



ADAPTING TO A CHANGING CLIMATE: CASE STUDY 17

MANAGING IMPACTS ON TUNA (EEL) USING A KAUPAPA MĀORI APPROACH

NGĀTI RAUKAWA KI TE TONGA ME TE WĀNANGA O RAUKAWA

ABOUT NGĀTI RAUKAWA

The Ngāti Raukawa ki te tonga region stretches from Bulls to Otaki in the southern part of the North Island. Te Wānanga o Raukawa (TWOR), a Māori tertiary education provider, arose from a joint effort of Te Āti Awa, Ngāti Raukawa and Ngāti Toa rangatira, known also as the ART Confederation. The Confederation has a population of about 40 000.

TUNA (EEL)

Tuna migrate to sea to breed, between the ages of 15 and 20, usually in autumn or early winter. They then die and the eggs float to the surface and hatch into leaf-shaped larvae. The offspring return to New Zealand on the ocean currents and settle in freshwater bodies such as rivers and streams. Changes in ocean temperatures and climate patterns are impacting on sea currents which play an important role in the life cycle of tuna. Changes are also effecting the growth and cycles of plankton, an important part of the tuna food chain. Tuna as a food source and a taonga species is a crucial part of iwi identity for the Ngāti Raukawa iwi.



Photo courtesy of NIWA; photographer Don Jellyman.

Over many years the iwi (tribe) of Ngāti Raukawa ki te tonga have noticed a decline in one of their most highly regarded taonga, the tuna. Anecdotal evidence, coupled with a decrease in quantity and quality, encouraged the hapū to initiate an in-depth research programme into the health and habitat of the tuna population. It is now apparent that climate change is having an impact on the tuna's sensitive life cycle.

The aim of the iwi of Ngāti Raukawa ki te tonga is to better understand all the effects of climate change and support their people to adapt through initiatives such as the revitalisation of tuna stocks in their own iwi rohe. The implementation of a research programme with their iwi educational institution, Te Wānanga o Raukawa, has enabled the iwi to work co-operatively to address the tuna decline.

THE RELATIONSHIP BETWEEN TUNA AND NGĀTI RAUKAWA KI TE TONGA

Māori have a special relationship with the natural environment which underpins their understanding of the health and wellbeing of taonga. The hapū correlate the decline in tuna numbers with a decline in the health and wellbeing of the natural environment. They also recognise that changes in climate and other factors have impacted on tuna quantity and quality, which has a flow-on effect to the people.

Mātauranga Māori (Māori intrinsic knowledge) is essential to the survival of Ngāti Raukawa tikanga and kawa. Through iwi oral history and the ongoing revitalisation of Te Reo Māori, Ngāti Raukawa will continue to thrive. Furthermore, being effective kaitiaki is integral to iwi identity and to achieve success means learning about the tuna, understanding what impacts are taking place, mitigating these factors and monitoring the health of tuna over time.

The important transfer of mātauranga between members of the hapū regarding tuna harvesting, life cycles and stream information is affected by the changing climate. The impact of losing the tuna reaches far beyond losing a significant food source – it includes the loss of the mātauranga related to the taonga, as well as the interaction between generations to share the mātauranga, be together as an iwi and strengthen their inter-whānau connections.

As a result of these issues, tuna is a key focus for the iwi. A collective research program was considered the most appropriate way to begin the adaptation to climate change impacts and the re-vitalisation of their taonga species for the iwi.

RESEARCH PROGRAMME

The iwi have become more aware of the tuna life cycle and recognise that climatic changes have played an important role in altering aspects of the natural cycle of the tuna population.

One aspect of the research programme was to note the age and sex of the tuna. Caleb Royal, a researcher on the project says: "There was a significant decline in the number,

size and type of tuna with their iwi data showing that 17 out of 18 sites measured had starving tuna. The one site where this was not the case could be explained by the intensive restoration of wetlands alongside the rivers and streams, which had profound impacts on the numbers and growth of tuna in this area.”

Another aspect of the programme was a focus on mātauranga Māori and kaumātua interviews. These interviews discussed how the kaumātua viewed the changes in their taonga and how their historical stories relate to this species. This knowledge was then collated and transferred to the wider whānau, hapū and iwi.

Seventeen oral history interviews were conducted in 2005. From this kōrero (oral history) it became clear that habitats had changed and this was impacting on the future of the tuna.

The information embodied in the interviews will contribute significantly toward the development of a Tuna Management Plan. This plan will be used by hapū to promote and protect the fishery and be utilised within wider advocacy and education in the region and while having scope and flexibility to be trialed and used nationwide.

The result is that participants can better monitor change to the fishery and adapt earlier and more appropriately. The information also provides a means of assessing which adaptation methods are most effective in reducing the negative impacts of climate change on tuna.

ADAPTATION

Part of ongoing adaptation is for hapū to continue to educate land owners as to how they can promote the fishery through more effective management.

Recommendations from the research included advocating for limiting access of cattle and other stock to waterways to reduce effluent

WHAT IS CLIMATE CHANGE?

Climate change is the change over time in the average (mean) state of the atmosphere over decades or longer. Climate change may be due to natural processes or external forces, or to persistent human activity that alters the composition of the atmosphere or land use (www.climatechange.govt.nz).

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pollution, restoring wetlands and restocking the rivers and streams with tuna, controlling weed growth and also opening flood gates at particular times of the year to support the migration breeding cycles for tuna and for their food source.

Another way the iwi believe they could support tuna was through developing Kaupapa Māori Environmental Indicators. These indicators are seen as being essential to preparing and developing further adaptation methods to help tuna thrive. This is an inter-generational scheme with ongoing monitoring planned.

Ngāti Raukawa may not be able to duplicate interventions in the oceans, however, through effective monitoring and re-vitalisation programmes within the iwi rohe, the iwi can better support the species to survive, adapt and thrive for their migration to the oceans.

PROGRAMME BENEFITS AND OUTCOMES

Some of the key achievements since initiating the project in November 2004 include the training of fourteen Ngāti Raukawa hapū representatives in oral history recording techniques, and twelve in the tuna ageing and sexing workshop.

The information gathered through mātauranga Māori and kaumātua interviews has built capability within hapū that has enabled them to deliver environmental benchmarks through narratives.

As a result of wider views, environmental restoration has been adopted by the iwi and action being taken includes looking at the restoration of water ways and the use of rāhui (moratorium) for commercial fishing of the longfin tuna to replenish stocks. This may also provide an opportunity for a Treaty-based approach to the management of tuna.

The longfin tuna are on the endangered species list alongside the great spotted kiwi and kererū. The iwi believe that inappropriate management of the Quota Management System in their rivers and streams and subsequent over-fishing is hugely degrading the stocks.

They believe that a moratorium on commercial fishing of the longfin tuna is a key way to support the species. A rāhui is being put forward by the iwi with support from key scientists. They are now garnering support for this from other hapū and iwi in the country which, to date, has been strong.

Ngāti Raukawa takes a long-term view of environmental restoration of tuna and understands that all facets of the tuna life cycle are connected. The iwi will continue to incorporate planning for climate change within this kaitiaki programme to grow and sustain the tuna stocks in their tupuna awa (ancestral rivers and streams).

FOR MORE INFORMATION

- Te Reo a Taiao Environmental Unit www.taiaoraukawa.co.nz
- Māori Freshwater Fisheries www.waimaori.maori.nz
- For climate change visit www.climatechange.govt.nz
- For climate change and sustainable land management visit www.maf.govt.nz