



Manaaki Whenua
Landcare Research

Working with, not on, the land

Dr. Nikki Harcourt



Take home messages

The way we frame our relationship with the environment shapes our information needs

In addition to standard data sets, MWLR can deliver more nuanced information

Māori are a diverse grouping, ask and don't assume (data needs)

Te ao Pākehā framing (an example)



Key driver-to maximise
\$/kg from

Lead considerations-
Potential ROI,
Biophysical feasibility,
Market dynamics

Core data-(technical)
e.g., cost of labour,
capital investment,
freight, climate, soil etc



Reductionist (discrete boxes/categories of things)

Our framing dictates the questions we ask.....

- What is the soil fertility like? We might send our soil samples off to the lab to be analysed.
- How much sediment is in the stream flowing past our boundary, how much dissolved nitrate is in that water. We might get this measured in the lab or get the results from some instream sensors.

And the language that we use.....

- When we think about potential economic returns we might think about maximising the amount of yield and therefore dollars we can generate.

“How many kgs do you reckon we can pump out of that paddock?”

Typical data needs look like (western framing)



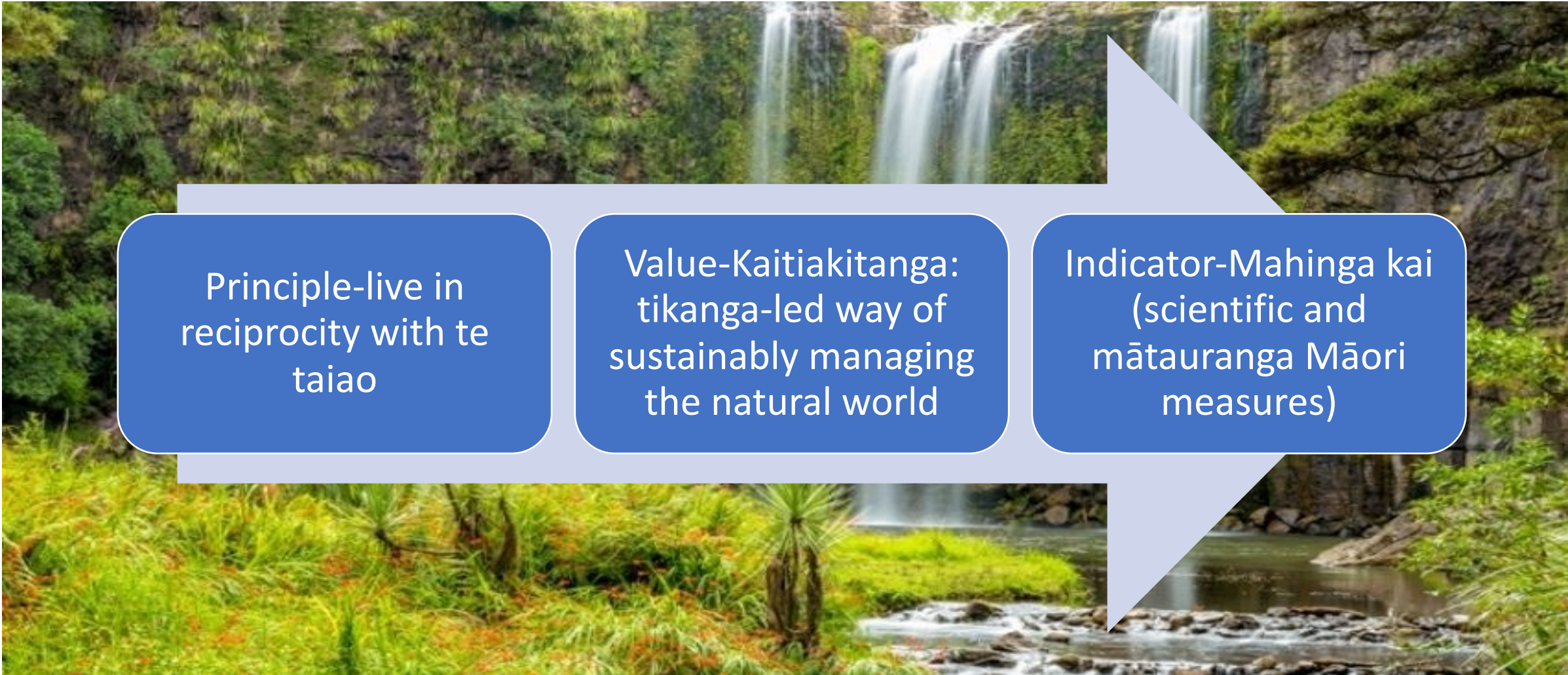
Māori are a diverse grouping



Te ao pākehā

Te ao Māori

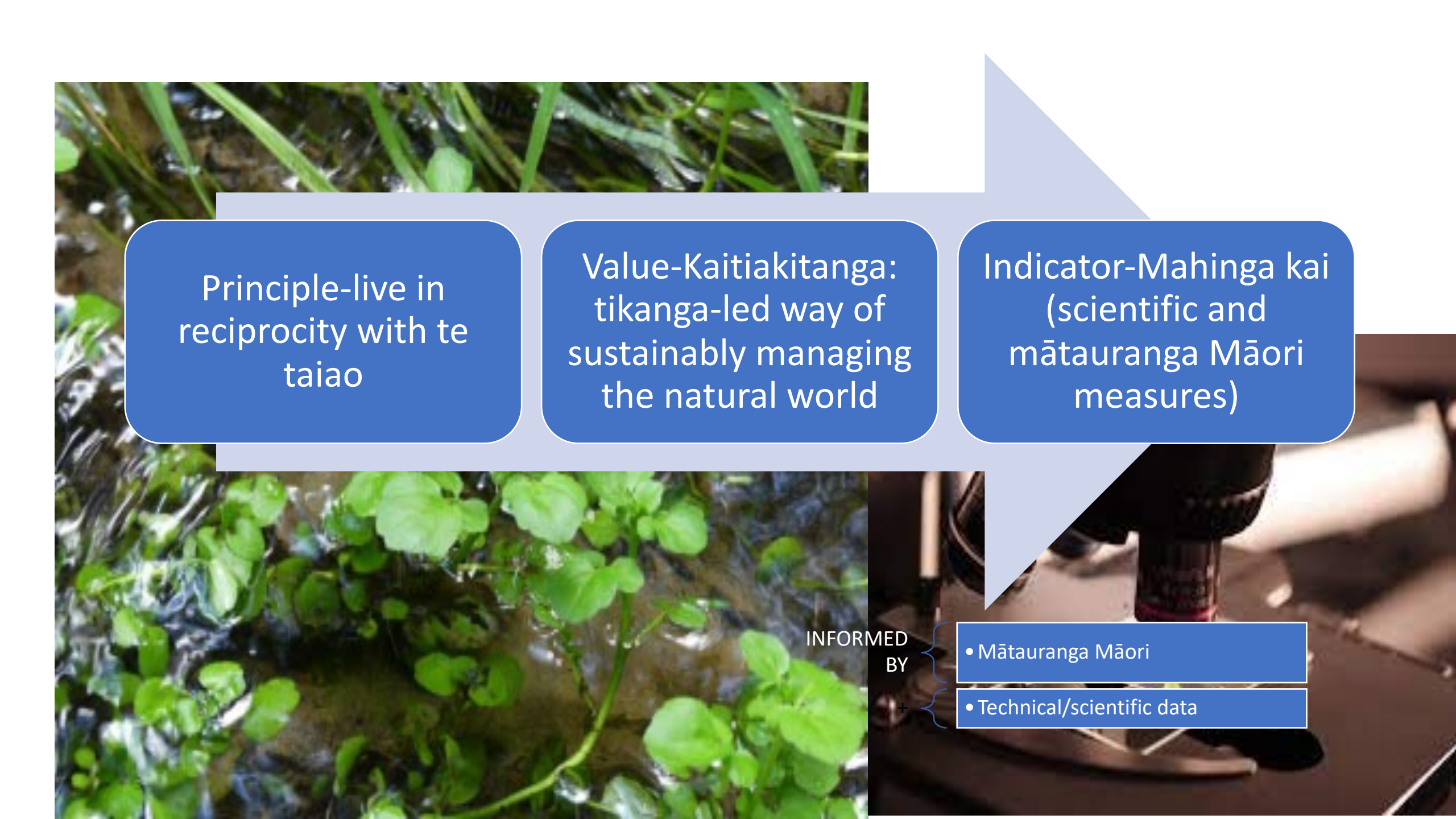
Te ao Māori framing (one example)



Principle-live in
reciprocity with te
taiao

Value-Kaitiakitanga:
tikanga-led way of
sustainably managing
the natural world

Indicator-Mahinga kai
(scientific and
mātauranga Māori
measures)



Principle-live in reciprocity with te taiao

Value-Kaitiakitanga: tikanga-led way of sustainably managing the natural world

Indicator-Mahinga kai (scientific and mātauranga Māori measures)

INFORMED BY

• Mātauranga Māori

• Technical/scientific data

Cultural values assessment (an example-impact on kaitiakitanga if mahinga kai farm was chosen as a land use opportunity)

Indicator	Description	Variable
Wāhi tapu/taonga	The mauri of significant sites	Pai rawa
<i>Significant sites</i>		
Mahinga kai	The mauri of food-gathering areas	Pai rawa
<i>Food-gathering areas</i>		
Nga otaota Māori	The mauri of culturally significant plants	Pai rawa
<i>Indigenous biodiversity</i>		
Ngā wai tipuna	The mauri of culturally significant waterways is enhanced	Pai rawa
<i>Significant waterways</i>		



SEARCH

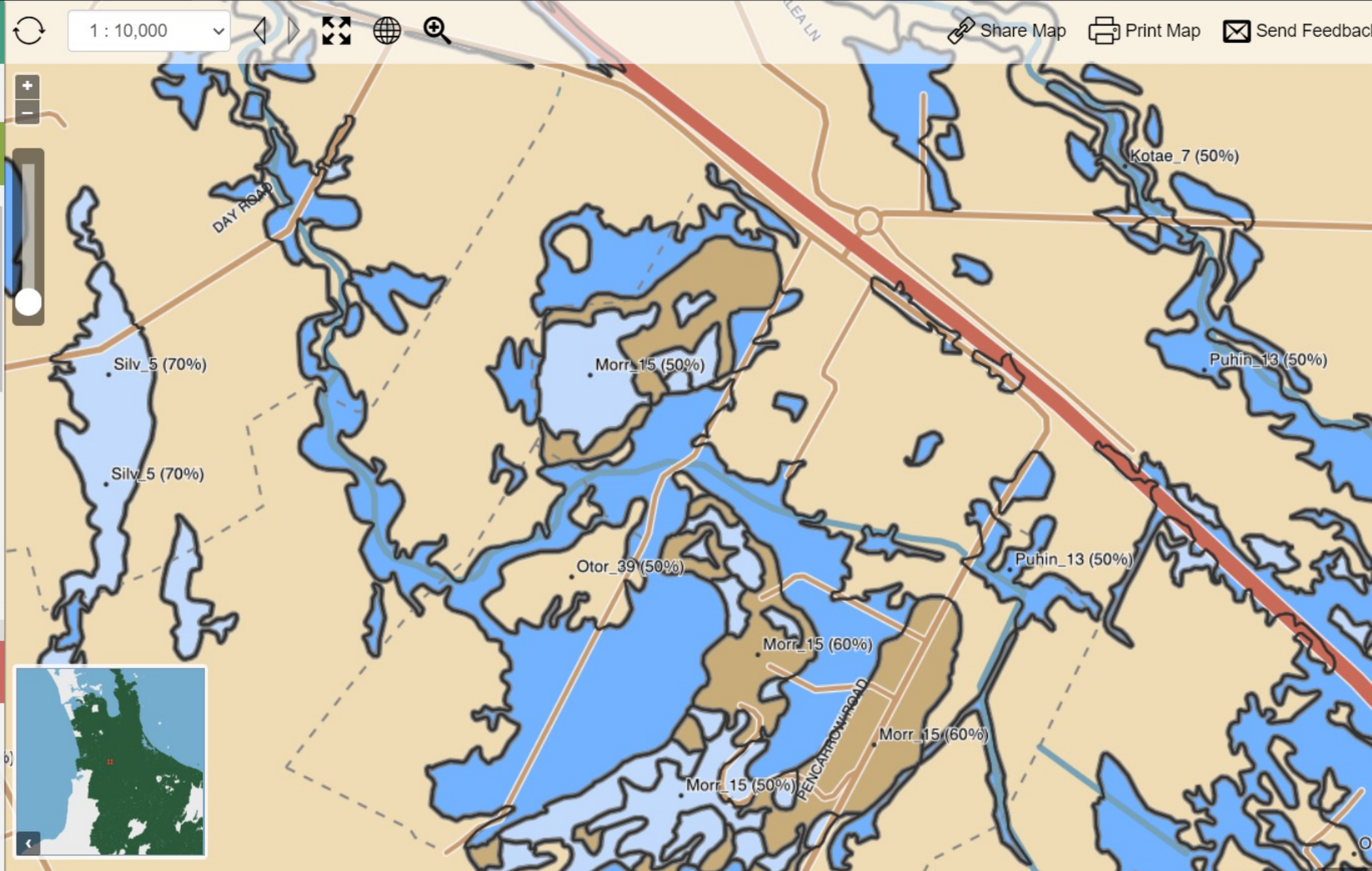
Enter coordinates, location or address

LAYERS

- Context layers
 - Māori Land Blocks
 - LINZ Parcels
 - Water, transport, text
- S-Map Data
 - Polygons & Labels (00%)
 - Soil Drainage
 - Very Poorly Drained
 - Poorly Drained
 - Imperfectly drained
 - Moderately well drained
 - Well drained
 - Depth To Hard Soil / Gravel / Rock
 - Soil Moisture - Profile Available Water in 1m (mm)

MY FEATURES

Add features from the "Feature report" pane to get details reports. You will find all saved features here.



Land & soil



Landcover Explorer

Explore and analyse New Zealand land cover change over time.



LRIS Portal

Soil data at your fingertips. The Land Resource Information System (LRIS) is for mapping, querying and spatial analysis.



NSDR

The National Soils Database Repository Viewer - view observations from the National Soils Database (NSD).



NZSC

The New Zealand Soil Classification (NZSC) classifies New Zealand soils in a five level hierarchical structure.



Our Environment Land Atlas

An online atlas of our land resources. View interactive maps to learn about your local environment and regional differences.



Pacific Soils Portal

Information and knowledge on Pacific soils, their health and uses. Regions include Fiji, Kiribati, Samoa, Tonga and Tuvalu.



SINDI: Soil quality indicators

SINDI [soil indicators] is a web-based tool designed to help you interpret the quality or health of a soil you have sampled.



S-Map Online

S-map is a digital soil map of New Zealand. It's the most comprehensive, quantitative soil information available.



Soils Portal

The Manaaki Whenua Soils Portal is the home to descriptive and analytical information as it relates to our scientific research into soil ...



Whenuaviz

Whenua Maori Visualisation tool, using up-to-date environmental and land resource data.

Other



DataStore

The Manaaki Whenua DataStore is the general data catalogue and repository for Environmental Research Data.



National Environmental Data Centre

Environmental data of Aotearoa New Zealand - all in one place

Allotment 61 Tamahere Parish

Title Information

[Make an enquiry](#)

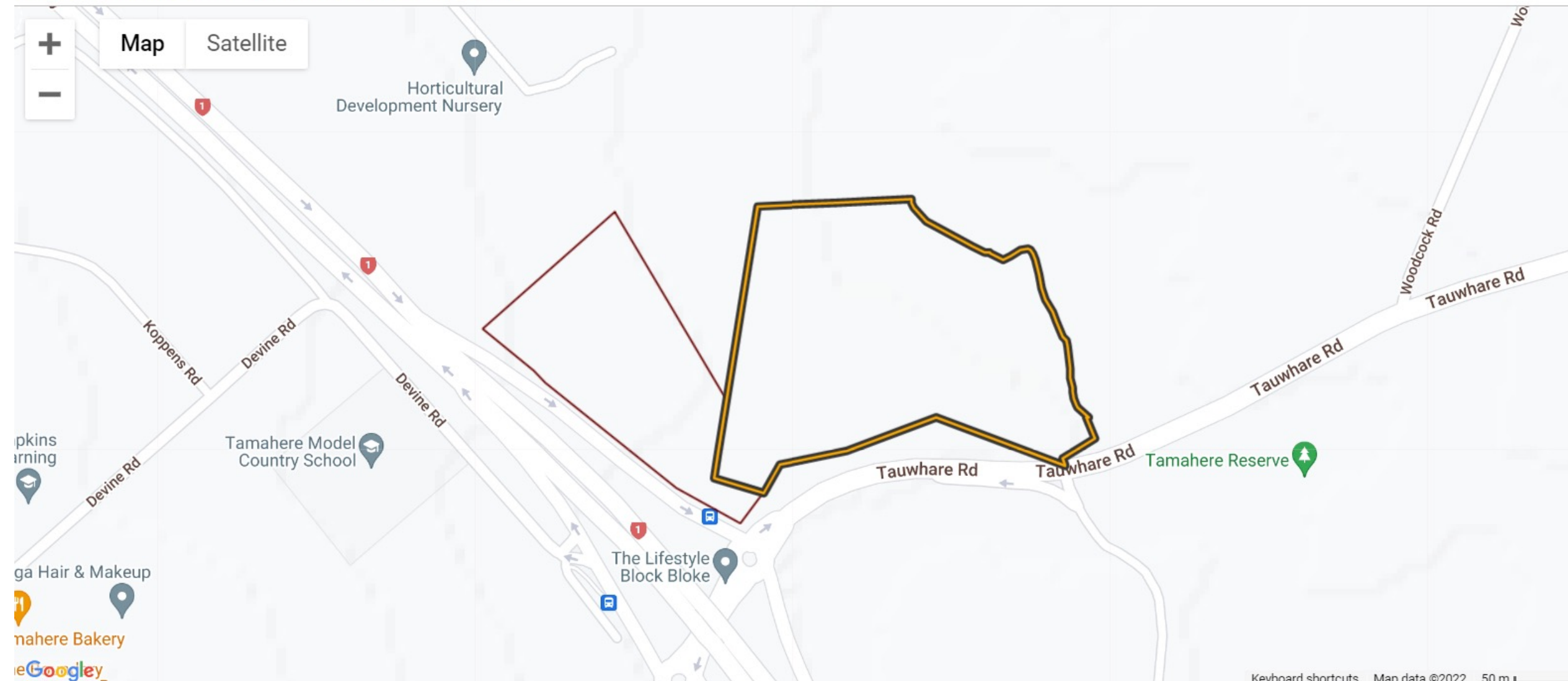
[View the block details at Māori Land Online](#)

[View a printable summary report about this land block](#)

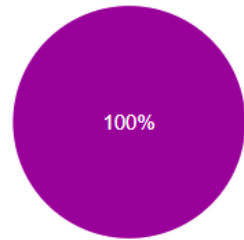
Area: 4.3 ha ⓘ

Owners: 321

Shares: 1



Profile Readily Available Water



● Moderate [4.3 ha]

Profile readily available water is a classification of profile readily available water for the soil profile to a depth of 0.9 m, or to the potential rooting depth (whichever is the lesser).

[Learn more...](#)

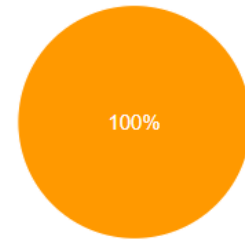
This is based off data from the MWLR Fundamental Soil Layer and that where S-map coverage exists, available water estimates should be made from S-map soil reports.

Soil Drainage



● Well Drained [4.3 ha]

Potential Rooting Depth

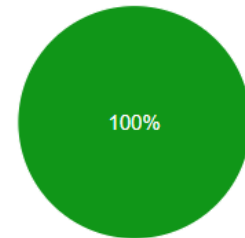


● Deep [4.3 ha]

Potential rooting depth describes the depths to a layer that may impede root extension. This may be due to penetration resistance, poor aeration or low available water capacity.

[Learn more...](#)

Particle Size



● Loamy [4.3 ha]

The proportions of sand, silt and clay in the fine earth fraction of the soil except in the case of skeletal soils.

[Learn more...](#)



Biota of New Zealand

Biota of New Zealand provides access to information about the fungi, land invertebrates, and plants that are found in, or are relevant to...

RESOURCE

DATABASE



Ko te Aitanga Pepeke o Aotearoa - New Zealand Land Invertebrates

This database lists over 38,000 names, focusing on groups of insects, mites, other arthropods, and nematodes.

RESOURCE

DATABASE



National Vegetation Survey (NVS) databank

National Vegetation Survey is a world-leading repository for New Zealand's plot-based vegetation data.

RESOURCE



Ngā Tipu Aotearoa – New Zealand Plants

Ngā Tipu Aotearoa provides access to information on plant taxa that occur in New Zealand.

TOOL

DATABASE



Ngā Rauropi Whakaoranga

Ngā Rauropi Whakaoranga contains detailed information on how Māori use and have used New Zealand's unique biota.

RESOURCE

ETHNOBOTANY



NZfungi - New Zealand Fungi (and Bacteria)

New Zealand Fungi and Bacteria provides access to Manaaki Whenua's fungal and microbial databases:

TOOL



Systematics collections data

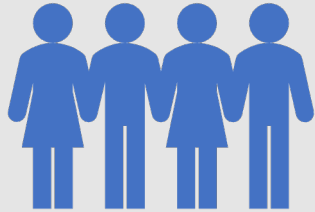
The Systematics Collections Data website provides access to specimen and culture data from our collections and databases.

RESOURCE

Table 4. Values domains for non-timber planting decision making

CORE VALUES	PARAMETERS	DATA
KAITIAKITANGA	<i>Biophysical</i> : Matching plant species (choice and position) to soil-landform-climate	Visual inputs (e.g soil colour/texture, slope, number of earthworms, existing vegetation characteristics, surface water)
	<i>Cultural values assessment</i> : assessment of perceived impact on the mauri of: culturally significant sites, food-gathering areas, culturally significant plants, culturally significant waterways	Ranking by trustees and landowners/beneficiaries
MANAAKITANGA	Selecting plant species based on mātauranga, reconnect descendants with historic plantings (taonga species)	Mātauranga
	<i>Cultural values assessment</i> : assessment of perceived impact on the potential to stimulate: education opportunities, community connectedness, cultural pride, commercial relationships with other iwi/hapū/wider community	Ranking by trustees and landowners/beneficiaries
WHAKATIPU RAWA	Rank plant species according to their potential to generate economic returns or employment	Look up tables
	<i>Cultural values assessment</i> : assessment of perceived impact on the potential to provide: equitable shared benefits across generations, retention of fixed assets, full-time equivalent employment	Ranking by trustees and landowners/beneficiaries

Māori and non-
Māori
knowledge is
equally valid



- *Grassroots/ahi-ka-roa, knowledge and wisdom gained from our Kuia/Koroua, whānau and hapū*
- *Technical data, gained from scientific measurement and generated by algorithms*