

# Decolonising Climate Change for Te Ao Hurihuri Resource Pack

A curated set of references and resources to build shared understanding of climate change from a Te Ao Māori worldview.

Supports whānau and hapori to critically examine narratives and review other examples from across the country. A tool to support tangata whenua in reclaiming tino rangatiratanga and restoring mana motuhake in climate adaptation and decision making, references include:

- Curated readings on tangata whenua-led climate adaptation projects
- Guidance on preserving historical assets or taonga
- Emergency or risk management plans
- Short video series on Te Ao Māori, atua Māori, and environmental relationships

**Table 1. Published resources on preserving historical assets**

Title, author & link	Date, article type and scale	Purpose of resource, tool/framework used, recommendations/ gaps identified
Repairing historic brickwork after an earthquake. <a href="#">Heritage NZ Pouhere Taonga Repairing historic brickwork</a>	Nov 2016 Sustainable Management of historic heritage guidance series: Information sheet National	To provide information about repairing historic brickwork after an earthquake. Includes advice on safety, support for determining and designing structural repairs, consent requirements and funding options.
Replacement of high-risk elements with lightweight materials. Heritage NZ Pouhere Taonga <a href="#">Replacement of high-risk elements</a>	Nov 2016 Sustainable Management of historic heritage guidance series: Information sheet National	To provide guidance on exterior fabrics that may be a threat to public safety – such as gables, parapets and façades. Recommendation: to use lightweight composite materials if repair and strengthening of original material is not possible.
Guidance for Preparing Heritage Risk Management Plans. Heritage NZ Pouhere Taonga <a href="#">Guidance preparing heritage risk management plans</a>	Sustainable management guides. March 2022 National	Guidance to assist owners and managers to prepare risk management plans to aid the conservation and protection of any place of cultural heritage significance in New Zealand or held to be taonga by Māori. Follows an internationally recognised methodology for risk management planning based on reduction, readiness, response and recovery (the 4 Rs). Sets out the 8 steps in the process leading to the preparation and implementation of action plans that can be used to prioritise, plan and resource actions to treat or manage the risk over the short, medium and long term.
Koiwi Tangata Human Remains Guidelines. Heritage NZ Pouhere Taonga <a href="#">Koiwi tangata human remains guidelines</a>	25 Aug 2014 Archaeological Guidelines Series National	To provide a process for the management of kōiwi tangata /human remains that have been uncovered accidentally or deliberately excavated/ exhumed in emergency response situations, as a result of development or as a result of natural processes that ensure compliance and NZ legislation are met.



<p>Governance, management &amp; planning: Emergency Procedures. _Te Papa National Services Te Paerangi <a href="#">Emergency procedures</a></p>	<p>June 2001 Te Papa National Resource Guides: Issue No. 7 National</p>	<p>A guide for small museums without specialist conservators to safeguard/conservate items in their care. It highlights the importance of identifying risks and preventive actions e.g. temperature control, air cleanliness, relative humidity etc. This document should be read in conjunction with Te Papa's <i>Minimising disaster and Emergency procedures</i> guidance.</p>
<p>New Zealand Archaeological Association Climate Change and Cultural Heritage Portfolio: Strategic Plan 2021-2026.  No link available but the report is available on request from NZAA. <a href="#">Contact NZ Archaeological Association</a></p>	<p>Strategic Plan June 2021 National</p>	<p>Sets out the plan and objectives of NZAA to aid the coordination and focus of climate action and response and to improve wider awareness and appreciation of cultural heritage. Sets out the goals and targets to achieve the NZAA strategic plan objectives.</p>
<p>Underwater Cultural Heritage in Aotearoa New Zealand: Challenges and Opportunities. _Carter and Bennett <a href="#">Underwater Cultural Heritage in Aotearoa New Zealand Challenges and Opportunities</a></p>	<p>2020 ICOMOS Heritage at risk Special Edition- Heritage Under Water at Risk: Challenges, Threats and Solutions National</p>	<p>Review of NZ underwater cultural heritage sites. Challenges: discrepancies between the way in which heritage legislation is applied to terrestrial vs maritime archaeological sites, failure to incorporate international best practice in management of underwater cultural heritage. Recommendations: Heritage NZ to employ one or more suitably qualified maritime archaeologists to oversee the management of underwater cultural heritage sites, establishment of a tertiary level maritime archaeology programme, collaboration with technical divers to investigate shipwrecks.</p>

**Table 2. Resources on adaptation pathways**

**Kete 1: Te Ahunga - Initiating the Kaupapa, Set the Direction and Purpose**  
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Title, Author & link	Date & Article Type	Organisations involved in action/ guidelines	Purpose of resource, recommendations/ gaps identified
<p>Māori community adaptation to climate variability and change: Examining risk, vulnerability and adaptive strategies with Ngāti Huirapa at Arowhenua Pā, Te Umu Kaha (Temuka), New Zealand. King D et al. <a href="#">Māori community adaptation to climate variability and change</a></p>	<p>March 2012 NIWA Client Report # AKL2011-015</p>	<p>Te Rūnanga o Arowhenua Society Incorporated and NIWA's Māori Environmental Research and National Climate Centre.</p>	<p>Explores the complexities around climate impacts, vulnerability and the capacity to respond and adapt. The research explored current and past climate conditions and risks that the community at Arowhenua Pā contend with. Vulnerability and adaptation to climate change are inseparable from issues linked to natural hazards management and sustainable development. Focus on whānau, historical changes in river course, flows and mahinga kai; causes and amplification of flood risks due to human modification of the environment. Findings: environmental, economic, social, political and cultural aspects of community life are interdependent, and all contribute to the sensitivity-adaptive capacity of the community. The capacity to adapt is rooted in cultural values and approaches such as tikanga and kawa, and actioned through whanaungatanga, manaakitanga, &amp; kotahitanga. Also important are social networks &amp; conventions (internal &amp; external), knowledge of place and closer human-environmental risks. See the report for further findings on constraints &amp; strengths and strategies and policies to tackle vulnerability and enhance adaptability under future climate risk.</p>
<p><a href="#">Coastal Adaptation to Climate Variability and Change: Examining community risk, vulnerability and endurance at Manaia Settlement, Hauraki-Waikato, Aotearoa-New Zealand.</a> King D et al. <a href="#">NIWA Client report 2012-029</a></p>	<p>December 2012 NIWA Client report # AKL2012- 029</p>	<p>Ngaati Whanaunga Incorporated Society, and NIWA's Māori Environmental Research and National Climate Centres</p>	<p>Explores the community's climate conditions, risk, vulnerability, resilience and adaptation to climate- induced coastal change at Manaia settlement. Identify options to eliminate and/or minimise vulnerabilities and to enhance the different skills and capacities to cope with (and adapt to) future climate conditions and challenges. Climate is only one of several factors that influence the vulnerability and adaptability of the 'community' at Manaia to cope and deal with climate threats and stresses. Identified four key determinants that influence the sensitivity and adaptive capacity. (i) Infrastructure and resourcing, (ii) Social-cultural networks and conventions, (iii) Knowledge, information and education and (iv) Planning, governance and competing values. Dominant determinants were concerns about unreliable infrastructure and housing and insufficient finance and resourcing to reduce exposures to climate hazards and stresses. Cultural values and approaches centred on tikanga, whanaungatanga, kotahitanga, and aroha were referred to as the Māori way of dealing with hazards, risks. These behaviours are dependent on the relationship between people and the environment supported through principles of rangatiratanga, and kaitiakitanga.</p>
<p>Coastal adaptation to climate variability and change: Examining</p>	<p>September 2013 NIWA Client report # AKL2013- 022</p>	<p>Hapū of Te Tao Mauī from Mitimiti</p>	<p>Explored future projections of climate change-induced coastal hazards and risks for the community at Mitimiti and the contextual conditions that</p>



community risk, vulnerability and endurance at Mitimiti, Hokianga, Aotearoa-New Zealand.		settlement, and NIWA's Māori	influence the vulnerability and endurance of the community to effectively respond to those hazards and risks.
<a href="#">King D et al.</a> <a href="#">NIWA Client Report 2013- 022</a>		Environmental Research and National Climate Centres.	Identified four key determinants that influence the sensitivity and adaptive capacity of the community to deal with climatic risks (i) social-cultural networks and community change, (ii) resourcing, self-reliance and innovation, (iii) knowledge, skills and expertise, (iv) community-based structures and decision-making. The capacity to adapt is rooted in the collective strength of whānau and hapū relationships, cultural values and principles such as whakapapa and tikanga, actioned through whanaungatanga, manākitanga, kotahitanga and aroha. Identified deep concerns about the enduring use and maintenance of Mātihetihe Marae for future generations. Major changes in the composition of the community, low levels of economic development and employment opportunities were identified as constraints to adequately reduce those risks and exposure to potential impacts.
The Race to Document Archaeological Sites Ahead of Rising Sea Levels: Recent Applications of Geospatial Technologies in the Archaeology of Polynesia. _Mark D. McCoy <a href="#">The Race to Document Archaeological Sites Ahead of Rising Sea Levels</a>	2018 Peer- reviewed article. Sustainability 10(1), 185		Review recent efforts to document archaeological sites using geospatial technology (remote sensing, high- resolution documentation, and archaeological site geodatabases) in assessing impacts of sea level rise across the islands of Polynesia. Using elevation models estimated more than 12% of all known archaeological sites in New Zealand will be affected by sea level rise. Recommended a greater use of geospatial technology for identifying and monitoring sites, more and better data sharing, and better investigation of coastal archaeological sites due to varying quality of geodatabase records. Also discussed the limitations of site locations represented as points in Archsite.
<a href="#">Te Mahi Taki Taiao Report</a> <a href="#">Maria Barnes, Kiely McFarlane,</a> <a href="#">Merata Kawharu</a>			To understand what support services and resources are needed by tangata whenua-led groups to pursue their restoration goals, and how Te Kete Hononga can improve support for those groups.



<p>He huringa āhuarangi, he huringa ao: a changing climate, a changing world. _Awatere et al. 2021 <a href="#">He huringa āhuarangi, he huringa ao: a changing climate, a changing world</a></p>	<p>Manaaki Whenua - Landcare Research Contract report. 2021</p>	<p>National Science Challenges, Ngā Pae o te Māramatanga (NPM)</p>	<p>Summarise the latest research and guidance on observed and projected climate change impacts on whānau/hapū/iwi and Māori business. Provide commentary about risk and uncertainty, knowledge gaps, and options for mitigation and adaptation. Compiled risk scores based on a consensus- based expert judgement approach for four domains of interest: He Kura Taiao – Living Treasures, Whakatipu Rawa – Māori Enterprise, He Oranga Tāngata – Healthy People, Ahurea Māori, Tikanga Māori – Māori Culture and Practice. Use a Kaupapa Māori approach, to explore how climate change will impact the physical, social, and spiritual connection that Māori have with the natural environment. Identified a total of 25 risks across the four domains. ‘Ahurea Māori, Tikanga Māori – Māori Culture and Practices’ domain explores and assesses the risk of potential climate change impacts on Māori culture and practices, with particular emphasis on language and customs, sports, festivals, mourning ceremonies, and cultural infrastructure. Detailed work is required to understand how cross- domain relationships might influence the development of effective mitigation and/or adaptation actions in the future. Urgent work is also needed to better understand the social, cultural, and fiscal implications of sea-level rise, including what duties local and central governments have with respect to actively upholding Māori interests under the Treaty of Waitangi.</p>
<p>Calculating Heritage Risks for the Climate Emergency in Aotearoa (New Zealand). _Jones and Bickler <a href="#">Calculating Heritage Risks for the Climate Emergency in Aotearoa New Zealand</a></p>	<p>2022 Peer- reviewed article. Archaeology 52</p>		<p>Explore some of the technical issues surrounding the identification of risks to heritage in NZ. Presented and discussed primary archaeological and environmental sources of information with quantitative and qualitative information associated for evaluating heritage risk. Discussed how most of the archaeological data sources provide detailed qualitative information but little systematic quantitative information. Included a discussion on the reliability of ArchSite database and how to improve the precision of analysis at local level.</p>
<p>The impact of climate change on the archaeology of New Zealand’s coastline A case study from the Whangarei District. _Simon Bickler, Rod Clough and Sarah Macready <a href="#">The impact of climate change on the archaeology of New Zealand's coastline: a case study from the Whangarei District</a></p>	<p>2013 DOC report Science for Conservation 322</p>	<p>The Department of Conservation (DOC)</p>	<p>A Geographic Information System (GIS)-based case study to examine the distribution of archaeological sites in the Whangārei District and assess the risk to the archaeological resource primarily from sea level rise associated with future climate change. GIS analysis of more than 2400 archaeological sites in the Whangārei District, revealed that the primarily coastal distribution of the sites makes them particularly vulnerable to coastal erosion, flooding and land instability. Approximately 35% of all archaeological sites on the mainland are vulnerable to some form of currently identified hazards. Suggested a risk assessment framework (adapted from MfE’s Coastal Hazards and Climate Change: Guidance for Local Government) to prioritise the protection or investigation of archaeological sites in coastal areas.</p>



			Emphasised that action is needed now to protect or retrieve the information from significant sites under threat before they disappear completely.
Risk-exposure assessment of Department of Conservation (DOC) coastal locations to flooding from the sea. _Andrew Tait <a href="#">Risk-exposure assessment of DOC coastal locations to flooding from the sea.</a>	2019 DOC report Science for Conservation 332	The Department of Conservation (DOC)	Describe a national-level risk-exposure screening assessment that identifies archaeological sites located in a potential coastal inundation risk zone. Identified a total of 4149 archaeological sites in the potential coastal inundation risk zone, representing 6% of all the known sites in the country (based on Archsite database). 420 of those sites are on Public Conservation Land. Recommended more detailed risk assessment of specific locations involving analysis of historical records, local knowledge and site visits followed by detailed mapping.
Better Management Through Measurement: Integrating Archaeological Site Features into a GIS-based Erosion and Sea Level Rise Impact Assessment—Blueskin Bay, New Zealand. _Greg Hill <a href="#">Better Management Through Measurement: Integrating Archaeological Site Features into a GIS-Based Erosion and Sea Level Rise Impact Assessment—Blueskin Bay, New Zealand</a>	2020 Peer- reviewed article. The Journal of Island and Coastal Archaeology 15(1)		Sets out a methodology that combines field survey with GIS-based spatial analysis to track erosion and inundation's impact on coastal sites in Blueskin Bay, New Zealand. Found that numerous sections of the Blueskin Bay shoreline may be severely affected by inundation by 2100. Discussed the unsuitability of ArchSite data for site- specific assessments due to the uncertainty of its site locations. Recommended the use of feature-based representations of archaeological sites to improve the ability of computer-based assessments to consider the impact of changing landscapes on site specific scales.
Understanding the potential exposure of coastal marae and urupā in Aotearoa New Zealand to sea level rise. Bailey-Winiata, A. P. S <a href="#">Understanding the potential exposure of coastal marae and urupā in Aotearoa New Zealand to sea level rise</a>	2021 MSc Thesis	University of Waikato	Understand the potential exposure of coastal (within 1 kilometre of the coastline) marae to sea level rise nationally and to urupā in the Bay of Plenty. Assess local coastal geomorphology around coastal marae and urupā in the Bay of Plenty. Identified 191 (out of 774) marae around NZ and 41 urupā in the Bay of Plenty were located within 1 km of the coast, making clear that they are nationally at risk to sea level rise. The potential response to sea level rise was highly dependent on the type of coastal geomorphology. Discussed the use of dynamic adaptive policy pathways (DAPP) in creating management and adaptation solutions. Any management strategies for marae, hapū and iwi will need to be aware of the tapu and mana of these places - no one size fits all approach.
Toi tū te whenua, toi tū te tangata: A holistic Māori approach to flood management in Pawarenga. _Proctor, E.-M. <a href="#">Toi tu te whenua, toi tu te tangata: A</a>	2010 MSocSc Thesis	Hapū of Te Uri O Tai, University of Waikato	Investigate and document Te Uri O Tai Hapū preferred strategies for reducing flood risk in Pawarenga and to identify the use of tikanga Māori principles and values in emergency response. Identify the factors that affect the resilience and vulnerability of the Pawarenga community. Resilience and strength that enabled the Hapū to respond to crises such as



<p><a href="#">holistic Māori approach to flood management in Pawarenga</a></p>			<p>flooding events come from learning from elderly people, self-reliance, talent and skills, resourcefulness and tenacity.</p> <p>Tikanga offers a system of action that enables the Hapū to demonstrate both resilience and adaptive capacity in the face of hazard events. Tikanga useful in flood management were identified as tika-pono-aroha, whanaungatanga, manaakitanga, and kaitiakitanga. Proposed a tikanga framework which could be used for preparing a flood management plan. Also identified factors that affect cultural, social, physical, economic and political vulnerabilities.</p> <p>Political factors, physical isolation and low-income levels were identified as the major contributors to the vulnerability. Political marginalisation has prevented tangata whenua from exercising their kaitiakitanga.</p> <p>Recommendations: facilitate full participation of Te Uri O Tai Hapū in decision-making in emergency management, recognise and support the value of tikanga in flood emergency management.</p>
<p>Collective action by Māori in response to flooding in the southern Rangitīkei region.</p> <p>_McLachlan, AD, Waitoki, W.</p> <p><a href="#">Collective action by Māori in response to flooding in the southern Rangitīkei region</a></p>	<p>2020</p> <p>Peer- reviewed paper</p> <p>International Journal of Health Promotion and Education</p>	<p>Ngā Wairiki – Ngāti Apa hapū (whānau support group), Waikato Institute of Technology, University of Waikato</p>	<p>Examine Ngā Wairiki – Ngāti Apa hapū collective actions and community efforts to provide support for those affected by flooding in the Southern Rangitīkei area. Identified the following four key themes:</p> <ol style="list-style-type: none"> <li>1. Collective aspirations mobilise in traumatic events - community had particular skills and attitudes due to the long history of significant flooding within the Rangitīkei, Māori responsiveness during flooding was quicker than local governments’ ability to respond.</li> <li>2. Genealogical relationships bring people together - genealogical relationships to people and land (whakapapa), and tribal canoe (waka) were identified as a key for successful collaboration.</li> <li>3. Collective leadership drives the vision - Māori taking leadership provided opportunity for Māori collective skill and action to be in the forefront and identify and activate resources from within or across Iwi.</li> <li>4. Indigenous values inform responses to traumatic events – Whānau relationship bonds helped to identify and reach out to the most vulnerable members of their communities.</li> </ol> <p>Identify how the oil spill affected people in the Maketū community and identify the factors that ensured the success of their clean-up efforts.</p>
<p>Local volunteers respond to the Rena oil spill in Maketū, New Zealand.</p> <p>_K Smith, H Hamerton, S Hunt &amp; RJ Sargisson</p> <p><a href="#">Local volunteers respond to the Rena oil spill in Maketū, New Zealand</a></p>	<p>2016 Peer- reviewed article.</p> <p>New Zealand Journal of Social Sciences Online, 11:1</p>	<p>Maketū/Te Arawa Rena Clean-Up Group, University of Waikato, Bay of Plenty Polytechnic</p>	<p>Maketū is historically and culturally significant as the landing place of the Te Arawa waka and also as a mahinga kai site.</p> <p>Maketū clean-up organisers expressed their rangatiratanga through the practice of kaitiakitanga and manaakitanga. Support from whānau, well established connections and roles in the community, spiritual connection to Tangaroa, resourcefulness, innovation, local knowledge, skills and expertise, ability to combine scientific knowledge with mātauranga Māori were identified as determinants of Maketū community’s ability to respond to disasters.</p>

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			Recommended the full inclusion and acknowledgment of the rangatiratanga of mana whenua, in planning and decision-making processes, and the use of participatory processes that engage local communities for effective disaster response.
Sea level rise, housing and insurance: Liability and compensation. Catherine Iorns Project Lead – Victoria University <a href="#">Sea level rise housing and insurance liability and compensation</a>	Deep South Challenge Research website Accessed May 2023	Deep South Challenge and Victoria University	Investigating tipping points at which insurance companies might decide to refuse insurance to coastal property owners. To what extent can or should homeowners rely on the EQC or local or central government to compensate them if their homes become uninsurable due to sea level rise or associated climate risks like storm surges or coastal erosion.
Risk management for Māori coastal assets. Project team lead: Huhana Smith Massey University <a href="#">Risk management for Māori coastal assets</a>	Deep South Challenge Research website Accessed May 2023	Deep South Challenge	This project builds on the collective knowledge about climate change risks and opportunities from 2015–17 in the rohe of Horowhenua– Kāpiti. Phase 1 combined data about soil, floods, topography, river sedimentation and sea level rise to identify the most vulnerable areas coastal farms. Although multiple reports have been produced about coastal erosion risks – including by local and regional councils – none have highlighted social engagement processes that could lead to effective community action. Our Māori-led research approach prioritises social engagement when considering how to respond to sea level rise and other climate change impacts.
The role of coastal marae in natural hazard response and climate change adaptation. Bailey-Winiata A, Gallop S, Hikuroa D, White I. <a href="#">The role of coastal marae in natural hazard response and climate change adaptation</a>	2022 Report Chapter 3 In Coastal Adaptation: Adapting to coastal change and hazard risk in Aotearoa New Zealand. (pp. 41–44)	University of Waikato	To understand the role of coastal marae in response to a natural hazard or climate change. Describes the significance of marae and their location close to waterbodies e.g. rivers/streams, estuaries, and the ocean. Also, self-determination and coastal adaptation. To manage the risk hapū and iwi are drawing on mātauranga. Hapū/iwi are developing innovative solutions to adapt and mitigate risk. 3 broad types of coastal adaptation: protect, accommodate and retreat. If retreat or relocation is to be conducted, it needs to be done carefully given historic injustices from colonisation. Adaptation for marae needs to be cognisant of history and ensure Māori self-determination. Māori should be active at every stage of the process, from knowledge collation and generation through to selecting adaptation options.



**Table 3. Adaptation and climate change models, tools and frameworks**

Title, Author & link	Date published & article type	Organisations Involved	Purpose of resource, recommendations/ gaps identified
<p>Tangoio Climate Change Adaptation Decision Model: A process for exploring adaptation pathways for Tangoio Marae. _Colliar J and Blackett P. <a href="#">Tangoio NIWA Client report</a>.</p>	<p>1 July 2018 NIWA Client report 2018242HN</p>	<p>Prepared for Maungaharuru -Tangitū Trust and Deep South National Science Challenge</p>	<p>8-step Adaptation decision model Te Huringa ki te Rangi - He Rautaki Tāwariwari. Brings together Mātauranga Māori community experience, and hydrological modelling. Information was presented back to the community using a range of formats, flooding history timelines, videos, visualisations of hydrological modelling outputs. This was to help the wider community better understand the potential impacts of extreme flooding to different future climate change scenarios over a range of timeframes. Actions: The Tangoio community have a vision and aspirations for themselves, the marae and their local environment, developed a shared understanding of the past and of what the future could bring and identified a range of potential options for assessment. By developing adaptation pathway maps for their marae, the community is considering the adaptation options proposed e.g. building stop banks, lifting building floor levels, improving site drainage, water-proofing buildings, riparian restoration works and developing a response plan and preparedness kit for large storm events.</p>



<p>A Māori love story: Community-led disaster management in response to the Ōtautahi (Christchurch) earthquakes as a framework for action. _Kenney, CM and Phibbs S. <a href="#">A Māori love story: Community-led disaster management in response to the Ōtautahi (Christchurch) earthquakes as a framework for action - ScienceDirect</a></p>	<p>2015 Peer- reviewed article. International Journal of Disaster Risk Reduction 14: 46-55</p>	<p>Joint Centre of Disaster Research in partnership with Te Rūnanga o Ngāi Tahu.</p>	<p>An overview of the Māori risk management. The response was collaborative, effective and kaupapa-led emergency management. A Māori Cultural Technologies Approach to disaster risk reduction – using tikanga (cultural practices), Mātauranga Māori (Cultural knowledge) and Kaupapa (cultural values &amp; principles) to achieve Whakaoranga Iwi whānui (community recovery, restoration and resilience). Action: The potential of Māori kaupapa-based technologies for addressing disaster management and risk reduction strategies. The Māori Recovery Network is conceptualised as an Actor- Network constructed through assemblages of actors, artifacts and technologies. Aroha nui ki te tangata – extending love to all people - is the principal value. Cultural values such kotahitanga (unity), manaakitanga (hospitality), whanaungatanga (relationality) and rangatiratanga (leadership) guided action. Coordinated action that includes principles of the Treaty of Waitangi and the Hyogo Framework for disaster risk reduction encourages coordinated action within and between government agencies and the community. This value- based recovery approach should be supported by establishing a national Māori Recovery Network which is linked in with mainstream emergency management.</p>
<p><a href="#">Marae-opoly: supporting localised Māori climate adaptation decisions with serious games in Aotearoa New Zealand.</a> _Blackett et al <a href="#">Marae-opoly: supporting localised Māori climate adaptation decisions with serious games in Aotearoa New Zealand</a></p>	<p>2021 Peer- reviewed article. Sustainability Science, 1-17.</p>	<p>NIWA, Maungaharuru -Tangitū Trust</p>	<p>Described and analysed a serious games approach which was utilised by the Tangoio community to support their decision- making on what they considered place appropriate adaptation. This serious game was used to explore adaptation pathways for Tangoio Marae in Colliar and Blackett (2018) above. Marae-opoly was the platform used to integrate diverse information into a digestible format to enable the hapū to experiment with different strategies to achieve their desired adaptation outcomes. See Marae-opoly   Deep South Challenge.</p>
<p><a href="#">Decolonising Māori narratives: Pūrākau as a method.</a> Jenny Lee <a href="#">Pūrākau as a decolonising method for Māori narratives</a></p>	<p>2009 Mai Review 2: Article 3</p>		<p>How pūrākau - a traditional form of Māori narrative was used as a methodology to describe the engagement with decolonising methodologies and kaupapa Māori. Pūrākau, Bricoleur - weaving together sets of practices as possible solutions to a specific problem. Need to have a broad knowledge of a range of methods that may adapt and evolve during the process of finding a solution to the problem.</p>

