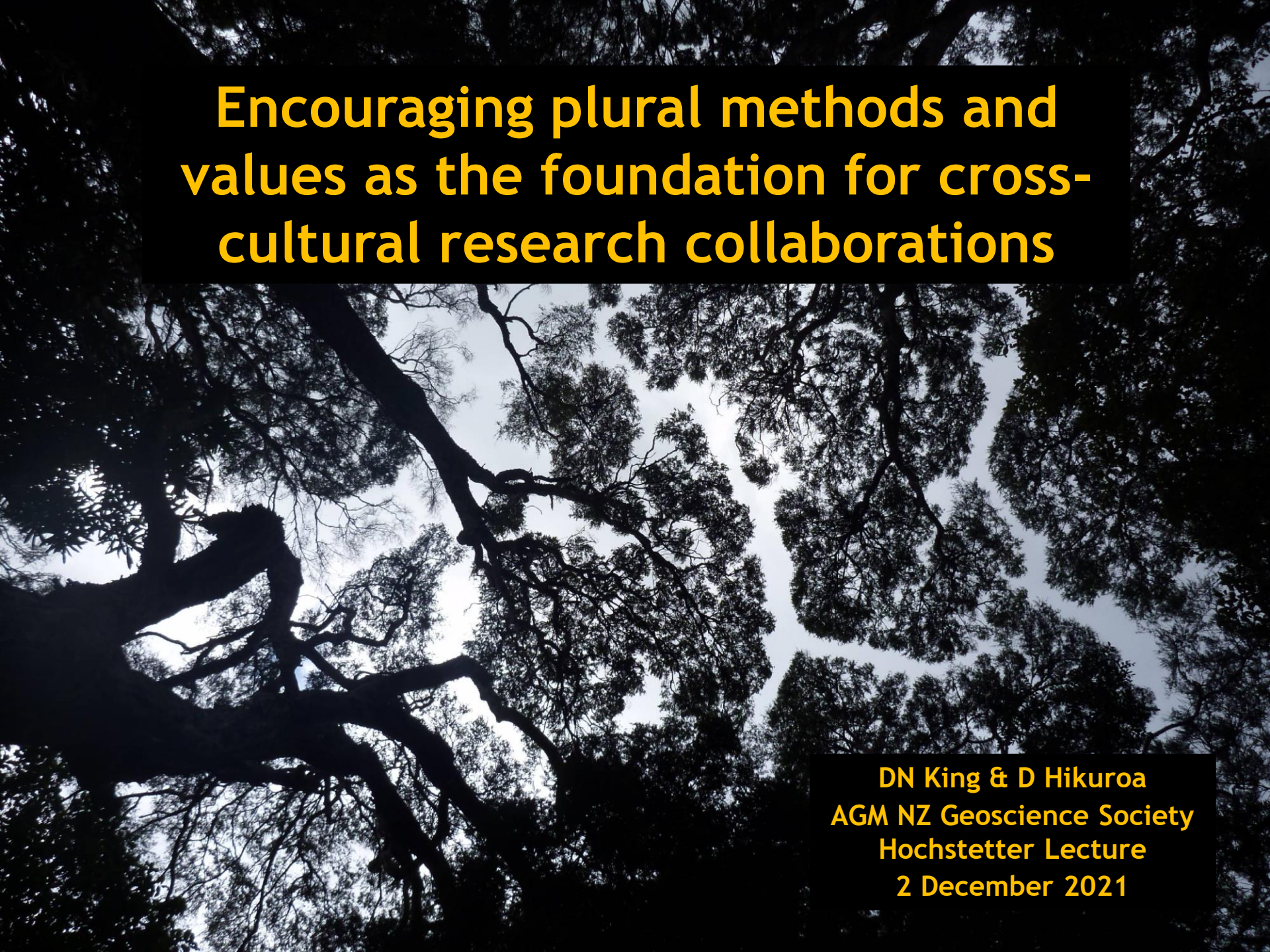
Encouraging plural methods and values as the foundation for cross-cultural research collaborations



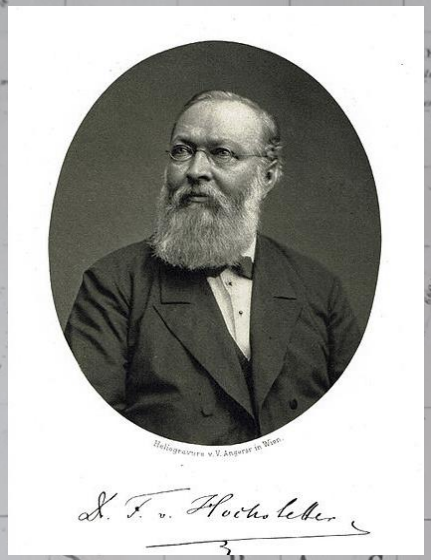
DN King & D Hikuroa

AGM NZ Geoscience Society
Hochstetter Lecture
2 December 2021

Overview

- Mātauranga Māori and natural hazards
- Mātauranga Māori and extreme saltwater inundations
- Ethnographic records, active Māori histories and past tsunami(s)
- Mātauranga Māori, geological archives and palaeotsunamis
- Post-project reflections and future tracks


Source: K Smith



Holzgravüre v. V. Angerer in Wien.

A. F. v. Hochstetter

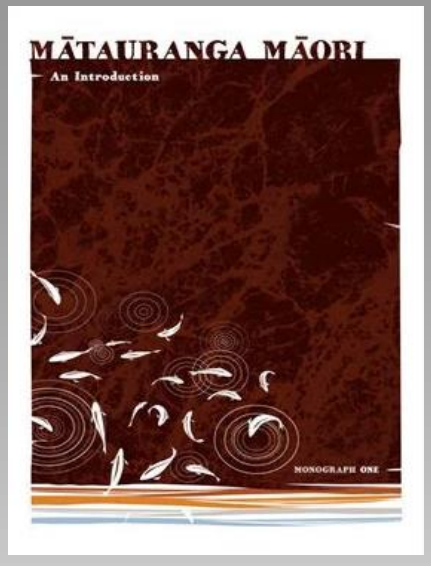
Die durch das Erdbeben in Peru, 13 August 1868
erzeugte
ERDBEBEN-FLUTH
IM
PACIFISCHEN OCEAN, 13-16 August 1868,
dargestellt
von Dr Ferdinand von Hochstetter.

Aequatorial-Maassstab 1:70.000.000.

Linien gleicher Distanz von Arica, in nautischen Meilen.
Ort der Erdbebenwelle nach der 1, 2, 3 u. s. w. Stunde
Fluth des Erdbebens von Simoda, 23. December 1854.

GOTHA: JUSTUS PERTHES.
1869.

I. Mātauranga Māori and natural hazards



Widespread acknowledgement of natural hazards in the knowledge-practice-belief complex of Mātauranga Māori (MM)

Early attempts to frame MM of natural hazards focussed on 'empirical' forms of knowledge:

- place names that designate hazardous areas
- environmental indicators to anticipate (and manage) adverse conditions and environmental risks
- oral histories/traditions referencing past catastrophic events

King, D.N., Goff, J., Skipper, A., 2007. Maori Environmental Knowledge and natural hazards in Aotearoa - New Zealand. Journal of the Royal Society of New Zealand, 37 (2), 59-73

Post-project reflections

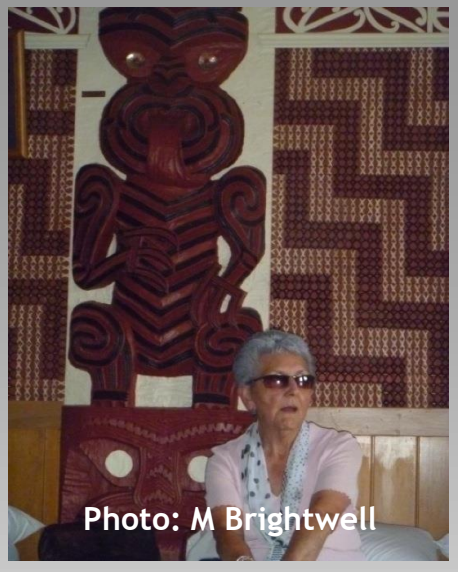


Photo: M Brightwell

1. Empirical forms of knowledge are part of the wider knowledge complex of *Mātauranga Māori* which implicitly recognises that human-nature relationships are coupled and integrated in their nature.

2. These different realms of knowledge are represented in the traditional Māori metaphor of the lower jaw (kauwae raro) which signifies earthly or empirical knowledge and the upper jawbone (kauwae runga) which signifies ‘knowing’ and ‘how people come to know’.

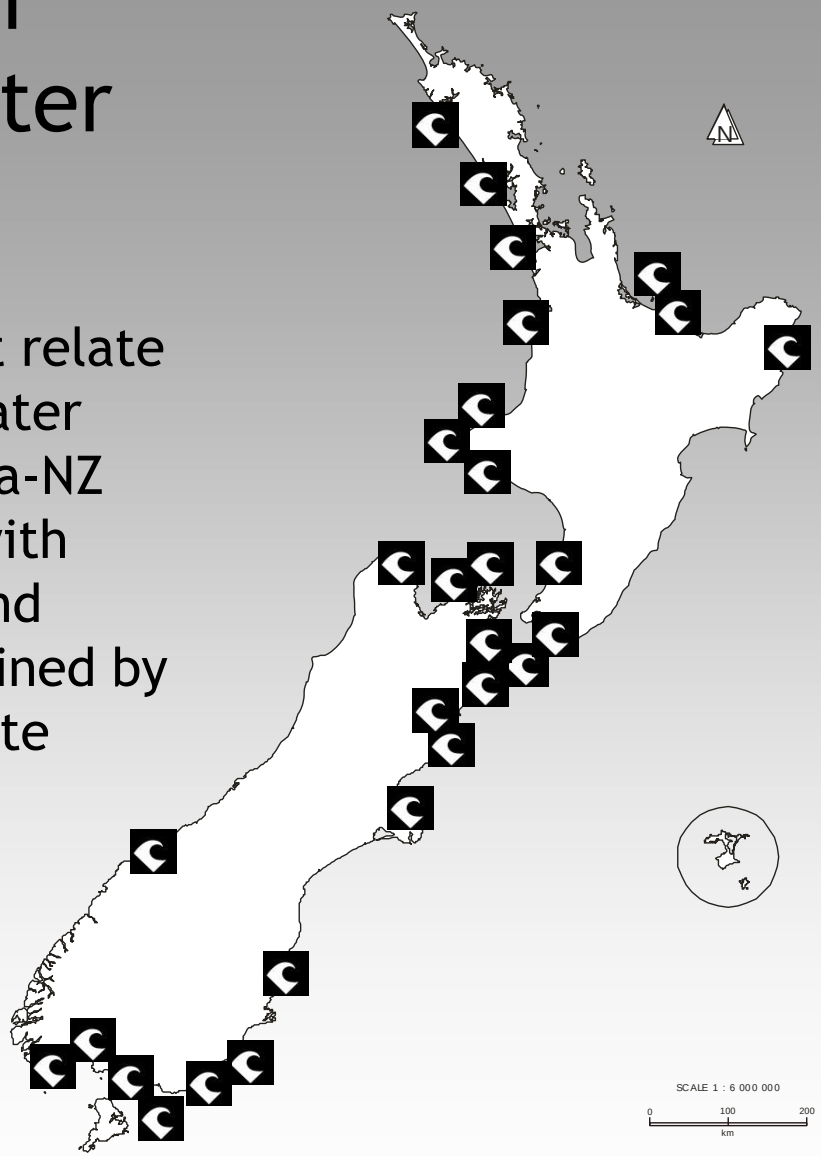
3. Mātauranga Māori continues to be used to frame, conceptualise, learn, know and be in the world – see: Roberts & Wills, 1998; Tau, 1999; Mead 2001; Marsden, 2003; Smith, 2001; Royal, 2009; Haami, 2012; Roberts, 2013; Hikuroa, 2017.

"This way of knowing may be different from what was known several hundred years ago by a community, but it is still a way of knowing that provides access to a different epistemology, an alternative vison of society, an alternative ethics for human conduct. It is not a question of whether the knowledge is 'pure' and authentic, but whether it has been the means through which people have made sense of their lives and circumstances, that has sustained them and their cultural practices over time…" (Linda Tuhiwai Smith, 2006:16).

Smith, L.T. 2006. Researching the Margins: Issues for Maori Researchers - A Discussion paper. AlterNative: An International Journal of Indigenous Peoples Scholarship, 2(1), 5-27.

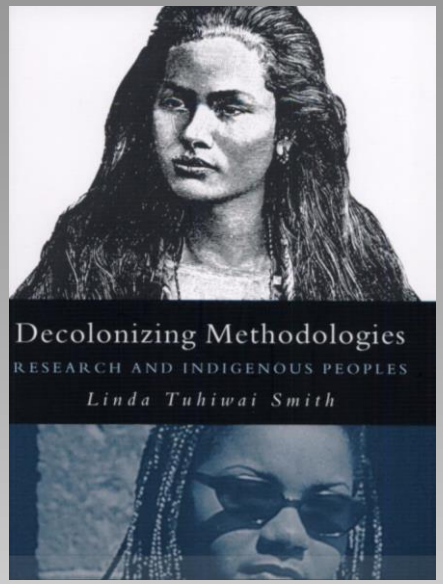
II. Mātauranga Māori and extreme saltwater inundations

The study mapped *purakau* that relate experience with extreme saltwater inundations around the Aotearoa-NZ coast, comparing the findings with geo-archaeological evidence, and discussing the benefits to be gained by considering *purakau* as legitimate perspectives on history.



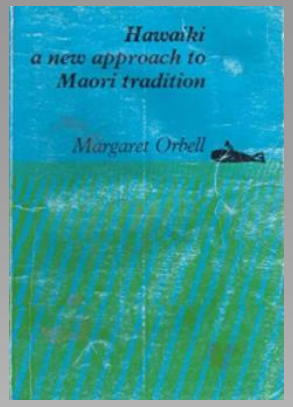
King, D.N., and Goff, J. 2010. Benefitting from differences in knowledge, practice and belief – Maori oral traditions and natural hazards science. Natural Hazards and Earth System Sciences (10) 1927-1940

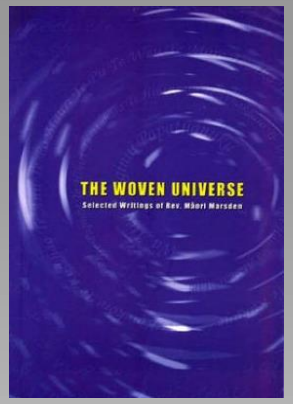
Post-project reflections

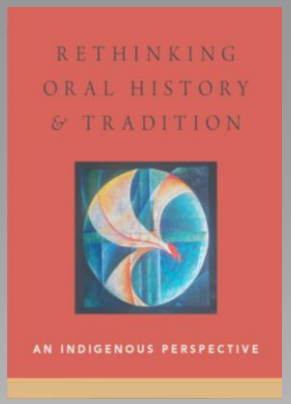


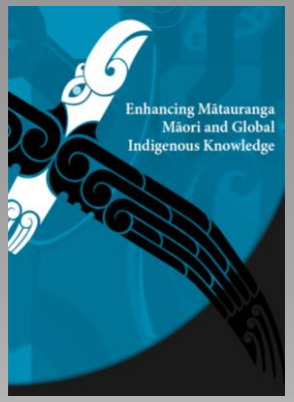
1. We must remain mindful that some of these stories and interpretations may relate to histories and processes other than tsunamis. We must also be mindful about the risks of turning treasures from our antiquity into things that they are not.

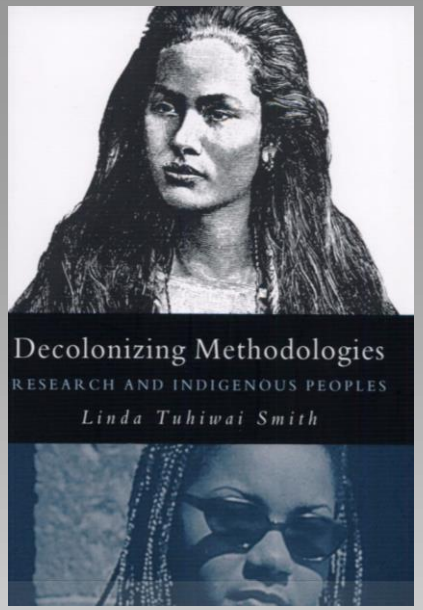
2. “Applying scholarly standards to Māori tradition and history is the only weapon we have to defend the integrity of Māori memory” (Sir Tipene O’Regan, 1992). This demands authenticating sources and scrutinizing texts (as well as translators) if we are going to consider that material in English, and it demands engaging with Māori who hold whakapapa to specific oral narratives to tell their own stories.

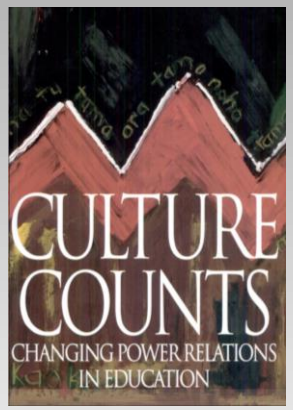

Hawai'iki
a new approach to
Maori tradition
Margaret Orbell

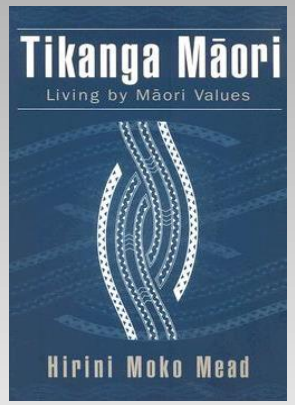

THE WOVEN UNIVERSE
Selected Writings of Rev. Māori Marsden

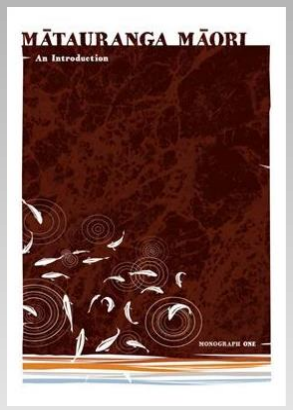

RETHINKING
ORAL HISTORY
& TRADITION
AN INDIGENOUS PERSPECTIVE

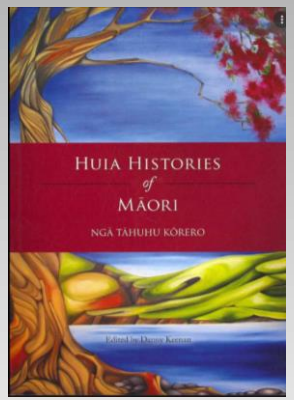

Enhancing Mātauranga
Māori and Global
Indigenous Knowledge

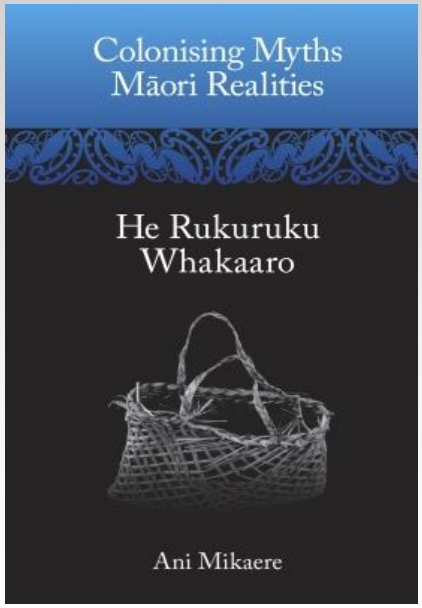

Decolonizing Methodologies
RESEARCH AND INDIGENOUS PEOPLES
Linda Tuhiwai Smith

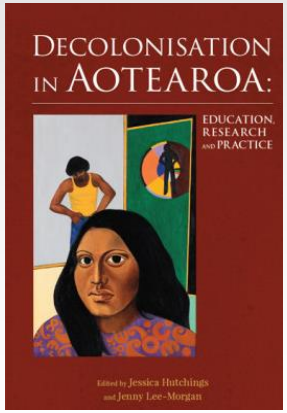

CULTURE
COUNTS
CHANGING POWER RELATIONS
IN EDUCATION

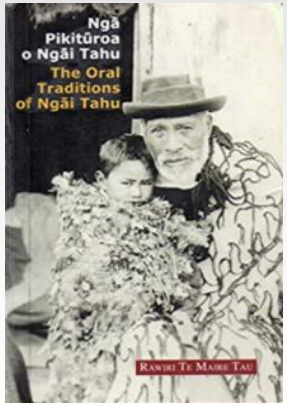

Tikanga Māori
Living by Māori Values
Hirini Moko Mead

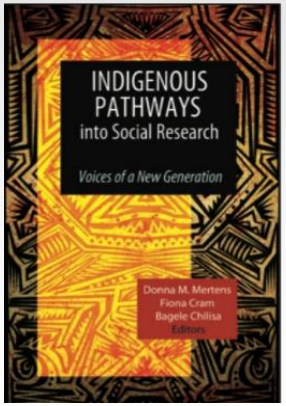

MĀTAURANGA MĀORI
An Introduction
MONOGRAPH ONE

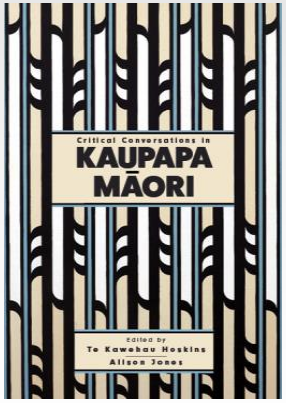

HUIA HISTORIES
of
MĀORI
NGĀ TĀHUHU KŌRERO


Colonising Myths
Māori Realities
He Rukuruku
Whakaaro
Ani Mikaere


DECOLONISATION
IN AOTEAROA:
EDUCATION,
RESEARCH
AND PRACTICE
Edited by Jessica Hutchings
and Jenny Lee-Morgan


Ngā
Pikitūroa
o Ngāi Tahu
The Oral
Traditions
of Ngāi Tahu
RAWIRI TE MAIRE TAU


INDIGENOUS
PATHWAYS
into Social Research
Voices of a New Generation
Donna M. Mertens
Fiona Cram
Bagele Chilisa
Editors

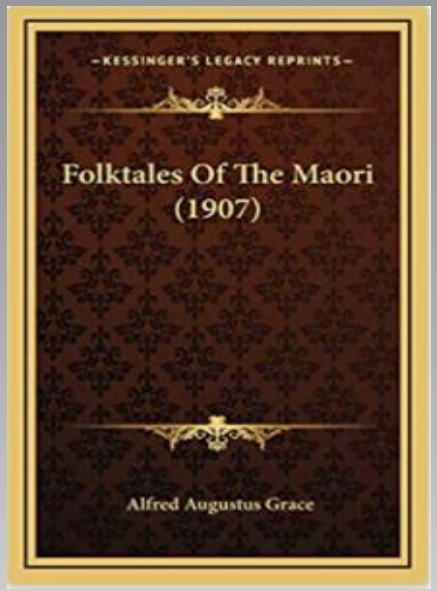

Critical Conversations in
KAUPAPA
MĀORI
Edited by
Te Kawehau Hoskins
Alison Jones

III. Ethnographic records, active Māori histories and past tsunami(s)

"…the sea grew dark and troubled and angry, and presently a great wave, which gathered strength as it came, swept towards the shore. It advanced over the beach, sweeping Titipa and all his fish before it till with the noise of thunder it struck the cliff on which the people stood. . . The great wave receded, sucking with it innumerable boulders and the helpless, struggling Titipa. Then another wave, greater than the previous one, came with tremendous force and, sweeping the shore, struck the cliff with a thunderous roar. This was followed by a third which, when it receded, left the beach scoured and bare and Titipa and all his fish had disappeared" (Grace, 1907).

King, D.N., Shaw, W.S., Meihana, P., Goff, J. 2018. Maori oral histories and the recurring impact tsunamis in Aotearoa-New Zealand. Natural Hazards and Earth System Sciences, 18, 907-919.

Project beginnings, research framing and interpretations



- Multiple project beginnings…
- Inductive-based research informed by Kaupapa Māori research theory and principles
- Human research ethics and the responsibility of re-presenting our kin-group members
- Narrative enquiry, discourse analysis and “collaborative story-telling” as method
- Māori ancestral experience with past tsunami impacts, and possibly multiple events, on Rangitoto (D’Urville Island).

Post-project reflections

1. This kind of research requires a commitment to relationships & processes that share power & resources. It also demands awareness of political, epistemological and methodological developments in research.

2. For physical-systems scientists this work necessitates the acquisition of new skills such as human research ethics, social-research methods and decolonising research practice.

3. Our ongoing project offers a chance to reclaim and reimagine Māori histories while also adding to scientific understandings about tsunami hazard and risk across Raukawa Moana [Cook Strait].

IV. Mātauranga Māori, geological archives and palaeotsunamis

"It preyed upon the people using the sand-spit joining the mouth of the Wairau River to the Cape... It was the only route. No matter how big a party of travellers might be, even a couple of hundred, if the taniwha noticed them, it would catch and eat them. Waiting until the party was half way along the spit, the Taniwha would dive out from its cave into the sea, and then approach the spit with such forces that the sea mounted in front of it like a tidal wave, sweeping the party into the lagoon behind where they were drowned, and the Taniwha could feed on the bodies at its leisure" (Carrington, 1934: 191).

King, D.N.; Goff, J.R.; Chagué-Goff, C.; McFadgen, B.; Jacobsen, G.E.; Gadd, P.; Horrocks, M. 2017. Reciting the layers: Evidence for past tsunamis at Mataora - Wairau Lagoon, Aotearoa - New Zealand. Marine Geology, 389, 1-16.

Mataora-Wairau, Marlborough
NE South Island, New Zealand

Wairau Bar

Mataora-Wairau Lagoon

Over-wash
Tsunami / Storm ?

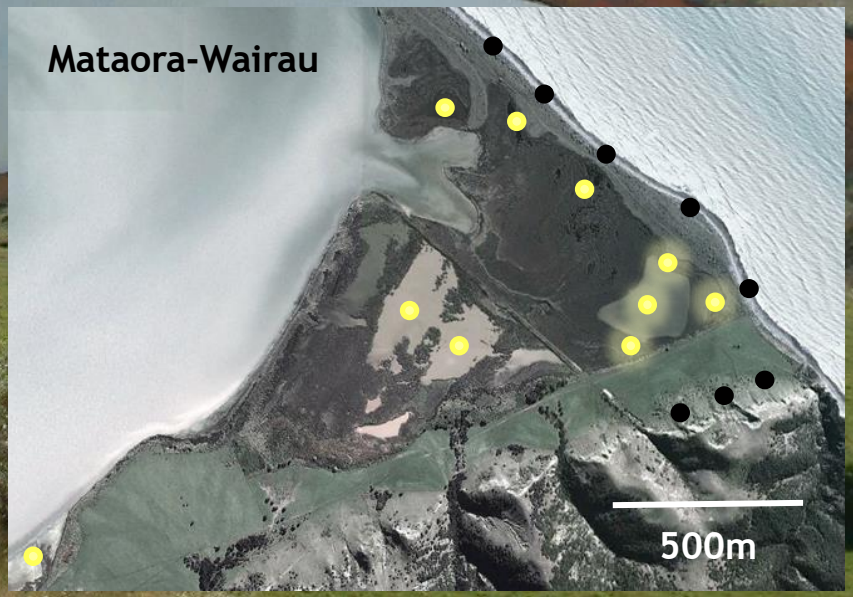
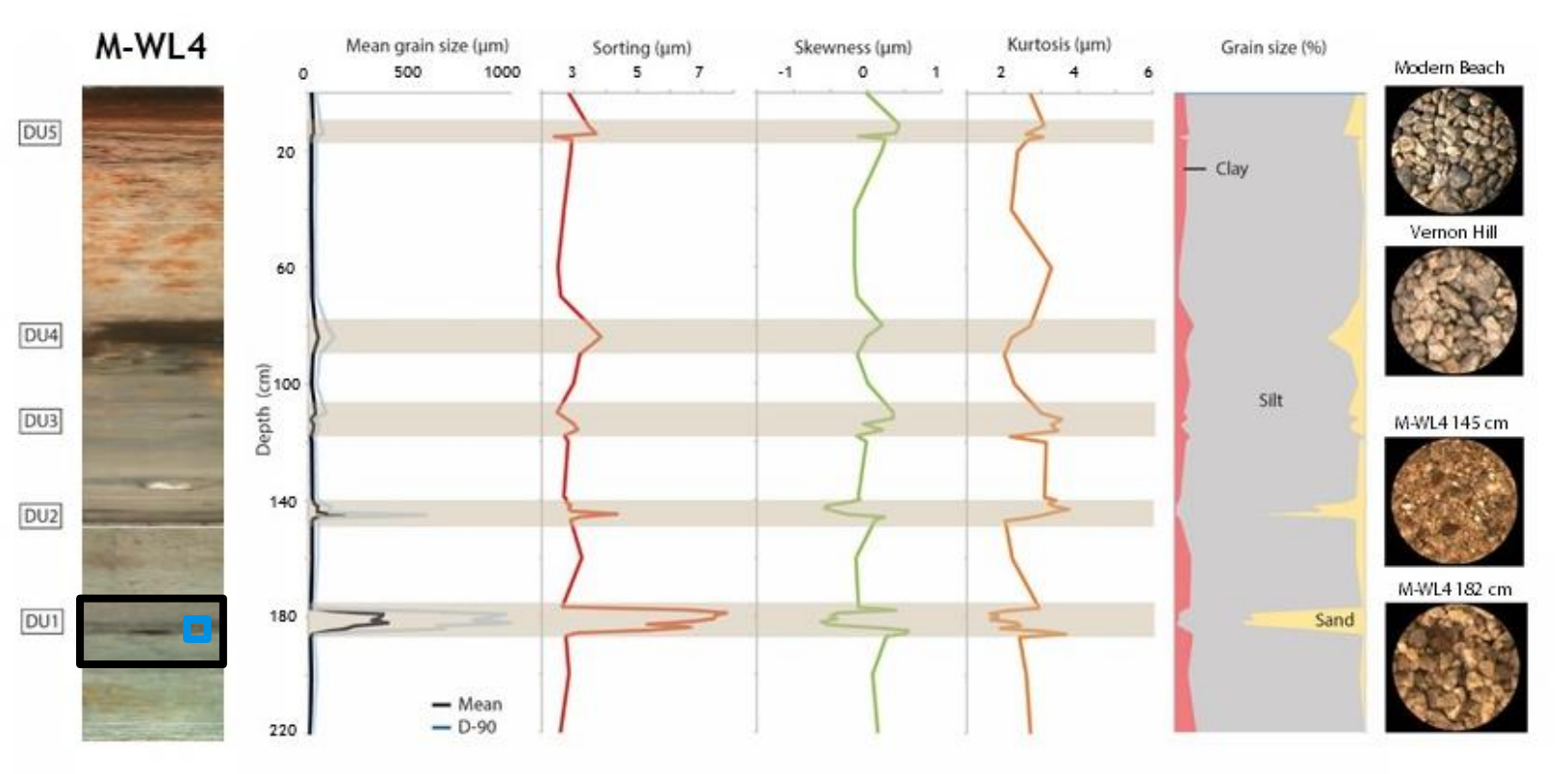


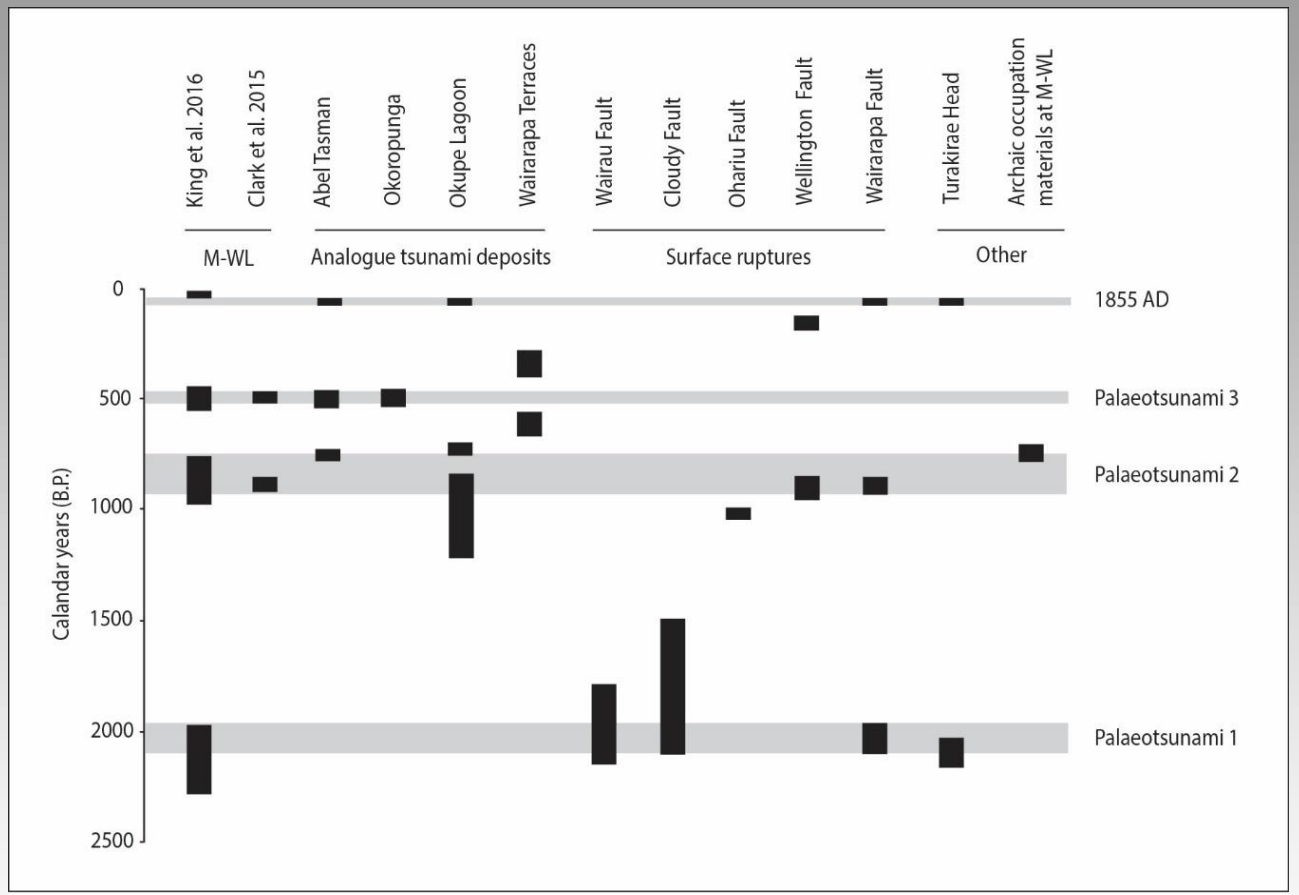
Photo: Darren King

Mataora – Wairau Lagoon



Grain size characteristics and photomicrographs of selected sediment samples. Disturbance layers are shaded in light brown. Selected diatoms from from DU1.

Geochronology and correlations



Correlation of age ranges for analogue tsunamis, earthquake ruptures and resulting disturbances in the Cook Strait region. Event ages: M-WL2015 (Clark et al., 2015); Abel Tasman (Goff and Chagué-Goff, 1999); Okoropunga (Goff and McFadgen, 2002); Okupe Lagoon (Goff et al., 2000; Cochran et al., 2007); Wairarapa Terraces (Berryman et al., 2011); Wairau Fault (Barnes and Pondard, 2010); Cloudy Fault (Barnes and Pondard, 2010); Ohariu Fault (Litchfield et al., 2006); Wellington Fault (Langridge et al., 2011); Turakirae Head (McSaveney et al., 2006); Archaic occupation materials (Higham et al., 1999).

Post-project reflections

1. Future multi-proxy work in the offshore and onshore is expected to improve understanding of the tsunami hazard in this region. Although challenges remain about how improved knowledge is ultimately translated into reducing risk.

2. Research priorities for Te Rūnanga a Rangitāne o Wairau include adding to existing stores of socio-cultural knowledge and history. In ongoing work, we are using art and design to bring together kōrero tuku iho with scientifically derived evidence to actively reclaim and reimagine tribal history and whakapapa surrounding ancestral experience with past tsunami(s).

Future tracks

- Cross-cultural research collaborations are encouraged to realise plural knowledge development and learning. Such a notion includes recognition of Mātauranga Māori informing science as well as science informing Mātauranga Māori.
- Elevation of MBIEs VM policy has created many opportunities for plural knowledge development and learning. Relationships and processes that share power & resources are critical to meeting diverse research priorities & outcomes.
- Researchers that can cross the physical- & human-systems sciences are required to help take advantage of all forms of understanding & experience available. New research capability, capacity and leadership is needed to help in the exchange of knowledge across different groups and communities.