

# New Zealand Archaeological Association Annual Conference · 2022



21-24 November

New Zealand  
Archaeological Association  
Annual Conference 2022

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Programme and Abstracts

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21–24 November

University of Otago  
Dunedin  
New Zealand



# PROGRAMME

All paper sessions will be held at the Castle 1 Lecture Theatre. The Poster session will be held in The Link, University Union.

Morning tea, lunch and afternoon tea will be available in The Link, University Union.

## Sunday 20 November

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5.30–7.30pm      **CFG Heritage Pre-conference icebreaker**  
The Atrium, Otago Museum

## Monday 21 November

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10.00–10.30am    **Mihi Whakatau**  
The Link, University Union  
Please assemble promptly by 9.50am

**Waiata to support NZAA speakers:**

***Ma wai ra***

Ma wai ra e taurima

Te marae i waho nei?

Ma te pono, ma te tika

me te aroha e

***Te aroha***

Te aroha

Te whakapono

Me te rangimarie

Tatou, tatou e

10.30–11.00am    **Morning tea**

11.00–12.30pm    **Paper Session 1 (p.7)**

*National, Regional and Local Vulnerability of Coastal Archaeology to Coastal Erosion and Sea Level Rise (SLR), Benjamin Jones*

*Travelling Te Ara o Raukawa Moana – Navigating Coastal Cultural Redress, Statutory Processes and Climate Change, Robert McClean*

*Fragile Shores: Addressing coastal erosion on archaeological sites in Otago*, Anne Ford

*Rescuing the record? Archaeological research as a response to the threat of climate change*, Karen Greig & Richard Walter

**12.30–1.30pm      Lunch**

**1.30–3.00pm      Paper Session 2 (p.9)**

*The Bluff Harbour lithic production system: quarrying and adze manufacture in early Aotearoa*, Chris Jennings

*What was the post-Kaharoa Landscape in the Bay of Plenty?*, Caroline Phillips

*Reinvestigating archaeology at Whareakeake through pounamu manufacture*, Anne-Claire Mauger

*The Collapse of the Moa Hunters?*, Dan Witter

*Redcliffs Revisited: a 14th century māori village*, Tristan Wadsworth

**3.00–3.30pm      Afternoon tea**

**3.30–5.00pm      Paper Session 3 (p.12)**

*101 Demolitions: decoding Christchurch's 19th century domestic architecture*, Katharine Watson

*Two Buildings One Problem: Building Along Dunedin's Reclaimed Waterfront*, Russell Cook

*On the Harbours Edge: A site for the faithful and freethinkers*, Megan Lawrence

*The Contamination of Archaeology and the Archaeology of Contamination*, Jodi Halleux & Amy McStay

*Recognizing an individual in the archaeological record*, Alison Witter

**7.00–9.00pm      New Zealand Heritage Properties & Underground  
Overground Panel Discussion: Archaeology and the  
climate crisis**  
The Hutton Theatre, Otago Museum (public event)

## Tuesday 22 November

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### 8.30–10.00am Paper Session 4 (p.15)

*Tōanga Waka: initial mapping of portages with Least Cost Paths (LCP),*  
Arden Cruickshank

*The Use of Ground-Penetrating Radar to Assist Indigenous Communities*  
*with Protecting Country – a case study from Mapoon, Queensland,*  
*Australia,* Emma St. Pierre

*Multi-Element Analysis and its Application to Pre-European Cultivation*  
*Sites in New Zealand: Preliminary Findings from T11/2789, Cooks*  
*Beach, Coromandel,* Oliver Walne

*Critiquing Starch and Raphides as Evidence of Cultigens from Wetland*  
*Archaeological Māori Ditch Systems,* Rebecca Benham

*The Aotearoa/New Zealand Radiocarbon Database Upgrade,*  
Fiona Petchey

### 10.00–10.30am Morning tea

### 10.30–12.00pm Paper Session 5 (p.19)

*Chamberpots, Coconuts and Carpet Tufters: Stories from Invercargill's*  
*past as told by material culture,* Naomi Woods

*'Put the Kettle On!' A look at tea rooms across the Invercargill central city*  
*block,* Alix Muir

*Capturing the Past: an archaeological analysis of photography in historic*  
*New Zealand,* Madison Hickford

*New Boot Hoofin': Investigating the archaeology of equines and*  
*smithing,* India Gillespie

*Oh Well! The seemingly endless wells of the Invercargill Central*  
*Redevelopment,* Victoria Ross

### 12.00–1.00pm Lunch & New Zealand Heritage Properties & Underground Overground Student Lunch

**1.00–2.30pm      Paper Session 6 (p.21)**

*An Exploration of Early Lived Experiences of Stress in Colonial Settlers of Otago Through Dental Histology*, Lucy Henderson

*Story of a Chinese Sojourner: using bioarchaeological evidence to reconstruct life histories from our colonial past*, Charlotte King

*Ancient Dna Reveals Dynamic Evolutionary Responses of Marine Taxa to the Polynesian Colonisation of Aotearoa New Zealand*,  
Nicolas Rawlence

*20th Century Data, 21st Century Questions: current fishbone analysis in Aotearoa*, Matthew Campbell

*Fishing for Data: a deep dive into the analysis of Barracouta harvest and preservation*, Brooke Tucker

**2.30–3.00pm      Poster session (p.35)**  
The Link, University Union

**3.00–3.30pm      Afternoon tea**

**3.30–4.30pm      NZAA Professional Organisation Workshop**  
Castle 1

**5.00–7.00pm      100 years of Anthropology at Otago**  
The Staff Club, University of Otago

**Wednesday 23 November**

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**8.30–5.00pm      Southern Pacific Archaeological Research Field trip to Lawrence, Central Otago.**  
Departing from the OUSA Main Office, 640 Cumberland St, Dunedin promptly at 8.30am.  
Morning tea, lunch and afternoon tea will be provided.  
Retuning to Dunedin approximately 5pm.

## Thursday 24 November

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### 8.30–10.00am Paper Session 7 (p.25)

*Nature vs Archaeology – Reflecting on climate change along the northern Tauranga Harbour*, Brigid Gallagher

*Artefacts and History of the Barque Robina Dunlop, Wrecked on the Rangitikei Coast in 1877*, Mike Johnston

*Building on the Past: Refining our current understanding of Lapita stilt Structures*, Nicholas Hogg

*Gowns, Streams, and Essence of Filth – the archaeology of Newtown, Wellington*, Mary O'Keeffe

*Adventures in the Social Media Game*, Gary Law

*Private Collections in the Public Eye*, Claire Thorrold

### 10.00–10.30am Morning tea

### 10.30–12.00pm Paper Session 8 (p.28)

*Interfacing Time: an introduction to the Chronological Network Analysis method of relating whakapapa Māori to calendar years*, Isaac (Zac) Mclvor

*Ko au te awa ko te awa ko au- The Connection Between Kāi Tahu/Kāti Māmoe Identity and Cultural Landscapes in Murihiku*, Marie Dunn

*The Chronology of Pā in the Central Waikato Region: an update of wiggle-match dating results and their interpretation*, Rowan McBride

*'Kia whakatōmuri te haere whakamua': reflections on becoming an archaeologist in Aotearoa*, Sabre Baker-Anderson

*Whareongaonga 5 Collaboration and Cultural Mapping Project*, Josie Hagan

### 12.00–1.00pm Lunch



**1.00–2.30pm      Paper Session 9 (p.32)**

*Importers, Retailers, 'Culture Brokers': shops and shopkeepers as curators of culture and consumerism in nineteenth century Christchurch,*  
Jessie Garland

*Shops, Shoes, and Smoking Pipes: Preliminary results on the archaeology of the new Court Theatre site in Christchurch,* Alana Kelly

*The Materiality of a City Block: preliminary findings from the new Dunedin Hospital Development,* Bree Wooler

*The Chesnuts, Not Chestnuts,* Jasmine Weston

*Changing Landscapes: archaeology and the emergence of the University of Otago campus,* Nick Sutton

**2.30–3.00pm      Closing**

**6.00 till late      Gala Dinner**

Larnach Castle, Otago Peninsula

Buses leave at 6:00pm from the St David St entrance of the University of Otago, with another pick up from the Dunedin Railway Station at 6.10pm.

Return departures from the Castle at 11.00pm and 12.30am.

# ABSTRACTS

## SESSION 1 – Mon 21 Nov 11.00am–12.30pm

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**Ben Jones, Mark Dickson, Murray Ford, Emma Ryan, Daniel Hikuroa**

*National, Regional and Local Vulnerability of Coastal Archaeology to Coastal Erosion and SLR*

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Coastal hazards threaten properties, infrastructure and cultural sites around Aotearoa's coastline and sea-level rise (SLR) will escalate this problem. SLR will elevate the level that is inundated by spring tides and will likely be accompanied by more frequent storm surges, especially in shallow harbors, river mouths and estuaries. It is widely expected that rates of coastal erosion and inundation (coastal flooding) will accelerate under SLR, although there will be considerable local-scale variability due to complicating factors, such as the effects of local sediment supply to shorelines. At present the full extent and potential loss of archaeological sites due to coastal erosion and inundation is unclear. The predominant coastal archaeological sites around Aotearoa are midden (44%) and earthworks (38%). In total, about half of coastal archaeological sites are within 100m of the shoreline. Only about 2% of sites are burials, but the impacts of loss of these 445 burial sites are significantly higher. The analyses in this paper indicate that 60% of coastal burial sites are located within 100m of the shoreline. Coastal erosion is a particularly important threat to this type of archaeology as it would permanently remove sites. Our results show that 72% of coastal archaeological sites are located on landforms that are sensitive to SLR driven erosion: ~29% of archaeological sites are located on foredune barrier beaches, 23% on foredune barrier plains, 14% on beaches, and 9% on beach ridge barriers. This work draws attention to scale of coastal archaeology in Aotearoa, the impact nationally, a focused regional perspective on Te Tai Tokerau, and local case study of Poupouwhenua / Bream Bay south of the Whangarei Harbour. The paper argues archaeology is uniquely placed alongside other disciplines to provide a scientific foundation for considering adaptation options. Data in archaeological deposits provide geomorphological context to coastal landform behaviour (CLB) in terms of accretionary and erosion

trends. Understanding the trends of CLB especially at the centennial scale aids the endeavor to adapt and prepare for the acceleration of erosion and inundation due to SLR.

**Robert McClean** – Principal Advisor, Te Rūnanga o Toa Rangatira

*Travelling Te Ara o Raukawa Moana – Navigating coastal cultural redress, statutory processes and climate change*

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Cultural redress recognises Māori heritage in Aotearoa-New Zealand within Treaty settlement legislation developed as a result of negotiations between the Crown and Māori claimants concerning claims lodged under the Treaty of Waitangi Act 1975. Despite the large number and variety of cultural redress mechanisms, there is inadequate understanding of the effectiveness of cultural redress 'on the ground' especially in the context of resource management processes and the challenges of environmental degradation, especially climate change.

This paper draws on experience from PhD research at the Stout Research Centre (Te Herenga Waka, Victoria University of Wellington) and work for Te Rūnanga o Toa Rangatira in relation to cultural redress implementation, RMA, archaeological authorities and climate change. It will comment on the challenges of coastal cultural redress sites across Raukawa Moana, including Taputeranga (Island Bay), Te Mana o Kupe (Mana Island), Wainui and Waikutakuta (Robin Hood Bay).

**Anne Ford** – Archaeology Programme, University of Otago

**Richard Walter** – Southern Pacific Archaeological Research, University of Otago; School of Social Science, University of Queensland, Australia

**Tim Thomas** – Archaeology Programme, University of Otago

*Fragile Shores: Addressing coastal erosion on archaeological sites in Otago*

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Coastal erosion has been identified as one of the major effects of climate change, due to both an increase in sea levels and severe weather events. Already many archaeological sites are being damaged and are at risk of destruction due to coastal erosion processes. With little strategy in place at a local or national level for managing, documenting and researching places at risk of loss, Otago University, Otago Museum and rūnaka are working on two archaeological projects on sites currently at risk in coastal Otago. These projects each have a

community aim to provide information and resources for future site management while also answering research questions about the history of these places relevant to kaitiaki communities.

**Karen Greig** – Archaeology Programme, University of Otago; Southern Pacific Archaeological Research, University of Otago

**Richard Walter** – Southern Pacific Archaeological Research, University of Otago; School of Social Science, University of Queensland, Australia

*Rescuing the Record? Archaeological research as a response to the threat of climate change*

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The practice of rescue or salvage archaeology has a long history in Aotearoa New Zealand, most often applied in advance of, or during, the destruction of archaeological sites due to construction and land development activities. As sites are increasingly threatened by climate change, particularly in the coastal environment, the potential for archaeological intervention will increase. This paper discusses the use and outcomes of archaeological investigations during the Southland Coastal Heritage Inventory Project (SCHIP) in the context of rescue archaeology.

## **SESSION 2 – Mon 21 Nov 1.30–3.00 pm**

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**Caroline Phillips**

*What Was the Post-Kaharoa Landscape in the Bay of Plenty?*

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In 1315, the Kaharoa eruption covered the forest between Paengaroa and Otamarakau in 30–50 cm of volcanic ash. It is likely that this killed much of the forest. The question posed here is significant for the understanding of the history of Maori occupation in the area: did Maori immediately occupy the cleared area in order to cultivate kumara, or did the forests re-grow only to be later cleared in the process of cultivating kumara? In this paper identified charcoal from cooking fires and landscape burn-offs, will be contrasted to the pollen record to try and determine which is most likely to have occurred.

**Chris Jennings** – Southern Pacific Archaeological Research, University of Otago; School of Social Sciences, University of Queensland

*The Bluff Harbour Lithic Production System: Quarrying and adze manufacture in early Aotearoa*

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Bluff Harbour was occupied during the earliest period of human settlement in Aotearoa. The harbour area exhibits a series of exposures of Bluff argillite, an indurated metasediment used to produce adze (toki), during early settlement. Bluff argillite adzes were widely distributed throughout much of the lower South Island, as far north as Banks Peninsula. Recent investigations suggest that the earliest activities within the harbour area were driven by the acquisition of stone raw material and the production of adzes. Colyers Island and Tiwai Point were two key nodes within this system. Field investigations on Colyers Island and subsequent analyses of lithic material indicate the locality was a single-function extraction site where quarrying and the initial stages of reduction were carried out. Analysis of lithic material from Tiwai Point shows more intensive reduction, demonstrating that quarried material from the harbour was brought there for the secondary stages of production. We use the results of these analyses to reconstruct the lithic production system in Bluff Harbour.

**Anne-Claire Mauger** – PhD candidate, Archaeology Programme/Mātai Whaipara Takata, University of Otago/Te Whare Wānanga o Otāgo

*Reinvestigating Archaeology at Whareakeake Through Pounamu Manufacture*

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In the 19th and early 20th centuries, multiple campaigns of fossicking at particular sites in Otago extracted a large quantity of pounamu taonga, now partially deposited in museums, with little regard to tangata whenua and the archaeological context of the artefacts. Until the 1960s, early archaeological digs and excavations left little to no record in the literature and museum files.

Whareakeake is one of these sites which is famous nationwide as a pounamu manufacturing centre, but whose story remains obscure. Instead, tragedy and fossicking haunt the memory of the place and affect our understanding of its archaeological reality: the successive occupations of the site, including their nature and extent, and the production of highly spiritual taonga.

This presentation will feature initial results of research into the site(s) of Whareakekake, including the study of archives and museum collection artefacts. These investigations, along with experimental archaeology, aim to understand pounamu manufacture through time, and providing insights to daily life at Whareakeake.

This research is carried out within the scope of a PhD project, in consultation and collaboration with Kāti Huirapa ki Puketeraki: Pounamu manufacture and the archaeology of Māori society in East Otago / Ko te whakairo o te Pounamu mō te mātai whaipara tangata o te porihanga Māori ki te Tai Rāwhiti o Otago.

## **Dan Witter – Witter Archaeology**

### *The Collapse of the Moa Hunters?*

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There is general agreement that New Zealand prehistory can be divided into an early and a late period. The explanation for this division however is a subject of debate. The Pines Site 30 km north of Kaikōura may give a new perspective on this issue. This site was excavated during NCTIR operations following the 2016 Kaikōura earthquake. The site seems to have belonged to a wananga type of area that is probably post 1400 AD. Two deposits are of particular interest: context 032 and context 059/100. Context 032 is interpreted as having a working floor for the conversion of broken or worn-out adzes of Nelson argillite into smaller-sized new preforms. Argillite was an imported material which appears to have been scarce and required this complex recycling process. Context 059/100 was a deep refuse pit. It contained obsidian but there was no evidence of cores being directly imported. Weathered industrial moa long-bone splinters were also present. Both the obsidian and moa bone would have been derived from earlier sites. The inference was that the argillite and obsidian had become severely limited. It was as though an earlier trade network had failed. An alternative explanation however is the loss of a chiefdom level redistribution system established by the Eastern Polynesian settlers. Special toolstones may have been circulated throughout New Zealand within a reciprocity framework by elites rather than by direct exchange between groups. If such a chiefdom collapsed, the production of high status Eastern Polynesian early type artefacts also may have been discontinued.

## Tristan Wadsworth

### *Redcliffs Revisited: A 14th century māori village*

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The Redcliffs Flat site and the associated Moa Bone Point Cave are among the earliest and richest Māori village sites in Canterbury, occupied approximately 1350–1390 AD. Part of the site, right outside the cave, was developed in 2018–2020 for the construction of a new primary school. This paper will outline finds from the faunal and artefact analysis from these excavations, which centred on a dense hāngī kitchen area and an expansive beachfront stone working floor. Analysis is ongoing, but so far, highlights include ≈300,000 stone artefacts, elephant seal skull bones, numerous extinct bird species, and plenty of moa drumsticks.

## **SESSION 3 – Mon 21 Nov 3.30–5.00pm**

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### **Katharine Watson** – Christchurch Archaeology Project

#### *101 Demolitions: Decoding Christchurch's 19th century domestic architecture*

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On 22 February 2011, Ōtautahi Christchurch was struck by a devastating earthquake. One of the unexpected outcomes of the process of recovery from this was the volume of archaeological work that was carried out in the city, including the substantial amount of buildings archaeology that was undertaken. Amongst the numerous buildings recorded were 101 houses from across the city, built between 1850 and 1900. For my doctoral thesis, I undertook a detailed analysis of these houses, examining their size, form, and external and internal appearance, as well as the lives of those who built them. This work enabled me to explore how housing styles in the city developed and changed over the course of the 19th century, and to consider the relationships between people and housing – particularly who built what, and why. This paper presents the results of that work.

## **Russell Cook** – New Zealand Heritage Properties

### *Two Buildings One Problem: Building along Dunedin's reclaimed waterfront*

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Excavations at the Standard Insurance Building and Sargood, Son, and Ewen's Warehouse in Dunedin have uncovered the remains of two contemporary yet starkly contrasted structural remains. Although built five years apart the difference between the two remains would lead a casual observer to conclude that they dated to entirely different periods. This contrast was likely shaped by the need for the people of Dunedin to adapt to a landscape that presented them with precious little flat, accessible land. While the Standard Insurance Building was partly built on a bed of hard clay the Sargood Building stood on reclaimed land raised from the sea the previous year. The contrast between these buildings, how their form was guided by the necessity of the time, and how this necessity came to shape the people who built them will be explored.

## **Megan Lawrence** – New Zealand Heritage Properties

### *On the Harbours Edge: A site for the faithful and freethinkers*

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One of the earliest establishments in the township of Dunedin was the Presbyterian Church on the edge of the town's original shoreline. As Dunedin's population expanded rapidly, so too did the Church's congregation and the need for an interim space until a more substantial, permanent building could be constructed. The site of the Interim Church, as well as the subsequent Freethought Lyceum, in central Dunedin was excavated over several months in 2021-2022. Structural remains uncovered illustrate how construction on this site was both an effort in dramatically altering a landscape and an exercise to address the complications of building on the edge of the former foreshore.



**Jodi Halleux** – e3Scientific, Arrow Lane, Arrowtown

**Amy McStay** – New Zealand Heritage Properties Ltd, Invercargill, NZ

### *The Contamination of Archaeology and the Archaeology of Contamination*

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As refuse of the past, archaeological remains can have both archaeological values to be managed and be considered as hazardous contamination requiring management for health and environmental safety and vice versa. Both environmental consultants and archaeologists follow similar pathways in accordance with New Zealand legislation to identify risks, plan for avoidance, protection, mitigation and consenting and both provide best practice advice to clients to manage risks for projects (e.g., costs, timeframes and liability). Despite many decades of legislation and a growing awareness of compliance both archaeologists and environmental consultants face similar challenges. Beyond common large scale industrial sites or private land, identified HAIL sites or recorded archaeological sites, and outside large urban centers there are gaps in environmental and archaeological management, for example road reserve. What happens when contaminated land is a protected archaeological site and vice versa? What have we learned from case studies in Invercargill? How can the two disciplines work together to plan and ensure good outcomes for a client? What do you do if you find blue bones during earthworks on a site? What does site management look like for contaminated archaeology? Where can each discipline go to get advice? Case studies spanning desk top assessments, to on site fieldwork and laboratory management are discussed to explain common ground between the disciplines and how specialists may work together in site management for good client, environmental and archaeological outcomes as well as protecting archaeologists and environmental scientists in their day-to-day practice

**Alison Witter** – Witter Archaeology

### *Recognizing an Individual in the Archaeological Record*

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An 1887 addition was attached to the front of an 1878 cottage. The new owner of the cottage was a general handyman, and this was his new home and business premises. The addition was primarily to provide a shop and storage space, but also included living space. A comparison between building techniques used in the original cottage and in the

addition suggests 'old fashioned' building techniques were used in the later. The carpentry in the addition is meticulous. However, it is not matched by the quality of the timber he was working with and there are two notable lapses in accepted building practice, plus a curious insertion in one of the sarking walls.

It is suggested that the addition was built by an older carpenter, trained in an earlier style, very deliberate and careful in his approach, but that his younger employer was somewhat impatient with progress and so hurried it along.

## **SESSION 4 – Tue 22 Nov 8.30–10.00am**

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### **Arden Cruickshank, Bernie Larsen & Ben Jones**

#### *Tōanga Waka: Initial mapping of portages with Least-Cost Paths (LCP)*

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Pre-contact Māori transport in Aotearoa was dominated by watercraft. Nearly 85% of archaeological sites are recorded within 1 kilometre of navigable water. Key to transport were tōanga waka; portages where watercraft were able to be moved overland between bodies of water. Acting as interchanges, these portages are known across the country and are well documented in historical accounts (Walter 1988).

The Otamatea portage between Mangawhai and Kaiwaka in Northland is the focus of this study as it provides an example of a portage with both pre-and-post-contact use. Least-cost paths (LCP) allow a way to question transportation and exchange networks, initially questioning how past landform, topography, and environmental conditions impacted functionally. This allows for the next step of understanding the role of human agency in their placement and usage.

In this talk we discuss our initial experimentation applying LCP modelling to the Otamatea Portage. Initial results are presented using slope as the unit of cost. We discuss adding complexity to future models through hydrological modelling, the visibility of the portage, and routes based on historical accounts. We argue LCP provides an additional predictive component of past site placement or areas to survey based on LCP outputs. Lastly, we hope to model other known portages and engage in a larger research strategy with local hapu to provide a more holistic picture of transport in Aotearoa.

**Emma St Pierre** – RADARch, Dunedin, New Zealand

**Lawrence Conyers** – Denver University, Colorado, USA

**Mary-Jean Sutton** – Virtus Heritage, Pottsville, Australia

**Peter Mitchell** – Ground Truth, Sydney, Australia

**Chet Walker** – Archaeo-Geophysical Associates, Colorado, USA

**Aunty Dianne Nichols** – Tjungundji Aboriginal Corporation, Mapoon, Aus.

*The Use of Ground-Penetrating Radar to Assist Indigenous Communities with Protecting Country – a case study from Mapoon, Queensland, Australia*

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In Australia, Aboriginal and Torres Strait Islander cemeteries were not gazetted until 1967, and the legacy of colonialism has, in many cases, led to the loss or partial loss of knowledge of traditional burial grounds, post-contact cemeteries, and massacre sites. The protection of ancestral resting places is an ongoing concern for generations of Aboriginal and Torres Strait Islander families. Here I discuss the results of community-led research of burial mounds and unmarked graves in Mapoon, Queensland. Ground-penetrating radar (GPR) and magnetic surveys were conducted on 13 earth mounds, as the community deemed non-invasive methods to be the most culturally appropriate tools for the identification and mapping of these places. Detailed analysis of GPR profiles and amplitude maps of the mounds were compared to models of known burials at the Mapoon Mission Cemetery. European-style and traditional burials were identified in 10 of the 13 mounds, suggesting that they were used for human interment prior to the European invasion, and that there may have been continuity of burial practice in these features after the invasion. GPR and magnetics also indicate that some mounds had constructed floors or platforms at the base of the mounds, and evidence for burning. Based on these results, and in conjunction with ethnohistorical and oral history research, we conclude that the mounds are constructed features that likely had a long history of use for multiple purposes, including mortuary. The identification of burials within these mounds allowed for the development of a management plan in line with community aspirations.

**Oliver Walne** – University of Otago; New Zealand Heritage Properties  
**Ian Barber** – University of Otago

*Multi-Element Analysis and its Application to Pre-European Cultivation Sites in New Zealand: Preliminary findings from T11/2789, Cooks Beach, Coromandel*

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Investigations overseas have identified that human activity modify the chemical signature of the soil. Using standard spectrometry methods, such as XRF and ICP-MS, this signature can be characterised and used in the interpretation of site function, activities and extent. Successful studies have shown that the enrichment of certain elements such as phosphorus, calcium, potassium and magnesium have been linked to anthropogenic sources such as hearths, middens and agriculture.

Using the site T11/2789 in Cooks Beach, Coromandel Peninsula as a case study, the investigation examines the feasibility and potential of such methods to the pre-European New Zealand archaeological context. Samples from the 13ha of modified soils were analysed using hand-held pXRF. The preliminary results show some potential trends in the concentrations of Mn, Ca, Fe and K that may shed light on how and why agricultural soils were modified. This will also highlight some potential differences in the patterns of elements enriched in Aotearoa compared to European studies which appear to relate to the difference in settlement organisation and cultural customs.

**Rebecca Benham** – School of Social Sciences, University of Otago

*Critiquing Starch and Raphides as Evidence of Cultigens from Wetland Archaeological Māori Ditch Systems*

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The northwestern wetland margins of Motutangi on Aupouri Peninsula incorporate several former wetland ditch systems. Māori ancestors used ditch systems during the early phase of occupation in Aotearoa. Radiocarbon dates suggest an occupational period from (if not before) c.1450–c.1700 CE.

Previous research has identified starch comparable to kūmara (*Ipomoea batatas*), taro (*Colocasia esculenta*) and uwhi/yam (*Dioscorea alata*). These studies argue that crops were productive in the marginally subtropical to warm-temperate climate of Aupouri Peninsula. Succeeding publications have disputed the identification of taro remains at Motutangi. CaOx raphides, another type of taro

evidence, have also been critiqued because previous studies did not apply detailed morphometric analysis by utilizing scanning electron microscopy (SEM).

My research examines starch and raphides extracted from Motutangi sediments. By employing a combination of light microscopy and SEM, this study critiques starch and raphides as diagnostic microbotanical elements. From samples analysed, I have identified granules consistent with yam and kūmara starch, and amyloplasts and raphides comparable to Araceae, of which taro was the only Polynesian crop in precontact Aotearoa. SEM examination shows raphides with diagnostic Araceae features including a long thin morphology, asymmetric terminations, and a median groove along two of the raphide's opposite faces. Collectively and within the context of the variable microbotanical remains at Motutangi, this evidence supports early Māori ancestors modified natural wetland environments during the early settlement phase to establish the crop staples of tropical Polynesia, semiaquatic taro and dry soil uwhi, alongside kūmara, in the sub-tropical climate and fields of far-northern Aotearoa.

**Fiona Petchey** – Radiocarbon Dating Laboratory, Te Aka Mātuaatua –  
School of Science, University of Waikato

**Simon Bickler** – Bickler Consultants Ltd.

**Lucy Hughes** – Dr. Caroline Phillips Archaeology

**Magdalena Bunbury** – ARC Centre of Excellence for Australian  
Biodiversity and Heritage, James Cook University, Cairns, Australia

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*The Aotearoa/New Zealand Radiocarbon Database Upgrade*

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For the last 20 years, New Zealand researchers have had limited access to the large number of radiocarbon ages obtained on archaeological materials. The most used resource, the New Zealand Radiocarbon Database (NZRD; <https://www.waikato.ac.nz/waikato/nzcd/>), has not been updated since 2002, leaving researchers to create their own, often selective databases for analysis. As a result, many radiocarbon dates have fallen into obscurity. Here we introduce a new online geospatial database for NZ archaeological radiocarbon ages that incorporates and adds to these older datasets. This project has identified over 5100 records associated with archaeological sites and artefacts, of which more than 4150, having met the minimum auditing requirements, are included in the new database release. This effectively doubles the content of the original NZRD.

### Victoria Ross

#### *Oh Well! The seemingly endless wells of the Invercargill Central Redevelopment*

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To date, at the Invercargill Central Redevelopment site, New Zealand Heritage Properties have excavated 26 wells. The wells provided the nineteenth century occupants of the block with a convenient source of water for household and commercial use, as well as for fighting the regular fires that plagued the early days of the settlement. Following their life span as a functioning well, they became conveniently deep pits to dump refuse in, both domestic and commercial. The wells have been one of the most useful archaeological features for gaining a snapshot of occupation in each town section, with each well displaying a different collection of materials, including sand, shell, building rubble, photography materials, children's toys, and socks. An excavation this size, covering nearly an entire city block, allows us to delve into what these features can tell us about the people dwelling in Invercargill's early centre city.

### India Gillespie

#### *New Boot Hoofn': Investigating the Archaeology of Equines and Smithing*

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Horseshoes are a commonly encountered artefact on nineteenth century archaeological sites in New Zealand, but what can these everyday artefacts tell us? In Invercargill, Town Sections 7 (59 Esk Street) and 16 (40 Tay Street), also known as Cambridge Place, were occupied by John Gethin Hughes from the 1860s onwards. Hughes established a coach service between Invercargill and Bluff, and used the two town sections as his Invercargill base with a coach house, stables block, and blacksmithing workshop present on site. This presentation will explore, compare, and contrast the historical narrative of Town Sections 7 and 16 with information gathered from recent archaeological excavations.

## Madison Hickford

### *Capturing the Past: An archaeological analysis of photography in historic New Zealand*

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Through much historical research, we know a lot about the history of photography, as well as its use in colonial New Zealand. However, there has been little investigation into how photography manifests in the archaeological record and what we can learn from it. This project is centred around an assemblage with photographic material from a well in Invercargill. The assemblage contained chemical or pharmaceutical bottles, camera pieces and a rare archaeological find of glass plate negatives. The glass plate negatives will be studied specifically to provide further historical context, in an effort to understand how they can help to date the Invercargill assemblage.

The aim of this project is to explore how this evidence of photography in the archaeological record enables a deeper investigation into the social history of photography in late 19th and early 20th century Invercargill, and New Zealand more broadly. If treated as objects, we could investigate the glass plate negatives as material remnants of the photographer and the photographed. The project will also facilitate a discussion on how archaeologists may conserve and interpret evidence such as glass plate negatives.

## Naomi Woods

### *Chamberpots, Coconuts and Carpet Tufters: Stories from Invercargill's past as told by material culture*

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Excavations for the Invercargill Central redevelopment have resulted in a vast artefact assemblage, most of which relates to several generations of commercial occupation. Despite the scale of many of the recorded deposits, individual voices and stories from Invercargill's past come through loud and clear. The material is still being catalogued and analysed, but this paper presents some of the highlights of the assemblage so far in the form of a series of snapshots of nineteenth century life in the centre of Invercargill.

## **Alix Muir**

*'Put the Kettle On!' A look at tea rooms across the Invercargill central city block*

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Various buildings were recorded as part of the Invercargill Central redevelopment with owners and occupiers of these buildings ranging from boot makers, soda manufacturers and watchmakers to name a few. A less common occupant across the block were Tea Rooms, which serviced to refresh the population of Invercargill. This presentation looks at the phenomena of Tea Rooms, their place within the Invercargill inner city block and the buildings which they inhabited.

## **SESSION 6 – Tue 22 Nov 1.00–2.30pm**

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**Lucy Kavale Henderson** – Department of Anatomy, University of Otago

**Annie Marie Sohler-Snoddy** – Department of Anatomy, University of Otago

**Hallie Buckley** – Department of Anatomy, University of Otago

*An Exploration of Early Lived Experiences of Stress in Colonial Settlers of Otago Through Dental Histology*

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Recently, archaeological excavations of three cemeteries in Milton (2016) and Lawrence (2018) were undertaken as part of a joint research project between the University of Otago departments of anatomy and archaeology. This aimed to elucidate the lived experience of nineteenth century non-Māori settlers of Otago, in particular marginalised individuals such as women, children and non-Europeans. Children are a valuable and widely used indicator of population health as they are more sensitive to stress events due to the demands of growth, however their life experiences are frequently excluded from the historic record. Preliminary bioarchaeological evidence has indicated a more nuanced picture of health than the established historical narrative. This paper presents the results of histological analyses of dental enamel disruption that provide evidence for childhood ill-health experiences in early non-Māori residents of Aotearoa New Zealand. Dental samples were sectioned and prepared according to established methods, and light microscopy was used to create composite digital images.



These images were analysed using Fiji™ software to identify potential ‘Wilson bands’, internal indicators of disruption to enamel secretion during formation of the teeth in early childhood. Teeth develop in a predictable and well-established sequential pattern and this allows the establishment of a chronology of non-specific developmental stress events during the period of enamel formation. This embodiment of physiological stress may reflect push factors that stimulated emigration to ‘new’ world colonies such as New Zealand. The results challenge the homogenous narrative that frequently presented New Zealand as a ‘land of plenty’, free from the hardships experienced in origin countries of early immigrants.

**Charlotte L. King** – Department of Anatomy, University of Otago

**Hallie R. Buckley** – Department of Anatomy, University of Otago

**Anne Marie Sohler-Snoddy** – Department of Anatomy, University of Otago

**Rebecca Kinaston** – BioArch South

**Lucy Henderson** – Department of Anatomy, University of Otago

**Lisa Matisoo-Smith** – Department of Anatomy, University of Otago

**Peter Petchey** – Southern Archaeology Ltd.

*Story of a Chinese Sojourner: Using bioarchaeological evidence to reconstruct life histories from our colonial past*

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Stories of life in colonial New Zealand are heavily weighted towards the experiences of Pākehā, predominantly male settlers—those who wrote historical documents associated with the period, and those who are easiest to trace in the archaeological record. Recent excavations of cemeteries associated with the Otago goldrushes, however, have given us a unique opportunity to develop insight into the life experiences of those whose graves were unmarked and whose stories have been lost. These excavations have yielded traditionally under-represented groups such as women, children and members of the Chinese communities on the goldfields. Part of the Southern Cemeteries Project has been to examine the lived experiences of colonial individuals living in nineteenth century Otago using integrated case studies that draw osteological, histological and chemical evidence from skeletal remains, alongside archaeological evidence from the burials. In this talk we present one of these case studies, a Chinese individual living in Lawrence during the late nineteenth century

**Nicolas J. Rawlence** – Otago Palaeogenetics Laboratory, Department of Zoology, University of Otago

*Ancient DNA reveals dynamic evolutionary responses of marine taxa to the Polynesian colonisation of Aotearoa New Zealand*

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Prehistoric human impacts on megafaunal populations have dramatically reshaped ecosystems worldwide. The advent of ancient DNA analysis, in combination with radiocarbon-dating and archaeology, has increased our understanding of the myriad of impacts that the settlement of Aotearoa New Zealand by east Polynesian colonists had on this ecologically naïve ecosystem namely through over-hunting, habitat destruction, and predation from kiore and kurī. However, the effects of human exploitation on marine species such as birds, pinnipeds (seals and sea lions), and cetaceans has been relatively understudied until recently. In this talk I'll review the latest research that has highlighted the dynamic evolutionary responses across multiple taxa including extinctions, range contractions, population bottlenecks, and biological turnover events. While extinction events are due to human impact, successful recolonisation may be tied to cooling climate during the Little Ice Age. There is also evidence that human impact differed across the motu through time. Newly developed ancient DNA techniques now set the stage for further discoveries through non-destructive ancient DNA analysis and the ability to sequence taonga genomes from archaeological mollusc shell. Overall, the research reviewed here highlights the role of anthropogenic processes in rapidly reshaping island ecosystems.

**Matthew Campbell** – CFG Heritage

**Melinda Allen** – Anthropology, School of Social Sciences, University of Auckland

**Reno Nims** – Anthropology, School of Social Sciences, University of Auckland

**Jingjing Zhang** – Department of Environmental Science, School of Science, Auckland University of Technology

*20th Century Data, 21st Century Questions; current fishbone analysis in Aotearoa*

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New Zealand has a long history of scientific engagement with archaeofauna, beginning with the mid-19th century recognition that remains of the extinct moa were frequently associated with

Māori occupation sites. However, it was not until the 1960s that archaeologists began to regularly identify fishbone from New Zealand sites, and the 1970s and 80s before a consistent methodology was developed to identify and quantify fishbone. This method relied on identifying five mouth bones considered distinctive to a low taxonomic level (dentary, articular, quadrate, maxilla and premaxilla, along with some 'special' bones), and publishing counts as MNIS. Along with improved methods of bone recovery, researchers have recently begun to identify a much wider range of bones, including vertebrae, and results are more commonly published as NISPs. This has resulted in a wider range of taxa being identified, including small taxa with small mouth bones that preserve poorly; the opportunity to examine differential treatment of body parts; and new understanding of pre-European Māori fishing practices and interactions with their environment. This begs the question, how can the fishbone analyses from the 20th century be used to answer 21st century questions? Here we make some attempt to answer this question, using a variety of quantitative methods to contrast and compare the results from the two analytical methods.

**Brooke Tucker** – PhD Candidate, University of Otago

*Fishing for Data: A deep dive into the analysis of Barracouta harvest and preservation*

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Fishbone comprises a major component of midden assemblages in New Zealand and has been the subject of specialist analysis in this country for more than 50 years. Indeed, New Zealand archaeologists working on fishbone assemblages pioneered some of the fundamental methods in modern archaeozoology. Over the decades this work has demonstrated the importance of zooarchaeological data for understanding subsistence techniques and aspects of social practice and cultural change. Ongoing research has documented considerable regional and temporal variation in Māori fishing systems. It has also highlighted the impact that different methodological approaches can have for data production.

In this analysis of a dense and diverse midden deposit from D48/5 Sealers Bay Camp, Whenua Hou/Codfish Island, I show the importance of employing an adaptive set of methodologies. I demonstrate how the adoption of different strategies of element quantification

produces different research options and outcomes across the multiple occupation layers at Sealers Bay Camp. Using a previously overlooked un-paired element for Barracouta (*Thyrskites atun*), a regionally significant marine resource in southern New Zealand, offers a fast and effective insight into basic MNI quantification for this species. The potential to apply increased accuracy and fine-grained analysis to fishing related behaviour is discussed in the context of both site specific and wider regional research.

## SESSION 7 – Thu 24 Nov 8.30–10.00am

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**Brigid Gallagher** with the support of hapu of the Tauranga harbour  
Pirirakau, Ngai Tamawhariua, Ngai Te Wai and Te Whanau a Tauwhao

*Nature vs Archaeology – Reflecting on climate change along the northern Tauranga Harbour*

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The effects of climate change, including sea level rise, king tides and increased cyclone/storm patterns resulting in damage, slips and erosion along the peninsulas of the northern Tauranga harbour are ongoing issue for archaeology, government agencies and residents. This is a project led presentation looking at the effects to archaeology and whenua through the lens of mahe by MishMish Heritage; and considers how these examples of at-risk landscapes and damage can inform future strategies and priorities regarding site recording, care, management and rescue excavations.

**Mike Johnston**

*Artefacts and history of the barque Robina Dunlop, wrecked on the Rangitikei coast in 1877*

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The 512-ton wooden barque Robina Dunlop built in England in 1874 ended her short but eventful life in 1877 wrecked at the Turakina River mouth in the Rangitikei District. A five-year study of the wreck site by MAANZ (Maritime Archaeological Association of New Zealand) is reported.

The wreck site had within decades become land-bound and is now located some 100m inland. Documents such as contemporary news articles and a Maritime Inquiry provide a vivid picture of the captain and crew during the vessel's life and demise.

The identity of the material at the site has been contentious. Documentary evidence and artefact analysis confirm this site is that of the Robina Dunlop. The presence of Muntz metal sheathing pieces and copper and galvanised iron fastenings are consistent with Lloyd's Register entries. Wood artefacts identified as exotic conifer species and exotic angiosperm indicate the vessel was built in the Northern Hemisphere. The presence of New Zealand native wood artefacts is explained as either repairs to the ship or as unrelated to the vessel.

Petrographic and palynological analysis of coal pieces from the wreck site imply the Robina Dunlop took-on at least some coal at Wellington, the last port of call.

The shipwreck had an impact on the local community. Wreckage was used for repair of other vessels, the ship's figurehead became a local feature at a nearby farm for decades and it is likely that the ship's timbers were used at nearby Tini Waitara marae where the shipwrecked crew had been cared for.

**Nicholas W.S. Hogg** – Institute of History and Philology, Academia Sinica

**Yi-lin E. Chen** – Archaeology Programme, University of Otago

**Glenn R. Summerhayes** – Archaeology Programme, University of Otago

**Gretel Boswijk** – School of Environment, University of Auckland

**Sturt W. Manning** – Cornell Tree-Ring Laboratory, Department of Classics, Cornell University

**Alan G. Hogg** – School of Science, University of Waikato

**Chris Gosden** – School of Archaeology, University of Oxford

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*Building on the Past: Refining our current understanding of Lapita stilt Structures*

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This paper reviews our current knowledge of Lapita stilt structures in the Bismarck Archipelago, Papua New Guinea, and contributes new data from the analysis of a wooden post belonging to a Lapita era stilt structure identified in the site of Adwe of the Arawe Islands. Via taxonomic analysis, the wooden post is identified as *Intsia bijuga* (Moluccan ironwood or Pacific teak), a saltwater-resistant species that would have proven to be a highly durable construction material.

The selective usage of sturdy timber including *Intsia bijuga*, cf. *Cordia subcordata*, *Diospyros* sp., cf. *Terminalia catappa* and *Calophyllum inophyllum* as building materials at various Lapita sites, suggests that the Lapita populations had a clear understanding of locally available timber resources. This paper also details a world-first attempt at radiocarbon wigglematch dating a Lapita-age wooden artefact.

**Mary O'Keeffe** – Heritage Solutions

*Gowns, Streams, and Essence of Filth – the archaeology of Newtown, Wellington*

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Newtown has always been, and remains today, an eclectic, humble, working class suburb of Wellington. Various consultancy archaeological projects undertaken provide rich physical evidence of the lifestyles and social conditions of the occupants of Newtown in the 19th century.

**Garry Law**

*Adventures in the Social Media Game*

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Through the Covid years the Facebook group: Aotearoa New Zealand Archaeology rapidly transitioned from a small well mannered group to one with almost 20,000 members, too many of whom seemed only to want to provoke. The paper discusses how the management of the group had to change to exclude parties wanting to use it to express racism, to ensure its intended concentration on conventional views remained and to ensure that comments remained within bounds. This utilised some tools made available by the media provider but primarily needed much closer moderation. There is a big demand for archaeological information on the net with which social media can assist. Social media needs to be lively , but the limits to that are not easy to find.

**Claire Thorrold** – Archaeology Programme, University of Otago

**Richard Walter** – Southern Pacific Archaeological Research, University of Otago; School of Social Science, University of Queensland, Australia

**Tim Thomas** – Archaeology Programme, University of Otago

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*Private Collections in the Public Eye*

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Private artefact collections are becoming an increasingly controversial topic across the globe, with a recent shift favouring repatriation. Since the arrival of Europeans in New Zealand, Māori taoka have been intensively fossicked into private collections. As more aspects of te ao Māori are incorporated into New Zealand society the place of taoka in private collections is starting to be questioned. This research focuses on the Waitaha Taoka–Stewart Willett’s Family Collection, originally a private collection which was donated to the Waitaki Museum in the 1990s. Right from initial discovery to recent museum exhibition, this collection has been in the public eye. We conducted interviews with key stakeholders involved in the donation and exhibition of the collection to understand their personal relationships and opinions on the taoka. This presentation will outline a novel approach to qualitative interviews and provide insights into the approaches applied to this case study. A deeper understanding of the appropriation of taoka into private collections may facilitate a more informed discussion on the ownership of said taoka.

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**SESSION 8 – Thu 24 Nov 10.30 am–12.00 pm**

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**Isaac (Zac) Mclvor** – Archaeology Programme, University of Otago

*Interfacing Time: an introduction to the Chronological Network Analysis method of relating whakapapa Māori to calendar years*

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In Aotearoa New Zealand, archaeologists and ethnologists have estimated generation lengths in whakapapa (Māori genealogies) to relate events in kōrero tuku iho (oral traditions) to calendar years for comparison with archaeological and other historical information. However, unsystematic methodologies, misunderstandings of the nature of kōrero, a disregard for generation length variation and technological limitations have created variable results. I present a part of my unsubmitted doctoral thesis in which I aim to explain when and

why pā were constructed in Waikato as part of a multi-disciplinary Marsden-funded research project (Rua Mātītī Rua Mātātā). I briefly review previous attempts at relating whakapapa to calendar years before outlining the computational Chronological Network Analysis (CNA) method. As a case study, I analyse changing frequencies of pakanga kōrero (conflict narratives) in Waikato through time. I consider the CNA method capable of greater transparency, adjustment with new information, hypothesis testing and internally consistent models. Maximum and minimum limits accompany each birthdate or event estimate. The results are that birthdate estimate precision varies through time in relation to the underlying structure of whakapapa. Meanwhile, there is a suggestion that there were several non-linear periods of heightened conflict, which may correlate with archaeological carbon-14 dates from events of pā (fortified settlements) construction or modification.

### **Marie Dunn** – Archaeology Programme, University of Otago

*Ko au te awa ko te awa ko au – The Connection Between Kāi Tahu/Kāti Māmoe Identity and Cultural Landscapes in Murihiku*

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For takata whenua, landscapes tell the stories of our whakapapa and experiences as whānau, hapū and iwi. By drawing from personal history accounts and interviews, this research has explored the relationship between Kāi Tahu and Kāti Māmoe identity and the cultural landscapes of Murihiku. This research adds to the growing discussion on contemporary Māori relations to landscapes through looking at connections between identity and landscape, both contemporary and historic.

The use of unpublished family writings has formed the basis of this research, a series of manuscripts written by Marna Dunn in c. 2000, detailing her whānau occupation at Makāti. These manuscripts are the combination of personal experiences, accounts from kaumātua, known whakapapa history and 'traditional' research. Dunn's manuscripts are framed by two key themes: The South Island Landless Natives Act of 1906 (SILNA), and Māori identity in Murihiku. The analysis of these documents has drawn out the connection that Dunn and her whānau have had to Makāti, and how this has informed our identity as Kāi Tahu and Kāti Māmoe.

This study has allowed for Dunn's manuscripts to make their contribution to the telling of Kāi Tahu and Kāti Māmoe histories from



our own perspectives, and present Makāti as a cultural landscape on the Catlins coast. An equally valuable contribution, Dunn's manuscripts centres on the voices of Wāhine Māori from the last 150 years, a historically overlooked population. The study of Dunn's manuscripts highlight the importance of indigenous led research and storytelling, and contribute to this growing field.

**Rowan McBride** – PhD Candidate, Te Aka Mātuatua School of Science, University of Waikato Te Whare Wānanga o Waikato

*The Chronology of Pā in the Central Waikato Region: an update of wiggle-match dating results and their interpretation*

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The centrality of pā to the economic, social and political activities of pre-European Māori is well documented through the archaeological record, oral traditions and early European observations. However, a lack of chronological precision from traditional radiocarbon dating applications has limited interpretations of pā and their links with traditional knowledge sets. The Rua Mātītī Rua Mātātā Pā Project was undertaken to investigate the critical relationship between the chronology of pā, extensive horticultural activities and traditional histories of whakapapa, mobility and occupation in the Waikato via a synthesis of archaeological research, radiocarbon dating and mātauranga Māori (traditional Māori knowledge) approaches. As part of this project, the research presented here applies high-precision AMS wiggle-match dating to preserved palisade posts from six pā, aiming to establish accurate and precise chronologies for the construction and development of these pā on both a regional and local scale within the central Waikato region.

**Sabre Baker-Anderson** – Archaeology Programme, University of Otago

*'Kia Whakatōmuri te Haere Whakamua': reflections on becoming an archaeologist in Aotearoa*

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For Māori, whakapapa (often translated to genealogy) is fundamental to our values and beliefs, relationships with one another and the wider universe. It connects us to people and the land, the past, present and future, as well as the spiritual and physical realms. However, as archaeologists there are times when we may have to write about or

work in areas of Aotearoa where we do not have whakapapa links to. This, combined with the tapu nature of our work, can be confronting for young Māori coming into archaeology and working in Aotearoa. This presentation draws on personal experiences to discuss some challenges faced by a young Māori woman while doing a Master's thesis and pursuing archaeology as a career. However, it must be acknowledged that this talk only touches on the experiences of one individual and is not a reflection of the journey all Māori face in archaeology. This talk hopes to foster a more open conversation of the struggles some Māori may face as they are coming through University and while working in the field, which could help other young Māori as they come into archaeology in the future.

**Josie Hagan** – InSitu Heritage Ltd.

#### *Whareongaonga 5 Collaboration and Cultural Mapping Project*

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Across the globe, archaeologists are becoming increasingly aware of the ethical responsibility of collaborating with groups outside the profession. In archaeology, a range of methodologies has evolved from the movement towards inclusivity. One of the methods gaining recognition in the literature is Cultural Mapping, which is discussed in this presentation. Many definitions have been put forward for Cultural Mapping, with most stating it involves communities identifying and recording their local cultural assets and histories. This presentation outlines a yearlong project working in collaboration with the shareholders of Whareongaonga 5 (35km south of Gisborne) on a cultural mapping project, with a focus on the methods and processes used. Starting by outlining the development of the project, then moving onto how a chain-referral method led to the contribution of over 100 locations of interest. Next, we will discuss some key findings, which include: 1) understanding what cultural mapping means to different people, 2) the importance of maintaining relationships and regular contact with the community, and 3) how story-mapping was used to present the results back to wider community. Finally, we will consider the potential next steps for the Whareongaonga 5 cultural mapping project.

## SESSION 9 – Thu 24 Nov 1.00–2.30 pm

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**Jessie Garland** · La Trobe University; Christchurch Archaeology Project

*Importers, Retailers, 'Culture Brokers': shops and shopkeepers as curators of culture and consumerism in nineteenth century Christchurch*

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Nineteenth century shops, particularly in colonial settlements like Christchurch, were places of interaction and intersection, spaces where the vast trading networks of the British empire met the local market and the transaction between consumer and retailer transformed objects from commercial commodities into consumer goods. As gateways between the consumer and the commercial networks of empire and colony, shops – and the shopkeepers who ran them – played a significant role in curating the material culture available to the colonial settler, influencing not just what was stocked, but also how it was viewed by those who would buy it. The 'performance' of retail in this colonial consumer market – the presentation, marketing and experience of shop, shopkeeper and stock – can be interrogated through archaeological evidence to shed light on both commercial concerns of the time and the broader nature of the society and culture within which this market, and these shops, operated.

This paper presents the comparison and analysis of twelve assemblages from seven nineteenth century Christchurch retailers, ranging from general stores to fancy goods shops, with a view towards understanding what these artefacts can tell us about the role of shops and shopkeepers in the formation of Christchurch's colonial material culture. Specific emphasis is placed on questions of imported culture, retailer agency and the just what the significance of novelty, quality, and value says about the consumer market of Christchurch during this period.

**Alana Kelly** – Underground Overground Archaeology

*Shops, Shoes, and Smoking Pipes: Preliminary results on the archaeology of the new Court Theatre site in Christchurch*

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In January 2022 earthworks began at the new Court Theatre site on Colombo Street in central Christchurch. Archaeological investigations resulted in features and material of varying shapes, function, and age.

With a wide range of businesses operating on the site from the 1860s onwards many of the features identified related to specific commercial ventures. Additionally, with residential occupation also occurring on the site various types of domestic refuse and infrastructure were encountered. The resulting archaeology provides an insight into both early commercial and residential Christchurch.

Following excavation, preliminary artefact analysis has highlighted the global colonial narrative within the surviving material culture. This paper presents the preliminary findings of investigations into the new Court Theatre site and highlights Christchurch's participation and place within the global colonial market.

### **Bree Wooller** – New Zealand Heritage Properties

#### *The Materiality of a City Block: Preliminary findings from the new Dunedin Hospital Development*

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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. The excavations, carried out by New Zealand Heritage Properties, have the potential to provide unprecedented insight into nineteenth-century life in Dunedin. Excavation on the new hospital site is ongoing, with over 105 bags of artefacts generated so far. A significant portion of the artefacts are from a deposit related to the earliest domestic occupation on the Wilson block, dating between 1859 and 1874. This paper will present preliminary findings of the artefact analysis to date, providing insights into landscape transformation, waste management, and working-class settlement in nineteenth-century Dunedin.

### **Jasmine Weston** – New Zealand Heritage Properties

#### *The Chesnuts, Not Chestnuts*

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In 2019 an excavation was monitored by archaeologists from New Zealand Heritage Properties on High Street, Dunedin (144/821). This was for the construction of a new building located on the rear of a small domestic section. The current house built in 1936 remains on the front of the property. There had been two houses constructed on the site during the 19th century – the first, 'Chesnuts', in 1863 and the

second in 1876. Excavations went to a depth of five metres, providing a clear image of the stratigraphy. It was determined that the original hill slope had been cut and the material reused to create a flat backyard. Archaeological features uncovered included an intact horse stable floor and associated trough that were both positioned on the modified flat, along with latrines and sizable domestic assemblage. These features have provided insight into the ways in which the occupants had interacted with the landscape by modifying it to suit their needs.

**Nick Sutton** – Southern Pacific Archaeological Research, University of Otago

**Tristan Russell** – Southern Pacific Archaeological Research, University of Otago

**Karen Greig** – Archaeology Programme, University of Otago; Southern Pacific Archaeological Research, University of Otago

*Changing Landscapes: Archaeology and the emergence of the University of Otago campus*

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For the past decade Southern Pacific Archaeological Research (SPAR) has been working with colleagues from the University of Otago's Campus Development Division to manage the effects of several large capital works projects across its Dunedin campus on archaeological sites and heritage. This campus-wide capital works programme has provided an opportunity for coordinated archaeological investigations and comparison across a wide area of North Dunedin. These ongoing investigations have encountered extensive nineteenth century archaeological material, the earliest of which pertains to the earliest European settlement and subsequent gold rush period expansion of North Dunedin. This paper will provide an overview of the archaeological work that has been carried out to date and the resulting insights into changes in settlement pattern and land use during the growth of the North Dunedin cityscape in the nineteenth century.

# POSTERS

**Tue 22 Nov 2.30–3.00pm (The Link)**

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**Kathleen Dons, Lucy Hughes, Jennifer Graydon & Jennifer Lane**

*Rarity of Stone-lined Hangi*

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In the Bay of Plenty, the team led by Caroline Phillips have excavated many hundred hangi features. These are nearly all shallow circular depressions filled with charcoal and broken fire-cracked rocks. However, we have only found five stone-lined hangi. Stone-lined hangi have been found in early sites, but at least three of those in the Bay of Plenty date sometime between 1450–1630 AD. These features pose interesting questions regarding why they are not as widespread as the usual hangi: does their use depend on what is being cooked; were they reused; do the morphological changes relate to time and space?

**Adelie Filippi** – Masters Candidate, Archaeology Programme, University of Otago

*Microscopic Insights into Māori Plant Use and Medicine – a study at Cook's Cove, Tolaga Bay*

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Located at Tolaga Bay, Te Ika a Māui, Cook's Cove is one of the rare sites in Aotearoa whose use spans the breadth of Māori occupation of New Zealand. Microbotanical analysis has seen previous use at the site, with this study seeking to expand upon existing works, applying phytolith analysis in the hopes of gleaning further information about plant-human interactions. The project has two primary goals — to analyse and identify evidence of early Polynesian-plant relationships from Cook's Cove sediments; and to collect reference material of traditional Māori medicinal plants, testing whether their remains can be identified using phytolith analysis.

**Sam Finch** – Archaeology Programme, University of Otago

*Held Hostage in the Sand: A Faunal Analysis of Cape Kidnappers*

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Part of a wider dissertation project at the University of Otago, this poster presents the faunal analysis of material collected from Te Kauwae-a-Māui (Cape Kidnappers) during a University of Otago Field School excavation in early 2020. By utilising the standard archaeozoological process of sorting, identifying, and quantifying, a clear picture of the contents of a section of this assemblage are uncovered and the initial results are presented.

**Jennifer Graydon, Kathleen Dons, Lucy Hughes & Jennifer Lane**

*Unusual Subterranean Storage Structures of the Bay of Plenty*

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For several years, Caroline Phillips' team has conducted archaeological investigations across the Bay of Plenty between Paengaroa and Otamarakau, uncovering sites of repeated Māori occupation and extensive gardening. In several properties, they have uncovered subterranean storage structures with unusual associated features, including internal retaining walls, two to seven lines of interior postholes for roof support, ledges along the walls to support rafters, soak-holes, and drainage systems. Analysing these uncommon formations can aid our understanding of the function of the storage pits, and possibly gain insights into the intentions of past Māori designers.

**Rose Young, Helen Heath** · with support from Brigid Gallagher, Raysan Al-Kubaisi (MishMish Heritage Team)

*Discovering Hawaiiiki*

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Hawaiiiki pā in Te Puna West, Bay of Plenty was first recorded in 1968 as a headland pā and much of it had already disappeared due to coastal erosion. In 2021 in preparation for seawall rehabilitation a north facing foreshore slope was stripped and a portion of the pā was revealed. The works had occurred without an archaeological authority and was halted after members of the local hapu (Pirirakau) noticed the earthworks.

Due to the unsafe nature of the exposed slope, immediate recording by MishMish Heritage resulted in this significant pā being re-established on the peninsula and documented through the use of drawings, drone and GPR survey before reburial.

### **Lucy Hughes, Jennifer Lane, Jennifer Graydon, Kathleen Dons**

#### *An Analysis of Māori Storage Structures through Experimental Archaeology*

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Caroline Phillips' team has been working on several projects across the Bay of Plenty region, between Paengaroa and Otamarakau. This region is primarily comprised of Māori gardening and associated living and storage features dated from c.1400–1600. Our archaeological investigations have uncovered extensive and sometimes unique subterranean storage. As part of this poster, we seek to explore the construction of subterranean storage structures using experimental archaeology through the medium of scaled three-dimensional model. In constructing a scaled three-dimensional model of a subterranean storage structure, we provide both an example of how a storage pit may have looked during Māori occupation.

### **Leteisha J. Lamb**

#### *Natural $^{14}\text{C}$ and $^{18}\text{O}$ Variation in Seashells from Kokohuia Midden*

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$\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  varies between shellfish taxa due to the influence of estuarine and marine conditions. Seven different seashell taxa from the archaeological site at Kokohuia, Northland, were investigated using the Isotope Analyser at the Waikato Radiocarbon Dating Laboratory. Some shells were found to have an isotopic signature that are more similar to the modern average ocean  $\delta^{13}\text{C}$ . The taxa showing a clear estuarine influence may be more influenced by environmental variability. Taxa that are more influenced by marine conditions should be preferentially selected for dating archaeological contexts.



## Leela Moses

### *The actions of bias on site recording and record management in Te Hoiere, Aotearoa*

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Does the archaeological record reflect the distribution of past human activity, or is it a reflection of archaeologists' activity? More specifically, do biases in site recording and archaeological data management impact our understanding of the archaeological record?

This project used GIS analysis of site record forms and NZAA SRS data to examine the relationship between survey motivation and datafication, and archaeological site record distributions in Te Hoiere. It found that changes in archaeological practices over time, from colonial, to academic and museum driven, then development driven archaeology, are correlated with changes in site types and site locations being preferentially recorded. It also found that site recording in te Tau Ihu has been largely driven by key individuals, which exaggerates these patterns.

## Eliza Thompson – Archaeology Programme, University of Otago

### *Optimal Foraging Models in New Zealand: A study on the Shag River Mouth and Kaikoura Fyffe sites*

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Prey and patch choice models, though widely applied overseas, have only been used a handful of times in New Zealand. Drawn from ecology, these models attempt to understand how people's diets change with the availability of prey types around them. Only one New Zealand study, conducted by Lisa Nagaoka at the Shag River Mouth site in the early 2000s, has investigated these models in any detail. To gain a deeper understanding of how these models might be utilised in New Zealand, this study aims to adapt the models used at Shag River Mouth and apply them to a faunal sample from the Kaikoura Fyffe site. Both sites are located along the East Coast of the South Island, and both date to early on in New Zealand settlement. By altering Nagaoka's models to fit the Fyffe site, we can better understand not only the foraging strategies of these settlers, but also how behavioural ecology models can and perhaps cannot be used in the study of New Zealand archaeology.

**Meriam van Os** – Department of Anatomy, University of Otago  
**Hugh Cross** – Department of Anatomy, University of Otago  
**Olga Kardailsky** – Department of Anatomy, University of Otago  
**Catherine Collins** – Department of Anatomy, University of Otago  
**Richard Walter** – Southern Pacific Archaeological Research, University of Otago; School of Social Science, University of Queensland, Australia  
**Greg Cook** – Department of Microbiology and Immunology, University of Otago  
**Htin Lin Aung** – Department of Microbiology and Immunology, University of Otago  
**Lisa Matisoo-Smith** – Department of Anatomy, University of Otago  
**Hallie Buckley** – Department of Anatomy, University of Otago  
**Michael Knapp** – Department of Anatomy, University of Otago

*Pathogen hunters: Using ancient DNA to authenticate the presence of Mycobacterium tuberculosis and other microbes in early Polynesian settlers of Aotearoa New Zealand*

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Historically, it was believed that tuberculosis was brought to Aotearoa New Zealand in the 18–19th Centuries by European voyagers, but pre-European skeletal evidence consistent with tuberculosis challenges this theory. A new hypothesis suggests that tuberculosis may have been introduced by seals and sealions, and subsequently jumped host.

This poster outlines the methods and results of our study, that uses advanced ancient DNA technologies to detect *Mycobacterium tuberculosis* complex species and other microbes in the people from Wairau Bar (~750 BP). While we could not confirm the presence of *M. tuberculosis* spp., we did detect several ancient oral microbiome species.

**Rachel Darmody** – Heritage New Zealand Pouhere Taonga, Tauranga  
**Eleanor Sturrock** – Heritage New Zealand Pouhere Taonga, Tauranga

*Moturata (Taieri Island)*

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The archaeology of Moturata Island, 45 km south of Dunedin at the mouth of the Taieri River, is harder to identify now than 30 years ago when it was rapidly being swept away by erosion. The small island is covered in archaeological sites representing important stages in New Zealand's history from early Māori settlement, industry and interactions at the whaling station, and coastal shipping centred on the

pilot station. Since the early 1990s the island has been the focus of a revegetation project run by the Moturata Taieri Whanau, putting a halt to the erosion and protecting the archaeological layers.

**Anne-Claire Mauger, Brooke Tucker, Sabre Baker-Anderson** (Ngāti Ranginui, Te Rarawa, Ngati Porou) & **Marie Dunn** (Kāi Tahu, Kāti Māmoe)

*Linking coastal erosion to the loss of an archaeological landscape (Ōtokia/Brighton, Otago)*

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The archaeological site at the Ōtokia mouth, Otago, is one of the numerous coastal wāhi tūpuna impacted by erosion in this country. Partially excavated by Haast, Skinner and Lockerbie, unearthed material was briefly investigated by Anderson and Leach. Despite its recognised significance, no further investigation has been carried out to understand this disappearing site within the context of the wider archaeological and cultural landscape, including the practice of mahika kai. Consequently, erosion at this site results in a loss of understanding the connection with other features throughout the landscape, which reflect patterns of occupation and subsistence practices around Ōtokia.



Cover image: Geoarchaeological investigation (in collaboration with Patuharakeke & DoC) of an eroding coastal midden (Qo7/1495) in a Holocene foredune barrier complex, Poupouwhenua Scenic reserve, south of Marsden Point oil refinery, Northland (Photo credit: North facing oblique drone taken 3/10/2022 by Aaron Aphel).