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Goodall, 2019

Climate change scientists look to Māori and other indigenous people for answers

Laura Goodall · 05:00, Feb 23 2019

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Scientists are working with indigenous people internationally to fight climate change. Maori mātauranga is part of the knowledge that is being shared.

In the Māoriland Hub in Ōtaki, north of Wellington, an exhibition details how bad climate change will get for locals in the Kāpiti Horowhenua region, where the frequency of heavy rainfall, flooding, erosion and landslides is already on the rise.

It includes a striking set of maps that draw on Māori knowledge systems of whakapapa (genealogy), hīkoi (walking) and kōrero tuku iho (ancestral knowledge) in combination

Mātauranga is the body of traditional and contemporary knowledge about the world – both physical and spiritual – held by Māori. It is also the process by which information is observed, tested, interpreted, built upon and handed down. It is inseparable from Māori culture, values and beliefs. Māori consider themselves part of nature and within it, and mātauranga reflects this.

This knowledge was developed over millennia and brought here hundreds of years ago by Polynesian explorers, with successive generations of Māori continually adding to it. Because it dates so far back, mātauranga can reveal things about Aotearoa – including what its climate was like before Europeans arrived – that science alone cannot.

Around the world, scientists are increasingly looking to work with indigenous communities on climate change initiatives. A large-scale report that sought to quantify the contribution of indigenous forest guardians in 37 tropical countries concluded that the cheapest and most efficient way to protect forests and sequester carbon was to protect or expand the land rights of indigenous people.

At last year's Asia-Pacific Climate Change conference in Manila, speakers from Indonesia, Vanuatu, Sri Lanka, Maldives, and the Philippines discussed the merits of coupling data with the kind of knowledge held by indigenous communities to develop policies that are "local to global".

Science meets mātauranga

In New Zealand, Niwa, Lincoln University, Massey University, and Landcare Research have all added mātauranga strands to their work, and the government's Deep South Challenge, which will allocate more mātauranga funding in July, currently has eight Maori-led projects on the go. Together these represent the largest ever Māori-led research into climate change.

Dr Jane Richardson, Massey University's Sustainability Project Manager and Research Portfolio Co-ordinator at Manaaki Whenua Landcare Research, says that mātauranga has broadened her mind. "At first I found this project challenging as I had to learn how to adopt a more unstructured, multidisciplinary way of thinking," she says.

"As a scientist, I'm trained to think in a very structured, linear way with quite rigid planning and methodology. But the greater fluidity of mātauranga creates space for ideas and answers to emerge."

Climate scientist Professor Martin Manning at Victoria University recalls the first time he saw the value of having different perspectives, at a meeting for developing a major

writing it down," she says.

Animal and plant activities take cues from the environment, such as how long the sun is in the sky, what temperature the air is, and what phase the moon is in. If something changes that causes a shift in the timing of even just one plant or animal activity, such as pōhutukawa blooming, this can affect other plants and animals, such as bees.

"If you don't look and you don't know that something is being affected, then you can't help," Dr Harris explains. "You've got to know about it to know what to do about it."

Māori have a deep understanding of what wildlife activities happen when, and how these activities synchronise with the Sun, Moon and stars throughout the year. They have used this knowledge to create the maramataka – the Māori calendar – by which they also plan activities such as planting, hunting and fishing. When the kōwhai blooms, for example, this is a sign for some communities that it's time to plant the kūmara.

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Securing sustainable food

Liliana Clarke (Ngāti Porou, Waikato, Te Rarawa, Ngapuhi) is a maramataka specialist at SMART, working on the same project as Harris.

Skipper explains that Māori weather predictions are, like science, consensus-based – where the more indicators that point to a particular scenario, such as a long hot dry summer, the more confident the prediction and the more prepared communities can be.

Experts in weather forecasting once could predict flooding months ahead with such accuracy that it makes European meteorology look error-prone. But since Europeans arrived, much of that knowledge has been lost, along with many indicators – such as trees that have been cut down.

Skipper also asked communities whether they had noticed any changes over time and what they thought about climate change.

'Things are out of whack'

"Everybody I interviewed agreed without a shadow of a doubt that climate change is definitely here," he says. "The weather now is different from what their grandparents and great-grandparents had seen. Back then, the extreme weather events were predictable, short and sharp – but now they're a lot wilder.

"They'd say things like, 'You know, when I was a kid, winter was winter, spring was spring and summer was summer, but now you don't know what's happening when – it's all higgledy-piggledy and things are out of whack.' Now they've got longer, hotter summers with shorter, milder winters."

Kaumātua told Skipper about seeing baby tītī (muttonbirds) starving because their parents cannot find food in the warmer water. Others pointed out that years ago, it would have been impossible to grow kiwifruit and grapes in Invercargill, yet these fruit are now thriving that far south.

Pests are thriving, too. "When you've got longer summers, you get double flowerings – when plants bloom twice – you get a lot of chicks, and then a lot more birdsong," Apanui explains. "But unfortunately what's good for birdsong is also good for predators – and they're seeing an explosion of rats, stoats and others."

Climate change is also creating more favourable conditions for the spread of pests and diseases into new areas. Researchers are in a race against time to stop kauri dieback before it completely obliterates our unique kauri forests. If kauri trees disappear, then so do all the other plants and animals that depend on them, along with our ability to walk, hunt, camp and relax among them.

The scourge of kauri dieback