OFFICIAL

Waitangi Tribunal — Wai 1884 | Ngāti Ngahere

Expert evidence:
Dr Shannon Davis & Dr Richard Morris
Designing Future Productive Landscapes Centre of Excellence
Lincoln University

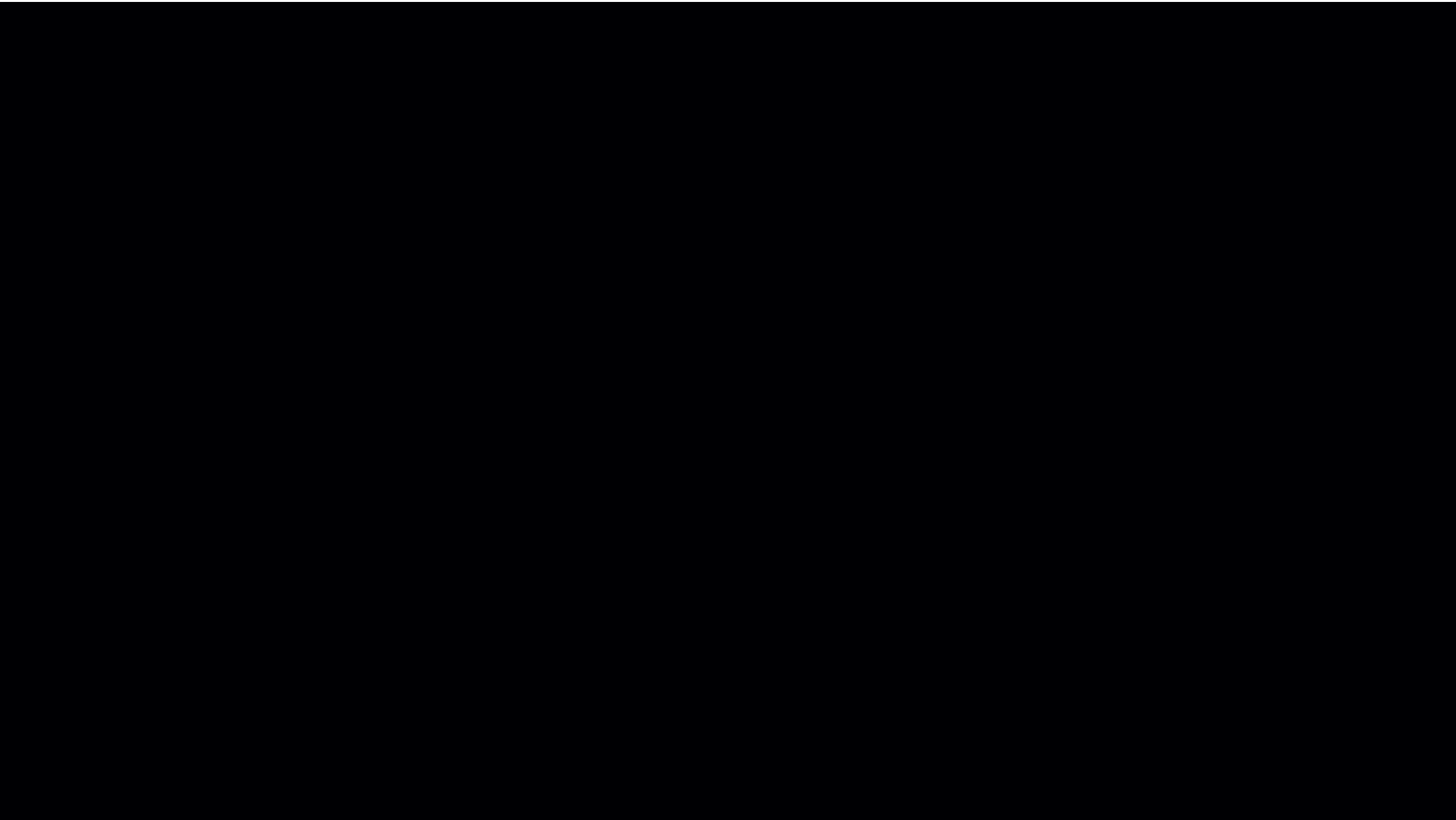
Climate adaptation, whenua and future resilience

RECEIVED
Waitangi Tribunal
10 Sep 26
Ministry of Justice
WELLINGTON

Our relationship with Te Whakatōhea

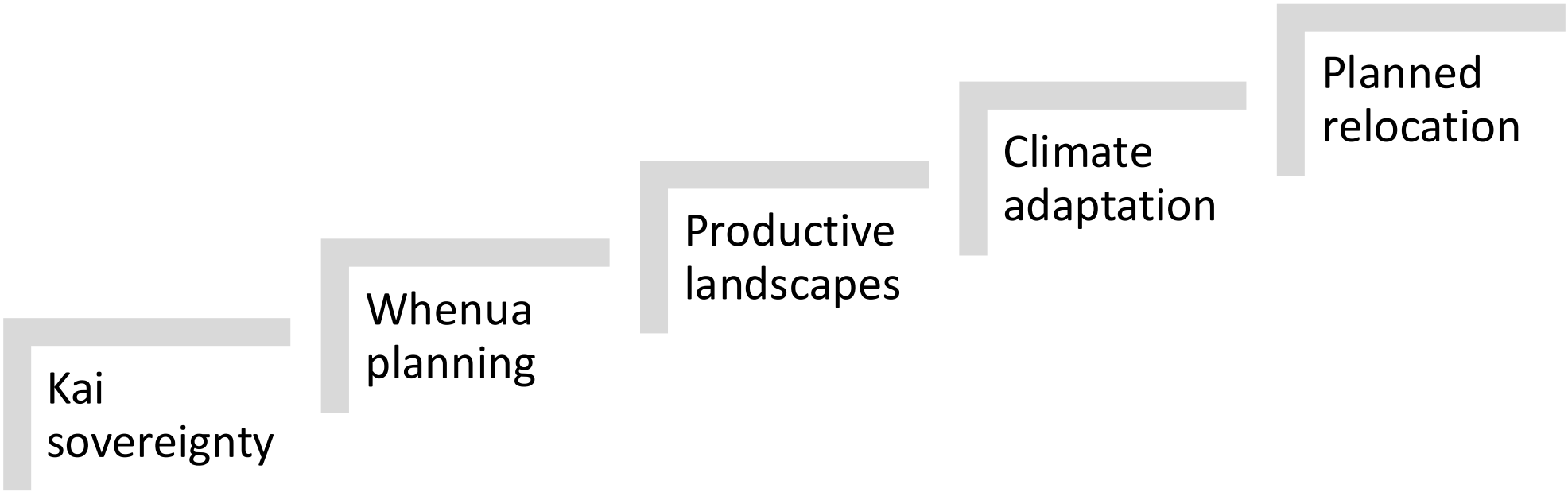
Tōhea Oranga Wānanga Whenua *Hold onto health, learn from the land*

30+ year relationship with Te Whakatōhea Lincoln University research partnership since 2022



Tōhea Oranga Wānanga Whenua

Research trajectory:



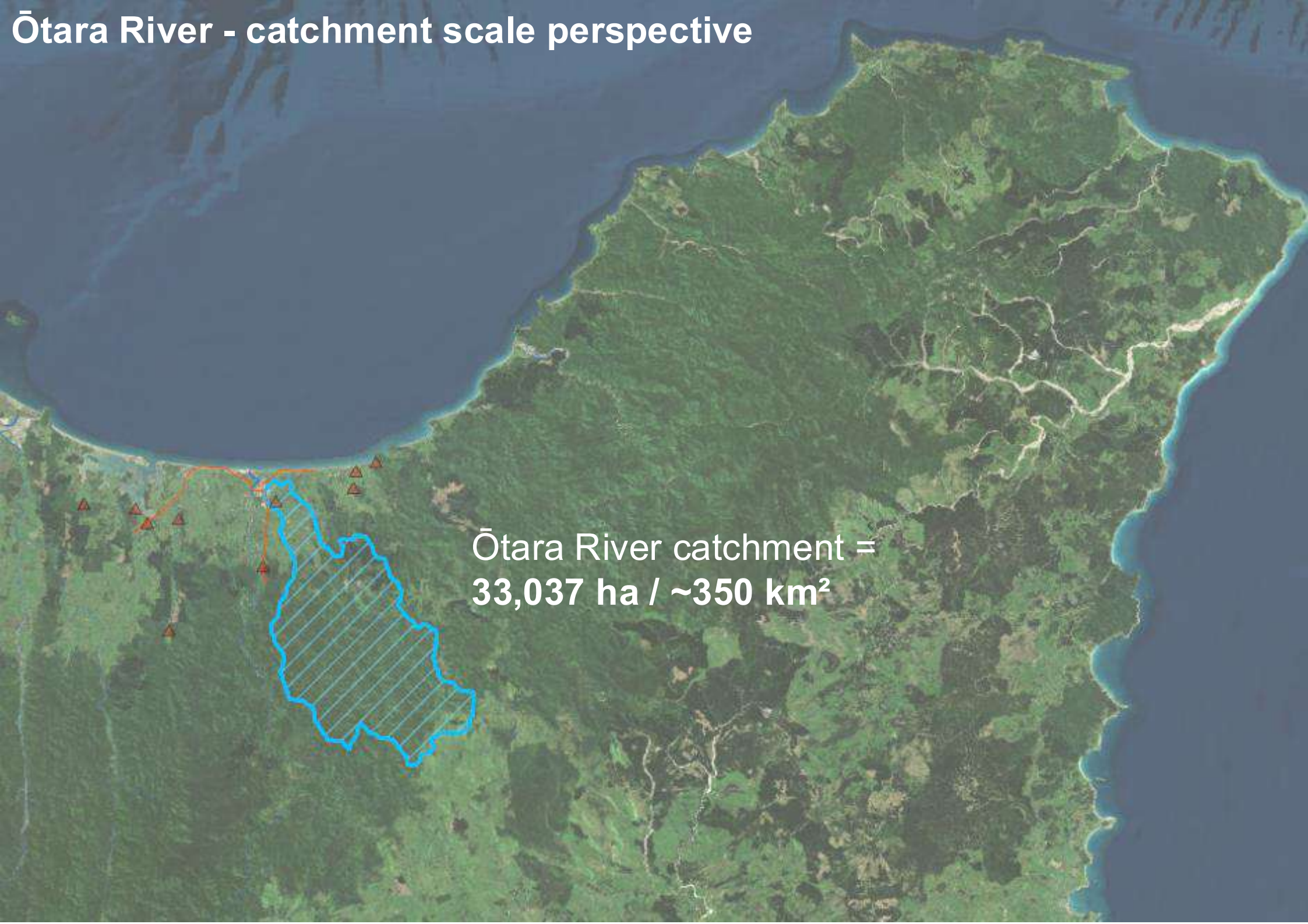
Climate change increasingly became the connecting condition across the Tōhea Oranga Wānanga Whenua research program

Ōpōtiki | Bay of Plenty

Te Rere Marae location

Infrastructure, productive land and communities concentrated in a vulnerable landscape

Ōtara River - catchment scale perspective

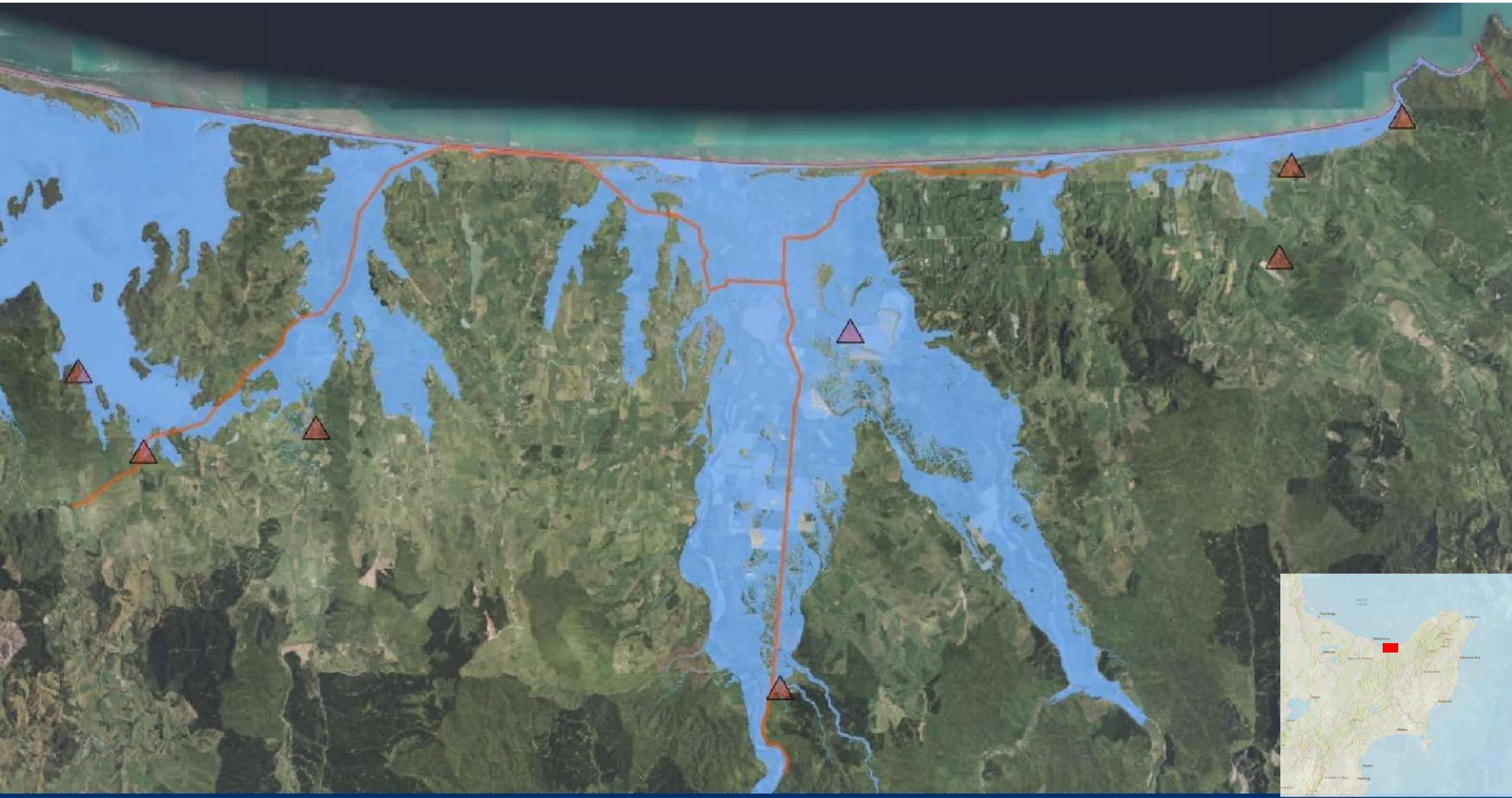


Ōpōtiki | climate exposure

2135 sea-level-rise / flood exposure

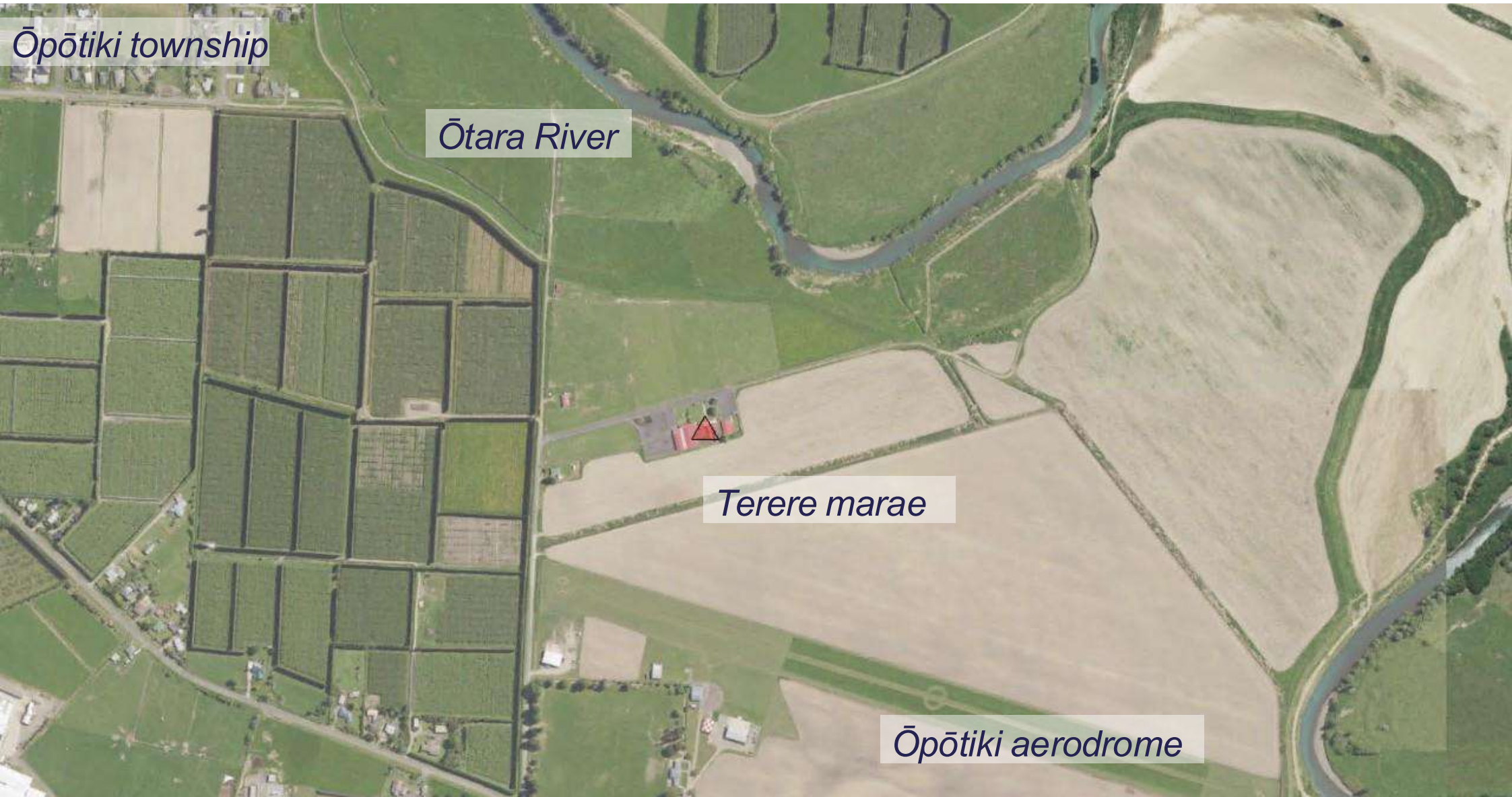
River flooding + sea-level rise/backwater + rising groundwater

Climate vulnerability is **compound and systemic**, not simply coastal inundation.



Te Rere Marae

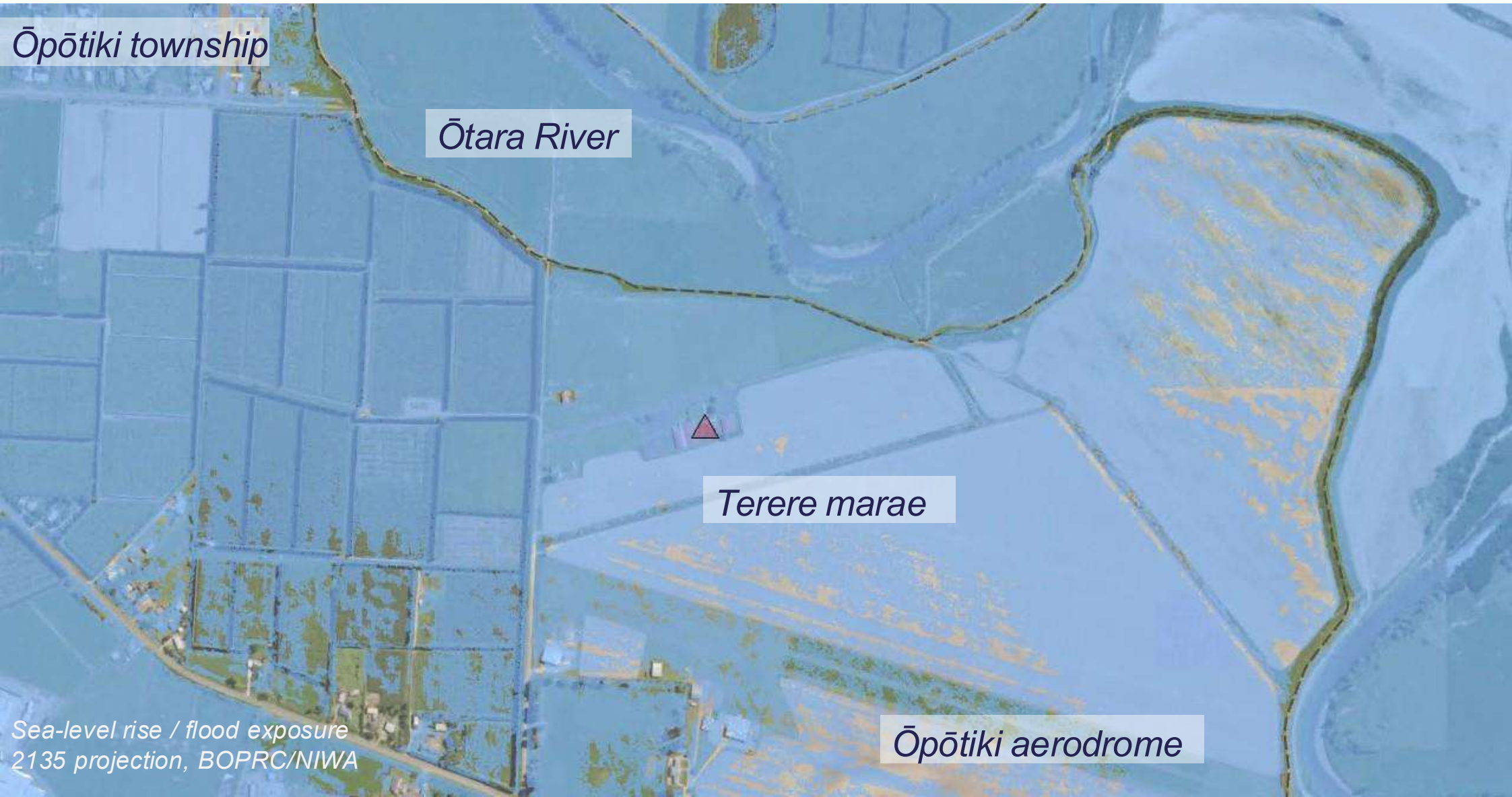
Te Rere Marae + Ōtara River + Ōpōtiki aerodrome



Te Rere Marae

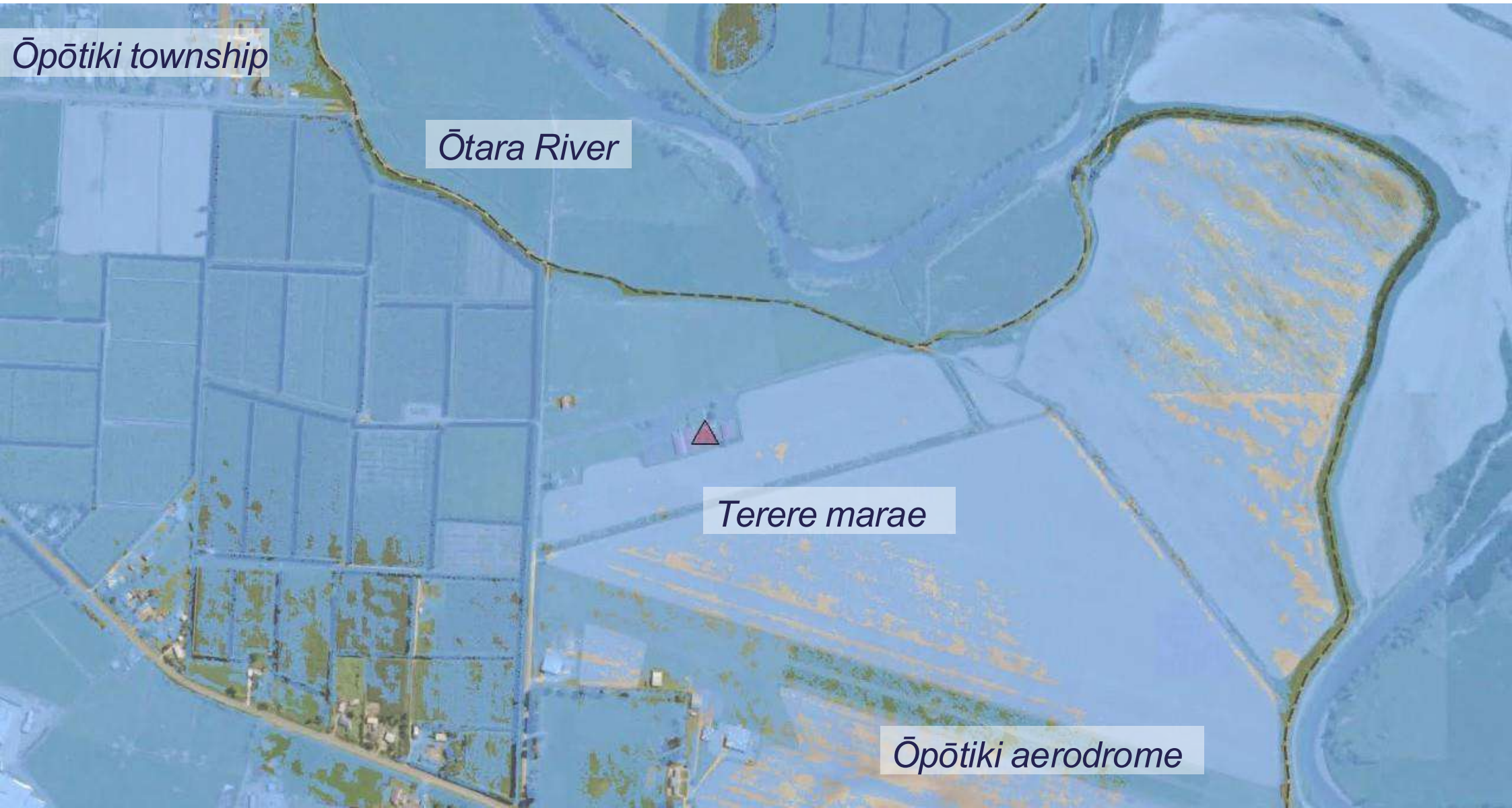
Marae immediately behind Ōtara stopbank

Flood exposure + rising groundwater + existing drainage pressures
Protection reduces risk; it does not eliminate it



Te Rere Marae - a resilience paradox

Te Rere functions as default public refuge/support infrastructure despite its own exposure



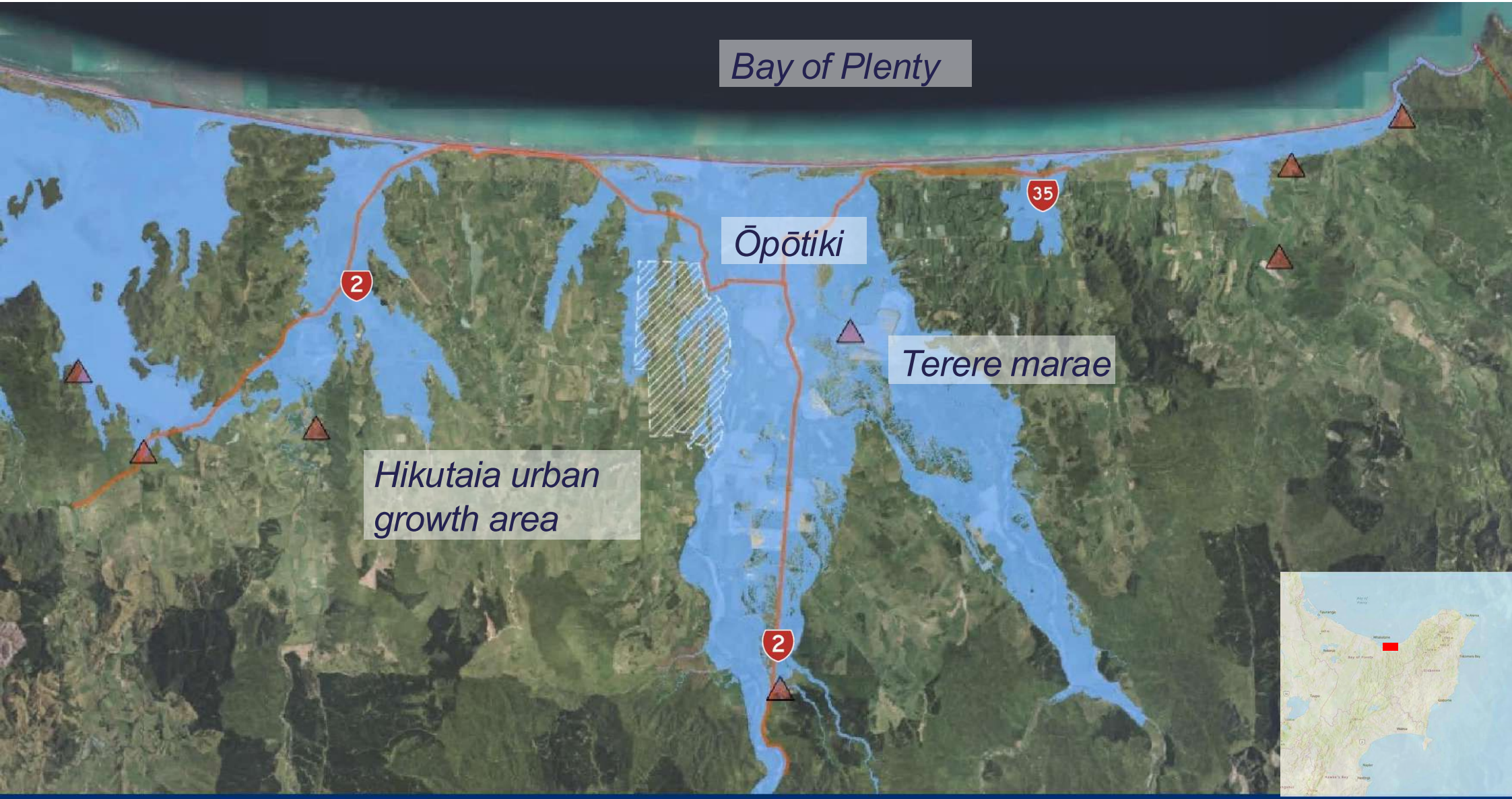
Ka Mate Kāinga Tahi Ka Ora Kāinga Rua
From adversity arises the opportunity for change

A case study of iwi-led long-term whenua adaptation planning in response to climate change

Hikutaia | what kind of future community?

Higher ground identified for future urban growth

But planning a residential growth area is not the same as planning the long-term adaptation of a community



Whakatōhea Dairy Farm

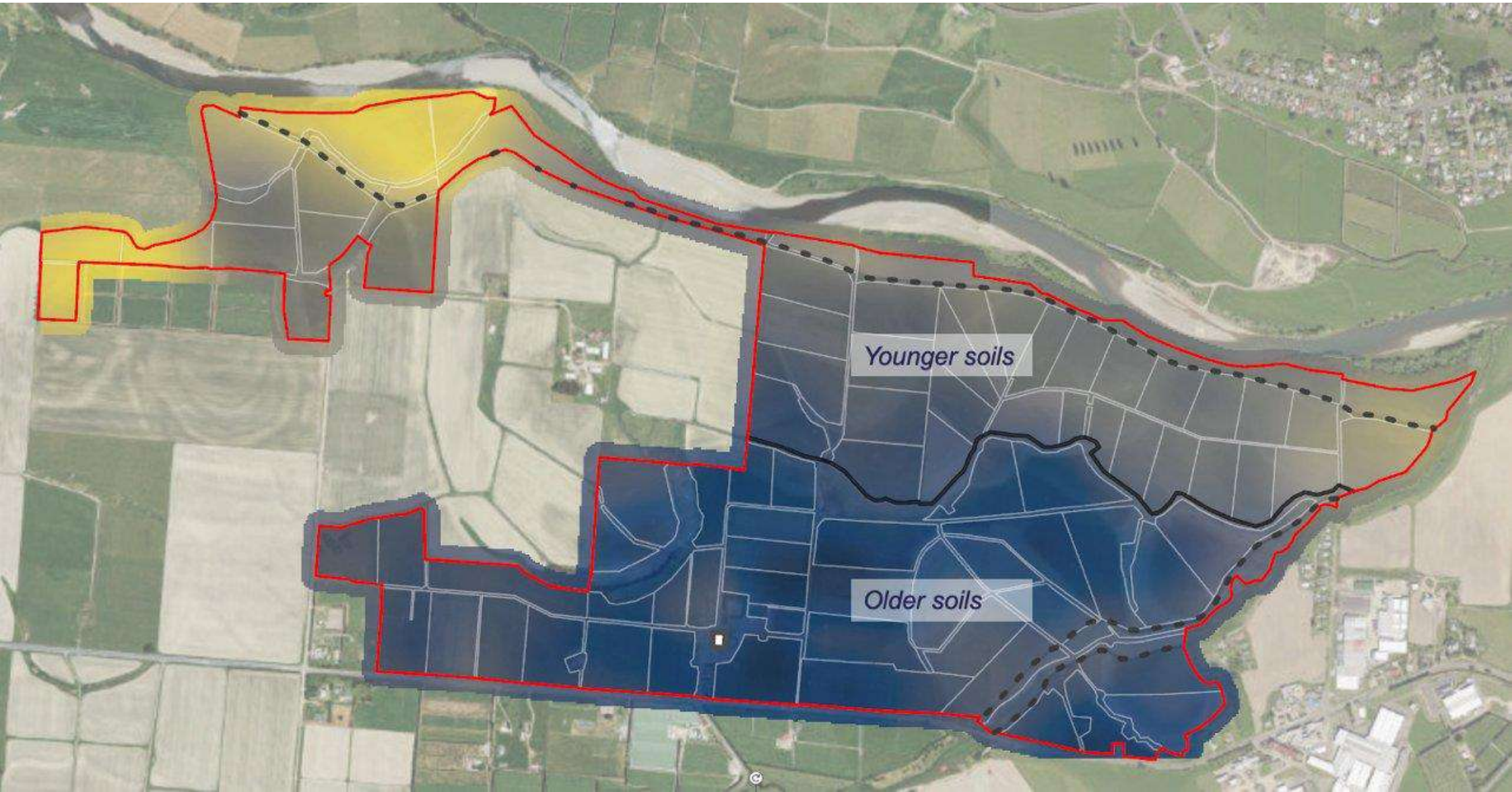
Wānanga whenua: understanding why landscapes function as they do

Radiometrics + terrain + hydrology/physiography as a way of reading landscape processes

Whakatōhea Dairy Farm

Wānanga whenua: reading the landscape

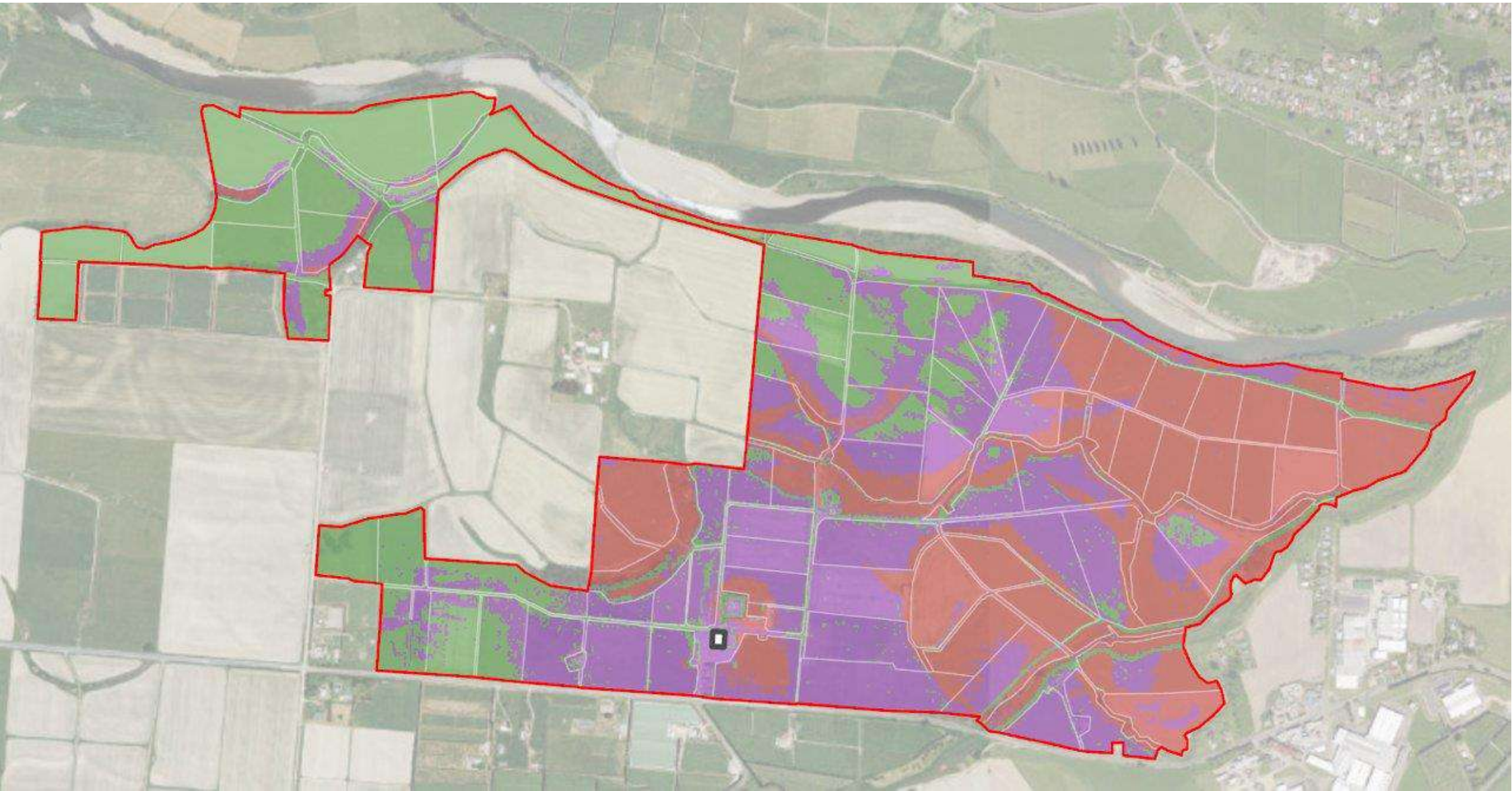
Radiometrics-informed physiography - revealing landscape variability not apparent from conventional mapping alone



Whakatōhea Dairy Farm

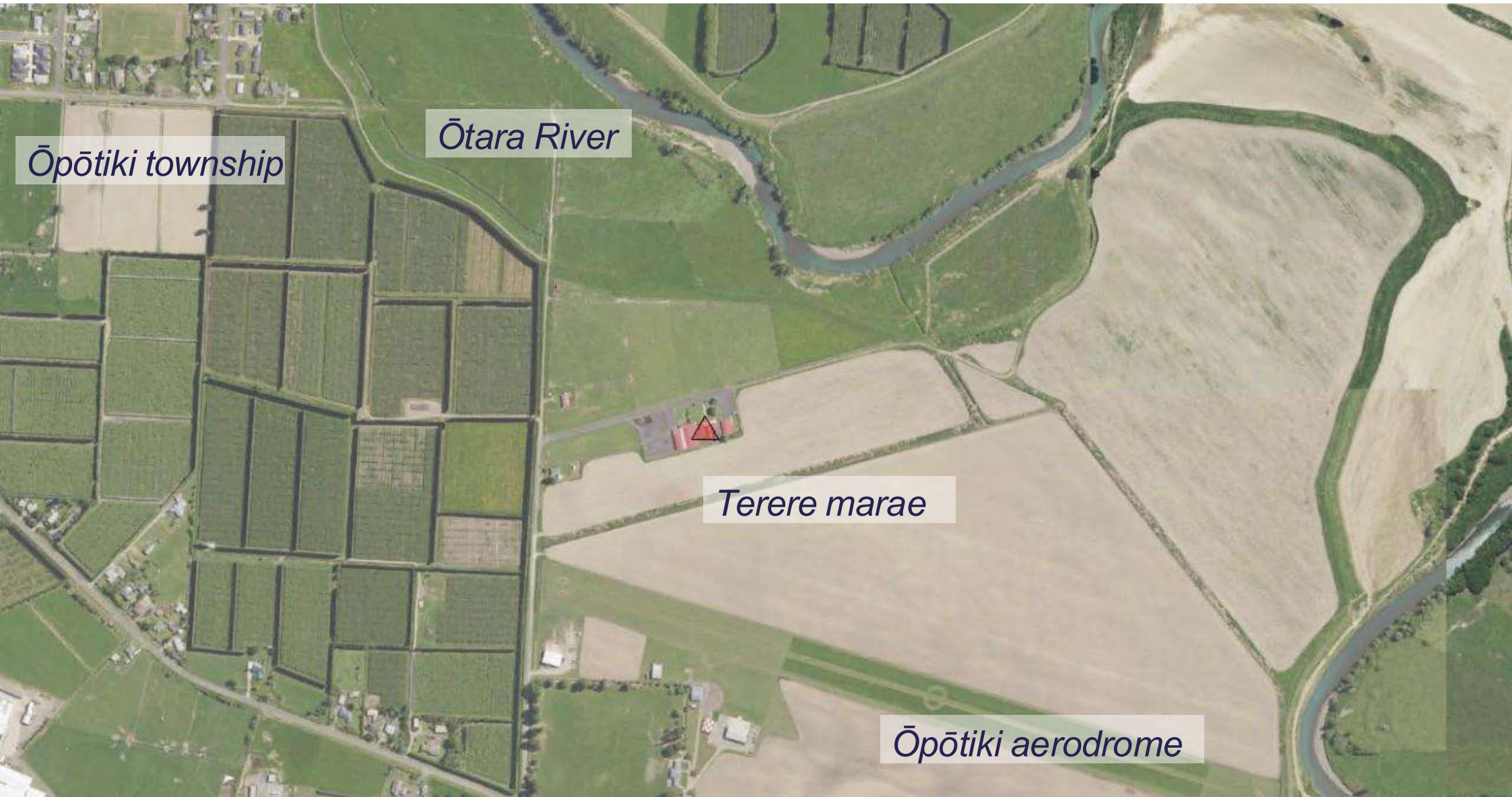
Wānanga whenua: reading the landscape

Absorption and run-off characteristics help define the real extent of the awa



Te Rere Marae - a resilience paradox: future investment

Landscape diagnosis informs how marae functions are organised for long-term resilience:
refuge, water, energy, sanitation, access, communications, kai



Te Rere Marae - a resilience paradox: future investment

Landscape diagnosis informs how marae functions are organised for long-term resilience:
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Te Rere Marae - from adversity arises the opportunity for change