



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

New Zealand Archaeological Association

Climate Change and Cultural Heritage Portfolio

Strategic Plan 2021-2026

June 2021

Background:

International Position

Climate change is one of the most significant and growing threats to communities and their cultural heritage worldwide. Scientific evidence shows that unprecedented concentrations of human-induced greenhouse gases (GHGs) are contributing to climate changes including oceanic and atmospheric warming, sea level rise and diminished snow and ice coverage. Variation in natural processes, such as the El Niño Southern Oscillation will also affect the scale and impact of climate effects. These impacts are already affecting infrastructure, ecosystems, and social systems – including cultural heritage – that provide essential benefits and quality of life to communities¹.

Climatic changes are creating new and exacerbating existing threats and vulnerabilities. While, cultural heritage resources have always been subject to environmental factors, the variation and recombination of these forces, are increasing the diversity and intensity of impacts on cultural resources. This not only increases the risk, but the urgency of providing a proactive management approach and enhancing good conservation practice. Responses to increase resilience of the built environment, including managed retreat, often overlook or are not applicable to cultural resources. Efforts to find sustainable adaptation options for cultural resources must also be a priority.

The call for climate action, identification and protection of cultural heritage is recognised internationally. The United Nations Sustainable Development Goals (SDGs) and Paris Agreement recognise that cultural heritage can guide choices that promote human action in ways that support resilience, sustainability and by extension ‘climate-resilient pathways’^{2,3}. Current best-practice calls for a more holistic and interdisciplinary heritage practice, grounded in a concern for resilience and sustainability to effectively respond to climate change through mitigation and adaptation responses. In addition, cultural heritage can contribute positively to climate action due to the repository of available information on past populations, environment and adaptation solutions and as a symbol of resiliency for ecosystems, cities, neighbourhoods, sites and cultural landscapes⁴.

New Zealand Position

The effects of climate change are already being observed in Aotearoa/New Zealand, with impacts including temperature increase, precipitation variation and sea level rise (SLR) set to worsen (New Zealand Climate Change Centre 2014). To understand the ongoing risks and wider implications, the New Zealand Government through the Ministry for the Environment (MfE) established a Climate Change Adaptation Technical Working Group, producing *Adapting to climate change in New Zealand*

¹ ICOMOS 2019

² Climate-resilient pathways are development trajectories of combining mitigation and adaptation efforts to achieve sustainable development to avoid “dangerous anthropogenic interference with the climate system”. Denton et. al 2014: 1107.

³ ICOMOS 2019.

⁴ ICOMOS 2019 page 65

(MfE 2017a and 2018) and *Preparing for coastal change* (MfE 2017b). Following the group's recommendations MfE have completed a wider climate change risk assessment to prioritise climate action and adaptation (MfE 2020). Additionally, the national risk assessment recognises the importance of social and cultural resilience through the following relevant factors: heritage (tangible and intangible), taonga and Mātauranga Māori. These documents have also supported the introduction of the Climate Change Response (Zero Carbon) Amendment Act (2019) and recent declaration of a climate change emergency to reduce carbon emissions and set clear targets for how we adapt to a changing environment. The latest legislative announcement proposes a Climate Change Adaptation Act through the Resource Management (RMA) Act (1991) reform, which would set a national direction to achieve emissions targets, coastal adaptation, and managed retreat.

While this legislative direction set a positive road map for change in Aotearoa, the effects and response for cultural heritage not well understood (MfE 2020:10). Furthermore, cultural heritage is rarely a significant component of these plans or is often heavily weighted to the effects on built heritage due to focuses on protecting coastal community assets and infrastructure.

However, as we mitigate effects and adapt to a changing environment, we need to recognise and protect the role cultural heritage plays in achieving cultural and social wellbeing and resilience and intersections with the natural environment. Cultural heritage provides a source of identity, sense of place, resilience, and guidance to effectively respond to the global climate emergency. For example, tangible and intangible cultural heritage (i.e., archaeological sites, museums, built heritage, cultural landscapes) offers insight into environment-friendly building techniques and agricultural practices and past environmental conditions, which underpin our capacity to adapt to a rapidly changing environment (ICOMOS 2019). Further examples highlight the sensitive retrofitting of built heritage to contribute to the mitigation of greenhouse gas emissions by reusing embodied carbon (Historic England 2019 and Wise et al., 2019). Raised appreciation and recognition of cultural heritage will also assist in identifying wider connections and collaboration with natural and social sciences in striving towards climate action.

For cultural heritage sites and places in Aotearoa, SLR and the associated effects of storm surge and inundation, exacerbating erosion currently pose the most significant risk to the ongoing protection of archaeological sites. Majority of archaeological sites in New Zealand are located in close proximity to the coast, due to the nature of past (and current) Māori and European settlement and dependency on coastal access and resources. This is particularly evident in the number and density of Māori archaeological sites in coastal environments, and therefore the unique heritage of tangata whenua is especially vulnerable. Drought, increased precipitation, risk of wildfires and land instability also threaten the condition and integrity of cultural heritage resources nationwide. Prioritising responses to these threats will change over time based on previous adaption and mitigation efforts and our increasing understanding of each threat and associated implications for cultural heritage resources.

Inclusion in national policy and legislation often comes down to a lack of understanding of the implications of climate change effects on cultural heritage and the contribution these resources provide to understanding past environmental patterns and human adaptation. There have been few examples of research and response in New Zealand and those to date have been on local or regional

scales (e.g., Bennett et al. 2018, Bickler 2013, Brookes 2008 and 2012, Egerton 2009, Hil 2016, McCoy 2018, Tait 2019, and Ramsay 2014). Moreover, there are limitations on the archaeological data available due to survey coverage and data quality (e.g., accuracy, locational information, and time between visits). Without regular monitoring and standardised recording of climate impacts, comparison of results and understanding coastal change is limited. Consequently, these gaps limit our understandings of suitable adaptation responses to improve resiliency and adaptive capacity of sites and places, particularly in coastal environments. Furthermore, there is a fragmented response within the heritage profession nationally to addressing climate change.

NZAA Position:

The NZAA and archaeological community has for some time been concerned about the vulnerability of archaeological sites, primarily caused by the exacerbation of coastal erosion and inundation through rising sea levels and increasing frequency and severity of storm events (e.g., Campbell 2009 and Walton 2007). Coastal survey, monitoring, assessment, and research has been undertaken by various practitioners and organisations, however, there is no coordinated national approach to understand and address the effects of climate change on cultural resources. NZAA also supports attempts to manage and reduce the rate of loss of heritage and information. Inaction and reactive responses will result in the loss of significant heritage sites and places, the potential for developing our understanding of the past, and the tangible connection to our unique history that these sites provide.

To focus our response and encourage immediate action the NZAA have developed the following mission statement, which draws on relevant climate change and cultural heritage literature and practice.

The NZAA are committed to encouraging and undertaking research to understand the implications of, and methods to proactively address the impacts on climate change on cultural heritage resources. The NZAA will work with tangata whenua and heritage sector to build greater cooperation and collaboration to respond to climate change and minimise the loss of archaeological sites and information. The NZAA will also advocate for the recognition and protection of cultural heritage across New Zealand and the contribution of cultural heritage resources to address climate change.

The strategic plan aims to enact the above statement and to aid in the coordination and focus of climate action, response and improve wider awareness and appreciation of cultural heritage. To implement the plan, objectives and goals are set out in the section below and where possible are aligned with the NZAA Strategic Plan. It is envisioned that this plan is flexible to response to changes in the discipline, priorities of the archaeological community and NZAA change and refinement of climate science and action (e.g. GHG emissions RCP projections, SLR scenarios).

Plan Objectives:

The objectives of the strategic plan are:

- To provide a consistent national approach to identify and address the impacts of climate change on cultural heritage

- Confirm the NZAA's position in managing the effects of climate change on cultural heritage
- Undertake and encourage climate change and cultural heritage research
- Bring key climate action partners together to build cooperation and collaboration across the heritage sector
- Work with and support tangata whenua in the management and protection of their cultural heritage sites and places
- Develop standard climate change reporting requirements in ArchSite to improve data collection, storage and analysis (particularly at a national level)
- Explore opportunities for funding
- Support and provide guidance into vulnerability assessments, mitigation and adaption projects
- Provide a forum for climate action project sharing and networking
- Advocate for the recognition and protection of cultural heritage in climate action plans, national policy, strategies, legislation and other relevant locales
- NZAA develops carbon neutral goals and targets within the organisations strategic plan

These objectives will be achieved through the following goals, which are aligned with the NZAA strategic plan. These goals will also inform the work program and desired deliverables.

Target	CC and CH Goals
Establish formal relationships with the wider heritage community Create and maintain a strong support base of members to serve on council and subcommittees	<ol style="list-style-type: none"> 1. Establish formal relationships with the wider heritage community and other relevant parties to deliver CC and CH work program. For example: <ul style="list-style-type: none"> ● Consultant archaeologists/organisations ● Tangata whenua ● HNZPT ● DOC ● Universities ● Museums ● NIWA ● MfE ● MCH ● Local communities, NGOs, volunteer organisations 2. Incorporate CC and CH outcomes into MoU/relationship agreements. 3. Support tangata whenua in the management and protection of their cultural heritage sites and places. 4. Identify areas of growth in the portfolio and opportunities for additional members to contribute to the subcommittee. 5. Identify and explore opportunities for CC and CH project funding.

<p>Promote and support archaeological research</p> <p>Promote archaeology at a national level</p>	<ol style="list-style-type: none"> 1. Contribute to, produce, and disseminate CC and CH publications. <ul style="list-style-type: none"> ● For example: Archaeology in New Zealand, NZAA website, social media, blog posts 2. Facilitate discussion and promote CC and CH on national, regional and local levels. 3. Continue and expand current archaeological risk mapping exercise with Eagle and NIWA and ground truth modelling results. 4. Facilitate the identification and a registry of high-risk sites on regional and local levels. 5. Develop a national strategic approach to research to address the most at risk sites. 6. Create a national networking forum for relevant and interested parties to register CC and CH projects to improve collaboration and share resources. 7. Develop and implement national climate change monitoring project with key climate action partners.
<p>Advocate for the protection and conservation of archaeological sites</p> <p>Build and maintain relationships with Crown heritage agencies and territorial and local authorities</p>	<ol style="list-style-type: none"> 1. Develop and clear and actionable position on identifying and addressing the impacts of climate change on cultural heritage. This should follow global positions from UNESCO, ICCROM and ICOMOS, while appropriately responding to national legislation and heritage best practice. 2. Advocate for the recognition and protection of cultural heritage in climate action plans, national policy, strategies, legislation and other relevant locales. 3. Develop standard guidance on inclusion of cultural heritage in hazard mitigation planning and appropriate adaptation options for coastal archaeological sites.

<p>Maintain and advocate ArchSite as the national inventory of archaeological sites in New Zealand</p>	<ol style="list-style-type: none">1. Incorporate compulsory climate change effects/threats and condition statements into site recording standards. Information to assist in prioritisation of risk areas and understanding of threats.2. Repository of information generated from national climate change monitoring strategy.
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Work Program | Time Frames:

To effectively meet the above objectives and goals the plan has been split into four phases to stage the work program. These phases are organise, access, develop and monitor.

Phase One: Organise	
Build relationships, networks and increase advocacy	
	Timeframe and Deliverables
1. Identify and engage with key climate action partners. <ul style="list-style-type: none"> a. Work within existing formal partnerships of the NZAA and organisations with interests in climate action and heritage i.e.: <ul style="list-style-type: none"> i. Kaupapa Māori Advisory Group ii. ArchSite Board iii. Tangata whenua iv. HNZPT v. DOC vi. MCH vii. ICOMOS NZ viii. Consultant archaeologists/organisations ix. Museums x. Universities <ul style="list-style-type: none"> a. Southern Pacific Archaeological Research (SPAR) b. Establish a NZAA subcommittee between NZAA, HNZPT and DOC, (advocacy, legislative and asset owners) to enable collaboration on policy development and adaptation planning, management of cultural resources, production of guidance documents, advocacy and funding. c. Scope a multidisciplinary partnership in addressing climate change impacts d. Complete a 'stocktake' of key and interested parties and understand their priorities regarding climate change and cultural heritage. e. Build network of parties to share projects, resources, facilitate discussion and identify advocacy and funding opportunities. <ul style="list-style-type: none"> i. National repository of data, approaches, failures, successes etc. ensure responses are coordinated and complementary i.e., national guidance and consistency in 	NZAA subcommittee established by August 2020 Expressions of interest for networking and developed forum by April/May 2021

<p>selecting, implementing, and monitoring adaptation options (where appropriate).</p> <p>ii. Investigate available platforms for Climate Change and Cultural Heritage Network</p> <p>iii. Scope for networking, collaboration and funding outside of heritage profession</p> <p>b. For example: MfE, NIWA, Coastal Restoration Trust, NZ Coastal Society.</p>	
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Phase Two: Assess	
Baseline Data and Resources:	
	Timeframe and Deliverables
<p>1. Continue and expand cultural heritage risk mapping project (risks may include but not limited to, coastal erosion, fluvial and pluvial flooding, storm surge, land instability and oceanic changes)</p> <p>a. Current scope includes five sea level rise scenarios mapped at 1m intervals for Wellington’s CBD, overlaid with recorded archaeological sites from ArchSite. https://climate-change-in-new-zealand-eaglelabs.hub.arcgis.com/pages/archaeological-sites</p> <p>b. The project will be expanded with data supplied from NIWA produced through the Deep South Challenge. Data to be obtained includes Auckland and Wellington region 100-year ARI (average recurrence interval) extreme sea level rise coastal flooding and national scale 100-year 3m sea level rise vector polygons.</p> <p>c. Data will be used to quantify the number of at risk coastal archaeological and underwater cultural heritage sites, identify gaps in our archaeological database/survey coverage and prioritise areas for additional fieldwork.</p> <p>d. Data can contribute to determine overall site vulnerability and prioritise protection/adaptation responses.</p> <p>2. Climate change projections and environmental change</p> <p>a. Assessment to be regularly updated with most recent climate projections, scenarios and hazards to cultural heritage.</p>	<p>Ongoing</p> <p>Aim to have mapping exercise to be completed by and presented to membership at 2021 conference</p> <ul style="list-style-type: none"> ● Publish preliminary results in quarterly AINZ and NZAA conference. Disseminate appropriately to iwi and relevant TLAs.

<ul style="list-style-type: none"> i. Often comes in at a global scale (IPCC) and required accurate information on national, regional and local levels to understand and plan for climate change impacts. ii. Data sourced from NIWA and TLAs 	
Assess:	
<ul style="list-style-type: none"> 1. Collate results from risk mapping project to: <ul style="list-style-type: none"> a. Landscape/coastal catchment scale - prioritise areas for further fieldwork and monitoring b. Individual sites and places - known at risk sites and environments can further understand risks and response to inform vulnerability assessments 2. “Short-circuit approach” to site protection/adaptation. Achieved in collaboration with regional/local experts (i.e., file keepers, archaeologists (HNZPT and consultant), universities/research institutes, Iwi and TLAs). Identify 10 sites per region, undertake initial site visits and regular follow up monitoring visits (i.e., 2-3 times a year). Prioritise some sites (1-2 per region) to have detailed recording, rescue archaeology or other proactive response. 	Ongoing
Disseminate:	
<ul style="list-style-type: none"> 1. Produce publication and disseminate results to NZAA’s climate action partners and Climate Change and Cultural Heritage Network <ul style="list-style-type: none"> a. AINZ, other journals, presentations, NZAA website, conference b. Summary information to supply to regional/district councils, HNZPT area offices, rohe areas. c. Dashboard created by Eagle – climatechangenzeaglelabs.hub.arcgish.com/pages/archaeological-sites 	

Phase Three: Develop	
Guidance and Information: <i>(Who is the audience?)</i>	
	Timeframe and Deliverables
1. Develop guidance in partnership with HNZPT, DOC, TLAs and tangata whenua. <ul style="list-style-type: none"> a. Topics for inclusion could include: <ul style="list-style-type: none"> i. Overview of impacts and response to climate change on cultural heritage sites. ii. Local / regional response plans <ul style="list-style-type: none"> a. Including stocktake of local experts to assist in site identification and recording following storm events, natural disasters etc. iii. Regional cultural heritage and climate change risk summaries. iv. How to report sites actively eroding or following extreme weather events. v. How to prepare cultural resource vulnerability assessments (CVA). vi. Appropriate coastal adaptation measures for archaeological sites. vii. Engagement and evaluating site significance and values (key component of vulnerability assessments – matrix with risk, value etc.). viii. Archaeology and climate science. 	2021 – ongoing
<p><i>Cultural Resource Vulnerability Assessments: due to the scale and resource required to produce cultural resource vulnerability assessments, NZAA would provide baseline information, guidance, and advocate for the production and use of these documents, rather than driving the production. That responsibility would sit with the landowner and/or relevant central or local government authority.</i></p>	
Coastal Monitoring:	
1. Provide the framework and support national/regional monitoring/CVA programme. <ul style="list-style-type: none"> a. Responsible or lead organisations: <ul style="list-style-type: none"> i. TLAs (capacity and training?) ii. Iwi (capacity and training?) iii. HNZPT iv. DOC b. Ideally to become self-sustaining programmes with strong focus on tangata whenua and community involvement – Public Archaeology and Citizen Science. <ul style="list-style-type: none"> i. Supported through the development of an app or similar accessible technology. ii. Scope for integration with existing databases (i.e., ArchSite). c. Draw from examples of best practice internationally. 	2021 - ongoing

<p>i. Project examples:</p> <ol style="list-style-type: none"> 1. Coast Snap (International initiative) https://www.coastsnap.com/ 2. Scotland (National) http://www.ssharp.co.uk/ 3. Florida, USA (State level) https://fpan.us/projects/HMSflorida.php <p>d. Collect sufficient evidence on climate change threats and risks, archaeological sites and measure rate of loss or degradation of site condition. This information is required (at a minimum) to prioritise sites and find suitable adaptation options. Data received and processed at national or regional level.</p> <p>e. Collaboration with stakeholders and related disciplines – particularly in coastal environments.</p>	
<p><i>NZAA would provide a support and advocacy role in this work stream, but a level of national oversight is still required. NZAA to provide overarching principles and outcomes for separate monitoring projects to follow to ensure consistency and compatibly with recorded data etc. NZAA can compile information and prioritise areas for assessment, adaptation, salvage excavation etc. NZAA can also provide additional support through training, funding, and as a platform to share monitoring outcomes and advocacy.</i></p>	
<p>Data collection and holdings:</p>	
<ol style="list-style-type: none"> 1. NZAA ArchSite Database <ol style="list-style-type: none"> a. How can we utilise the existing database to consistency collect information on climate change threats and risks, measure rate of loss or degradation of site condition and assist in the prioritisation of any adaptation responses and/or proactively address threats to reduce site vulnerability and increase resiliency. b. Threats, condition, site significance/value fields? Collation of HNZPT List and District Plan schedules? c. Expansion of ArchSite? 	<p>2021</p>
<p>Mitigation and Adaptation Planning:</p>	
<ol style="list-style-type: none"> 1. Advocate for the incorporation of cultural heritage considerations into mitigation, adaptation and resiliency or recovery plans – disasters response and emergency works. 2. Keep database of key policy documents and legislation 	<p>Ongoing</p>

Phase Four: Monitor	
Review and revise	
	Timeframe and Deliverables
1. Future expansion past SLR and associated effects to include additional hazards on cultural heritage site types. 2. Legislative changes? a. HNZPT Archaeological Authorities i. Baseline research, relevant case studies and post event responses to inform or advocate for a proactive and timely response to authorities for high risk archaeological sites. ii. Authority process following unpredicted storm event which has exposed and/or severely eroded or undermined archaeological deposits iii. Ensure any site recording (invasive – e.g. section drawings, sample collection, salvage excavation) and any required stabilisation is compliant with all legislative requirements and international best practice, i.e methods associated with in situ preservation. iv. Case studies where multiple storms have occurred in short succession, compounding damage to archaeological sites and all within the processing timeframes of a general authority. Revision to scientific authority? ‘Blanket Authority?’ – What information would be required to support this? Minimum standard of recording? Discussions required with HNZPT national office.	Ongoing 2025

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