limited by the number of experienced analysts available. Machine learning offers one solution. We applied machine learning in the context of flaked stone artefact identification to differentiate natural lithic clasts from flaked stone artefacts. We tested this method on three different stone artefact assemblages from the Fayum, Egypt; Ahuahu Great Mercury Island, New Zealand; and Western New South Wales, Australia, and will discuss these results. Machine learning of 2D images, however, is limited by what is depicted in the photo; another approach is to utilise 3D models to this end, which visualise entire objects. Large quantities of stone artefacts are required to train deep-learning models for automatic analyses. This necessitates an expedient method of 3D data capture and model creation, which is enabled through photogrammetry. Photogrammetry technology enables accurate measurement of the shape and texture of artefacts whilst being relatively low cost compared to other 3D scanning technologies. We present the initial step of this work with the development of a custom photogrammetry-based 3D scanner that enables high-throughput measurement of stone artefacts in a semi-automated manner. The segmentation of data on the resulting models for deep learning is also discussed.

Te Kōhai ki Uta ki Tai – Archaeology supporting kaitiaki relationships to wāhi tūpuna

Lyvia Fitzgerald, Te Kōwhai Roding & Urupā Committee CHA; Te Uri o Hau, Te Rarawa, Hokianga

Haki Toka, Te Kōwhai Roding & Urupā Committee CHA; Te Uri o Hau, Te Rarawa, Hokianga

Thelma Curtis, Te Kōwhai Roding & Urupā Committee CHA; Te Uri o Hau, Te Rarawa, Hokianga

Shane Miru, Te Kōwhai Roding & Urupā Committee CHA; Te Uri o Hau, Te Rarawa, Hokianga

Mehgan Wright, Te Kōwhai Roding & Urupā Committee CHA; Te Uri o Hau, Te Rarawa, Hokianga

Te Tau o Te Kōhai - When the flower of the Kōhai blooms, the tūi calls, “the kina is fat”.

This presentation offers an interdisciplinary overview of fieldwork conducted in Te Kōhai Valley, Ruawai Northland, merging archaeology with Mātauranga Māori to investigate recent explorations and reconnaissance endeavours. With a focus on an integrated approach, it acknowledges associated constraints and risks while proposing future management strategies to strengthen a Hapū Management Plan (HMP) in a flood-prone zone. Guided by esteemed kuia and kaumātua, custodians of mātauranga-ā-hapū the research illuminates past inhabitants’ daily and cultural activities through the examination of various occupation zones, intertwining traditional knowledge with much-needed conservation efforts to safeguard wāhi tupuna and Pā sites from destruction. Policies are established to safeguard historical features, many of which are situated on private land, therefore good relationships are imperative for enhanced collaboration with private landowners. Our approach nurtures cooperative relationships among academics and practicing archaeologists, bolstering kaitiakitanga, and assisting in the preservation of areas, some adjacent to wetlands and estuarine environments. By advocating for customary practices within the rural community, these initiatives aim to empower the kaitiaki with the requisite resources and support to proficiently manage and steward the archaeological sites within the project area.

The same old rubbish: an analysis of local variation within the global material culture of 19th century Christchurch

Jessie Garland, La Trobe University; Christchurch Archaeology Project

Nineteenth century Christchurch, like other British colonial settlements, was primarily supplied with goods by the global trade networks of the British empire. The city's material culture – and nineteenth century archaeology – shares characteristics with other British colonial settlements throughout Aotearoa New Zealand and across the wider global landscape of British imperialism and colonialism. Yet, this material culture was filtered into Christchurch through a framework of supply and distribution influenced and shaped by local agents and adapted to the particular economic and cultural circumstances of the city's foundation and development. This paper presents some of the results of my PhD research, focusing on the macro-scale assemblage analysis, which uses a 'city as site' approach to analyse patterns in the supply and distribution of domestic commodities to the city during the nineteenth century.

Māori and Moriori treasures and ancestors in the collections of Imperial Russia

Elena Govor, The Australian National University

Hilary Howes, The Australian National University

Currently thousands of Māori and Moriori treasures (taonga Māori/miheke) are held in overseas collections, disconnected from their communities and history. Similarly, hundreds of Māori and Moriori ancestors (kōiwi/kōimi tangata) remain in overseas collections, far from home. Māori and Moriori communities wishing to reconnect with their treasures and facilitate the return of their ancestors need to know where they are held and how they came to be there. At present very little is known about Māori and Moriori treasures and ancestors held in collections in the former Russian Empire, despite its enormous geographical expanse. At its height it covered roughly one-sixth of the world's landmass, making it the third-largest empire in history. We discuss the reasons for this lack of knowledge and outline our efforts to counteract it. We also detail promising sources of information and share some preliminary outcomes.

Fish from the Ōtata midden: change and continuity in pre-European Māori fisheries

Caitlin Haylock, CFG Heritage Ltd; Anthropology Department, University of Auckland

Matthew Campbell, CFG Heritage Ltd; Anthropology Department, University of Auckland

Louise Furey, Auckland

Emma Ash, Auckland Museum

The five occupation layers in the Ōtata midden on Ōtata Island in Tīkapa Moana / the Hauraki Gulf north of Auckland span the full extent of the pre-European occupation of New Zealand, from the 14th century, soon after initial settlement, to the 18th century, soon before the first European incursions. The rich fishbone assemblages allow us to examine questions of change and continuity on the pre-European Māori fisheries in the gulf. We conclude that changes in the assemblages are due to cultural factors rather than pressures on the environment from artisanal fishing – 14th century occupants caught a broader range of fish while later occupants were more targeted in their fishing strategies. However, there appears to be no evidence of changes in fish populations.

The recent discovery of the Kolana cemetery site, Alor Island, East Nusa Tenggara, Indonesia

Stuart Hawkins, Archaeology and Natural History, Australian National University
Pratiwi Yuwono, Geoarchaeology and Archaeometry Research Group (GARG),
Southern Cross University

The Austronesian dispersal sparked the greatest transformation in culture and society across the Indo-Pacific region during the Late Holocene. Originating in Taiwan, Austronesian peoples, languages, pottery technology, and domesticates began to disperse across open seas after 4200 BP reaching Madagascar in the east while Ancestral Polynesians reached the Southwest Pacific by 3000 BP culminating in the arrival of the Māori in Aotearoa by 700 BP. The storey, well known for the Pacific, appears more complex in the island region of Wallacea which appears to have been a melting pot of Asian and Papuan peoples when the Austronesian Neolithic package appeared in Wallacea by 3500 BP. The Kolana cemetery, discovered in a non-Austronesian speaking enclave on Alor Island in eastern Indonesia, represents a rare opportunity to study the influence of Austronesian colonization on the peoples of Wallacea with respect to culture, burial practices, migration, health, and subsistence. This paper presents the preliminary findings from the excavation at Kolana in 2023 and their implications for this important period in human history.

How come the spars from an 1884 shipwreck are still in use in a farm woolshed?

Mike Johnston

The *Fusilier* was a well-known wreck exposed on the Rangitikei coastline for 100 years, from the time it was beached on 16 January 1884, before eventually being covered by dune sand. Parts of the wreck were salvaged and can still be found in use on farms in the district.

Built in 1860, the barque *Fusilier* was innovative for its time being built of iron when wooden ships predominated. The vessel had a demanding working life like many others in the 19th Century, plying the world's oceans delivering raw materials and produce.

The vessel was intentionally beached 8km NW of the Rangitikei River mouth, having encountered a violent westerly gale which exposed the ship's inadequacies. While the captain claimed the beaching was to save lives, some of the ship-wrecked crew implied the real reason was fraud.

However, other factors were at play. The *Fusilier* was old, had design flaws, and had a captain who proved unable to meet the challenges of sailing the ship. In addition, the excessively long voyage out to New Zealand just before the beaching was disastrous as many of the crew became incapacitated with scurvy and injury or were subjected to violence by a troublemaker onboard.

Since the beaching the exposed wreck has been frequently visited by various agencies and the public. The subsequent photographic record illustrates the progressive deterioration of a wreck exposed to the coastal terrestrial environment for a century.

A Māori burial site is an archaeological site. Let's discuss

Des Kahotea

The legal status of Māori burial sites is a legacy from our history of being colonised by British people and the Crown. There is none. At first there was no nationally applicable law governing the establishment or management of cemeteries and burial grounds, and different provinces adopted different approaches. The first comprehensive burial law was passed in 1882 which brought all land used for burial under a common

legal structure irrespective of how the land had come to be set aside. This did not apply to Māori burial grounds or urupā. With the introduction of the archaeological provisions of the Historic Places Act 1975, up to 1990, where kōiwi tupuna were uncovered especially in Tāmaki Makarau, the practice for Ngāti Paoa, Ngāti Mahuta, Ngāti Te Ata, Te Ākitai and other Tainui iwi was kaumatua would take the kōiwi tupuna immediately to be buried. Today Heritage New Zealand and consultant archaeologists implement a status under the Heritage Act that Māori burials are archaeological sites and have displaced the role of kaumatua and tikanga.

Matauranga and its place in final reporting

Darran Kerei-Keepa, Heritage New Zealand Pouhere Taonga; Waitaha, Mamoe, Ngai Tahu

Huia Pacey, Heritage New Zealand Pouhere Taonga; Tuwharetoa ki Kawerau me Kai Tahu ki Kaikoura

Following through on the commitment to provide a report, whether draft or final is more than just complying with the archaeological authority conditions. Being given Matauranga from the descendants of those who lived at that time is a gift and therefore should be shown the respect it deserves. For Manawhenua, the final report is not grey literature, it is a record of passed on knowledge that is interwoven fact and tikanga. The report can provide a written record utilised by Manawhenua in numerous forms, many of them legal or regulatory in nature. Failing to complete a final report is a transgression and likely to result in information not being shared in the future.

Adze manufacture in Tīkapa Moana: A view from Rakino Island

Brendan Kneebone, CFG Heritage Ltd

Andrew McAlister, Anthropology Department, University of Auckland

Alex Jorgensen, Auckland Council

Dante Bonica, Māori Studies, University of Auckland

On arrival to Aotearoa, the first settlers rapidly discovered several sources of fine-grained rock suitable for adzes. In addition to basalt, which would have been familiar to the settlers from tropical Polynesia, a range of other stone types were utilised for adzes and other ground edged tools. In the Tāmaki region, greywacke, a fine-grained sedimentary rock, was frequently used for these purposes.

Throughout Tīkapa Moana, known exposures of workable greywacke stone are located on several of its inner islands, including Rakino, Motutapu and Motuihe, as well as locations on the mainland. In addition, sites with evidence of adze manufacture have been recorded in various places; however, only one, Pig Bay on Motutapu, has been studied in detail to date.

This paper presents the results of a non-intrusive recording of surface material associated with adze manufacture at Home Bay on Rakino Island. Activities there resulted in hundreds of large, primary flakes, as well as dozens of adze preforms with a range of cross-section shapes recorded along the high water mark and in the intertidal zone of the beach.

The results of the survey indicate that Rakino was a focal point for adze manufacture in the Hauraki Gulf, acting both as a centre of manufacture and potentially as a distribution centre for the wider Tāmaki region. This research was conducted as part of a larger project investigating the use of greywacke as a raw material for adze manufacture in the Tāmaki region.

Preliminary research into niche construction and indigenous Māori plant economy in southern Te-Ika-a-Māui before 1800 CE

Latisha Lee, Archaeology Programme, School of Social Sciences, University of Otago

The 1969-1972 Wairarapa research programme saw the first major regional archaeological investigation in Aotearoa, New Zealand. The results significantly advanced the knowledge about Māori plant production and confirmed an early occupation of Palliser Bay. However, there remains much to learn from Palliser Bay's archaeological sites. Today, the distinctive karaka (*Corynocarpus laevigatus*) can be seen across much of Palliser Bay, with many in close association with pre-contact Māori agricultural complexes.

Despite the importance of karaka to historical Māori society, we currently have a limited understanding of the Māori introduction and management of karaka to southern Te-Ika-a-Māui.

As part of my Ph.D., I will investigate the idea that northern karaka was translocated by hapu-Māori and introduced to southern Te-Ika-a-Māui. To help understand this, I consider niche construction whereby people and other organisms modified their environments to create more evolutionary secure niches.

In this presentation, I will present results from karaka surveys, note potential characteristics of cultural plantings, and provide an overview of trans-disciplinary methods that will be used to test when and how karaka was introduced to Palliser Bay. With the support of local Iwi, this Ph.D. aims to improve understandings relating to the introduction of tropical Polynesian plants, northern karaka, and endemic plants to southern Te-Ika-a-Māui, including how these were managed over time.

Contextualising Movement Using Stone Artefacts

Stacey Middleton, Waipapa Taumata Rau, University of Auckland

Rebecca Phillipps, Waipapa Taumata Rau, University of Auckland

Simon Holdaway, Waipapa Taumata Rau, University of Auckland

Joshua Emmitt, Tamaki Paenga Hira, Auckland War Memorial Museum

In Aotearoa there is a large literature on human movement based on functional settlement type identification and trade and exchange networks reconstruction. Settlement unit identifications use archaeological features, artefact size and morphology, and faunal identification to assess the degree of movement among archaeological sites. Artefact based studies often employ pXRF sourcing, artefact size, and frequency to quantify such movement. However, these variables also relate to raw material, reduction intensity, economisation, and recycling or re-use meaning that isolation of patterns related solely to movement is problematic. We report research that uses volume to assess assemblage completeness allowing a direct measure of the movement of stone material between sites. A sample of obsidian, basalt, and chert cobbles are used as inputs allowing the reconstruction of cobble numbers represented in archaeological assemblages. This provides the means to quantify stone material movement and contextualise stone resource movement when discussing settlement and exchange in Aotearoa.

Exploring Te Pākeka

Leela Moses, CFG Heritage Ltd; Ngāti Kuia

Ruihana Smith, Te Runanga o Ngāti Kuia

In March 2024 Ruihana Smith and Leela Moses of Ngāti Kuia, with funding from the Walton Fund and the support of Te Rūnanga o Ngāti Kuia, the Department of Conservation and CFG Heritage, undertook a 2.5 day survey of Te Pākeka (Maud

Island) in the Te Hoiere Sound. There are passing references to gardening on the Island, and a large number of sites recorded by Brailsford in the 1970s, including a village site and stone wall, though no direct gardening features. A follow up survey by Steve Bagley in 2000 offered a different perspective on the sites. Since either of these surveys, the Island has undergone significant native forest regeneration, masking the previously visible features.

This survey was an opportunity to try and relocate sites not seen since bush regeneration on Te Pākeka, assessing their condition and the impacts of recent major slips. It also represented an opportunity for Ngāti Kuia to continue to engage with our wahi tūpuna, preserve these wahi for future generations to engage with their Ngāti Kuiatanag, and also as a model for future site survey for Ngāti Kuia across Te Tau Ihu.

“A Capital Death” – the Mount Street Cemetery, Wellington

Mary O’Keeffe, Heritage Solutions

The Catholic Mount Street Cemetery is one of two original cemeteries in Wellington. Its location and establishment characterize 19th century social, religious and political values of the time.

Archaeological monitoring of on-going maintenance work has revealed details about the use and density of the cemetery.

Stone artefact assemblages from Ahuahu

Rebecca Phillipps, University of Auckland

Stacey Middleton, University of Auckland

Joshua Emmitt, Auckland Museum

Simon Holdaway, University of Auckland

Over the past 12 years, the Ahuahu Archaeological Project has investigated a range of locations on Ahuahu Great Mercury Island. This work has revealed a range of stone artefact assemblages highlighting the use of different stone materials and spanning the pre-European occupation sequence of Aotearoa. The systematic collection and analysis of over 40,000 stone artefacts allows us to investigate patterns of manufacture, use, and reuse at a larger scale and with a greater level of confidence. We report on the preliminary findings of our investigation of these assemblages. We use principles of formational emergence to inform our practice and investigate the stone artefact assemblages to understand how the archaeological record has formed in addition to identifying behavioural patterns that emerged over time. Our results suggest that post depositional processes and repeated reuse and recycling of stone materials over time cannot be ruled out as explanatory factors when interpreting assemblages. This has implications for how quantitative analyses of stone artefact assemblages are used by archaeologists to support synchronic models of Māori landscape and resource use.

Pongakawa Houses Revisited

Caroline Phillips and the Mysteries of the Trowel

Between 2016 and 2023, my team and I have been investigating archaeological sites around Pongakawa in the Bay of Plenty. In 2019, Brendan Kneebone and I presented a paper to NZAA on the five Maori house sites we had found at that time. Since then we have found about 15 more houses dating from 1450-1500. These have a posthole pattern around the room, while some have additional details: porch, hearth, shallow platform and wall packing. There are generally two sizes: whare moe were small, made of irregularly placed poles; while whare puni were more formal and larger, made with regularly spaced posts.

In 1982, Nigel Prickett wrote about the conservatism of house design comparing an early one found in the Wairarapa with ethnographic examples. Although that house has been re-dated to the mid-sixteenth century, our findings, together with other archaeological houses from throughout the country support his hypothesis. Ethnographic studies show that although larger whare runanga (now the main house type) began to be constructed from the 1830s, the two smaller types of houses appear to have been present for at least four hundred years.

Critical Thinking in a Cultural Landscape, 101

Craig Reidy, Heritage New Zealand Pouhere Taonga; Ngāti Maru, Ngāti Rarawa

Te Haana Jacob, Heritage New Zealand Pouhere Taonga; Tauranga Moana

Huia Pacey, Heritage New Zealand Pouhere Taonga; Ngāi Tahu, Ngāti Tūwharetoa

Archaeological Assessments are an integral part of an archaeologist's mahi. Historic research forms the basic building block for assessment on what was, what is or what could be there. This helps to understand the human context of the landscape. It helps to understand what the impact of a project could be on the building or land in question. Basic research into Maori historic occupation of an area becomes more accessible every year, and yet there are still times when an archaeologist/project manager/planner have gaps in their research or make fundamental errors in both research and understanding of presence in the landscape. It's as though they don't know how to apply critical thinking in a cultural landscape.

Three experienced kaimahi will provide their thoughts on this topic and how we can all seek to improve our understanding.

Panel Discussion, Whakauru

Makeke Rika Heke, Heritage New Zealand Pouhere Taonga

Dr Amber Aranui, Te Papa Tongarewa Museum of New Zealand

Te Kororia Netana Rakete, Ministry of Culture and Heritage

To interview the panel members on how the three government agencies can better work together to strengthening their relationship, thus providing better outcomes for Māori in the archaeological sector. This includes questions around the current process of taonga tuturu finds on an archaeological site, recognizing Māori role as kaitiaki of taonga and the need to follow proper tikanga process during an archaeological dig. We will also explore how to plan for climate change and coastal inundation around known and unknown along significant sites along coastal margins. How best to develop coastal mapping plans and/or information gathering to protect future koiwi/ cultural material exposure along vulnerable coastlines. And finally, are the role of museums still relevant in the changing world where indigenous peoples are starting to change the narrative on where taonga should be housed.

A Bayesian Approach to Sourcing Poor Knights obsidian: New Zealand's most recently identified obsidian source

James Robinson, Heritage New Zealand Pouhere Taonga

Andrew McAlister, Anthropology Department, University of Auckland

Poor Knights obsidian was first identified in archaeological deposits on Tawhiti Rahi Island in the Poor Knights Island group in 2010. Since then it has been identified in a number of archaeological excavations in the Northland/Auckland area.

Using a Bayesian approach, it is argued that the Poor Knights Islands obsidian does not originate from this Island group. Instead, using comparative pXRF data it is argued that this unknown source is located within the 'mid-north' a zone of similar but not

identical obsidian that occurs from Whangarei in the west to Aotea in the east. The paper concludes with a multi-disciplinary field research proposal that could be used to identify the source locality within the mid north zone

Applying novel time-series techniques to unlock new information from sclerochronology data

Armagan Sabetian, School of Science, Auckland University of Technology

Matthew Campbell, CFG Heritage Ltd; Anthropology Department, University of Auckland

Jingjing Zhang, School of Science, Auckland University of Technology

Julian Lilkendey, School of Science, Auckland University of Technology

Richard Walter, Southern Pacific Archaeological Research, University of Otago

Sclerochronology is a methodology for dating calcified organic structures such as shell or otolith. Here we are using sclerochronology to analyse fish otoliths in order to identify mobility and lifeway changes in snapper populations in the Hauraki Gulf over the last 700 years. This will provide insights into human impacts on fish populations. Conventional sclerochronology cannot provide the high-resolution reconstruction needed for in-depth analysis of movement patterns and changing habitats. Using advanced time-series analysis and machine learning techniques we applied a more sophisticated approach to interpreting the rich, continuous habitat data embedded in fish otolith microchemistry of archaeological, historical, and modern samples spanning the entire 700-year history of human settlement in New Zealand. Specifically, we applied time series analysis techniques - Behavioural Change Point Analysis (BCPA) and Dynamic Time Warping (DTW) - to otolith element profiles of New Zealand snapper (*Chrysophrys auratus*). Our innovative methodology helped uncover significant differences in snapper movement patterns pre- and post-industrial times and draw inferences about ocean chemistry, fish residency, nursery usage, migration, and population clustering patterns. As a result, we gained key insights into the long-term impacts of anthropogenic environmental changes on snapper movement and habitat use. Our research integrates time series analyses with movement ecology, proposing novel ecological indicators for reconstructing shifting baselines. Apart from otoliths, our analytical approach has the potential to unlock new information from any calcified structure with a temporal profile, such as bone, teeth, and vertebrae.

Introducing the Archaeological Authority Portal: A new tool to assist Heritage New Zealand Pouhere Taonga with ensuring compliance with authority conditions

Vanessa Tanner, Heritage New Zealand Pouhere Taonga

Makere Rika-Heke, Heritage New Zealand Pouhere Taonga

Mel Russell, Heritage New Zealand Pouhere Taonga

In a 2020 survey carried out by HNZPT and the NZAA you told us that you were concerned about non-compliance. The results of that survey have informed the development of our online Archaeological Authority Portal (AAP), which will be launched later this year. The AAP brings improvements to in the application process, and changes to the way HNZPT manages compliance with authority conditions. Through the AAP, HZNPT will be able to monitor compliance with authority conditions in real time and take action to ensure authority holders are compliant at all times. In this paper, you will get a preview of the AAP, an understanding of the reasons for its development and we will explain the changes we have made to HNZPT's Compliance Delivery Model.

What the Flock is This? Birding Strategies in Foveaux Strait/Te Ara a Kiwa, New Zealand

Brooke Tucker, Archaeology Programme, School of Social Sciences, University of Otago

We all know that New Zealand is the land of birds. Sea birds, forest birds, world famous extinct birds, flightless birds, and birds that ‘fly’ under water. The first human colonists from East Polynesia encountered an array of new bird species in an extensive range of unfamiliar environments.

In 2019 excavation at D48/5 Sealers Bay Camp, Codfish Island/Whenua Hou, revealed complex stratigraphy representing multiple occupation layers and dense and diverse midden deposits. Post-excavation analysis generated a significant data set of avian remains from an offshore island site in Foveaux Strait/Te Ara a Kiwa. This data can now be compared with an analysis of bird bone from The Neck, on Patterson’s Inlet, Stewart Island/Rakiura. Excavated by Les Lockerbie in the 1960s, this assemblage (while missing associated fieldnotes) was also obtained from a multilayered occupation site in the Strait.

I use these results to examine regional birding strategies in Foveaux Strait/Te Ara a Kiwa. Can we move beyond moa-hunting and muttonbirding in Murihiku to gain a fuller feathered picture of past life ways in the Deep South?

Technological and social implications of hand knife use on an offshore island in Foveaux Strait/Te Ara a Kiwa

Brooke Tucker, Archaeology Programme, School of Social Sciences, University of Otago

Dan and Alison Witter, Witter Archaeology

Atholl Anderson, School of Culture, History & Language, Australian National University, Australia; Ngai Tahu Research Centre, University of Canterbury

The polished stone knife has received sporadic attention within New Zealand archaeology, primarily as an ‘early’ artefact form with typological connections to the wider Pacific and beyond. The ‘ulu’ (for want of a te reo term) is generally understood to be a thin, flat, handheld knife of rectilinear or semicircular shape, manufactured from a variety of stone sources including slate, nephrite and argillite. Distribution is limited to archaeological sites in the South Island, where the ulu tends to be associated with moa hunting sites, likely as a butchery tool.

The excavation of an argillite hand knife and a number of striated flakes from the precontact period at Sealers Bay Camp, Codfish Island/Whenua Hou, in Foveaux Strait, prompts a reconsideration of the uses of ulu in this region. The argillite tool and striated use wear flakes exhibit consistent wear and retouch, indicating that a number of ulu were present and maintained on site in a lithic working floor or depositional layer. However, microscopic analysis has identified inconsistencies with previous use wear studies on ulu from mainland sites, indicating that the function of the Sealers Bay Camp ulu is currently unknown.

The evidence for multiple ulu on an offshore island is discussed with reference to faunal material from the site, within the context of the archaeological landscape of Murihiku 1300-1400 AD.

Kā Pūtahi Stream – an archaeological landscape on a Canterbury waterway

Tristan Wadsworth, Underground Overground Archaeology

Kā Pūtahi is a spring-fed stream that runs through Belfast Christchurch and empties into the Pūharakekenui/Styx River. The residential expansion of Belfast in the last decade has encountered archaeological remains associated with farming and the freez-

ing works that has dominated the industry in the area until today, as well as a regular pattern of short-term Māori occupation sites along the Kā Pūtahi, associated with the use of the waterway as a transport corridor. Roughly 25 midden or oven sites have been recorded so far along the waterway, and radiocarbon dating suggests regular repeated use of the area from the 14th century likely into the 19th century. Microfossil analysis suggests the presence of kumara and taro within at least one oven. The regular pattern of occupation revealed during archaeological monitoring in these greenfields developments provides a model that could have been expected to exist elsewhere.

In the footsteps of our Ancestors

Michelle Wanoa, Te Whānau a Hunaara

Hal Hovell, Te Whānau a Hunaara

Danielle Trilford, CFG Heritage Ltd

Pam Bain, Heritage New Zealand Pouhere Taonga

In 2021 Ngā Taonga o Hinerupe received funding from the HNZPT Mātauranga Māori Contestable Fund to undertake research and map two important sites, Rangitane and Matarehua at Te Araroa, East Coast. The project was a continuation of a number of archaeological projects in the area and involved taiohi and pakeke working alongside archaeologists to map the sites and learn about archaeological techniques. Associated with this mapping, pakeke kōrero was recorded about each of the sites.

The project achieved:

- The development of a mātauranga Māori template for archaeological work in the region.
- Supporting hapū members to develop mapping techniques to continue the māhi
- Recording of pakeke telling the kōrero about the sites for hapū use in future
- A poster for the Rāngitane Pā for hapū information
- Encouraging taiohi to consider careers in heritage

Life in nineteenth century Christchurch: a comparative study of domestic archaeological sites

Clara Watson, Underground Overground Archaeology

In 2022 Underground Overground Archaeology undertook a three-and-a-half-month excavation at the site of the new Christchurch Multi-Use Arena. During this period, a total of 23 domestic archaeological sites were excavated, with over 20,000 artefacts recovered. The excavation took place under a research framework, which sought to take a comparative approach to look for similarities and differences between the investigated sites. The sites for investigation were chosen so that they represented a variety of occupants of different socio-economic status, and so that they would include features dating from the 1850s through to the late 1890s. While there has been numerous archaeological excavations that have taken place since the Christchurch earthquakes, to-date these excavations have mostly focused on individual sites and there's been a lack of comparative analysis. This has resulted in a large body of work, but with little synthesis. This project was designed to address that issue, and to produce a comparative study to which future and previous archaeological investigations could then be compared. This paper presents on the preliminary results from the project.

Forecasting the impact of an Alpine Fault Earthquake on Archaeological Sites

Jasmine Weston, University of Otago

Karen Greig, University of Otago

Nicola Lichtfield, GNS Science

Using a scenario of a south-to-north magnitude 8.2 earthquake on the Alpine Fault, this paper combines previously created hazard datasets that forecast the impacts of ground shaking, landslides, tsunamis, and lake seiching with recorded archaeological sites using GIS technology. These combined datasets forecast some of the possible impacts of these hazards on recorded archaeological sites across Te Waipounamu. The results show significant variation in potential impacts across the South Island. The areas forecast to be heavily impacted are in and around the Southern Alps (Kā Tiritiri o te Moana) throughout Westland, Central Otago and Fiordland. A large portion of these are nineteenth century gold rush mining sites located throughout these mountainous regions. The research undertaken has shown a wide gap in the knowledge of the impacts of earthquakes on archaeology in New Zealand and internationally. It is hoped that this research will promote further work for a previously unconsidered impact of an earthquake that is likely to occur within the lifetimes of many of the people living in Aotearoa and consider impacts on archaeology of other large scale natural disasters.

Awls, needles, and the Hikurangi Trough

Dan Witter, Witter Archaeology

Following the 2017 earthquake at Kaikōura NCTIR (North Canterbury Transport Infrastructure Recovery) was established to restore the rail and road corridor along about 50 km of the Kaikōura coast. A large number of sites were excavated, but none dated before 1400 AD. Detailed recording of the lithics was accompanied with experiments on technology and tool use. This included identifying the bone-working tool kit. A sophisticated multistage kerfing sequence for producing long thin awl blades from albatross wing bones was replicated using stone tools. These were replaceable standardised components that were hafted. A review of published literature indicates that this type of awl blade is rare or uncommon in other New Zealand assemblages.

The design function of the needles and awls was for sewing, and indicates that skin garments were an important article of dress. Work by Wallace (2002) shows that the importances of skin garments has been much neglected in the ethnographic literature. The Hikurangi Trough that comes up against the Kaikōura coast where the upwelling of deep nutrient-bearing water resulted in an exceedingly rich marine ecosystem. The use of skin garments by people on the Kaikōura coast appears to be part of an adaptation to the Hikurangi Trough, probably as foul weather gear in winter. They belong to an overall regional evolutionary process of regional diversification.

Who put that there? Tracing the life trajectories of Dunedin's inner-city residents

Bree Wooller, New Zealand Heritage Properties

The new Dunedin Hospital Development has led to the archaeological investigation of several inner-city blocks, which were once the location of densely packed dwellings interspersed with commercial and industrial premises. Many of the site's occupants were first-generation settlers who created new lives for themselves upon their arrival to the city - while some prospered, others fell victim to hardship. Ongoing excavations, conducted by New Zealand Heritage Properties, have encountered a range of features and deposits associated with the nineteenth century settlement of the site. This paper will explore the life trajectories of individual occupants, discussing how they came to be living on the block, what they left behind in the archaeological record, and where they ended up - generally buried in either Dunedin's Northern or Southern cemetery.

POSTERS

Picture the Past - Artistic Site Reconstruction for Effective Communication and Outreach

Annika Beesley, Biosis Pty Ltd

Effectively communicating archaeological findings and concepts to stakeholders is a recurring challenge to consultants. Technical imagery used in reports, though necessary, is often challenging for non-archaeologists to interpret.

While models or 3D renderings can effectively communicate a site to the public, they are not always practical for use by consultancies. 2D digital art provides a low-cost, high-impact, and highly adaptable alternative.

Regular use of artistic site reconstructions, whilst no magic bullet, could lead to improved understanding between archaeologists and the various stakeholders involved with cultural heritage management.

Ōtūmoetai Pā Historic Reserve

Rachel Darmody, Heritage New Zealand Pouhere Taonga

Eleanor Sturrock, Heritage New Zealand Pouhere Taonga

It has been 20 years since Tauranga City Council bought the last piece of Matheson's Fairview Farm preserving the eastern extent of Ōtūmoetai Pā as a Historic Reserve, while houses cover the majority. This was a significant outcome for the city as the pā plays a central role in the history of Tauranga. It was the stronghold of both Ngāiterangi and Ngāti Ranginui for several centuries prior to European settlement and was continually occupied until the mid-19th century. Much of what occurred during the early historic period in Tauranga revolved around Ōtūmoetai Pā as the "capital" of the district, with a mission station and trading store on its coastal terrace. Heritage New Zealand Pouhere Taonga continues to work closely with tangata whenua and Council on the management of the Reserve to ensure the long-term preservation of the site.

Tabletop games as a method of community outreach for archaeology

Jacqui Lokum

Lucy Arrell, CFG Heritage Ltd

The mapmaking tabletop game, *To Care is to Cairn* is a game in which players interact with the world from the perspective of artefacts and the landscape, rather than through the anthropocentric view of humans. In this poster, we explore the ways in which this game provides examples of archaeological concepts such as intangible heritage, stratigraphical palimpsests, and artefact life history. We then evaluate the ways in which this game can provide insights into effective methods of community outreach.

Evidence of specialist whale and shark processing from Māori archaeological site N27/119, Bell Island, Waimea Inlet, Whakatū

Ian Barber, University of Otago Ōtākou Whakaihū Waka

Fiona Kirk, University of Otago Ōtākou Whakaihū Waka

What does the archaeology of specialist Māori marine processing look like? This question is explored through site evidence from Bell Island (NZAA site no. N27/119), Waimea Inlet, Whakatū/Nelson. N27/119 was excavated in the late 1990s to assess impacts of recent site damage. Subsequent analysis of the excavation assemblage

and records confirms the processing of whales (cetaceans), including young animals. Multiple articulated vertebral columns *in situ* also point to the targeted food preparation of local cartilaginous fish (Chondrichthyes), probably sharks in the main. Indications of sinker stones in the estuary below suggest local capture by netting, in part at least. Site layout and stratigraphy are consistent with the persistence of whale and shark processing over time. Radiocarbon dates from this specialist processing site underscore economic and other significant cultural values of whales and sharks in post-1500 Whakatū Māori society.

Fast, Good, and Cheap in Desktop 3D Scanning for Lithic Analysis

Steven Mills, University of Otago

Janina Castro, University of Otago

Gerard O'Regan, Tūhura Otago Museum

Lana Arun, Tūhura Otago Museum

Richard Walter, University of Otago

An initial experience of capturing detailed 3D models of lithic flakes from Māori stone tool manufacture indicates the utility of a current commercial desktop scanner. Such models are expected to be useful for automating measurements of large flake collections and offer the potential for more nuanced analysis through machine learning. However such applications are dependent on the efficient acquisition and processing of the 3D data. The increasing availability and accuracy of consumer and prosumer grade equipment means that scan qualities that previously required expensive laser scanners are now available on a more modest budget. Specifically, we use an EinScan SP scanner that retails for approximately NZ\$4,000, so is a similar price to a high-quality DSLR or mirrorless camera and lens kit. Some experimentation is required to determine the optimal scan settings for a given application, however once these are determined we find that it is a simple process to capture highly detailed scans with minimal manual intervention. Scanning still takes 10-15 minutes per flake with the settings we found most effective. Visual comparison of the scans and original flakes indicates that fine surface details are captured reliably, although sharp edges can be smoothed slightly in the mesh-fitting process. Based on our initial experiences, the scans that are produced capture fine surface details well and are likely suitable for further analysis. The ability to capture such high-fidelity 3D scans easily on comparatively inexpensive devices opens avenues for collection rather than object-scale analysis.

Obsidian Production and knapping strategies at Waitapu: Analysing persistent patterns in Māori Lithic Systems

Anne Pielberg, University of Auckland

Archaeological research in Aotearoa has extensively studied lithic sourcing and adze manufacture, leaving a gap in understanding wider lithic systems. My research addresses the gap by analysing obsidian production at the site of Waitapu (Ahuahū/ Great Mercury Island). This study aims to understand production systems of obsidian tools to better understand Māori knapping strategies by examining reduction sequences and the possible presence of persistent patterns in knapping processes. Results so far suggest a consistent pattern in knapping practices, indicating optimal reduction when reducing cores until maximum reduction potential is reached and reuse of waste flakes as tools.

The Archaeology of the Caversham Public School, Dunedin

Bree Wooller, New Zealand Heritage Properties

Victoria Ross, New Zealand Heritage Properties

Excavations for the Te Kāika Wellbeing Hub, carried out by New Zealand Heritage Properties, unearthed substantial bluestone foundations relating to the 1863 Caversham Public School, including a sub-surface schoolroom in use prior to 1861. Additionally, numerous artefact deposits were recovered from a historic creek bed on the eastern side of the school grounds. The largely intact foundations appear to be unique among educational site types in New Zealand, while artefacts such as slate tablets, a dolls' eyeball, perfume bottles, bullet casings, and a moustache cup provide a rare insight into childhood and education in the nineteenth century.

OPENING 22ND JUNE

TE TUHI O TE WHENUA

PAKOHE UNEARTHED



Ngāti Kūia



Native Provincial
MUSEUM

IN COLLABORATION WITH I NGĀ IWI O TE TAUIHU

TE TUHI O TE WHENUA: Pakohe Unearthed 22 June–6 October
Discover a story as old as stone as you step into Te Tuhi o te Whenua: Pakohe Unearthed. Immerse yourself in the sounds, stories, and colours of Pakohe, also known as argillite, a strong and versatile stone significant to Te Taihū (the top of the South Island). Experience the world of Pakohe, from its ancient roots to its contemporary revitalisation, and gain insight into the tools, methodology, trade and tikanga surrounding its use. This remarkable exhibition, curated in partnership with Ngāti Kūia he Iwi Pakohe in collaboration with ngā iwi of Te Taihū, is not to be missed.