ELEVATING BUILDINGS AND PALUDICULTURE

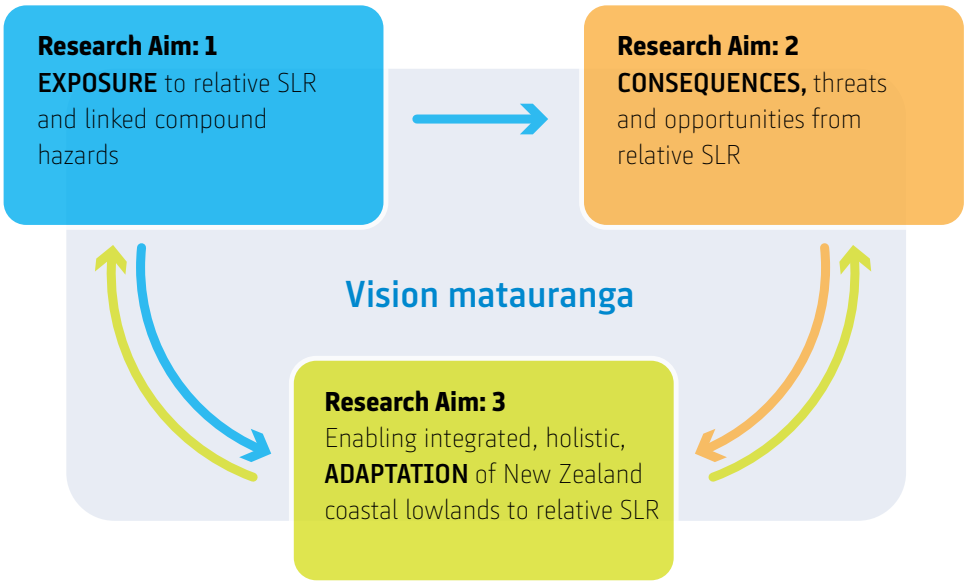
Research findings from the Future Coasts Aotearoa programme

This brief provides background of review reports as part of investigations into options for communities in Te Puuaha o Waikato affected by future sea-level rise: the cost to elevate buildings and paludiculture in Aotearoa New Zealand.

About the Future Coasts Aotearoa programme

Future Coasts Aotearoa is a five-year (2021-2026) collaborative research programme led by the National Institute for Water and Atmospheric Research (NIWA) that aims to transform coastal lowland systems threatened by relative sea-level-rise into prosperous communities.

Work under Research Aim 2 focusses on the socioeconomic and cultural impacts of relative sea-level-rise and adaptation to it. The programme includes four case study coastal communities from across Aotearoa.



Note: relative sea-level-rise (SLR)

The University of Waikato
U.S. Geological Survey
Komanawa Solutions

TE PUUAHA O WAIKATO CASE STUDY

One of the case studies is Te Puuaha o Waikato - an area traditionally demarcated by tangata whenua as starting near the town of Te Paina (Mercer) and following the flow of the Waikato River westward to the sea at Port Waikato. Research is being conducted to identify opportunities for iwi in the Lower Waikato area to adapt to relative sea-level-rise while retaining connections with their whenua (land), awa (river), and whaanau.

This case study is co-led with community-based researchers affiliated with Waikato hapuu (Te Puuaha) and NIWA.

Reports were commissioned to inform potential adaptation in the Lower Waikato:

Elevation of buildings

It is important for the community to remain physically connected to their remaining land to retain cultural identity and practices associated with the land and whakapapa. Elevating buildings on the land could potentially allow whānau to safely remain in place for as long as possible.

NIWA commissioned a firm of engineers to estimate possible elevation costs so that the magnitude of the action could be understood. The resulting report outlines general activities that would be needed to elevate buildings in situ, generalised costs and other considerations such as expenses that are not covered and that might need to be addressed at some point.

Paludiculture

Te Puuaha identified paludiculture as a possible activity for the region and are keen to explore its potential. For the Lower Waikato case study, paludiculture provides a possible means to:

- help the landscape of the Lower Waikato return to unmanaged conditions, enhancing the environmental health of the area and the spiritual and cultural health of the people, while simultaneously.
- softening the blow of agricultural losses arising over time from relative sea level rise and or removal of flood defences.

While paludiculture exists elsewhere in the world, it is still a new option for Aotearoa. This introductory review of paludiculture was commissioned so that the team could understand what paludiculture is, how it can be done and general issues involved in considering this for the Lower Waikato.

For further information about the programme and to view the report visit:

niwa.co.nz/future-coasts

The Future Coasts Aotearoa NIWA-led programme is funded under the Endeavour Fund (MBIE).

Find out more about report findings in the 'Elevating Buildings' brochure

Paludiculture

Paludiculture refers to the productive use of wet and rewetted peatlands where peat is preserved, subsidence is stopped and greenhouse gas emissions are minimised. Paludiculture can potentially provide numerous benefits including:

- provision and maintenance of ecosystem services
- sequestration of greenhouse gas emissions and carbon
- conservation of species
- commercial earnings from cropping.

NIWA Taihoro Nukurangi

Maaku anoo e hanga tooku nei whare