

GENOMES AT WORK

Tackling Environmental Problems in Aotearoa New Zealand

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Outline

Is genetic engineering the first thing you think of when hearing the words 'genome technology'? You may be surprised to discover how much more there is to genomics than just GE.

We devise technologies in order to meet human wants and needs. The greatest need that we have in the 21st century is to reverse the damage we are doing to the living systems of planet Earth. Genomic technologies can help us tackle the interwoven crises of biodiversity loss, environmental degradation and climate disruption that we face in Aotearoa New Zealand.

First of all we require a basic understanding of how all living organisms share a common past and are linked together through the information coded in their DNA. Only then can we start to make sense of the ways in which an understanding of genomes has the potential to help us treat myrtle rust, plan tuatara translocations, remediate polluted industrial sites, develop a vaccine for avian malaria, breed low methane emitting sheep, determine fishing quotas for snapper, control stoats and wilding pines; and do much more besides.

No technology is perfect, and no technology exists in a value-free vacuum. It's not just about the science. *Genomes at Work* takes a hard look at how social, cultural, political and economic factors must all come into the mix when grappling with the difficult choices to be made as we face an uncertain future.

Subjects

Stewardship of the environment and nature in NZ
Genetics (non-medical) and Genetic engineering
Genomes at Work is a valuable resource for achievement standards in Science L1, Biology L1–3, Agriculture and Horticulture L1–3, and Environmental Sustainability L2–3.

Author Bio

Jane Young is a science educator and freelance writer. Her publications include *The Uncertainty of it all: Understanding the Nature of Science*, *Pet Genetics* and *Fuelling Dissension: Coal and coal mining in 21st century New Zealand*. Jane's editing assignments have ranged from *Catlins Birds: a pocket guide to Te Awa*, the Green Party magazine. She also produces an environmental newsletter, *Kārearea: Protecting a Southern Land*.