

Educating the public on coastal hazards

As a coastal researcher at NIWA, Darcel Rickard spends a fair amount of time looking at the beach. Darcel has been analysing Cam-Era images from Pāuanui and Tairua beach, looking at rip current frequency, location, and persistence. "We looked at the images from the camera, noted the rips, and then compared what we saw happening with concurrent wave data. Some of this work has ended up in educational posters on rip currents in both English and Māori."

Another aspect of our coastal work could prove to be one of New Zealand's most popular summer websites. That is the development of NZCoast – a GIS-based coastal classification and database on different coastal areas. NZCoast holds a range of information, such as erosion rates, tidal range, wave conditions, or whether the shoreline is sandy, rocky, or a sheer cliff. By identifying various environments we can help manage coastal hazards and risk and also educate the public on coastal processes and hazards.

Darcel Rickard explaining the beach morphology at Ngarunui Beach, Raglan, to students from the University of Delaware, in New Zealand on a summer programme.



Art Trembanis, University of Delaware

Kaitiakitangi blends with NIWA mission

The Waitao Stream restoration project has become a nursery for information sharing and the development of process for future projects. Ngā Pōtiki iwi wanted to restore the Rangataū arm of Tauranga Harbour, but NIWA stressed the catchment needed to be restored first.

Restoration programme leader Dr John Quinn said it was quickly realised that NIWA knowledge and systems were not easily accessed by iwi groups. That has been addressed, and NIWA has in return learned from traditional knowledge on restoration and even medicinal native plants. Tom Cooper of Ngā Pōtiki has been trained in stream monitoring and electric fishing and the project is producing regular community reports and field-days, with assistance from NZ Landcare Trust.

There have been some exciting findings, like the rediscovery of lamprey in the catchment, tools have been tested and refined, and a new catchment-scale fish diversity index developed.

"There is a mixture of Māori and Pākehā ownership, landuse, and habitat in the catchment, which includes Kaiate Falls, but gradually kaitiakitanga and Pākehā needs are coming together," John says. "Several initiatives are taking hold, and

a greater feel for the environment is emerging within the demands of small-lot and commercial farming."

Other iwi are learning from the project and kaitiakitanga is seen as a very powerful vehicle that happily coincides with NIWA's mission.



John Quinn, NIWA

Tom Cooper (kaitiaki of Waitao Stream) and Dave Rowe (NIWA) demonstrating electric fishing in the lower Waitao Stream at a catchment field day.

Using Māori environmental knowledge in natural hazard management

A group of Ngāi Tara went out fishing from Wai-iti, north of New Plymouth. A violent storm drove them south to Rangitoto (D'Urville) Island, where they eventually settled at Moawhitu (Greville Harbour). One version says this migration occurred in the 14th century, and that a 'wave' drowned everyone some time in the 16th century. Another version names this event Tapu-arero-utuutu – said to have drowned nearly everyone, piling the bodies into the sand dunes. NIWA scientists have been looking at how Māori environmental knowledge can contribute to natural hazards management and mitigation. In the case of the oral recording of Ngāi Tara, there is physical evidence pointing to a tsunami

at Greville sand bar. Such accounts can suggest past events warranting further investigation, help ground-truth scientific predictions, and provide supporting evidence for broad-scale models.

Oral recordings, such as histories and traditions, pose many challenges. Te Kūwaha has considerable expertise in the complementary use of Māori environmental knowledge and Western science.

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Reyn Naylor, NIWA



I whakanaotia e NIWA e rua ngā pānui i roto i te reo Māori. Ko tētehi e whakaatu ana i ētehi o ngā tohu huarere me ngā tohu āhuarangi a te Māori (nā Te Whānau-ā-Apanui rāua ko Ngāti Pare te nuinga o ngā kōrero) huri noa i te motu. Ko tērā atu he mea hei whakatūpato i te tangata e kauhoe ana i ngā tai kukume tē kitea, ā, i tukuna whānuitia atu ki ngā marae me ngā karapu whakaora kauhoe. Mena e hiahia ana koe ki te hoko tētehi kape, tuku imera mai koa ki; posters@niwa.co.nz.

