National Science Challenges | SUSTAINABLE SEAS | Ko ngā moana whakauka

Sustainable Seas Teaching Resource Package

By Mary Robinson and Karen Finn
based on research by the Sustainable Seas National Science Challenge

The Sustainable Seas National Science Challenge was established in 2014, with the objective of enhancing utilisation of our marine resources within environmental and biological constraints. Sustainable Seas research addresses the question: How can we best develop our marine economy, while protecting the taonga of our marine environment?

To help achieve this, the research focuses on:

1. Improving marine resource decision-making and the health of our seas
2. Transforming New Zealand's ability to enhance our marine economy

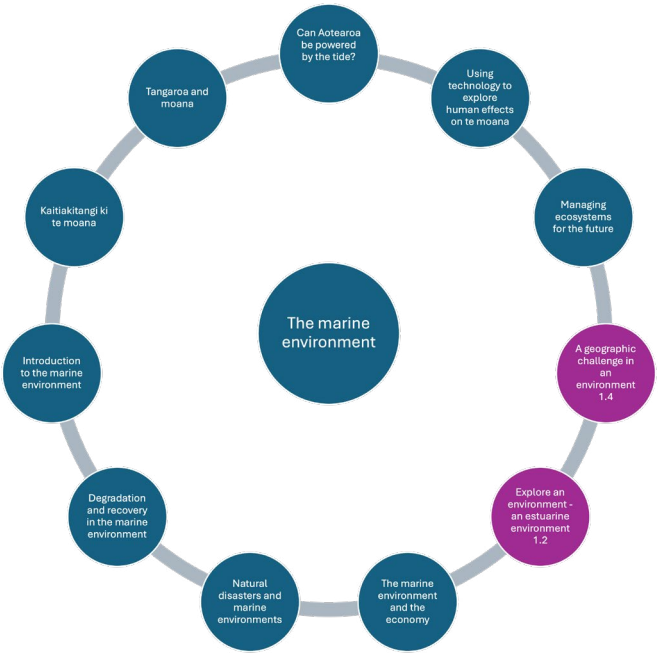
All forms of knowledge are important. The Sustainable Seas interdisciplinary research includes mātauranga Māori, geography, social science, economics, and biophysical science.

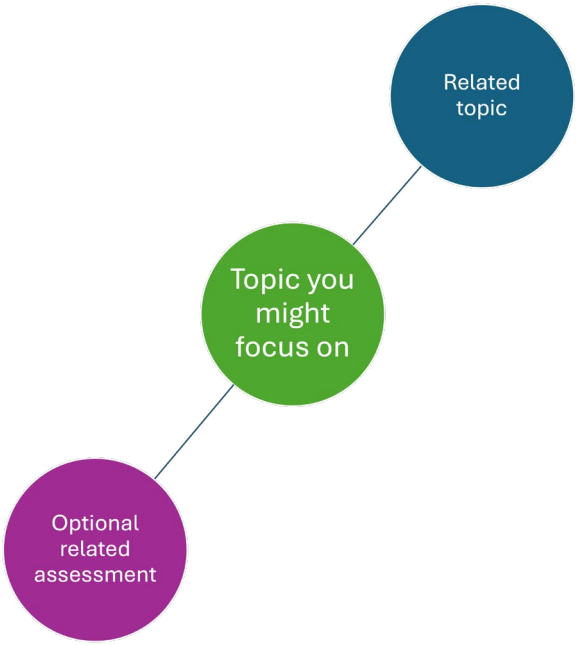
This resource package delves into the academic research and makes it accessible for geography and social science teachers and their classes. The package includes teaching sequences and student resources based on Sustainable Seas research. Each teaching sequence contains links to the New Zealand curriculum refresh, highlighting the Understand- Know-Do framework and geography Big Ideas and Significant Learning. Geographic and social science skills including numeracy and literacy are covered throughout, and the package offers two assessments linked to refreshed geography Level 1 achievement standards. Teachers can pick and choose from the package to teach develop a programme about the marine environment that is relevant to their ākonga.

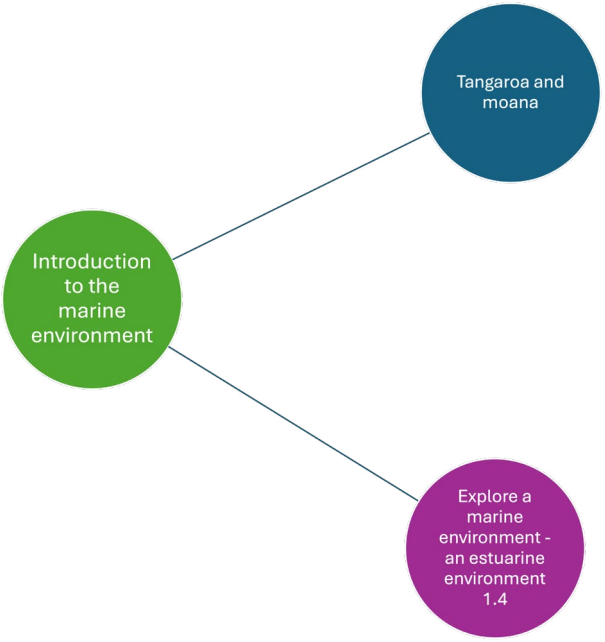
Sustainable Seas resource map

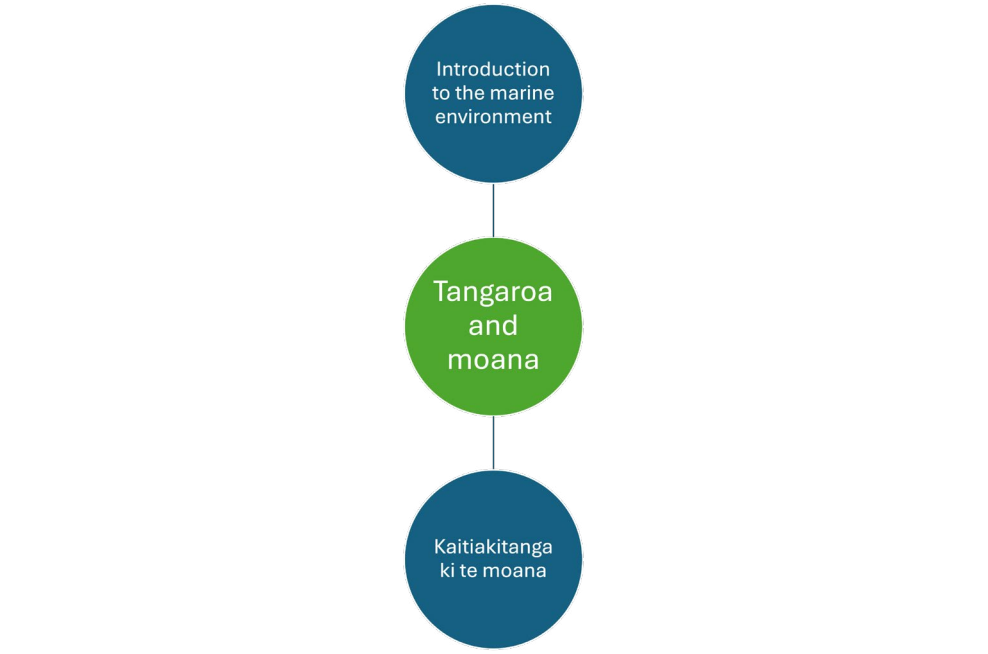
This resource package contains units of 11 different topics. Each unit starts with curriculum links and a teaching sequence, and is supported by a variety of student resources. Although the units are numbered to help keep the resources together, teachers can pick and choose from units that suit the needs of their ākonga. The diagrams below show connected topics.

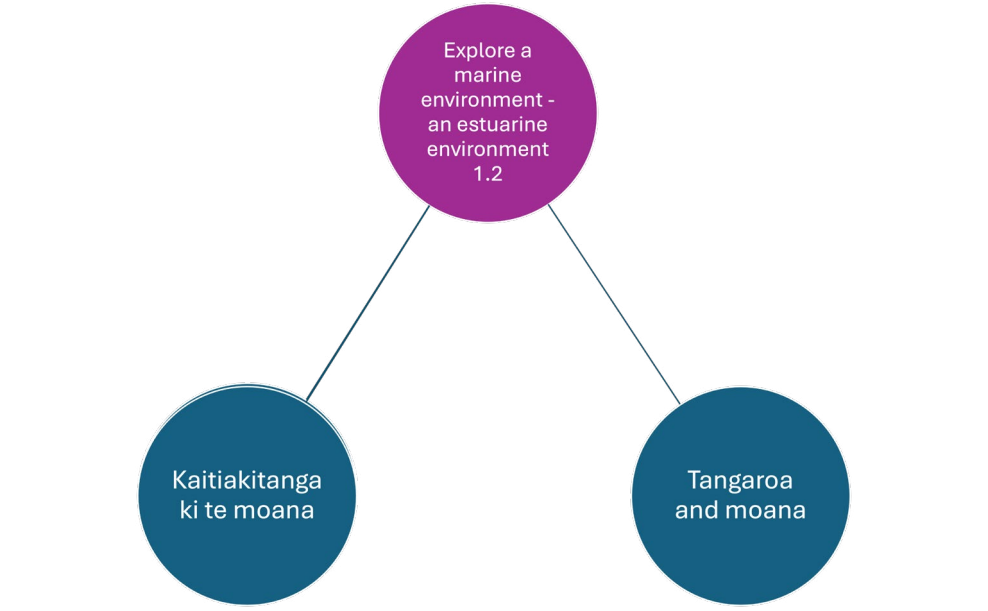
1. Introduction to the marine environment
2. Tangaroa and moana – Te ao Māori perspectives of moana
3. Explore a marine environment – an estuarine environment 1.2
4. Natural disasters and marine environments
5. Degradation and recovery in the marine environment
6. Kaitiakitangi ki te moana
7. Managing ecosystems for the future
8. Marine environment and the economy
9. A geographic challenge in an environment 1.4
10. Can Aotearoa be powered by the tide?
11. Using technology to explore human effects

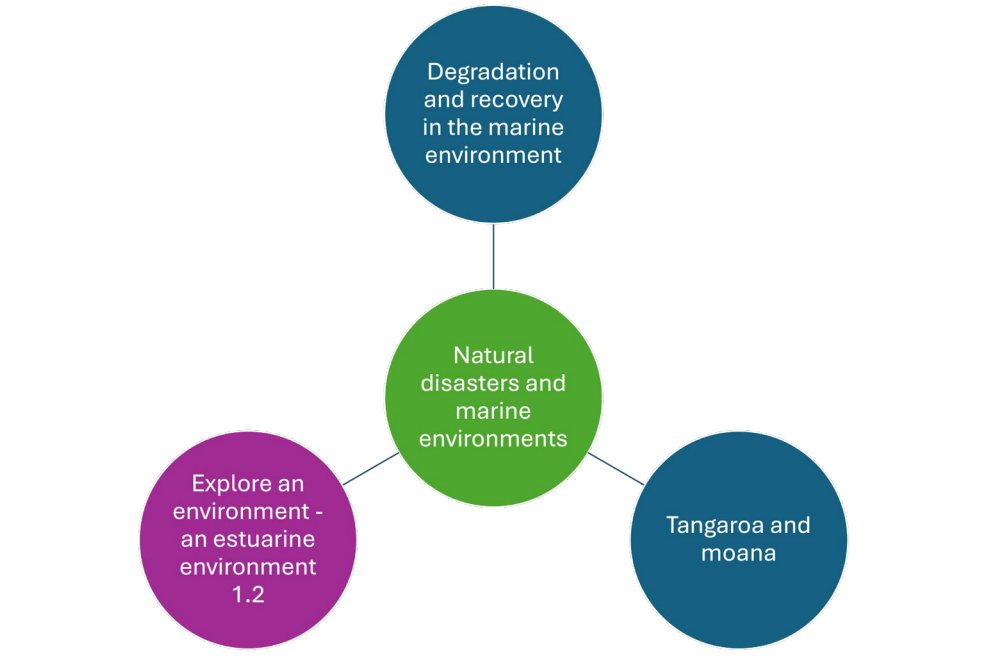

The marine environment
Can Aotearoa be powered by the tide?
Using technology to explore human effects on te moana
Managing ecosystems for the future
A geographic challenge in an environment 1.4
Explore an environment - an estuarine environment 1.2
The marine environment and the economy
Natural disasters and marine environments
Degradation and recovery in the marine environment
Introduction to the marine environment
Kaitiakitangi ki te moana
Tangaroa and moana


Related topic
Topic you might focus on
Optional related assessment

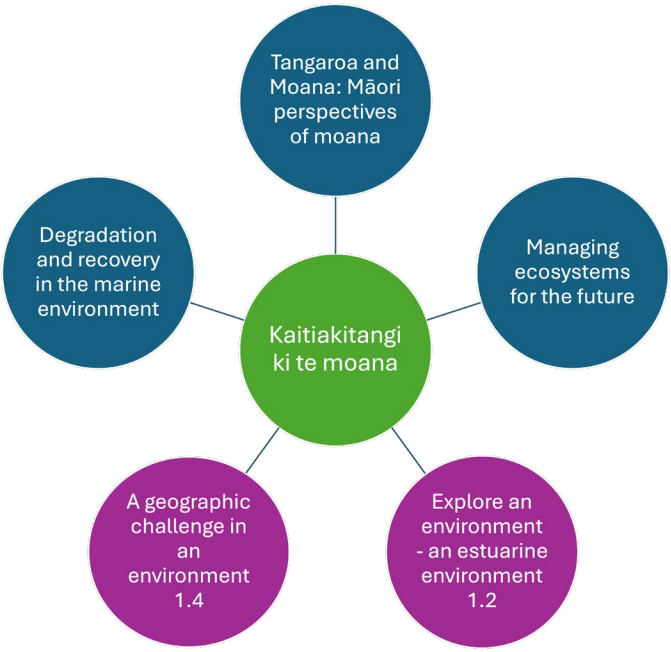

Tangaroa and moana
Introduction to the marine environment
Explore a marine environment - an estuarine environment 1.4

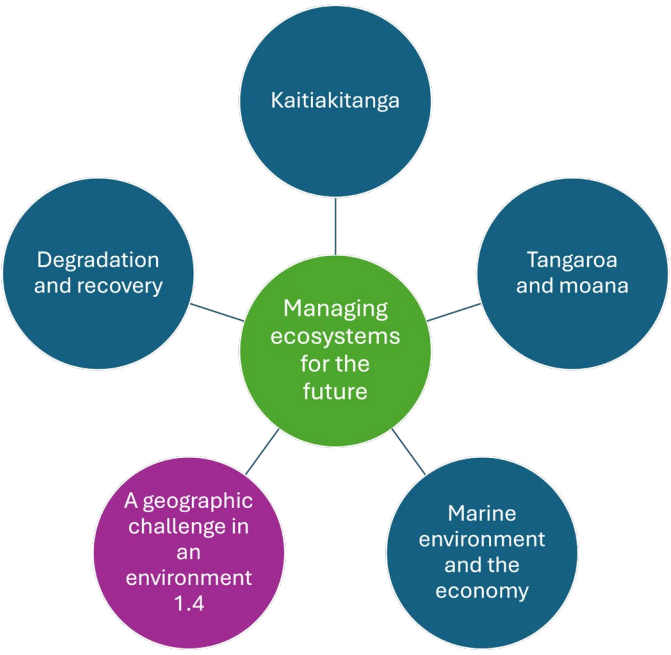

Introduction to the marine environment
Tangaroa and moana
Kaitiakitanga ki te moana

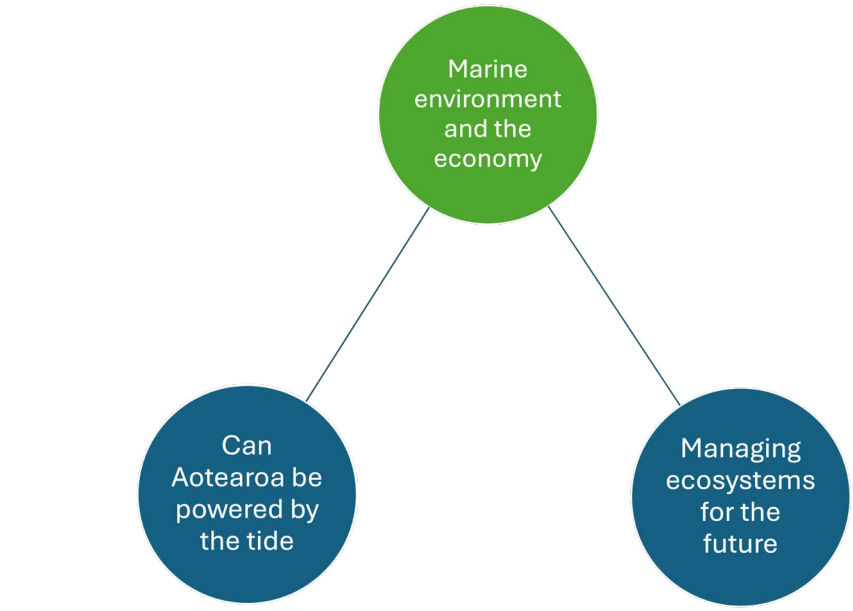

Explore a marine environment - an estuarine environment 1.2
Kaitiakitanga ki te moana
Tangaroa and moana

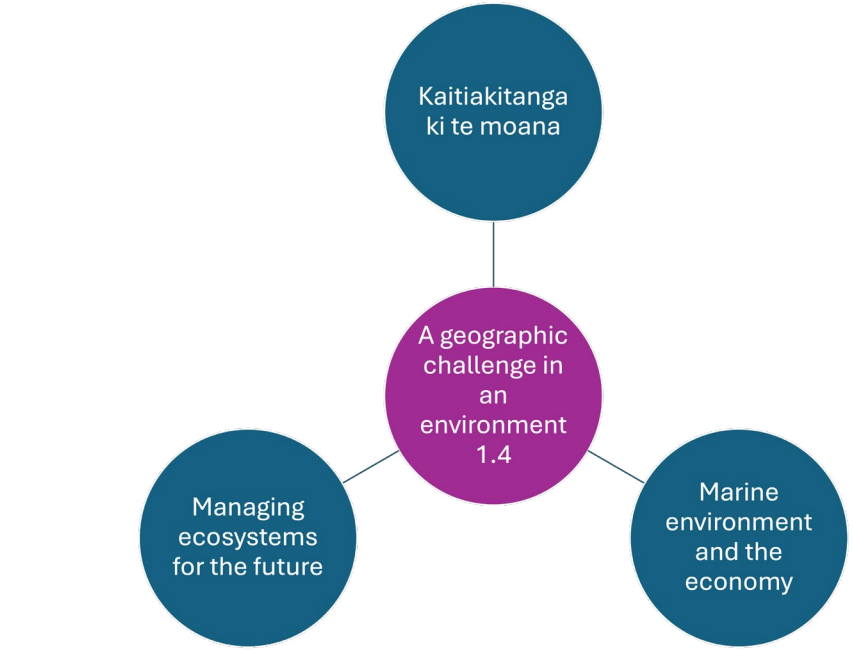

Degradation and recovery in the marine environment
Natural disasters and marine environments
Explore an environment - an estuarine environment 1.2
Tangaroa and moana

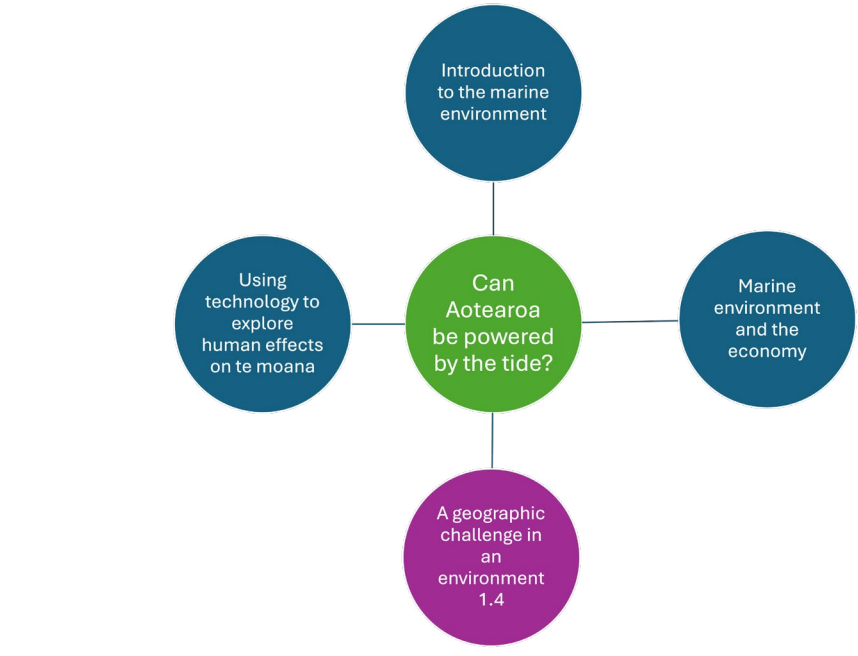

Kaitiakitanga ki te moana
Natural disasters and marine environments
Degradation and recovery in the marine environment
Tangaroa and moana
Managing ecosystems for the future

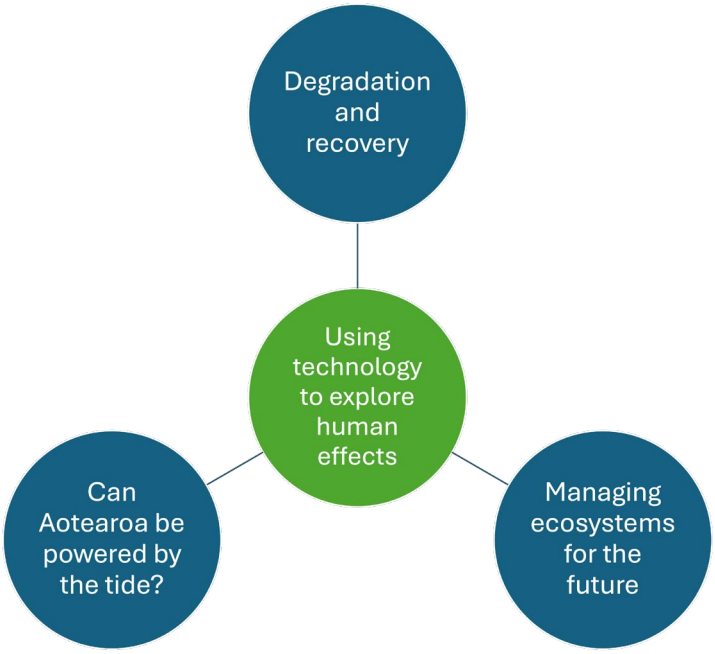

Tangaroa and Moana: Māori perspectives of moana
Degradation and recovery in the marine environment
Kaitiakitangi ki te moana
Managing ecosystems for the future
A geographic challenge in an environment 1.4
Explore an environment - an estuarine environment 1.2


Kaitiakitanga
Degradation and recovery
Managing ecosystems for the future
Tangaroa and moana
A geographic challenge in an environment 1.4
Marine environment and the economy


Marine environment and the economy
Can Aotearoa be powered by the tide
Managing ecosystems for the future


Kaitiakitanga ki te moana
A geographic challenge in an environment 1.4
Managing ecosystems for the future
Marine environment and the economy


Introduction to the marine environment
Using technology to explore human effects on te moana
Can Aotearoa be powered by the tide?
Marine environment and the economy
A geographic challenge in an environment 1.4



Curriculum links

Social Sciences curriculum links

Topic	Geography	Junior Social Studies	Senior Social Studies	History	Commerce	Education for Sustainability
Introduction to the marine environment	✓	✓	✓			
Tangaroa and moana	✓	✓		✓		
Explore a marine environment 1.2	✓					
Natural disasters and marine environments	✓	✓				
Degradation and recovery in the marine environment	✓					✓
Kaitiakitangi ki te moana	✓	✓				✓
Managing ecosystems for the future	✓	✓	✓			✓
Marine environment and the economy	✓		✓		✓	✓
A geographic challenge in an environment 1.4	✓					
Can Aotearoa be powered by the tide?	✓	✓	✓		✓	
Using technology to explore human effects	✓	✓				✓

Curriculum links to other learning areas

Topic	Literacy	Maths and numeracy	Science	Technology	Health
Introduction to the marine environment	✓	✓	✓		
Tangaroa and moana	✓	✓	✓		
Explore a marine environment 1.2	✓	✓			
Natural disasters and marine environments	✓	✓	✓		
Degradation and recovery in the marine environment	✓	✓			
Kaitiakitangi ki te moana	✓	✓	✓	✓ Materials technology see Ōhiwa example	
Managing ecosystems for the future	✓	✓	✓		
Marine environment and the economy	✓	✓			
A geographic challenge in an environment 1.4	✓	✓			
Can Aotearoa be powered by the tide?	✓	✓	✓	✓	
Using technology to explore human effects	✓	✓	✓	✓	✓ See Tasman and Golden Bay example