# **GEOGRAPHY BULLETIN**

# CONFERENCE SPECIAL – NEW ZEALAND



Geography Teachers' Association of New South Wales Inc.

# Volume 46 No 2 2014

In this issue: Why students, particularly boys, could develop a deeper understanding of geography from outside the classroom New Zealand – Pure Canterbury A millenium ago Perceptions of liveability

in the Kauri Coast 15 A notional transect across the Volcanic Plateau 27



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# **GEOGRAPHY BULLETIN**

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Geography Teachers' Association of New South Wales Inc.

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Covers: Lake Te Anau and Waitangi Mäori carving Source: Wikimedia Commons

The Geography Bulletin is a quarterly journal of the Geography Teachers' Association of New South Wales. The 'Bulletin' embraces those natural and human phenomena which fashion the character of the Earth's surface. In addition to this it sees Geography as incorporating 'issues' which confront the discipline and its students. The Geography Bulletin is designed to serve teachers and students of Geography. The journal has a particular emphasis on the area of the Pacific basin and its near neighbours and a specific role in providing material to help meet the requirements of the Geography syllabuses. As an evolving journal the Geography Bulletin attempts to satisfy the requirements of a broad readership and in so doing improve its service to teachers. Those individuals wishing to contribute to the publication are directed to the 'Advice to contributors' on the preceding page. Articles are submitted to two referees. Any decisions as to the applicability to secondary and/or tertiary education are made by the referees. Authors, it is suggested, should direct articles according to editorial policy.

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Performing the second edition of the Geography Bulletin for 2014. Featured in this edition are a series of articles on New Zealand by Nick Hutchinson, Convener of the 2015 biannual conference of the Australian Geography Teachers Association (AGTA). Nick contributes articles on Pure Canterbury, a geographer's perspective of New Zealand's Canterbury Plains; an article, A Millennium Ago, which is an historical geography of New Zealand; an investigation of the perceptions of liveability on the Kauri Coast and the East Coast of the Far North District; a study of the South Island Highlands; and a transect across the Volcanic Plateau from Tukorehe Scenic Reserve to Te Urewa National Park.

By way of contrast, Brendan Stewart of the King's School, Parramatta, investigates why students, particularly boys, can develop a deeper understanding of Geography through an engagement in fieldwork.

The GTA thanks Nick and Brendan for their valued contributions.

# **GTA HSC Student Lectures**

More that 350 HSC students took advantage of the HSC student lectures in 2014. Lectures, presented by Grant Kleeman, David Hamper and Chris Tanna, were held at the Hurstville Civic Centre, Callaghan Secondary College in Newcastle, the University of Wollongong and St Andrews Cathedral School, Sydney. In 2015 GTA NSW will be taking the lectures to a number of regional centres.



# **GTA NSW Annual Conference**

The GTA's Annual Conference will be held on 5 August 2014 at the Rydges Hotel World Square. The theme of this year's conference is Liveability–Geography Comes Alive. The focus will be on syllabus links to Stage 6, and Australian Communities and Issues in Australian Environments (Stage 5). Fieldwork opportunities will be offered after lunch at key CBD and inner city places. Professor Phillip O'Neil from UWS will present the opening keynote speaker and lead a fieldwork activity. Representatives from Barangaroo, Contour Education and NSW Department of Planning and Environment will conduct presentations and run fieldwork. As an alternative to fieldwork, Sydney Olympic Park Education Unit will also be running a workshop in the afternoon, presenting their education resource about urban dynamics affecting the Olympic site and surrounding suburbs.

Conference information and the registration form can be found at: http://www.gtansw.org.au/files/prof\_learning/2014/GTA%20conference%20flyer\_14\_v2.pdf



Dr Grant Kleeman, Editor



# AGTA Conference 2015

The 2015 AGTA conference will be held from 11-16 January 2015 in Rotorua, New Zealand. The conference's major sponsor, *Group Events*, have arranged special return conference airfares with Air New Zealand, conference accommodation as well as pre and post-conference tours.

# Conference program:

Date	Activity
Sunday 11 January	Registration and welcome function
Monday 12 January	Welcome, keynote presentations, workshops and evening social event
Tuesday 13 January	Fieldtrips
Wednesday 14 January	Fieldtrips and conference dinner
Thursday 15 January	Keynote presentations and workshops
Friday 16 January	Post-conference tours

# Pre-conference tours

- Tour 1: Northland (Tuesday 6 January–Sunday 11 January)
- Tour 2: Central North Island, Middle Earth & Blue Duck Station (Tuesday 6 Sunday 11 January)

# Conference fieldtrips:

- Tour 1: White Island
- Tour 2: Hells Gate Geothermal Process & Mokoia Island Urban/Environmental & Rotorua
- Tour 3: Scion Forest products Innovation & Farm Tour focusing on sustainability
- Tour 4: Waimangu Volcanic Valley, GNS Volcanic Activity Centre, Huka Falls, Wairakei Geothermal power & Lake Taupo

# Post-conference tours

 Tour 3: Christchurch only (Friday 16–Sunday 18 January) Tour 4: South Island (Friday 16–Wednesday 21 January)

Additional information regarding the conference can be found at: http://agta.asn.au/Conferences/conf2015/index.php

# **2014 Australian Geography Competition**

The Australian Geography Competition is a joint initiative of the Australian Geography Teachers Association and the Royal Geographical Society of Queensland. In New South Wales and the Australian Capital Territory the Competition is sponsored by Macquarie University, Sydney.

The number of students entering in 2014 was 70,719, from 761 schools. While this represents a decline in the number of students from 2013, it was great to see an increase in the number of schools entering this year up from 725 in 2013. From New South Wales, 275 schools entered with 25,892 students and from the Australian Capital Territory, 19 schools entered with 2,682 students.

Congratulations to the NSW and ACT students who came first in their age divisions, and to the school winners:

#### Category

NSW Junior	Andrew Guang, <b>Sydney Boys High School (equal first in Australia)</b>
NSW Intermediate	Wai Lam Wong, <b>James Ruse Agricultural High School</b> & Jeffrey Wang, <b>Shore School (both equal first in Australia)</b>
NSW Senior	Jamie Abel, <i>Shore School</i> Oscar Fawkes, <i>Sydney Grammar School</i> Joshua Hinton, <i>Fort Street High School</i> Angus Konta, <i>St Andrews College – John Paul II Campus</i> Alexander Morony, <i>Smith's Hill High School</i> Keita Richardson, <i>Normanhurst Boys' High School</i> Stephen Roche, <i>Sydney Grammar School</i> <i>(all equal first in Australia)</i>
NSW School	Sydney Grammar School <b>(Australia first)</b>
ACT Intermediate	Tara Dabrowski, <b>Canberra Girls Grammar School</b> Tristan Miller, <b>Lyneham High School</b> Joshua Welling, <b>Canberra Grammar School</b>
ACT Senior	Niels Beowulf-McGowan, <i>Canberra Grammar School</i> Miles Davis, <i>Canberra Grammar School</i> Thomas Willson, <i>Canberra Grammar School</i>
ACT School	Canberra Grammar School
The following stude	ents also received prizes for outstanding results in the Competition:
Junior	Matthew Blyth, <i>Merewether High School</i> Nicolas Janjevski, <i>Barker College</i> Yongqin Li, <i>Sydney Girls High School</i> Maxwell Semmens, <i>The Scots School - Bathurst</i> Luke Stewart-Yates, <i>Normanhurst Boys' High School</i>
Intermediate	Sophie Booth, Frensham William Hughes, <i>Merewether High School</i> Brendan McKee, <i>Cherrybrook Technology High School</i> Andreas Orsmond, <i>Sydney Grammar School</i> Philip Rowe, <i>Barker College</i>

# A number of NSW and ACT schools ranked in the top 10 schools in Australia.

Rank	School
1	Sydney Grammar School
2	Canberra Grammar School
3	Normanhurst Boys' High School
4 (equal)	Camberwell Grammar School
6	Sydney Boys High School
7	Merewether High School
8 (equal)	James Ruse Agricultural High School
8 (equal)	Shore School
10	Baulkham Hills High School

High-scoring senior students in Year 11 or less are selected from the Competition to take part in Geography's *Big Week Out*. This is a week of geographical activities focusing on fieldwork and spatial technologies. In 2014 it will be held in Sydney's Northern Beaches from 28 September to 3 October, and organised by a Geography Teachers' Association of New South Wales committee under the leadership of Milton Brown. Australia's team to the 2015 International Geography Olympiad in Moscow will be selected from students who participate in Big Week Out. Representing NSW and ACT in the 2014 Big Week Out will be:

NSW	Jamie Abel, Shore School
	Catriona Calantzis, Danebank Anglican School for Girls
	Canada Gavin, Kinross Wolaroi School
	Keita Richardson, Normanhurst Boys' High School
ACT	Emily Alder, Canberra Girls Grammar School
	Miles Davis, Canberra Grammar School

The 2014 International Geography Olympiad will be held from 12 to 18 August in Krakow, Poland. Thirty-seven countries are expected to participate. Four students have been selected to represent Australia, based on their performances at the 2013 Geography's *Big Week Out*:

Janice Mui, MacRobertson Girls' High School, Melbourne
Oscar Fawkes, Sydney Grammar School
Stephen Roche, Sydney Grammar School
Leon Shi, Melbourne High School

With the greater flexibility allowed by the discontinuation of the Final for Under 16s, the Competition organisers made a determined effort to raise the average score this year by including more skills questions and fewer based on place-specific knowledge (i.e. the state and territory questions). This is reflected in the comparison of the Australian average scores for 2013 and 2014 presented in the following table:

Age level	2013	2014
Junior (out of 30)	12.5	15.7
Intermediate (out of 40)	17.6	22.7
Senior (out of 35)	14.8	18.9



The Competition organisers are currently investigating commencing a competition for Year 5– 6 students. The organisers would encourage any Primary teachers interested in providing input or ideas to contact me (contact details below). I would ask secondary teachers in F–12 schools to pass this on to their primary colleagues.

The Competition organisers appreciate the support of NSW and ACT teachers in entering their students in the Competition. Please do not hesitate to contact us if you have any queries.

# Bernard Fitzpatrick Coordinator, Australian Geography Competition info@rgsq.org.au, ph (07) 3368 2068 www.geographycompetition.org.au



# Why students, particularly boys, could develop a deeper understanding of geography from outside the classroom

# **Brendan Stewart, The King's School**

"That which ought and can best be taught inside the classroom should there be taught, and that which can best be learned through experience dealing directly with native materials and real life situations outside the school should there be learned"

Julian Smith, 1943, Outside the Classroom, The Education Forum, 7 (4), 363.

Sight, sound, smell, taste and touch are the senses that allow us to experience the world around us. It should therefore be no surprise that students who entertain each of these senses in an outdoors setting learn more than in a classroom situation particularly when it is related to content being learnt. This is why for Geography to truly be learned it must be experienced, and where better to experience it than in the world around us.

Geography is the study of both the human and physical environments and the interactions that take place between them. Students in a typical high school context, studying mandatory Geography in Years 7 through to 10, should according the current syllabus, attend a minimum of two excursions. Whilst two excursions may seem reasonable from an organizational, logistical and feasibility point-of-view, the question must be asked, does this time sufficiently give a student studying Geography an appreciation into the greater world around them? Are students really able to relate content with reality? Would an art student gain the required skills given only two canvases throughout their high school years? Probably not, and while the comparison may seem extreme, perhaps we are viewing the way in which we teach geography with trained and tired eyes. Geography like PDHPE should have a strong focus on outdoor education. Geography is an area of study where more boys participate than females (In the 2013 NSW Board Of Studies 2-unit HSC Geography course candidates: 54% were male; and 46% female) we need to look at the characteristics of how a majority of students attempting the course, boys, learn. Currently only 5.5% of all students in NSW attempt the 2-unit HSC Geography course. This is down from previous years. The Sydney Morning Herald (October 5, 2013) reported in an article: "Geography loses as HSC students map their future" dissects the enrolments into courses over the past decade and states that "The popularity of Geography continues to decline, with 26 per cent fewer students studying it in 2013 compared to 2003" one reason offered by the article is a more directed focus by students towards subjects in the "vocational education

and training (VET) courses, which lead to a skill certification". Fair enough, but then why did PDHPE become one of the fastest-growing subjects rising from 10,342 to 14,048 candidates over the past decade? Is there a connection with being outdoors and experiencing the elements around us pumping life and outdoor stimulus through out veins? Is it even natural to be learning inside a classroom when we yearn to be outdoors?

I reiterate that students need to <u>experience</u> Geography. They need to see the processes taking place in the field. They need to hear and feel the ocean and see the waves breaking on the shore or experience the hustle and bustle of a crowded city environment or an urban village. They need to smell the smoke coming from an industrial area or to sense the emotion of someone who has experienced loss through a natural disaster or those who have responded to one. This is how, in my opinion, students learn Geography: they must experience it, all its wonders. Geography should spark discussion, create interest, inspire innovation and creativity which inevitably will lead to the ultimate development of a deeper understanding of our place on this planet and the role we each share in civics and citizenship.

I believe a stronger focus in encouraging Geography students to engage with their outdoors, conduct more action research, get more involved in local communities and sustainability drives will lead to a shift in attitudes towards Geography. I believe this could boost number of student entering the subject and address the learning needs of the larger number of boys attempting the course.

Restak (1979) and others have shown that many students do not become strongly visual before Year 3, and that auditory acuity first develops in many students after Year 6, further boys often are neither strongly visual nor auditory even during high school. Therefore, since most young children are tactual and kinesthetic learners, such resources should be developed and used, particularly for those who are experiencing difficulty learning through lectures, direct verbal instructions, Why students, particularly boys, could develop a deeper understanding of geography from outside the classroom



"chalk and talks," and textbook assignments. Instruction should be introduced through an individual's strongest perceptual strength and reinforced in the two next strongest modalities (Bauer, 1991; Carbo, 1980; Dunn, 1990a; Kroon, 1986; Ingham, 1989; Martini, 1986; Weinberg, 1983; Wheeler, 1980, 1983). Further, because many K toYear 2 youngsters are enthusiastic about designing and building tactual/kinesthetic games and materials, they can easily teach themselves through this procedure.

Now let's push forward, and for a minute entertain the thought that my rambles have been heard and perhaps even inspired a few Geography teachers itching to spend sometime outdoors with their geography students who are hungry to get outside the classroom and absorb the learning opportunities Sydney's geographies have to offer. From the Blue Mountains (Yr.7 World Heritage Sites) to the coastlines at North Cronulla, Point Kernel, Collaroy and Narrabeen (Yr.10 Coastal Management and Yr. 11 Biophysical Interactions involving the hydrosphere and lithosphere) to Sydney's expanding urban dynamics, from one of the World's most recognisable harbours to the sprawling suburbs pushing the urban-rural limits to the North West, to the Intertidal Wetlands of Homebush Bay and changing history of Sydney Olympic Park. North, South, East and West, Sydney has so much to offer geography, so much for students to relate to and so many contextual links intertwined within the pages of the current NSW Geography Syllabus.

What is stopping us as teachers from experiencing Sydney's geographies? Time? Cost? School Policy? There are many arguments, which would suggest there is not enough time for additional fieldwork and excursions in a school's busy curriculum. I concede. However, I would challenge a Geography teacher to think this through. Is there potential to add just one additional outdoor activity into their teaching? It could be as simple as a

walk through the local park or street in the suburbs. There is so much to discuss outside. The questions that will be asked while students are given the license to discuss Geography and see the world through their geo-goggles. What native flora can be seen? What evidence is there of biological weathering? Or how many drains are there in a local street? Where does that water go? Are we in a drainage basin or close to a mountain? Alternatively, bring Sydney's geographies into your classroom. Take your own photos and share through Twitter or on the electronic white board. Perhaps use Google Earth to zoom into a Sydney location relevant to a topic being taught. Ask students to share their experiences of the local environment, what they have seen, heard, smelt, touched or experienced. Get student to visualise the road home and consider the direction they are facing when taking rights, lefts and so on. Relate those experiences to the content being taught and you have contributed to experiential learning. Students who are able to place themselves in an environment being discussed are learning and are able to better relate with the content, leading to deeper a more meaningful connections with Geography.

Through my teaching I have come to understand that while males make up larger numbers in HSC 2-unit Geography, they do by no means often win top accolades in the subject. (From 2001 to 2013 females students have won 11 First in Course accolades leaving males with only three at the top of Geography podia). This is too often because of the directive-verb in the front of a short or extended response question. Discuss, Explain and Evaluate are all examination terms, which send shivers down the spines of boys. These directive-verb terms are more comfortably met and understood by girls who have a natural-ability, even biological superiority, to cover questions like these with sufficient detail, and to the extent required by HSC markers to obtain those Band 6 marks and to earn the top positions. After watching my two and half year old son play with a young female friend next door both of approximately the same age. Her language has developed significantly more than his, while my son's physicality and hand-eye coordination was far more tuned. A simple observation, yes, but one that was shared by many of my parent-peers. I entertained the thought that the girl next door would be at least six months ahead of my son in terms of language development, yet both would write the HSC together.

Boys are, however, wonderful learners and can learn as well as girls. "Though the disruptions they cause in classrooms and the low grades they get on report cards, through their glazed eyes and tapping feet, through their aggression or confusion on the playground, they are pleading: "We need a lot of help. We need teachers to understand how to teach us effectively, so that we succeed. We need schools to harness and challenge our powerful energy. We need everyone to remember: we're not just 'kids' or 'students'—we are boys." (Adapted from *The Mind of Boys* (Michael Gurian and Kathy Stevens)

We as Geography teachers need to work on two fundamentally important areas to secure our subject's future. We need to develop a more profound

understanding of how the majority of students, boys, in Geography learn and we need to provide more outdoor learning opportunities for both students male and female. This will encourage growth in Geography and stronger over-all results from boys, perhaps even narrowing the divide. Geography is a wonderful subject; it is relevant, real and happening all around us. Politicians use geographic catch-phrases to win votes and elections; charity organisations use the power of global issues to motivate people into donating to their cause. The world's entrepreneurs and innovation industries are turning towards green energy and low-energy consumables. This is all Geography. Let's get our students outside. Let's get them motivated and let's see the current 5.5% level of candidates entering Geography increase towards the 10% mark by 2020. It is possible. I conclude with a quote relevant to my rambles:

"Three or four times only in my youth did I glimpse the Joyous Isles, before they were lost to fogs, depressions, cold fronts, ill winds, and contrary tides... I mistook them for adulthood. Assuming they were a fixed feature in my life's voyage, I neglected to record their latitude, their longitude, their approach. Young ruddy fool. What wouldn't I give now for a never-changing map of the ever-constant ineffable? To possess, as it were, an atlas of clouds." David Mitchell, *Cloud Atlas*.

2015



Download a tour itinerary from AGTA – http://agta.asn.au/ Conferences/conf2015/index.php



AUSTRALIAN GEOGRAPHY TEACHERS PRE CONFERENCE TOUR THE CENTRAL PLATEAU AND MIDDLE EARTH NEW ZEALAND





# NEW ZEALAND



**Nick Hutchinson** 



The great French geographer Paul Vidal de la Blache believed that the human geographer's primary task was to account for distinctive genres de vie, lifestyles, or, modes of existence set in a landscape. Nothing was more distinctive to subsequent New Zealand geographers than the patchwork quilt of rectangular paddocks of cereals, crops and fat lamb pastures that comprised the Canterbury Plain between 1890 and 1990. A patchwork delineated by water races, wire fences and impressive shelterbelts of English gorse, Monterey Pine (Pinus Radiata) and Monterey cypress, from California, planted to protect the paddocks from desiccating norwesterly winds. Much has changed since.

At Camelot Robotic Dairy farm, near Ashburton, mid Canterbury, the robotic system gives 500-odd unusually large framed Friesian and Swiss Brown cows the option of being milked up to four times a day. A microchip collar tracks their movements as they move between pasture, the dairy and rewards of straw and water in the loafing yard. The microchip opens the gate when the cow needs to visit the dairy. Inside laser sensors direct the cups to individual teats. Milking information is displayed on a computer monitor.

At Dunsandel, half way between Ashburton and Christchurch Synlait opened a \$100 million shiny, ultramodern milk powder factory in 2008, the largest infant formula facility of its type in the Southern Hemisphere. In 2010, Chinese company Bright Dairy, a Shanghai-based enterprise, bought a controlling stake in Synlait so that container loads of cans containing Pure Canterbury infant formula are now shipped off to China.

This year a large-scale dairy farm has been given the go ahead in the Mackenzie Basin, southwest of Ashburton, around Twizel, despite opposition from environmental groups and from Ngai Tahu the principal Maori iwi (tribe) of the southern region of New Zealand. Huge central pivot irrigation systems pump water from the fluvioglacial gravels to provide pastures for some 1 400 dairy cows. So severe is the north Otago climate that the cows will need to be wintered off the property. The battle to establish this enterprise took two years in the court system and it may offer a precedent for further dairy farming in the district. A more optimistic venture to farm 18 000 dairy cattle further down the valley that involved stall feeding in cubicles over winter was denied permission to proceed.

Rather ironically, Ngai Tahu Holdings Corp, the commercial company owned by the iwi is also planning the development of three dairy farms in former forested country at Eyrewell Forest, north of the Waimakarri River, close to Christchurch, where irrigation pipes will supply river water to the pastures. The iwi is concerned enough about the environment to develop these farming ventures in conjunction with experts from Christchurch's Lincoln University.

Dairy farming is big business in this part of New Zealand. Although many farmers still grow wheat and barley and high value specialist crops such as radish and Asian greens, dairying has proliferated under central pivot irrigation and rotary dairy systems. In 1990 there were 20,000 hectares in Canterbury under irrigation and in dairy production. In 2012 the relevant figures are an order of magnitude larger with 200,000 hectares irrigated and in dairy production. In the past two or three years dairy farming has boomed in this part of the world. Land prices and cattle prices have risen commensurately and dairy farming is still an attractive financial proposition.

Of course there are environmental consequences connected to this expansion of dairy cattle numbers. The distinctive mixed crop and livestock farming landscape referred to above had a number of advantages. A typical farm in the 1980s had substantial herds of breeding ewes feeding off pasture, wheat stubble and green weeds that spring up in the newly ploughed paddocks. The sheep fertilise the soil and a rotation of root crops, legumes, clover, lucerne and fallowing revitalise the soil and replace nitrogen and other elements. Farm activities were income supplementary dependent on the oscillations of meat and grain prices, and, work complementary. When the intensive periods of grain production occurred on farm then livestock needed little attention and vice versa.



Today, mixed crop and livestock farms harvest grass grown as a cash crop that is sold to dairy farmers as silage thus removing valuable nutrients from the soil and interrupting the nitrogen cycle. Dairy farmers have further problems with the nitrogen cycle. Animal wastes add excessive nitrate ions and ammonium ions to rivers and groundwater systems. Scientists from Lincoln University say that there is evidence of an increasing long-term trend of nitrate in groundwater. A 2009 study by Environment Canterbury revealed that only 43% of all Canterbury dairy farms were fully compliant with the standards set for the discharge of dairy effluents. Further, Canterbury Plain river systems have been degraded both in terms of water quality and water quantity with significant contamination from faecal matter, nitrogen and phosphorus, shelter belts have been demolished with concomitant reductions in biodiversity and, most important of all, the agricultural sector emissions of CO2 equivalent gases, largely from the belches and backsides of cattle, represented 49.4% of all greenhouse gas emissions in New Zealand.

The incursion of dairy farming into the Mackenzie Basin is particularly disturbing. The Basin is a high intermontane dry area floored by fluvioglacial outwash deposits and covered by brown tussock grasses set against the backdrop of the snow-covered Southern Alps. The braided rivers and moraine-dammed lakes are habitats for important native birds, the most famous of which is the black stilt, which is one of the rarest waders in the world. It is an area of outstanding natural beauty, a quintessential New Zealand landscape, an area impacted on by people but a region in a nice balance between human occupance, whether pakeha or Ngai Tahu, whether seen in terms of forest clearing and hydro-power development, and the maintenance of a surrounding awe-inspiring and irreplaceable scenic resource. The Aoraki-Mt Cook National Park and the Ruataniwha Conservation Park are well protected but the Basin is hardly a natural landscape because it encompasses the farms, and, townships of Tekapo and Twizel, the hydro-power infrastructure, wilding pines (the spread of exotic conifers), introduced hawkweed and patches of semi-desert like bare ground in the drier and lower parts of the Basin. Nevertheless, it does provide an impressive foreground, an aesthetic picture frame, for the Southern Alps. It does allow ecological and geomorphological processes to proceed in the Basin. Intensive dairy farming and conversion of the land to irrigated pasture threaten the picturesque qualities and the ecological integrity of Mackenzie Country.

It is probably apocryphal but Chinese tourists are said to be able to pay for their trip to New Zealand should they be allowed to fill their suitcases with milk powder on their return journey. Chinese demand for dairy products is increasing rapidly. In the four years since the 2008 Free Trade Agreement was signed between the two countries New Zealand dairy exports to China increased in value from \$500 million to \$2 billion. By 2019, the ever-reducing tariffs of dairy products will be reduced to virtually zero. The young New Zealander that came to try his or her hand at mixed crop and livestock farming, from North Island, thirty or forty years ago has been replaced by robots and a succession of dairy farm workers on Canterbury dairy farms with temporary work permits from as far away as the Philippines and Latin America, particularly Chile. Such is the power of the market. Although, Vidal would add that the natural endowments of the Canterbury Plain and Mackenzie Basin present a range of possibilities for people to make use of.

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# NEW ZEALAND

# A millennium ago

# **Nick Hutchinson**

Aotearoa/New Zealand was the last major landmass to be colonised by people before the era of mercantile capitalism. A particular predilection of the geographer is to attempt to envisage what is happening in various parts of the world over a similar period of time. Historical geography, the geography of past times, through imaginative reconstructions of trading networks within chosen spatial contexts, sees emphases on both human ingenuity and the exercise of power and control over environmental resources.

When East Polynesian people arrived in Hawaii, Easter Island and Aotearoa/New Zealand it is interesting to contemplate the contemporaneous nature of proto capitalism in Islamic Central Asia as well as the contours of pre-capitalist geographies in the West Coast of North America and in Australia. Maori landfalls, in Aotearoa/ New Zealand, up to a thousand years ago, are viewed through this prism.

One thousand years ago, just before the turn of a new millennium the Syrian geographer, al-Muqaddasi surveyed his world, part of which was Khurasan, a region that encompassed modern eastern Iran and much of Uzbekistan, Turkmenistan, Afghanistan and Tajikistan. This region exported soap and sulphur; silk, sables and silver fabrics. Watermelons were despatched to Baghdad in lead caskets packed with snow. Khurasan supplied the most succulent meats, elaborate leatherwork, as well as fine porcelain from Shash (Tashkent) and exquisite paper from Samarkand, the source of paper for the entire Islamic world.

One thousand years ago, on the south-facing section of the California coastline, between the Santa Ynez Mountains and the Channel Islands, Chumash People were trading overland and by the means of sophisticated redwood, plank-built canoes. The seagoing canoes, or *tomols*, were typically 6–7 metres in length and could carry two tonnes of cargo or up to twelve passengers. They were sewn together with fibres of twisted red milkweed and caulked with local tar deposits mixed together with pine resin.

From neighbouring Gabrielino People, from Santa Catalina Island, they imported precious soapstone or



steatite to be fashioned into cooking pots that would not fracture over fire, from the Yokuts of the San Joaquin Valley they traded sharp shards of obsidian or volcanic glass. And, from the Colorado Mojave transported pottery, woven cotton blankets and red ochre over the mountains and down to the coast. Island Chumash traded Olivella shell beads, (an effective currency) chert knives and blades, fish, sea otter and sea lion meat with mainland people that supplied chia (sage) seeds, wild cherry, acorns and pine nuts together with deer hide, rabbit skins and antlers for tools. Thousands of Chumash lived in this part of Southern California in hundreds of villages and scores of towns, made up of conical tule (bulrush) huts.

One thousand years ago, Australia was a patchwork of refined biophysical environments, an Aboriginal estate of altered forests, grasslands, vegetated belts and clearings shaped by firestick farming. According to Professor Jim Kohen, one thousand years ago fires became less frequent on the north side of the Hawkesbury River in what is now Dharug National Park, in the Sydney Basin. The vegetation changed from open woodland species to wet sclerophyll and rainforest species perhaps suggesting that kangaroo numbers had plummeted and that rainforest resources had become more valuable to Dahrug People. It is argued that such changing impacts of Aboriginal people on the environment increased social networking, trading networks, inter-national marriages and sharing ceremonies. In arid Australia, within the last one thousand years there was a dramatic increase in the manufacture of stone tools, with the stone being traded over long distances.

Diyari people, occupying the north-eastern sector of South Australia to the east of Lake Eyre, were at the epicentre of continental trade routes that revolved around nearby supplies of pituri, a native tobacco, and the most prized red ochre. People carried in stone axes from Mt Isa, bailer shells from Far North Queensland and pearl shells from the Kimberley; hook boomerangs from northwestern Queensland and softwood shields and wooden containers from southwest Queensland and axe heads were obtained from the southern coastlands. Australia comprised of 200-300 autonomous language groups, with an extensive trading system and associated networks of social interaction.

When Antarctic scientists return to Hobart they can smell eucalyptus far off in the Southern Ocean. One thousand years ago when perhaps Maori first voyaged to Aotearoa/New Zealand (Maori legends date the earliest landfall of canoes to CE 950) they were confronted by a symphony of bird song each and every sunrise, a chiming of tiny bells harmoniously ringing with 'the most tuneable silver sound imaginable' according to Joseph Banks as late as 1770. Perhaps there were indeed landfalls along the most northerly coastlines of Northland one thousand years ago but more recent examination of archaeological evidence suggests Maori colonisation in the 12th or 13th century and this conforms with current analyses of whakapapa (genealogies) that indicate 17-22 generations of ancestors traced back to the colonising canoes: 19 generations, for example, at 29.5 years would indicate arrival of Maori in CE 1290.

The kiore (Pacific rat), dog and sweet potato, kumara, survived the voyages to become dietary staples. Trading networks were rapidly established over the forthcoming generations with vast bird butchering sites stretching over 120 hectares in extent in South Island set up to harvest flightless moa; and, extensive culling of seals along the coastlines of both islands. Bird and seal meat preserved in its own fat was packed into taha (bottle gourd) and poha (inflated bull kelp) containers and transported back to home settlements. Obsidian, volcanic glass, was mined from Tuhua, or Mayor Island, off the Bay of Plenty coast and distributed throughout the two islands; silcrete butchering knives fashioned from deposits in South Island have been found in far off Taranaki, and, much prized Westland greenstone was traded all over Aotearoa/ New Zealand to make axes, chisels and fearsome weapons.

The contemporary geography of Aotearoa/ New Zealand is enriched by a curiosity about initial Polynesian settlement of the land of the long white cloud, the transformation of the land into 'a dynamic kaleidoscope of Maori tribes' that was encountered by Europeans in 1769 and, the proud continuity of Maori culture that informs current geographies of Aotearoa/ New Zealand.

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# NEW ZEALAND

# Perceptions of liveability in the Kauri Coast and the East Coast of the Far North District

# **Nick Hutchinson**

Why do people live in this part of the Far North District of Northland (Te Tai Tokerau), of New Zealand and what are their perceptions and the perceptions of others about the liveability of places in the Kauri Coast and the East Coast? What are the influences of environmental quality on the liveability of these places? These are pivotal ideas outlined in the 'Geographies of interconnections' Australian Curriculum: Geography, Year 9 content descriptions.

# Palimpsest and possibilism in the Far North

The questions can be addressed, to some extent, through the notion of palimpsest and through the geographic philosophy of possibilism.

Two particular parts of the Far North are examined: a substantial part the Kauri Coast on the west, that includes Hokianga catchment and Waipoua Forest, and the urban centres of Kerikeri and Moerewa, close to the Bay of Islands on the East Coast.

[refer to http://www.teara.govt.nz/en/interactive/7509/ northlands-topography map Northland's topography – choose layers to show place names, highways, districts and land use ]

[refer to http://www.nrc.govt.nz/Download/?file=/ upload/2032/NRC%20boundary%20map.pdf for a map of the three districts under Northland Regional Council]

The palimpsest, a metaphor for the process of landscape change, seen through the lens of cultural geography, derives from the writing tablet used by medieval monks, a tablet that left inscriptions of prior scripts. It could never be wiped completely clean.

# **Kupe and Cook**

The twin cultural impacts of Kupe and Cook are imprinted on the imaginations of people from this region where 'Te Kohanga o Te Tai Tokerau', the nest of the northern tribes, centred on Hokianga Harbour, trace their ancestry to the discovery and settlement of this place, rendering it the 'birthplace' of the Nation. There is a tangle of oral histories surrounding Kupe but one of the strongest stories, recounted by Peter Buck, or Te Rangi Hiroa, in the early twentieth century, tells of Kupe leaving far off Hawaiki to chase an errant octopus down the east coast of North Island (Moon, 2013, 88). The creature was killed in the stretch of ocean later called Cook Strait and Kupe then circumnavigated North Island to settle in Hokianga from whence he later departed for Hawaiki. Kupe, according to Ngāpuhi<sup>1</sup> oral histories, vowed never to return and named his point of departure, Hokianga, Te Hokianga-a-Kupe (the great returning place of Kupe) (Taonui, 2012, 2).

And, the Georgian buildings such as Mangunu Mission House, which overlooks Hokianga Harbour and Kerikeri Mission House and the Stone Store at Kerikeri, bear witness to the influence of the pre-eminent scientific explorer, Cook. Cook was not the first European to navigate New Zealand waters but he certainly has been elevated in importance locally, particularly in the process of anglicising New Zealand. As, historian James Belich observes, 'Thousands of New Zealanders now live in Cook's place-names as contentedly as they live in Kupe's' (1996:122).

Possibilists believe that the biophysical environment holds inherent possibilities, which people may choose to develop while others, may choose to ignore them. The environment provides a backdrop to events, it provides certain biophysical limits but human ingenuity is a powerful countervailing force.

Ngāpuhi now has the largest affiliation of any New Zealand iwi/people/nation/tribe, with 122,214 people registered (2006 census), and formed from 150 hapu/subtribes/clans.



Site of a kumera storage pit, One Tree Hill Auckland. Source: Wikimedia Commons

# The possibilities of the potato

Kumara (Ipomoea batatas) is a quintessential Polynesia resource. Kumara remains have been dated back to the tenth century in the Cook Islands (Belich, 1996: 32) and these same islands are sometimes cited as legendary Hawaiki, the origin of Kupe's long canoe voyage. How an American plant was found to be so widespread throughout the Polynesian diaspora is another matter? One convincing line of argument that examines the DNA of the kumara traces its origin to Mexico, rather than Peru or Ecuador where supposedly Polynesians may have made contact with Amerindian people and returned with the tubers (Furey, 2006:10). According to an International Potato Centre report there is a significant sweet potato 'gene flow' from Mexico to Oceania but a weak genetic association with Peru and Ecuador. The scientists suggest that kumara may well have been transferred as botanical seeds by birds into Polynesia (Rossel, Kriegner & Zhang, 1999-2000).

Kumara, brought over with the founding canoes, were tended in carefully constructed gardens in the 900 hectares of volcanic loams at Kerikeri where gravel and sand was added to the soil to assist in drainage and heat retention and charcoal was dug in to increase fertility. Gravel is 'kerikeri' or 'kirikiri' in Māori, although 'kerikeri' also means ' to dig intensively' (Middleton, 2007, 33). Underground stores, called 'pits', were dug to keep precious kumara over winter. In Polynesia kumara could overwinter in the ground but the Maori 'pits', or cellars, were quite elaborate, 'some had raised rims, thatched roofs, drainage systems and little cupboards in the corners (Belich, 1996, 29).

When Europeans introduced the white potato, later called the Māori potato, to the district it was extensively grown as a trading crop, a commodity to be exchanged for axes, hatchets and more particularly muskets. In the early 1800s, enterprising chiefs, such as Ngāpuhi war leader Hongi Hika encouraged such trade with the whaling ships and amassed so many muskets that the chiefs were able to mount successful armed raids down the west coast to Taranaki, to the Bay of Plenty, the East Coast, to the present site of Auckland and Tauranga, Mokoia Island in Lake Rotorua and Kaipara on the west coast of Northland. Captured slaves tended ever more extensive potato gardens in an expanding cycle of production, warfare and slavery.

Kumara growing expertise built up over generations was widespread and easily transferred to the production of Māori potatoes. The precarious nature of cultivating an essentially tropical crop, such as kumara, is illustrated by the fact that firstly, kumara plants do not flower or set seed in temperate New Zealand and, secondly, kumara gardens in marginal areas such as the Wairarapa Coast of southern North Island and Marlborough Sounds in the northeast of South Island had to be abandoned, possibly when a climate shift led to colder conditions during the early seventeenth century (Waitt et al, 2000, 164).

# The possibilities of kauri

Ngati Hine<sup>2</sup> elder, Kevin Prime explained that the tallest and most magnificent trees in the forests, such as kauri, were awarded high status (mana). They could only be felled for an exalted purpose, such as building a war canoe. Similarly, Ngāpuhi elder, John Klaricich maintained that, 'In the Hokianga, kauri was seen as a timber of prestige and rarely used' (Orwin, 2004, 21). Prime also explains that kauri offered fewer possibilities than other trees because it was considered to be inferior as a resource. Totara, another forest giant, for example, provided good timber for building canoes, for house construction and for carving. Its berries provided food



for birds, thus facilitating hunting and its bark could be made into containers to carry cooked forest birds, preserved in their own fat. Klaricich remembered that his ancestors were more concerned when the miro was felled because the miro was

the main food source for pigeons (kupuku), particularly through autumn and winter when the small plum-sized red berries provide so much food that the kupuku can barely fly. He also recalled that tanekaha saplings made better fishing rods than did kauri saplings and tanekaha could be also be used for canoe paddles and the bark used for medicine and red dyes (Orwin, 2004, 23).

<sup>2</sup> Ngati Hine can be identified as an independent iwi rather than a hapu of Ngāpuhi.

# Possibilities of the biophysical environment

The biophysical environment offers a number of possibilities for human endeavour. Just inside the bar on the southern shore of Hokianga Harbour lie boulders, cobbles and pebbles of both hard and fine-grained sandstone, and, a variety volcanic rock, such as andesite and basalt. The sand that fused these egg-shaped rocks together has been eroded from local conglomerate into fine beach sand strewn beneath the boulder beach. The great rivers that deposited these rocks 16–23 million years ago are part of the redeposited basement rocks of the Northland Region. Some 25 million years ago there was widespread over thrusting of rocks from the northeast effectively bulldozing pre-existing rocks away and rolling the volcanic and sedimentary rocks over into complex arrangements.

The straight western coastline follows a north westerly alignment that represents the angle of rifting when the Tasman Sea formed the micro-continent, New Zealand, as it drifted away from Australia and Antarctica between 60 and 80 million years ago (Orange, 2012). The western coastline is a drift dominated coastline with impressive rias, or drowned valleys, such as Hokianga Harbour (11 065 hectares, cf Sydney Harbour 5 500 hectares) while the eastern coastline is irregular, with rocky headlands, sandy bays and deep harbours. Here, and further inland towards the headwaters of Hokianga, there is evidence of recent volcanic activity, that has taken place over the last 2000 years.

The climate of Hokianga could be described as mild, humid and rather windy (Conning et al, 2004, 18). Opononi, a low altitude coastal station on the southern shores of Hokianga Harbour receives 1467 mm of rainfall on average, with least falling December-March. Mean temperatures are 19°C in February 10°C in July. Hokianga and Kerikeri experience 2000 hours of sunshine on average per year. Kerikeri averages 1646 mm with least rain falling in summer. The February mean is 20 °C and July 12 °C. Both stations could be classified as temperate maritime climates.

The geological, climatic and biotic inheritance of the Hokianga is a series of heavily leached clays with few nutrients and a thin layer of topsoil. Kauri trees contribute leaf litter that is highly acidic resulting in these poor soils. The volcanic soils and patches of free draining alluvial soils are agriculturally productive but much of the region is much better suited to forestry.

'Prior to human settlement, most of Hokianga was forested, apart from the huge dunes on the north side of the harbour entrance and extensive wetlands on the harbour margins.

Some of the earliest European visitors noted that kauri abounded "as far as my eye could reach"" (Conning et al, 2004, 19).

Below: Hokianga Harbour entrance. Source: Wikimedia Commons



Hokianga was the centre of a saw milling industry from the mid 1820s through to the 1830s with up 4000 Māori and some 90 Pākehā<sup>3</sup> living around the harbour bush felling the Kauri logs. Hokianga was then the point of origin of 50–60% of the timber exported from New Zealand, much of it, in the form of spars, baulks (squared logs) and sawn timber was destined for the Australian colonies.

'Today few large tracts of forest remain, representing fragmented remnants of the former extensive woodlands. Freshwater wetlands are rare. Significant areas of mangrove forest, tidal flats and coastline have also been lost or modified through stop-banking [bunds], clearance and grazing. For example, approximately 27% of the Hokianga Harbour's intertidal zone has been lost to reclamation, while the vegetated intertidal zone has been reduced by 45%' (Conning et al, 2004, 20).

# Kerikeri land use futures

By the 1930s Pākehā occupied the deep, friable volcanic soils, at Kerikieri, to develop a citrus farming industry. The North Auckland Land Development Company subdivided twenty-acre blocks, in order to grow oranges, lemons and grapefruits, fringed by windbreaks of Eucalyptus trees and Hakea shrubs. The properties, which were run down during World War II, also suffered from savage droughts during 1945 and 1946. But there were subsequent plantings of new varieties of tangelos, oranges and mandarins and the advent of successful tamarillo production. The 1970s saw the introduction of kiwifruit to the district. However, the 1980s presaged a change in fortune for growers when a virus affected tamarillo crops and kiwifruit were in oversupply. By the end of the decade the local authorities found it more expedient to allow subdivision for residential housing. Nevertheless, the region continues to grow citrus and subtropical fruit, bringing in about \$12 million annually to the region (Myhre, 2013). The New Zealand Yearbook 2012 indicating that Northland is a major producer of lemons, mandarins and avocadoes. Hedges of feijoas and passionfruit still fringe the productive orchards and groves.

One company, Kerifresh, employed 140 casual workers from Tonga in the summer season, 2013, under the Recognised Seasonal Employment program, as well providing work for 300 casual workers from the surrounding district (Myhre, 2013).

Some of the horticultural land will still be viable in years to come but an examination of land use using Google

Earth and the Far North Future Plan 2006/16 indicates that much of the horticultural area will be redeveloped into housing sections, or subdivisions, when the neighbouring centre of Waipapa is fully developed. The population of Kerikeri-Waipapa is expected to increase from 7,830 in 2001, to 14,975 in 2021, and, 16, 835 in 2026.

# **Possibilities in Waipora Forest**

The singular fact that a significant reserve of Kauri forest should still remain in the Far North is an interesting story. Tragically, only 5 % of the old growth kauri forests are left standing in New Zealand following European occupation and most of the remnants survive in isolated patches on spurs, ridges and inaccessible plateaus. Waipoua kauri forest was initially purchased by the Crown in 1876 from two rival but related Māori chiefs, Tiopira Kinaki, (Te Roroa4), and, Parore Te Awha, (Ngāpuhi). Importantly, Parore had secured an agreement with Pākehā to protect the forest for the long-term benefit of both groups. In actual fact, Waipoua was inaccessible enough to prevent extensive kauri logging, although gum diggers and tappers exploited parts of the forest in the early 1900s. The area was eventually intended for clear felling to facilitate settlement, but was gazetted as a state forest in 1906. The department of Lands and Survey had finally accepted the kauri would soon be effectively milled out. Thus one representative section of forest should be preserved. In 1908, Leonard Cockayne, a notable ecologist, was the first to unsuccessfully recommend that Waipoua should be declared a national park.

In the 1930s Te Rorua, whose roha, (the territory of their tribal group), encompass the Waipoua catchment, explained that there was a rahui placed on the forest and that Waipoua forest should be protected for ever. A rahui is a form of tapu (sacred, restricted, or prohibited) that restricts access to a resource. It may be a means of conserving resources, or, imposed, for example, for the security of burial sites or the protection of native birds in the forest.

The wheels of government moved slowly but by the early 1930s there were further calls for the absolute and permanent protection of Waipoua kauri forest. The depression and World War II held up proceedings and the State Forestry Service, later the NZFS, continued to call for wise forest management, a euphemism for the sustainable logging of trees that take hundreds of years to regenerate. Although parts of the lower

<sup>3</sup> Collective noun for people of European descent or, more generally, any non Māori New Zealander.

<sup>4</sup> Te Roroa are based in the Waimamaku valley, Waipoua Forest, Maunganui Bluff and Kaihū valley along the western coast of the Far North District. Refer to the map at http://www.teara. govt.nz/en/map/1195/ngati-whatua-tribal-area

Waipoua catchment were intensively logged in World War II, under the guise of a wartime emergency, some 75% of the catchment remained as indigenous forest, with some 16% under radiata pine and only 5% used as pasture land.

After the War scientists and the Waipoua Preservation Society unsuccessfully called once again for the establishment of a national park. Finally, in 1952 the Waipoua Forest was gazetted as a sanctuary under the jurisdiction of the NZFS, but, more importantly, as an area set aside for preservation. Geographer, Michael Roche (2013:218) explained, 'The Waipoua debate was an occasion when other scientists and members of the public challenged the governments foresters' professional judgement.'

A 2011 proposal from the Department of Conservation to declare the area a Kauri National Park listed the ecological values of the Waipoua Forest. The Forest together with contiguous parts of Waima and Mataraua Forests support the largest New Zealand population of the nationally threatened North Island brown kiwi, with possibly between 1000-2000 birds in the Waipoua Forest and the Waipoua/Mataraua plateau. It contains the most viable population of North Island kokako, a bird that cannot fly very well and prefers to flit from branch to branch. This ancient 'wattle' bird species is nationally endangered in Northland. Should the Park come to fruition it would house much distinctive northern flora and fauna in a transect that extends from the mountains to sea, which includes the kauri forest, and, covers an area of great cultural significance to Te Roroa.

A 2013 report on the Waipoua River explained that Te Roroa are recognised as kaitiaki5, or guardians, of the Waipoua Forest (Gray, 2013). Their ancestors have inhabited the forest for 27 generations, or about 1000 years, and, contemporary Te Roroa descendants engage with environmental management, such as the maintenance of the near pristine Waipoua river system, pest and weed control, biosecurity monitoring of kauri dieback disease and the spread of Argentine ants. According to the Department of Conservation (2011) the entire area, wider than just Waipoua Forest takes Te Tarehu (tarehu means 'mist' or 'shroud' – the mists that cover the Waipoua Forest or the shroud of mists that cloak the land). Te Tarehu is a wāhi tapu6, place sacred to Māori in the traditional, spiritual, religious,



Kauri tree, Waipoua Forest Source: Wikimedia Commons

ritual or mythological sense. Te Tarehu is of vital cultural importance to Te Roroa, and includes many specific wāhi tapu and wāhi taonga (treasured sites).

One such treasured site is Tane Mahuta7, a gigantic kauri tree. Up to 200 000 people per year visit the Tāne Mahuta site. Department of Conservation recent surveys have shown that overseas tourists make up the majority (62%) of visitors to the forest, with people from Auckland making up the majority (38.5%) of domestic visitors. 'The Waipoua Visitor Centre, located in the heart of the forest, is owned and run by Te Roroa. It contains a small gallery, café and a retail/reception area with an adjacent campsite, cabin and house accommodation. Since 2000, an average of 80 000 people a year have visited' (DOC, 2011, 23).

# Liveability in Hokianga

By the 1830s the Hokianga was the epicentre of New Zealand's timber industry, rivalled only by the Bay of Islands as the most important focal point for European settlement in the country (Goddard, 2010, 8). This industry, heavily reliant on the exploitation of kauri forests prior to the 1920s, had two major results: it provided a source of wealth, both locally and nationally,

<sup>5</sup> Kaitiaki is a New Zealand term used for the Māori concept of guardianship, for the sky, the sea, and the land. A kaitiaki is a guardian, and the process and practices of protecting and looking after the environment are referred to as kaitiakitanga.

<sup>6</sup> Tapu, an ancient Māori spiritual and social code that was central to traditional society, is about sanctity and respect for people, natural resources and the environment.

<sup>7</sup> The 'lord of the forest' Tāne Mahuta stands victorious in Waipoua forest, with his shoulders still pushed hard against his 'mother earth' and his feet stretched high towards the heavens of his 'sky father'.

but 'it left Northland with a heritage of deforested land vulnerable to erosion and difficult to farm'. (Lloyd & Guild, 1976, 193).

Small dairy farms were established in the Hokianga, compatible with Ngāpuhi land tenure, and using the water to transport the cream cans to the dairy factory at Motukaraka, in the upper reaches of the Harbour. Restructuring of the dairy industry in the 1950s and early 1960s saw the closure of local dairy factories with the small dairy farms becoming unviable and an economic malaise setting in: 'an economic decline in Hokianga from which it has not yet recovered' (Hokianga Health Enterprise Trust, 2014). Many Māori left the district to seek employment opportunities elsewhere. The population continued to decline in the 1960s and 1970s but people began to return in the 1980s when industrial restructuring was taking place in urban New Zealand. At the same time, 'Alternative life-stylers (known then as hippies), mostly Pākehā, began to settle in Hokianga, attracted to the relatively cheap land and relaxed way of life' (Hokianga Health Enterprise Trust, 2014).

Geography teachers Mayhill and Bawden, essentially writing about 1960s New Zealand alluded to this change in lifestyle when local inhabitants began to return to Northland after seeking employment in the south. They ... returned what they consider is an idyllic way of life, a little fruit and vegetable farming, and a little fishing and casual work in development projects when they are short of cash' (Mayhill & Bawden, 1972: 224). In the 1990s Auckland still acted as a magnet for many local people but between 1991 and 1996 population increased as a consequence of high Māori birth rates and the desire of people to return to ancestral lands. Belich (2001, 484) maintains that during this time (1990-96) the Far North was the prime growing area for cannabis production, with a value of production that outranked other leading industries in Northland, such as dairying, tourism and beef farming. He sees this proliferation of petty crime as yet another manifestation of the informal economy in the Far North which can include, 'perfectly innocent practices, such as gardening, other forms of home production, fishing and gathering, the receipt of legitimate welfare benefits, the bartering of goods and services and the occasional sale of such things as fish or firewood' (484).

More recently the population has stabilised with most of the formal workforce engaged in the tertiary sector, construction, tourism, forestry and pastoral farming industries (Hokianga Health Enterprise Trust, 2014). More generally for the Far North District, agriculture, fishing and forestry was the largest industry in 2011 accounting for 19% of total GDP, followed by business and property services (11.1%) and wholesale and retail trade (10.2%) (Infometrics, 2011). Marijuana growing is still of major significance in the informal economy and methamphetamine labs have also become significant contributors to the cash economy (Wedde, 2014, 157).

For those that live or pine for Hokianga there are obvious attractions, as seen in this wistful sentiment from a webmaster in far off Belgium:

'... it is one of the most beautiful and relatively unspoilt parts of New Zealand: its low population means uncluttered beaches and room to move; the climate is mild at all times of the year and the gardens grow well. The people are an amalgam of Māori/ Pākehā, old and young, academic and practical, way-out and conservative, in which everyone generally respects each other's ways. A small piece of Paradise? Some think so' (Baker, 2013).

On the other hand, the legacy of economic and social problems continues in Hokianga. It is a relatively poor area by national standards, with pockets of substandard housing and high unemployment (Winder & Lewis, 2010,100). Hokianga has even been described as a "landscape of deprivation" (Crampton et al, 2000) with census data indicating that the Hokianga community was one of the most socio economically deprived communities in New Zealand (Hokianga Health Enterprise Trust, 2014).

The Hokianga Health Enterprise Trust explained:

'The unemployment rate in Hokianga at the 2001 census was 21% compared with 12% for the Far North District and 7.5% for New Zealand. The annual average income for Hokianga people was only \$11,300 according to the 2001 Census, compared with \$14,100 for the Far North District and \$18,500 for all New Zealanders.

The 2001 census also reported that access to motor vehicles, telephones and the internet were significant lower than the Far North and New Zealand averages. 44% of the Hokianga population left school without a qualification compared to 37% for the Far North and 28% for New Zealand populations' (Hokianga Health Enterprise Trust, 2014).

Hokianga has a high proportion of Māori inhabitants many of whom are living on their ancestral land. This fact alone may help to explain the so-called landscape of deprivation but it also may presage improvements in livelihood and liveability. As the treaty of Waitangi settlement process sifts through the claims of Northland Māori, and wealth accrues to iwi, the tribes will become important economic agents combining their investment strategies with visions of sustainability and well-being. External perceptions about the liveability of Hokianga typically conjure up social deprivation in its various forms. However this is tūrangawaewae8 for many. This is the literal 'standing place' for many Ngāpuhi and others.

## [refer to http://www.teara.govt.nz/en/map/393/ traditional-lands-of-ngapuhi for a map of the traditional lands of Ngāpuhi]

This is the place where Ngāpuhi feel especially empowered and connected. Clearly, indices of social deprivation do not effectively measure well-being when these are expressed in terms of connection to marae, place and community. Moreover, the machination of the Waitangi Treaty settlement process may indeed change the nature of this place.

In the mid 1980s, New Zealand's highest courts found that the Crown had not done enough to protect Māori commercial fishing interests since the signing of the 1840 Treaty of Waitangi. The 1989 and 2004 Māori Fisheries Acts not only allowed fishing quota allocations to flow through to iwi but also cash allocations to Māori (Durie, 2005,132–3). Iwi/Māori are said to own approximately 50% of fisheries quota through iwi,

8 'Tūrangawaewae is one of the most well-known and powerful Māori concepts. Literally tūranga (standing place), waewae (feet), it is often translated as 'a place to stand'. Tūrangawaewae are places where we feel especially empowered and connected. They are our foundation, our place in the world, our home' http://www.teara.govt.nz/en/papatuanuku-the-land/page-5 Aoteroa Fisheries Limited, the largest Māori-owned fisheries company, and through other companies. Currently the New Zealand Government is negotiating Māori fishing rights under the Office of (Waitangi) Treaty Settlements. In 2005 Ngāpuhi received '\$67 million of fish quota, \$3 million in cash and \$45 million in shares in Aotearoa Fisheries Ltd., from the Government as settlement of its Waitangi Treaty claims' (Winder & Rees, 2010, 157). Ngāpuhi have developed a strategy of investing in commercial fishing businesses rather than selling off its Annual Catch Entitlement (ACE) for cash. For example, they chartered a Korean fishing vessel to catch their deep water ACE and sold their inshore ACE to Moana Pacific Fisheries, owned by Māori company Aoteroa Fisheries Ltd. Fisheries provide Ngāpuhi with the majority of their annual income. The Korean shipping venture alone delivered \$6.8 million to the iwi over two years (Field, 2011).

# **Comparisons with the East coast**

There are many more affluent New Zealanders, and others, living in the surrounds of The Bay of Islands. Localities in the Bay of Islands generally enjoy average scores in the socio-economic indicators as a direct consequence of wealth generated from horticulture and tourism. Tourism has grown rapidly in New Zealand with the number of overseas tourist arrivals doubling since 1992. It is the second largest foreign exchange earner after the dairy industry nationally. Growth in tourism in Far North has averaged 2.2% pa over the last ten years, whereas tourism growth averaged 1.9% in the national economy over the same ten-year period (Far North Annual Economic Profile 2011).



The essential economic differences between Kauri Coast and the Bay of Islands have been intensified by the influx of wealthy people from Auckland and the socalled 'swallows', the overseas people that flock in to the Bay of Islands during the austral summer. The area is also becoming increasingly rural over the last twenty years largely because of the propensity for people to build 'lifestyle' and holiday homes. Land use has changed along the East Coast from livestock farming to 'aesthetic production' or 'farming of real estate', where livestock 'exist to pay the rates, complete the 'idyll', and keep the place tidy, rather than provide substantive income (Blue & Blundon, 2010,119)

During the 2001–06 inter censual period the fastest population growth in the Far North tended to be in the more sought after pockets of real estate privilege in the Bay of Islands. Winder and Lewis are optimistic with regards to future livelihoods in the area, particularly when expressed in material terms, 'Located next to New Zealand's fast growing metropolitan centre, blessed with coastal attractions, high sunshine hours and relatively cheap land, we posit that it should be benefiting from economic growth and positioned to exploit the global impetus to sustainable development' (2010:101).

Nonetheless, there are pockets of deprivation in the East Coast. But there again the possibilities for improvement are apparent in a case study of the small town, Moerewa, a place with more than 80% of the population identifying as Māori.

# Possibilities for a northern town

Moerewa is one of the many towns in New Zealand and elsewhere that have been decimated by industrial restructuring, 1975–1990. Situated in the central Far North of New Zealand on State Highway 1, it emerged as a thriving town in the 1940s built around a meat processing works and a dairy factory (FitzHerbert and Lewis, 2010, 138). Essentially a service town for the surrounding farming district, it has attracted Māori workers pushed off the land and drawn in from many parts Te Tai Tokerau9. In the 1960s, there were still opportunities for employment in the meat processing works, dairy factory, work on the railway at Otiria and the export port, Opua. The meat processing works was obviously still prospering in the 1970s, '... in the year to 30 June 1975, the works processed, mainly for export, 135 200 cattle and vealers, 146 000 bobby calves, 556 000 sheep and lambs, and 6000 pigs. These figures represent a 62% increase in production since 1961' (Lloyd and Guild, 1976,181).

Much changed in the intervening years with the meat processing works still operative but little else existing by way of employment opportunities. 2012 marked the end of a bitter dispute between the works and the Meat Workers' Union. Ngāpuhi elder Sonny Tau, who convened the successful dispute resolution process had even threatened to call on all Māori farmers to stop sending livestock to the nine Auckland Farmers Freezing Company plants across the country.

Notwithstanding these setbacks Moerewa is currently the focus of renewed civic optimism. Ngahau Davis, who is of local Ngāpuhi descent, explained, 'Here Here in Moerewa we want to develop a culture of doing things for our- selves' (FitzHerbert and Lewis, 2010,138). In 1994 Davis, and his partner, returned to live in Moerewa and were instrumental in reviving a community trust, He Iwi Kotahi Tatou10 Trust (HIKTT). He explained that only 5 out of 28 of the town's businesses remained operative, graffiti and gangs dominated the town and 85% of the townspeople were dependent on social welfare payments. Davis explained,

'We don't know who made the decisions, to close the dairy factory, take away the banks, downsize the freezing works, close down the rail link, cut back hospital services, we don't know who made those decisions, but it wasn't us, as long as we are controlled by people and forces outside our community we would be victims of those decisions' (Davis, ND)

HIKTT organised community meetings and challenged the people of Moerewa to imagine and take hold of their own future, a future based on a sense of place and kaupapa Māori<sup>11</sup>. As a consequence several community owned enterprises have been established in the once derelict main street, including a hairdresser, café, craft shop, surf shop, ta moko (traditional tattoo) shop and body/massage shop. HIKTT has set up recording studios, film editing facilities and a radio production workshop, built new community facilities such as public toilets and a skateboard park and it supports a number of social welfare schemes in schools and the local community.

'For Ngahau Davis, it is a struggle to sustain an intergenerational geography of hope set within the principles of tino rangitiritanga<sup>12</sup> and tino Māoritanga<sup>13'</sup> (FitzHerbert and Lewis, 2010, 150).

<sup>9</sup> Te Tai Tokerau encompasses the three districts: Far North, Whangarei and Kaipara.

<sup>10</sup> The words "he iwi kotahi tatou: now we are one people" were spoken by Captain Hobson, who signed the Waitangi treaty on behalf of the British Crown and subsequently became the first Governor of New Zealand.

<sup>11</sup> Kaupapa Māori is the "conceptualisation of Māori knowledge" that has been developed through oral tradition - plans of action created by Māori that express Māori aspirations and express certain Māori values and principles

<sup>12</sup> Māori sovereignty

<sup>13</sup> The traditions and ideals and culture of the Māori people

For other Māori in the Far North HIKTT offers a blueprint for alternative paths towards enhanced liveability.

# Liveability in the Far North?

Why people choose to live in the Far North invites a variety of answers. Ancestral ties to land are paramount for many. For others environmental factors come to the fore. The Far North is scenically spectacular: the environmental quality is incomparable. Legions of cruise ships drop anchor in the Bay of Islands every year. The landscape is perpetually green, a humid, sunny and temperate New Zealand region; hardly a 'winterless north' but equable enough for almost continuous plant growth. The Department of Conservation has identified as much as 35% of the Far North District as being ecologically important, containing significant areas of natural vegetation and harbouring important and threatened native animals, with half this area in private ownership, much of which is Māori. The climate contributes to the great variety of native plants and animals and the ability of indigenous vegetation to rapidly regenerate.

Natural landscapes include:

- freshwater wetlands
- podzol kauri gumfields
- dunelands and dune lakes
- coastal broadleaf forest
- volcanic broadleaf forests
- podocarp forests
- kauri forests
- alluvial flood plain and riverine forests
- saltmarsh
- swamp forests and shrublands

On the other hand, some of these landscapes have been severely depleted since the start of European occupation, accounting for 70% of the native forest, 95% of the freshwater wetlands, 80% of the dunelands and 90% of the podzol kauri gumfields lost to agriculture and exotic forestry (Erickson et al, 2004 172).

And, the grandeur of the kauri forest has to be experienced to be fully appreciated. To hear karakia<sup>14</sup> being sung to Tane Mahuta, the deity of Waipoua Forest, is an overwhelming spiritual experience. Historian, Paul Moon maintains that the naming of particular kauri embodies the way in which Pākehā have come to think of themselves as Kiwi. 'The kauri was tall, broad, hardy,



A cluster of Kauri called the Four Sisters, Northland NZ. Source: Wikimedia Commons

silent, grand and somehow stoic' (2013: 153). Here becomes evident a New World heritage equivalent to often-revered European architecture. Artist, Charles Heaphy's, 1839 painting of pit sawyers in dense kauri forest on the Wairoa River, south of Waipoua Forest, attests to the awe inspiring majesty of the remaining trees as well as the considerable industry of the sawyers. The early days of the Waipoua Preservation Society, in the 1940s, employed the following purple prose:

'What we seek to preserve in Waipoua is a gem with many facets: a fragment of old New Zealand, untamed in all its pristine glory; a remnant of an incredibly ancient garden of Nature, in all its inspiring loveliness and set in the midst of a vast dim-aisled cathedral that entombs an eternal silence' (Halkett & Sale, 1986, cited in Orwin, 2004:167).

It is this sense of environmental optimism that entices the geographer to the Far North. Undergraduate Geography students from the University of Auckland visit Stephen King's property undertaking GEOG 207 'Field Studies in Environment and Community.' Stephen King is an inspiring personality, an eco-warrior and practical conservationist. In 1998 King and Alex Nathan (Chair of the Te Roroa) formed the Waipoua Forest Trust to give practical effect to Te Roroa kaitiaki, or traditional

<sup>14</sup> Literally prayers or incantations, the more traditional karakia are poetic and full of beautiful imagery and metaphor. And there are not always appropriate English words that can fully reflect the essence of the Māori words.

guardianship of the forest. The Trust was granted \$1.4 million from the Lottery Grants Board to establish the Millennium Kauri Forest. The money was used to buy farmland on the southern boundary of the Waipoua catchment and then sow this with manuka15 seed to provide a protective cover to nurture kauri seedlings. Te Roroa people actively work on the project, as do backpackers weeding previously planted areas and eradicating pests such as rats and rodents. It is a project rendered even more remarkable by the reality that 'the people contributing to the work of the Trust will never see the end result of their labour. Kauri grows slowly and it will be centuries before the new forest will come to maturity' (Boswijk, 2010:134).

The Waipoua Forest Trust also rears kiwi chicks. It becomes evident that kiwi conservation permeates the psyche of residents of the Far North. In the high value coastal properties of the Bay of Islands the New Zealand Kiwi Foundation has targeted the affluent landowners to convince them that 'kiwi are a valuable commodity: a rare, natural oddity in a world of relatively undifferentiated luxury lodges and private hideaways' (Blue & Blunden, 2010:119). Perhaps it is the personified North Island brown kiwi that best expresses liveability in the Far North. The Council holds indicative maps of high and medium density kiwi habitat and makes this information freely available to all. They proudly proclaim that the Far North Island brown kiwi in the country.

<sup>15</sup> New Zealand tea tree.



# **Geographers by instinct?**

For the Geographer the Far North is a fascinating New Zealand region to scrutinise. It is a complex landscape to read. Rather parochially, Professor Gregory's introductory statement in a 1911 text titled *The Geography of New Zealand: historical, physical, political and commercial,* opined

'The fortunate inhabitants of New Zealand should be geographers by instinct; for New Zealand consists of a collection of geographical models, from which true geographical ideas should be unconsciously absorbed. There is no other land area of equal size which is so varied and complete. It is unique from the combination of the variety of its landforms, the clearness of their development, and simplicity of their arrangement' (Gregory, 1911, cited in Morgan, 2014, 54).

The good professor, a geologist, writer and explorer, may well be correct in his assertions. However, over the past one hundred years the shape of geographical inquiry has changed substantially. The magisterial descriptions of regional geographers, where description was an art, are also long gone. Notwithstanding this, the essence of geography is an appreciation of place. Diverse layers of history and culture can be unearthed in the geographical palimpsest that is the Far North. And, there are infinite possibilities yet to be unfolded for people and environments in this part of New Zealand.

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Left: New Zealand road sign. Source: Wikimedia Commons

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# **Call for presenters**

Geography teachers and academics are invited to be a workshop presenter at the conference. Workshops will be conducted on Monday 12th and Thursday 15th January 2015.

The focus of workshops is on Geography Education and should be classroom focused. We particularly welcome:

- primary school teachers who would like to share how they might deal with some of the issues of implementation F-6 of the Australian Curriculum: Geography
- New Zealand and international geography teachers who wish to share their teaching experience with Australian colleagues.

Full details from AGTA – http://agta.asn.au/Conferences/conf2015/presenters.php

# **Teachers Association of**

#### Liveability – Geography comes alive Tuesday, 5 August, 8.30am – 3.30pm, Rydges Hotel, World Square, Sydney bility – hy e

# **Conference Programme**

8.30 - 9.00	Registration and view of textbook and resources			
9.15 – 10.15	SESSION 1: Keynote – Professor Phillip O'Neill, Director, Centre for Western Sydney (UWS) Liveability and urban growth; lessons for western Sydney http://www.uws.edu.au/urban_research_centre/urc/key_people/professor_phillip_oneill			
10.20 - 11.05	SESSION 2: Presentation – Mick Law (Contour Education) Using ICT in geographical education http://www.contoureducation.com/			
11.05 – 11.35	MORNING TEA			
11.40 – 12.25	SESSION 3: Presentation – Evelyn Ivinson (NSW Department of Planning and Environment) Urban Planning – decisions and starategies affecting urban planning decision and their effect on local communities http://www.planning.nsw.gov.au/			
12.30 - 1.15	SESSION 4: Presentation – David McCracken (Barangaroo Delivery Authority) http://www.barangaroo.com/			
1.15 – 2.00	LUNCH			
2.00 - 3.30	FIELDWORK - Delegates choose on	e of the following options around the Sydney CBD		
<b>Option 1:</b> led by Professor Phillip O'Neill, UWS Title: Urban establishment and growth Location: Sydney Tower, Pitt Street, Sydney.		<b>Option 3:</b> led by Barangaroo Delivery Authority (BDA) Title: Urban development – looking to the future Location: BDA Offices, Kent Street, Sydney Note: WHS requirements at Barrangaroo due to construction, only allow one session to be offered not the previously advertised three.		
<b>Option 2a:</b> led by NSW Department of Planning and Environment Title: Urban development – light network of Sydney CBD Location: NSWDPE office, Bridge St; then Wynyard & Town Hall.		<b>Option 4:</b> led by Mick Law, Contour Education Title: Strategies for using ICT in the Geography classroom Location: Rydges Hotel World Square and various Sydney CBD locations Participants to BYO electronic device.		
<b>Option 2b:</b> led by NSW Department of Planning and Environment Title: Rezoning – an urban planning decision and strategy Location: Carlton United Brewery site, Broadway		<b>Option 5:</b> led by Sharon McLean, GTA NSW Councillor Title: Urban dynamics in Pyrmont-Ultimo Location: Pyrmont-Ultimo		
<b>Option 2c:</b> led by NSW Department of Planning and Environment Title: Urban growth at Wentworth Point Location: NSWDPE office, Bridge Street, Sydney. Participants to BYO electronic device.		<b>Option 6:</b> led by Milton Brown, GTA NSW Councillor Title: Urban renewal in Green Square. Location: Green Square Note: Return rail fare is included in conference fees.		
<b>Option 2d:</b> led by NSW Department of Planning and Environment Title: Urban planning and design – an education resource Location: NSWDPE office, Bridge Street, Sydney.		<b>Option 7:</b> led by Sydney Olympic Park Education Unit Title: Urban change around the Olympic site – an education resource. Location: Rydges Hotel, World Square, Sydney		

#### Cost: GTA NSW Member \$210 and non-member \$240, Retired/unemployed \$75, Student \$50





Geography Teachers' Association NSW, through the Professional Teachers' Council NSW – Board of Studies, Teaching and Educational Standards (BOSTES) (formerly the NSW Institute of Teachers) as the endorsed provider of Institute Registered professional development for the maintenance of accreditation at Proficient Teacher level. Scope of Endorsement

All Standards of the Australian Professional Standards for Teachers at the level of Proficient and Highly Accomplished teacher . Standards 1-6 of the Australian Professional Standards for Teachers at the level of Lead teacher

This course: GTANSW Annual Conference – Liveability: Geography Comes Alive – 05 August 2014 is registered with BOSTES for 4.75 hours of professional development at Proficient Teacher level. This course addresses the Australian Professional Standards for Teachers: 3.4.2; 6.2.2; 6.3.2; 7.4.2.

# NEW ZEALAND

# A notional transect across the Volcanic Plateau from Tukorehe Scenic Reserve to Te Urewa National Park

**Nick Hutchinson** 

This article addresses the following curriculum content description from the Australian Curriculum: Geography, The aesthetic, cultural and spiritual value of landscapes and landforms for people, including Aboriginal and Torres Strait Islander Peoples http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACHGK049

The emphasis here is on the aesthetic, cultural and spiritual value of landscapes and landforms for Mäori. The organising framework is a geographical transect across the Volcanic Plateau, North Island, New Zealand.

# **Leaving Waikato behind**

Dairying, dairy beef, sheep and beef, fat lambs, and, horse racing studs, predominate in Waikato on a journey from Auckland to Rotorua across seemingly endless tracts of intensive grassland farming. Suddenly entering Fitzgerald Glade is a surreal experience. About 40 kilometres from Rotorua, State Highway 5 runs gunbarrel straight through a stand of secondary growth indigenous forest. Australian Geography teachers tend to search for bark patterns and contorted shapes to distinguish between trees but Fitzgerald Glade is dominated by shades of forest green. It is more like a tunnel than a glade. The canopy closes across the road, 'blotting out the sky like some vaulted cathedral ceiling. The effect is profound enough to cause most drivers to slow down as they pass through' (Moon. 2013, 210). It is a unique kilometre-long stretch of road that has escaped recent planning restrictions for 'safe roads' with the mature trees fringing the bitumen.

Fitzgerald Glade is also known as Tukorehe Scenic Reserve, named after a Maori ancestor that settled in the district between Cambridge and Tirau. South Waikato District Council, the local Marae<sup>1</sup>, and, the Department of Conservation look after the Reserve. There are green tree ferns lining the road and towering verdant willow-like tawa, olive green mangeao, rimu red pine, mataī – black pine and five species rātā in the

1 A marae is a fenced-in complex of carved buildings and grounds which belongs to a particular iwi (tribe), hapū (sub tribe) or whānau (family). Māori people see their marae as tūrangawaewae - their place to stand and belong. Marae are used for meetings, celebrations, funerals, educational workshops and other important tribal events. iwi (tribe), hapū (sub tribe) or whānau (family). Māori people see their marae as tūrangawaewae - their place to stand and belong. Marae are used for meetings, celebrations, funerals, educational workshops and other important tribal events. http://www. newzealand.com/au/feature/marae-maori-meeting-grounds/ Glade. The Reserve reminds one that much of North Island was once covered with indigenous forest and raises questions about aesthetic, cultural and spiritual values of landscapes to Mäori.

# Mätauranga Mäori

Mätauranga Mäori (indigenous Mäori knowledge) includes holistic and spiritual components in its knowledge system. It is concerned with Mäori beliefs about creation and the relationships between atua, or supernatural guardians and tängata, humankind. Forested environments then are more than just the sum of the parts: individual flora and fauna. The concept of holism guides the ways in which Mäori view and treat the forest (Majurey et al, 2010, 267).

When younger Mäori students are told, in school, that the world consists of both living and non-living objects this idea is in conflict with Mäori world views. Mäori believe the environment has spiritual and metaphysical values as well as a physical presence (Majurey et al, 2010, 267). There is a sacred regard for the whole of nature and its resources – literally gifts from the gods (atua) (Walker, 2008, 3) and there is a sense of reciprocity of giving back what is taken from the forest. A sense of kinship with all living things is expressed in whakapapa, the genealogical descent of all living things from atua to the present time. Everything in the forest has a whakapapa, an imbricated superimposition of one thing upon another, literally laying one generation upon another, 'birds, fish, animals, trees, and every other living thing: soil, rocks and mountains also have a whakapapa' (Majurey et al, 2010, 268).

Whakapapa determines how people behave in terms of their environmental ethical practices as expressed in traditional sayings and oral tales and portrayed in waiata (song) and pepeha (proverbs). (Majurey et al, 2010, 265). Traditional oral tales (Nunn, 2001, 125), more commonly referred to as myths and legends are much more than nursery room stories. They are deliberate constructs used to encapsulate mätauranga Mäori (Miller, 2005, 3) and whakapapa, the basis for a system of knowledge that relates to the creation and development of all things (Barlow, 1991, 173).

The spiritual values that follow from these knowledge systems are expressed in collective action and responsibility.

'This is part of what is commonly referred to as Mäori spirituality, the idea that everything is linked, more or less directly, to everything else. Mäori collective responsibility extends beyond the family, beyond the tribe, beyond the Mäori race, beyond the human race; it extends to all living things, it extends to the lands and the waters of the earth, it extends to Earth and the Sky themselves' (Majurey et al, 2010, 269).

Mäori recognise that all living things, humans, and flora and fauna, have life cycles. Mätauranga Mäori recognises and protects these life cycles through concepts such as kaitiakitanga (guardianship and protection), karakia, (incantation, prayer and ritual) rähui, (temporary bans on using forest resources) and mauri (a life force that must be protected in forests to ensure the ongoing existence of the mauri or life force of all things, inanimate or animate). (Majurey et al, 2010, 271).

# **Forestry practices**

Traditional Mäori oral tales using stories of the atua (gods and spirits) and ancestors guided forestry practices and the need to follow proper protocols before exploiting resources.

'When Rata (an early ancestor) felled a giant totara tree without performing the proper ritual, the Hakuturi (kaitiaki [guardian] of the forest) punished him by making the tree stand upright again overnight while he was away preparing for his return the next day to carve a waka [canoe]. On his return he was amazed to see the tree standing upright again. He felled the tree again, and again the Hakuturi restored it. This occurred for three nights before Rata suspected he was being tricked. On the third night Rata felled the giant totara tree then hid nearby. Before long he saw the Hakuturi chanting and rebuilding the tree. The Hakuturi then saw Rata and they reproached him for cutting down the tree without performing the proper rituals and seeking authority from his ancestors. Rata was very embarrassed and apologised for his wrongdoing. The Hakuturi eventually went on to help Rata build his waka [canoe]' (Orbell, 1995, p 150).

'This tradition highlights the relationship between Mäori and natural resources, and the need to respect the mana (prestige, power, authority) and tapu (sacred, restricted, prohibited) of their ancestors and the atua, and is a reminder that such resources can only be exploited after following proper protocols'. (Majurey et al, 2010, 278).

# Tane

Tane is considered one of the most important of the kawai tipuna [revered ancestors]. He is the creator of all living things such as animals, birds and trees. His uri (descendants, offspring or issue) include atua such as Tutewehiwehi, the father of reptiles, and, individual reptiles such as tuatara<sup>2</sup> or mokomoko (skinks).

'He has authority over the forests, their products and the birds. His children are the trees. Therefore when a tree was felled to build a house or waka [canoe], Mäori gave recognition to the parenthood of Tane through karakia [prayers or incantations], chants or offering. Non-recognition brought punishment in some form, such as obstruction to the work. Since houses and waka are made from trees, they too are Tane.

The *whakatauki Te wao tapu nui a Tane* the great sacred forest of Tane serves as a reminder of the strict rules of tapu [prohibition, restrictions] that apply to the forest and its inhabitants. Trees must not be felled without obtaining permission from Tane. Anyone who neglects this, invites the rebuke

*Kei te raweke koe i to tipuna i a Tane* You are interfering with your ancestor Tane. The whakatauki [proverbs, sayings] reminds people that Tane is the tipuna [ancestor] of mankind as well as of the trees, which makes the trees people's relatives, therefore they should be treated appropriately' (New Zealand Ministry of Justice, 2001).

Nevertheless, Mäori may use the forest's resources. They are simultaneously an integral part of the forest but also arbiters of its fate (Moon, 2013, 149). A conversation between two giants, the kauri tree and the whale went as follows,

'The whale asked the kauri tree to join him in the ocean, lest he be cut down and turned into a canoe by the people living in the land. The kauri scorned the idea that he was under any threat from 'such funny little men.'The whale responded with caution: 'Ah ... you don't know. They may be small and insignificant, but their sharp greenstone axes will bite into you and their fire will burn you' (149).

2 http://www.terranature.org/tuatara.htm

The aesthetic, cultural and spiritual values of landscapes have come into conflict with economic imperatives.

# Patupaiarehe and ignimbrite tors

The forest also harboured a sense of foreboding and mystery for Mäori. There were also forest spirits. Patupaiarehe (fairy people) also known as tūrehu and pakepakehā, (Wikaira, 2012) inhabited remote, inaccessible and lofty mist covered forest recesses. 'Fearing the light, they were active mainly in the twilight hours and at night, or when the mist was heavy enough to shield them' (Wikaira, 2012).

State Highway 5 cuts across the Mamaku plateau en route to Rotorua. These remote areas were the home of patupaiarehe. Stafford (2001) retells a local Arawa legend about the origin of the prominent ignimbrite tors that can be seen from the Highway. A peaceful group of patupaiarehe was threatened by the invasion of a war party of tipua (giants or more literally, gifted ones,3) who had designs on their lands and lakes. The patupaiarehe called on their tohūnga (expert spiritual leader) Tongakohu to rescue them from the invaders. He uses an ancient karakia (incantation, prayer, ritual) to make the tipua so lethargic that they were immobilised and set into stone. The heads and shoulders of the petrified tipua are dotted across the landscape with their bodies are buried under layers of sediment.



Distintive formation south of Atiamuri. Source: Wikimedia Commons

Whatever the underlying intent of the story is, it is not readily apparent but it should be appreciated that Mäori accounts were not concerned with explanations of phenomena but rather with acute observation and 'bringing the landscape within the compass of human understanding' (Andrews, 2010, 16). The kinds of questions that physical geographers ask include What, How, Where, When, but, not Why in the sense that a detective asks this question in search of a motive or purpose. Of course, they ask the question Why in terms of a loose sense of meaning: How does it

3 - for extended meanings see Best, 1907, 191-2

happen or come about (Holmes, 1965, 2)? Answering the question Why, then, implies an answer to the question Who. The Awara legend answers the question Who just as the Sumerians, Hindus, Babylonians and Greeks did by reference to the power of mythical deities. Pliny 'explained' earthquakes in terms of the Earth's resentment against those that 'mutilated and plundered into her skin by mining for gold and silver and iron' (Holmes, 1965,5). At the time of Tasman and Cook's 'discovery' of New Zealand many earth scientists in Europe believed that volcanic eruptions were the consequence of subterranean coal seams burning below volcanic vents.

Mäori observations of volcanic phenomena were more perceptive. The Tarawera eruption of 1886 on the Volcanic Plateau, 24 kilometres southeast of Rotorua was spectacular as three peaks erupted sending smoke and ash thousands of metres upwards and initiating a pyroclastic surge that destroyed several villages. Each of the three peaks already had Mäori names, possibly indicating that people had witnesses an earlier eruption 700 years ago. Indeed, perhaps they recognised the Tarawera plateau as volcanic. 'Ruawahia has been translated as 'the split hole' or 'pit broken asunder'; Wahanga as 'bursting open'; and Tarawera as 'burnt peak' (Andrews, 2011,19).

To get back to the essential questions the study of contemporary physical geography tells us that the Mamuka plateau is covered by deposits of ignimbrite, coming from the Latin words to describe 'fiery showers' or 'fiery clouds' (Andrews, 2011,7). This ignimbrite erupted nearly a guarter of a million years ago from what is now the Rotorua basin, discharging an estimated minimum of 200 cubic kilometres of fragmented magma from the magma reservoir below (9). 'Much of this hot material, buoyed by gases, travelled across the landscape at speeds calculated at hundreds of kilometres per hour' (9). Although tors are usually associated with granite rocks the mode of formation is similar for ignimbrite tors: vertical cooling cracks the ignimbrite causing lines of weakness that are accentuated by weathering and then exposed as resistant core boulders. Less resistant ignimbrite deposits of broken mineral crystals and pumice are eroded away to expose the tors.

# Ngatoroirangi and Ngauruhoe

In 1859, the eminent Austrian geologist, Ferdinand von Hochstetter spent nine months in New Zealand collecting rock specimens, making drawings, preparing maps and compiling reports. He also conversed with Mäori observing that they 'clothed their conceptions in the garb of a legend' (Andrews, 2011,13). Te Heuheu, chief of the Ngati Tuwharetoa of the Taupo region explained to Hochstetter that the fire so evident in the Volcanic Plateau had been sent over from Hawaiiki in response to the call from a powerful tohūnga, Ngatoroirangi. The tohūnga was acclaimed as the navigator of the Te Arawa whaka<sup>4</sup>. He could make thunder resound across the sky, could navigate by the stars, converse with the moon and knew about the prevailing winds of each season (Taiaroa, 2006).

Ngatoroirangi, an adventurous explorer of North Island, was perishing on the icy slopes of a steep volcanic cone adjacent to Tongariro, caught in a ferocious blizzard. The name, Tonga-riro, commemorates the cold south wind, which chilled Ngatoroirangi and the name of the cone, Ngauruhoe commemorates his slave who perished in the snow. The fire he implored his two sisters in Hawaiiki to send over to revive him came under the sea from Whakaari (White Island) along a subterranean passage to Ngauruhoe reaching to the surface in various localities in the form of volcanoes, geysers, hot springs and other forms of geothermal activity. Hochstetter was impressed that this explanation made the connection between vulcanism and geothermal activity and that it 'affords a remarkable instance of the accurate observation of the natives, who have indicated the true line of the chief volcanic action upon the North Island' (Andrews, 2011,20).

Science tells us that earthquakes, volcanic action and geothermal activity are not the action of some opportunistic deity or laid down as the fiery tracks of subterranean taniwha (powerful spirits). They come about as a result of stresses and strains within the earth's unstable interior and from the action of escaping gases and heat on vulnerable parts of the crust (Holmes, 1965, 6). This line of vulnerability, so accurately plotted by Ngatoroirangi's taniwha, stretching from White Island to Ngauruhoe is aligned to the subducting edge of the Pacific Plate (Hicks & Campbell, 2012, 24)

The same legend explained how Ngatoroirangi eliminated a rival by calling on Ruamoko (the atua of earthquakes and volcanic activity) to shower the aggressor with clouds of volcanic ash. This is possibly a reference to the frequent pyroclastic falls of ash, pumice and scoria that erupt from Ngauruhoe (Grattan & Torrence, 2002, 149). Ngatoroirangi was also said to have stamped his feet at various locations between Rotorua and Tokaanu, at the southern edge of Lake Taupo, to produce springs of hot water.

Ngatoroirangi also placed patupaiarehe in the surrounding hills.



Rangitaiki River. Source: Wikimedia Commons

# Fort Galatea and the Rangitaiki River valley

Some twenty years ago one of the more remarkable mapsheets that NSW Higher School Certificate Geography students studied was the Galatea extract (refer to http://www.topomap.co.nz/NZTopoMap/ nz56469/Galatea/Bay-of-Plenty ).

Southeast of Rotorua along State Highway 38 the landscape is dominated by Kaingaroa Forest, hectare after hectare of pine forest growing on acidic soils underlain by ignimbrite deposits, incised by west east sub-parallel flowing streams. Galatea, is a tiny settlement, situated on the eastern terrace of an alluvial plain formed by the meandering habit of the Rangitaiki River, a landscape dominated by small rectangular paddocks: grazing land. The hamlet's name comes from legends enacted in far off places. At the height of the New Zealand Wars in the late 1860s Fort Galatea was set up by Government forces in the heart of the war zone, with the Fort named after the ship HMS Galatea which at that time was visiting the country under the command of Prince Alfred, Duke of Edinburgh. Galatea was an ivory statue carved by king Pygmallion of Cyprus, which then came to life in Greek mythology.

The Rangitaiki River, the largest river in the Bay of Plenty region, is insignificant when compared to the mighty Whanganui River, that has its source further south in the Volcanic Plateau, but the significance of rivers to Mäori is evident in the following extract,

'The Whanganui River Tribunal Report (Waitangi Tribunal Report, 1999) highlights the importance of the Whanganui River to Whanganui iwi, stating:

It is necessary to consider how Mäori saw and related to the river, recalling again the philosophy of their place in the natural order, and the centrality of the river to everyday lives ... It has been a home for a numerous people from

<sup>4</sup> http://www.teara.govt.nz/en/te-arawa/page-2

immemorial time, but a home that was built around a river life. The region was marginal for major food crops, but the river, with its eels, fish, freshwater shellfish, and waterfowl, provided the staples.

- The river was also the pathway to the sea, and the roadway that knitted the people spread along its banks into a single entity. ... Small settlements were strung along the entire length of the river...
- Around the river had been woven many stories and beliefs. For the Atihaunui people, the river is a doctor, a priest, a larder, a highway, a moat to protect their cliff-top pa, and, with the cliffs,
- ...when the claimants spoke of the river, or referred to its mana, wairua (spirit), or mauri, they might in fact have been referring not just to the river proper but to the whole river system, the associated cliffs, hills, river flats, lakes, swamps, tributaries, and all other things that serve to show its character and form... (Majurey et al, 2010, 277)

# Te Urerewa and Ngāi Tūhoe: the kererū story

Fort Galatea was a tiny edifice dominated by the forested hills and mountains further west shown on the map extract as steep sided, hills and ridges dissected by numerous dendritic stream networks. A landscape composed of relatively less resistant rocks such as young mudstones, siltstones and sandstones, commonly known as papa; a landscape of slips and scars; a green cloak of beech, rimu and tawa; a landscape referred to as Te Urerewa National Park; and, a landscape profoundly associated with Mäori.

At the beginning of the twentieth century Moon described it as the 'other' New Zealand, 'indigenous, wise in the ways of nature, steeped in tradition, and stubbornly resisting the ways of the modern worldeked out a living from the trees, the rivers, the wild fauna that inhabited the misty valleys' (Moon, 2013,217).

A Landcare Researcher<sup>5</sup> and a number of members of the Tūhoe iwi wrote about mātauranga and Tuhoe relationships with a culturally significant bird species, the kererū, or New Zealand pigeon (Lyver et al, 2008). They explained, 'The kererū is a taonga (treasure) for Tūhoe from which the iwi draws part of its cultural identity, and it is a highly valued source of food and feathers' (Lyver et al, 7).

'Tūhoe continued to go to great lengths to harvest kererū after the practice was outlawed in 1921



The kererū. Source: Wikimedia Commons

because of the bird's immense cultural significance and value. Kererū have a key role within Tūhoe tradition and it is considered whakama (shameful) to receive a visitor of importance and not serve them huahua6. This practice is fundamental in defining the iwi and/or individual as a kaitiaki (guardian)' (Lyver et al, 2008,15)

Mätauranga Mäori, in this instance, shows Tūhoe had intimate knowledge of kererū and its habitat, understood important environmental signals and patterns and they were very well informed about the sustainability of kererū. They recalled how the birds would arrive en masse in March just before the fruiting period of the mīro, in April to June. Before 1950, the vast flocks would obliterate the sun, and rumbling sounds would issue from the sky. Kererū would break off the miro branches as they alighted in such numbers to feed. Sadly, their numbers have dwindled since the 1960s. Now few flocks of kererū are observed throughout the forest.

According to Tūhoe this long-term decline in kererū numbers can be attributed to the community's failure to uphold traditional practices and customs regarding the kererū and the forests. The traditional rituals conducted by Tūhoe ancestors showed respect towards the kererū and the bird responded by making itself available to the hunters. Extensive karakia (incantation, prayer) needed to be recited by tohūnga before harvest season. Tāne Mahuta (the atua of the forest) maintained mauri (the life force) of the kererū through strict adherence to traditional practices. The hunters should only pluck and process the kererū when they had returned to the Marae rather than prepare the birds in situ.

Kererū numbers had declined as colonial processes ensued, with the Crown taking over mana (authority) over the kererū. This was accomplished in the first

<sup>5</sup> Landcare Research is a Crown research institute, an independent company owned by, and accountable to, the New Zealand Government

<sup>6</sup> A substantial number of kererū, perhaps 20 or so, preserved in their own fat

quarter of the 20th century by the imposition of laws outlawing the harvest of kererū. Another explanation offered explained that nature, or Tāne Mahuta, would not replenish a resource if it was not continuously harvested or exploited by people. People are intrinsically part of the ecosystem, a necessary cog in the web of life. The respondents to the researcher's questions believed that if mana (authority) was restored to Tūhoe by the Crown then greater efforts would be expended to ensure the restoration and survival of the kererū.

Of course, the respondents also were very familiar with the introduction of feral species. They knew all about new predators and competitors in the forest, the main ones being rats, stoats, possums, and feral cats. They recalled the stories of their parents and grand parents that saw possums eating flowers, shoots and the fruit of the preferred trees of the kererū. They knew that magpies and spur-winged plovers behaved aggressively towards kererū and harrier hawks predated on them along the forest edges. Red deer and wild pigs hindered forest regeneration and forestry operations had removed feeding, nesting and roosting sites. They identified increasing climatic variability and a general warming trend over the last ten to fifteen year period knowing that frost or cold clear weather was necessary for miro fruit to ripen. Apparently the fruiting season is now regularly three to four months later than normal. 'In the old days fruit ripened by end of March, and was all gone end of June, but nowadays some trees are fruiting through until mid-October' (Lyver et al, 2008,13).

# The spiritual dimensions of mātauranga Mäori

The aesthetic, cultural and spiritual value of landscapes and landforms for Mäori are unlikely to be embraced by all those that live in the New Zealand environment. But the spiritual dimensions of mātauranga are formidable influences on Mäori. Understanding the role of mātauranga Mäori in environmental perception and how it shapes decision-making is most important for the collaborative management and enriched knowledge of New Zealand landscapes.

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# NEW ZEALAND

# Addressing some inquiry questions about South Island High Country



Panoramic view from Mt John observatory, Tekapo NZ

# Describing the high country of South Island

The late Professor Kenneth Cumberland described the high country as a sixty-four kilometre long strip of mountainous country east of the great divide of the Southern Alps, stretching from the Cook Strait in the north to Te Anau, in Fiordland (McIntyre, 2008, 8). He named the region, on his hand drawn map of New Zealand Soil Erosion Regions as, 'South Island Tussock High Country' (Cumberland, 1943, 120). In short, it is a tract of land sandwiched between the Alpine ranges and the downlands and coastal plains of the east coast. Also known as 'the tussock grasslands', 'rangelands' or 'run country' it has been closely linked with an extensive system of Crown Pastoral Leases that restrict the use of the area to pastoral activity, effectively the extensive grazing of merino sheep, and no significant other landuse (Kearsley & Croy, 2000, 114).

[refer to Crown pastoral Land Maps http://www.linz. govt.nz/crown-property/pastoral-land-tenure-review/ status-of-pastoral-land/lease-maps/index.aspx and https://data.linz.govt.nz/layer/1572-south-islandpastoral-leases/]

It occupies a central part of the Kiwi geographical imagination. It is a special place, 'For the majority of us Kiwis who are not ecologists, artists and run-holders, the South Island high country contains many instantly recognised images of what we think of as 'our place': scenes of snow-clad rocky alps; panoramas of large open tussock and mountain ranges and valleys; vistas of merinos, mustering and farm homesteads in lonely mountain settings; images of waterfalls, rock tors and remnants of seasonal snows; records of alpine vegetation suited to seemingly impossible environmental niches (whether in the permanent mists of waterfalls, clinging to exposed or concealed hard rock surfaces, or sheltering on scree slopes exposed to desiccation, searing heat and enormous cold); tourism, marketing, tramping, snow sports, fishing, adventure experience, alpine lakes, warm chalets and sumptuous red wine' (Cairns, 2005, 1).

[refer to High Country Accord website for traditional images of the high country http://www. highcountryaccord.co.nz ]

# 'How do people's connections to places affect their <u>perception</u> of them'? (Year 6)

'The country was the grandest that can be imagined. How often have I sat on the mountain-side and watched the waving downs, with the two white specks of huts in the distance, and the little square of garden behind them; the paddock with a patch of bright green oats above the huts, and the yards and wool-sheds down on the flat below; all seen as through the wrong end of a telescope, so clear and brilliant was the air, or as upon a colossal model or map spread out beneath me' (Butler, 1987(1872), 20, cited in Dominy, 2001, 26).

'Considering high country pastoral land that is close to lakesides, there may seem to be no good land use options' (Parry, 2009).

People and places are imbricated together. They comprise space invested with social meaning. They are mutually constitutive. Undifferentiated space becomes place as our perception deepens. The ways in which high country run-holders are attached to the place has implications for both people and places (Morris, 2009, 93). Grazing families, she explains, 'come to selfhood through an experiential and embodied knowledge of the land they farm' (95). The sheep station, or run, is a place defined by the physical and conceptual landscape of high altitude tussock grasslands and mountainous terrain (Dominy, 2001, 4). It has been described as, 'a tawny tussock outback long celebrated by poets and painters. A dramatic landscape, the high country arouses equally dramatic emotions' (Hutching, 1986, 14-15). The romance of the high country resonates. Most New Zealanders know the names of high country properties such as Mount Algidus, Mesopotamia and Molesworth (Dominy, 2001, 29).

The purple prose flows when coffee table book writers get involved in describing the high country. 'Colours and their contrast are a defining characteristic of Molesworth's moods. It really is one huge changing light show, varying according to the time and the season. In one day the landscape you travel through can pass from golden to green to grey, and then the mountains in evening light will assume a deep azure-blue as they fade off into the night' (Broad, 2013, 12). Similarly "Messie" (Mesopotamia Station) held a special pace in the imagination of journalist, Bruce Ansley and photographer, Peter Bush, who captured the seasonal calendar in his images of 'the autumn muster and tailing of lambs in summer, velvet harvest from the valuable deer herd, the thundering feet of Angus cattle moving to lower country for winter' (Stone, 2012) in their recently published A Fabled Land: The story of Canterbury's famous Mesopotamia Station (Ansley & Bush, 2012). Mesopotamia, 'the land between the rivers', was the subject of Samuel Butler's prose in the opening quotation above.

[refer to map of Mesopotamia country, where Samuel Butler farmed, wrote and set is novel, Erewhon http://www.teara.govt.nz/en/1966/25302/ mesopotamia-country-where-samuel-butler-farmedwrote-and-set-his-novel-erewhon]

The feeling of belonging to the high country, then, has been enhanced by long engagement with the challenging biophysical environment. A distinctive high country 'culture' emerged from the 1860s onwards, based on the various practices of extensive sheep grazing (Dominy, 2001, 96). Practices that engaged with the vicissitudes of floods, droughts, and snow storms as well as the irruption of rabbit plagues, invasion of woody weeds, sweet brier, gorse and hawkweeds; extensive soil erosion, landslips and fluvial adjustments of braided rivers; and, the see-sawing vagaries of the market for wool across the other side of the world together with ongoing costs of production. As well as adaptations to physical geography, the landscapes runholders call 'country', Dominy (2001, 19) also refers to the significance of kinship networks and the various ways by which property transactions facilitated intergenerational continuity and intensified attachment to place. Eldred-Grigg (1980) wrote of Southern Gentry: New Zealanders Who inherited the Earth. Dominy (2001, 40) articulated an outsider's view of high country people, 'they see private planes, jetboats, and Range Rovers; attractive homesteads and gardens, swimming pools, tennis courts, and pleasure horses; the private boarding-school education provided to many high-country and rural children; fashionable city clothes'.

Paradoxically, the connections of the graziers to the land have been strengthened as run-holders have perceived themselves to be under threat from the changes that have occurred since the passage of the Crown Pastoral Land Act 1998. For the previous fifty years run-holders had security of tenure granted by the 1948 Land Act that created a perpetual pastoral lease tenure system that provided occupiers with the confidence to invest in long-term management strategies, and to enable the NZ Government (the Crown) to exercise control over leased lands for soil conservation and erosion control purposes. Leaseholders were granted exclusive occupation rights and fixed rentals but no right of freehold (Sutton, Tamihere & Carter, 2003, 2).

Initially, the pastoralists, together with government and conservation interests, supported tenure review<sup>1</sup>. As early as 1982 a government committee concluded that pastoral lease tenure had 'outlived its usefulness' (2003, 2). However, in the first decade of the 21<sup>st</sup> century graziers, conservation and recreational groups not only expressed serious doubt about tenure review but they also were lobbying hard to change the outcome. The graziers had posted a website, High Country Accord and conservation and recreation groups one titled Stop *Tenure Review.* By 2009, with the advent of the National Government in Wellington the issue appeared to disappear from public discourse. There have been no media releases published on the High Country Accord website since August 2009 (Morris, 2014, 187) and the Stop Tenure review website is no longer operative.

Early in 2010 an overview of a decade of tenure reviews appeared in Architecture New Zealand. The article ended: 'Thus, at the dawn of a new decade, we're back to where we started – with the quiet but steady privatisation of the New Zealand high country' (Brower, 2010, cited in McDonald, 2011, 680).

The debacle<sup>2</sup> reveals much about how people's connections to places affect their perception of them. The graziers realised that deprived of their occupation

2 Tenure review had been labelled everything from a 'land grab' to a 'carve up' and 'hijack' by the popular media (Beer et al, 2006). When the 2009 government report Change in the high country was released TV3, the Country Channel, Radio New Zealand, and at least twenty newspapers and other publications, with a combined circulation of more than 700,000, covered the report. Such was the degree of polarization across the country (Government tenure review update report July 2010).

<sup>1</sup> Tenure review is the process by which pastoral lease tenure will be phased out. The lessees can freehold much of the more productive lower altitude areas in exchange for the surrender of the higher altitude areas and other lands of significant inherent value (i.e. identified as possessing conservation, heritage, landscape and recreational values worthy of protection) back to the Crown. The surrendered lands pass into the conservation estate (Bray, 2007, 4).

of the high country peaks, destined to become farmers of the low lying flatter country surrounding the lakes and glacial valleys, their very identity was disrupted. These landholders had been offered the opportunity of entering into an agreement with the government, a voluntary process of tenure review whereby leaseholders have the opportunity to gain freehold title to the most economically productive parts of their property: generally the lower slopes and valley flats. The less productive grazing land with significant historic, scientific, ecological or cultural values is then reinstated as government land, to be managed by the Department of Conservation (DoC) (Morris, 2014, 185).

The high country run-holders had established a pioneer myth as early as 1890 (Morris, 2009, 99). This discourse became ever more powerful as run holders were threatened with the prospect of losing their sovereignty over the high country under the tenure review process. This pioneering discourse was as influential as Paterson's Man From Snowy River or Clint Eastwood's High Plains Drifter. The mystique of the high country every bit as evocative as schoolroom geographies of the Great Steppe stretching from Ukraine to the Tian Shan ranges, the Canadian prairies, and, the Pampas of Argentina and Uruguay. The 'back in the day' image of the high country run-holder is a portrayal of the early settler battling against the elements to earn a living (Morris, 2009, 99). Such pioneering families are reconstructed as being hardworking, thrifty, resilient, flexible, independent and self-reliant (Morris, 2009, 99). Morris explains, 'Not all of the land, however, on a high country station carries the same symbolic weight. It is the land that is the highest, the most remote—the tops, the back country—that bears the greatest symbolic load. It is the possession of this land that forms the foundation of high country farmer subjectivity, and farmers are aware that its loss will necessarily transform identity' (2009, 100).

The high country is a precious jewel, one dear to the heart of all Kiwis, part of a shared cultural heritage, 'no matter how deep in suburbia we dwell'. (White 2006, 42). For many the discourse had to contain *'musterers on horse back with a team of dogs guiding a flock of merino sheep through tussock-clad mountains'* (Wallace, 2004, 36–7 quoted in Mcintyre, 2008, 299). Just who the musterers were deserves some attention. Pascoe (1945, 20) explained that the workers on the runs were called musterers not shepherds. They may be quite distinctively different from the masculinist Australian or North American metonym of the stock rider/cowboy. *'Most musterers are little men, almost weedy in city clothes. But they can stand days of shingle sliding, nights of sleeping in wet clothes (not without a growl) and be quizzical* 



A Central Otago vineyaqrd. Source: Wikimedia Commons

through it all. They spend more on boots than a bowlerhatted man will pay for his shoes. Their coats are rough tweed, their trousers denim, their shirts grey wool, and their ice-axes manuka poles' (Pascoe, 1945, 27).

Connection to place becomes a citizenship issue when rural places are subject to significant changes. New political actors challenge the prevailing views of agricultural elites, rural-leaning political policies and government ministries (Yarwood, 2014, 177). Who decides? Who should decide the destinies of the high country? The run holders are faced with new political actors with a grab bag of different agendas for the high country.

Some of the actors are rurally inclined to the extent that 'pinot' has replaced 'merino' (Morris, 2009, 107) in the basins and ranges of Central Otago. Generally, there are fewer sheep, more dairy cows, avocado orchards and olive groves (Morris, 2009, 95). In addition, there are more hang-gliders, hunters, shooters, fishers and off-road vehicles, more rural subdivisions into 'lifestyle blocks' and sprawling suburbs of *McMansions*. Baby boomers are buying up lands with a view. Moreover, the distinctive Kiwi sense of place and belonging of the high country portrayed in 'Southern Man' beer promotions or Toyota advertisements (Kearsley & Croy, 2000, 114) is a vanishing illusion without the musterers, horses and sheep. The run-holders feel that they have lost their ascendancy as guardians of the nation and they rail against their inability to control the outcomes of the tenure review process. New Zealanders in general are in two minds about the tourist invasion. Tourist information describing Glenorchy at the head of Lake Wakitipu, 48 kilometres north of Queenstown lists, 'Jet boats, eco tourism, conservation, recreation opportunities, accommodation, cafes and restaurants, horse trekking, galleries, retail outlets, camping, biking, kite surfing, kayaking and ski activities are a few related businesses to stem from increasing tourist numbers' (glenorchy-nz-com, 2009).



Panoramic view of Queenstown from Bob's Peak by Steve Collis. Source: Wikimedia Commons

The notion that Pakeha pastoralists are no longer pivotal to national life is reinforced by the success of Māori in seeking reparation under the provisions of the Treaty of Waitangi. The high country stations the head of Lake Wakatipu known as the Routeburn, Greenstone, Elfin Bay and Caples stations were bought for Ngāi Tahu, the dominant South Island tribe, by the government as part of the \$NZ170 million settlement in 1996 for historic breaches of the Treaty of Waitangi between Maori and the Crown (Dick, 2010). The mountainous tops of the Greenstone, Elfin Bay and Routeburn were subsequently gifted to the people of New Zealand (Scoop Media, 2006). The gifted lands, known as Ka Whenua Roimata - Land of Tears, were named to commemorate the long fight of Ngāi Tahu to reclaim their rightful territory (glenorchy-nz-com, 2009). The bulk of the remaining area of beech forest, mountain lands and the huge Maroroa Valley – comprising about 90% of the total area has been leased back in perpetuity to the Department of Conservation at a peppercorn rental for conservation purposes. Ngāi Tahu has retained a right to veto any commercial activities on these lands. Ngāi Tahu also has the right to farm all the freehold titles Ngāi Tahu also has the right to farm all the freehold titles, on the valley flats and lake shores. Trampers, fishers and hunters are assured public access through these freehold lands (Te Rūnanga o Ngāi Tahu<sup>3</sup>, ND).

There is an ambivalence expressed to towards the high country and its inhabitants for many Pakeha. They are resentful with regards to both Ngāi Tahu and the leaseholders because they believe that the high country belongs to the nation. They feel a sense of visual ownership of the high country. 'The visual reminder is there, not only across the plains from wherever one stands in Canterbury, but also as a symbol of New Zealand nationhood and, more particularly, of South Island identity. Such negative sentiment toward highcountry people and the mystique their habitation embodies emerges over issues of access and land use, of ownership and control, of power and privilege' (Dominy, 1993).

# 'Why are interconnections and interdependencies important for the future of places and environments'? (Year 9)

The high country is ever more interconnected worldwide through the international movements of tourists, investment capital and various forces of cultural integration. Historically, the high country has always been an interconnected place. Kevin O'Connor, Emeritus Professor of Range Management, Lincoln University, Christchurch, spoke of the role of venture capitalism in the high country, 'The story of pastoralism is a story of dwindling capitalism, overshadowed early by the glistering of gold, steadily superseded in town by the new oligarchies of High Street and Hereford Street<sup>4</sup>, supplanted on the rural lowlands by the spread of husbandry and the new venture of refrigeration, gnawed at in the wake of mining decay by irrigation for small-holdings and orchards, eventually overwhelmed by the incursions of roads, electrical engineers, and a growing tumult of ideas of soil conservation, pasture *improvement, farm forestry, holidays in the sunshine and* rain in the mountains, and a new spurt of venture capitalism in tourism' (O'Connor, 2005, 41). The new scourge of venture capitalism was the advent housing subdivision, peri-urban developments, or rural lifestyle blocks, into the high country.

Mcintyre (2008, 131) explains that foreign ownership of New Zealand, including the high country, is a longstanding tradition. Early colonial New Zealand has been described as being more like a British corporation than an embryonic nation (131). Some of the interconnections were Scottish. In 1877 two Scottish companies held huge swathes of land in the southern parts of South Island. Run holders varied in origin from former poor Scottish shepherds to mercantile and upper middle class Britons. And, they soon set themselves apart from workers and smaller farmers, with their spacious homes, servants, musterers and leisured pursuits organising tennis, shooting and hunting parties (132).

<sup>3</sup> Ngāi Tahu tribal council, the relevant iwi authority for almost all pastoral leases in the high country

<sup>4</sup> The main commercial streets in Christchurch: there is possibly a parallel with 'Pitt Street farmers' in NSW?

More recently post- productivist activities threaten the rural quietude of the high country. Geographers know that a shift from an emphasis on extensive grazing to rural tourism<sup>5</sup>, for example, changes the character of the place, changing a sense of place and place identity as the high country undergoes rural restructuring (Rosin et al 2013). McIntyre describes the South Island high country as having become *'a new frontier for the domestic and international film, advertising, hunting, tourism, wine, dairy and property industries'* (Mcintyre, 2008.348-9).

For some this has been termed 'high country hijack'. Referring to the advantages conferred on run-holders by the process of tenure review journalist White opined, 'It's a process whereby 10 per cent of New Zealand's most remote but most beautiful country, owned by the Crown, is being divided up, with much of it effectively given away to farmers, who until now have only leased this land' (White, 2006, 42, cited in Morris, 2009, 103). The conservation/ recreational lobby group *Stop tenure Review* explained that land converted to freehold on the shores of Lake Wakitipu, close to Queenstown was subsequently on sold by the landowner as rural housing subdivisions for massive profits.

In another example the freehold section of a property on the shores of Lake Wanaka was sold by the Crown to the run holders for some \$265 000 and the owners then collected over \$10 million when they on sold a portion of their land for housing subdivision (Gorman, 2013).

In another instance the value of leasehold land on the shores of Lake Tekapo was valued under the tenure review process as 'very definitely deer farming' land (McDonald, 2011, 613) whereas environmentalists visualised residential subdivisions similar to those in the Lake Wakitipu case. Dr Ann Brower revealed in her book, *Who Owns the High Country*, that during the period of tenure review, 1994–2007, 'the Crown [gave] high country farmers hundreds of thousands of hectares of valuable land and millions of dollars in a flawed process that was partly hidden from public view' (Brower, 2008, 25).

By the end of 2006 public opinion began to change in New Zealand and there was a groundswell of resentment concerning run-holders and their windfall profits from the land reform program. The run-holders were faced with urban-based nature conservation and recreation organisations forcefully seeking political and economic control over the high country, wresting power from the pastoralists and breaking up their selfcontained social and cultural world forever.

5 Geographer, David Relph wrote a book titled from tussocks to tourists: The story of the central Canterbury high country, 2007, Christchurch: Canterbury University Press The enormous social, economic and cultural power that the pastoral leaseholders wielded in New Zealand was exposed in Brower's book

There are other important actors, other interconnected threads that will alter the high country as an iconic place. Firstly, the baby boomers are 'returning home'. They are Kiwis born between 1946 and 1964, who have aspired to live in the scenic parts of Central Otago. The Mayor of Central Otago explained, *'If you're sitting in London or Sydney or even Auckland, and you want somewhere to retire and park your money, this is increasingly where your investment advisors are telling you to come'* (Macpherson, 1985, 21).

Then, there are the foreigners. Foreign ownership of high country properties is an anathema to many New Zealanders. *'In a sense, all New Zealanders feel that they own the high country. Many South Islanders can see the Alps from their windows'* (McIntyre, 2008, 336). New Zealand was also an early adopter of privatisation.

Lilybank, a former merino run was taken over by the infamous Indonesian, Tommy Suharto in 1992 and his luxurious lodge on sold to his Singapore business partner in 1999 (McIntyre, 2008, 338). In 1998, Glenhope Station adjacent to two national parks was bought by North American interests and turned into a private game, fishing and safari park, complete with restocked herds of deer and other animals (McIntyre, 2008, 340-41). In 2001, Allen Evans, the Federated Mountain Club's patron asserted that about 160 000 hectares of high country were under foreign control (McIntyre, 2008, 340). A year later, the editor of Forest & Bird complained that foreign owners were denying New Zealanders access to the high country and were setting up exclusive commercial tourist ventures (McIntyre, 2008, 342).

McIntyre sums up, 'The story of the Pakeha era begins with foreign speculators investing in the high country and continues similarly. The difference is that whereas formerly foreign owners were of British stock, in recent years they have been members of a global elite' (McIntyre, 2008, 347).



Below: Snow covered peaks of the New Zealand high country. Source: Wikimedia Commons

# 'What are the causes and consequences of change to places and environments and how can this change be managed'? (Year 9)

'Increasingly, the High Country is becoming marginal land with invasions of hieracium (hawkweed), wilding pines, rabbits and possums, among others. Many soils are eroded and degraded; much land has been retired from production' (Kearsley & Croy, 2000).

A case study of Molesworth Station illustrates the causes and consequences of change to places and environments in the high country and ways that this change has been managed. Molesworth is the largest farm in New Zealand extending over 180 000 hectares. It is situated west of the Inland Kaikoura Ranges, one of the two parallel mountain ranges in the northeast of South Island, in Marlborough district. Transferred from Land Information NZ to the Department of Conservation management in 2005 it combines the attributes of a working farm operated by Landcorp Farming Limited, a state-owned enterprise, with outstanding recreational and conversation characteristics. It personifies environmental change in the high country and offers several lessons in managing places and environments.

[maps of Molesworth Station can be found at Land Information New Zealand (2013). *Molesworth Map*, Wellington: LINZ. Retrieved May 2014 from http://www. linz.govt.nz/sites/default/files/docs/crownproperty/ review-of-molesworth-mgmt-plan/molesworthopening-map.pdf and using the search function at http://www.topomap.co.nz]

The headwaters of the Clarence, Wairau and Acheron Rivers were all formerly glaciated and glacial features abound, including moraines, outwash plains, hanging valleys, cirgues and arêtes. The soils are thin and poor derived from (greywacke) dark grey sandstones, mudstones and claystones in the hill country with more fertile soils on the river terraces, flood plains and lower rainfall eastern areas. Landslides and rock falls are common in the scree-covered slopes, frequently triggered by tectonic action. The climate is continental in character in the rain shadow of the main divide: hot and dry in summer, precipitation in the form of snow in relatively cold dry winters. The former beech forests have been burnt off following human occupation leaving montane tussock grasslands and scree on mountain slopes<sup>6</sup>. Over seventy threatened plant



Moleworth Station gate and fence. Source: Wikimedia Commons

species, mainly herbs, currently grow on the Station and Molesworth supports one of New Zealand's most diverse lizard faunas.

Early written accounts, drawings and paintings of Marlborough high country, from the 1840s onwards, portray a treeless landscape (Peden & Holland, 92). British settlers brought with them experiences of open hill country pastoral farming where burning off vegetation was the norm. The triumvirate of burning, grazing and trampling transformed the high country. Burning, overstocking with sheep and irruptions of rabbit plagues, were thought to be a particular environmental problems at Molesworth but more recently historians studying station records and diaries have been more circumspect about the deleterious effects of burning, insisting that pastoralists, elsewhere in the high country, were guite prudent with their burning practices (Peden, 2011). They burned in early spring giving the plants every chance to recover, where the early evening dew prevented fires from spreading too widely. In addition there are some doubts expressed about the role of burning and the incidence of rock falls and slides on the scree covered slopes of Marlborough. Natural erosion rather than accelerated erosion and mass wasting occurs readily in precipitous scree covered slopes in relatively recently formed mountainous landscapes.

However, the evidence from Molesworth suggests that burning was a significant contributor to environmental degradation. By 1860 tussock burning was a widespread land management technique but soils were left exposed and extremely vulnerable to erosion. Burning had ceased to be a major management practice on Molesworth by 1919 (DoC, ND, 3).

A detailed examination of the suite of environmental changes that have occurred on Molesworth is most instructive. In 1852 some 1800 sheep were driven across Barefell Pass en route for the Canterbury Plains from Nelson. Travelling up the Awatare Valley towards

<sup>6</sup> In Polynesian times forest and other woody vegetation was destroyed, native plants spread across the high country expanding the extent of tussock grasses (Molloy, 2005, 62).

Molesworth the sheep were making heavy going. The thorny bush, Matagouri (Wild Irishman) and Fierce Spaniard (or speargrass) injured the sheep's feet so the musterers set fire to the bush to provided better access for the stock (McIntyre, 2008 39). Between 1857 and 1858 over 24,000 sheep were driven from Nelson to Canterbury across Molesworth (DoC, ND, 2). The land that was to become Molesworth, at first called Barefell Run, became sheep country in 1854. By the early 1860s perceptive botanists and naturalists had observed that pastoralism was altering the biophysical environment of the high country irreversibly (McIntyre, 2008, 50-51).

[early maps of Molesworth and adjacent stations can be found at http://www.doc.govt.nz/Documents/parksand-recreation/places-to-visit/nelson-marlborough/ acheron-accommodation-house-interp-info.pdf]

The 1870s saw the first arrival of rabbits on Molesworth, where the open grassland resulting from burning practices encouraged rabbit numbers to rapidly increase. Thirty years later the properties that currently make up Molesworth were stocked with as many as 95 000 sheep. (DoC, ND, 4). The run holders, and Pakeha generally, introduced a variety of animals to the high country, many of which became feral. As early as the 1850s herds of feral pigs roamed the Marlborough high country (Mcintyre, 2008, 51) rooting up the tussock and speargrass and honeycombing the flatter land with water holes. Feral dogs attacked the flocks. In August 1860, to the east of Molesworth, over the Kaikoura Ranges, at St Leonards Station twenty-eight dead sheep were found drowned in a small creek. They had been herded together by feral dogs (Mcintyre, 2008, 51). However, rabbits were public enemy number one, with nine million rabbit skins exported from the Marlborough region in 1882 (Stephens, 2009).

Molesworth and adjoining stations were severely rabbit infested. In 1873, ferrets were released in the Kaikoura Ranges to prey on rabbits. At Shades Station, on the East Coast hundreds of cats were bred to prey on rabbits. In 1883 the government facilitated the release of thousands of stoats, ferrets and weasels (McIntyre, 2008, 155). By the 1890s the high country had been completely transformed. In 1891, the owner of Molesworth Station described the surface of the upper slopes, 'peeling away through the rabbits and dry weather and large patches of land are becoming useless' (McIntyre, 2008, 161).

'Stock numbers fell, but the rabbits continued to thrive. The run holders frequently suffered very heavy losses in the winter snows. These losses, in combination with economic recessions, meant that funds were not always available to spend on rabbit control. The cycle of deterioration continued and by the mid-1930s the four runs [that make up Molesworth] were desolate properties – rabbit infested, denuded of vegetation and suffering from severe erosion' (DoC, 2003, 2).

During this cycle of deterioration Molesworth run holders needed very deep pockets to attempt to manage this degraded land. In 1911, members of the wealthy Rutherford family took up the leases of the runs that would eventually be consolidated into Molesworth. Particularly harsh winters in 1911 and 1912 caused devastating losses of sheep and lambs but Duncan Rutherford believed that investment in the leases could redress the problems of burning at the wrong time of year and the proliferation of rabbits through 'careful handling and surface sowing'.

In 1915, Eva Rutherford the actual lessee of Molesworth, seeking tenure on the Station, promised the Land Boards that rabbit proof fencing would be erected, trees planted and experimental grasses would be sown on the loose shingle country (McIntyre, 2008, 217). Tragically, Duncan Rutherford died in 1917 and the leases were sold off to the Nicholls family of Belfast, in order to pay off death duties. This family, in turn, lost many sheep in the snowstorms of 1918 and parts of the run were so overrun by deer that that sheep grazing became impossible in certain areas (McIntyre, 2008, 218).

After Nicholls death in 1920 absentee landlords from the New Zealand Farmers' Cooperative Association took over the leases. Molesworth was in such a degraded state that, when the Association offered the land up as runs to the government for soldier settlement, subsequent inspections by the Land Boards and the Commissioners of Crown Lands deemed the area to be 'quite unsuitable for soldier settlement owing to the altitude and heavy losses of sheep in winter' (McIntyre, 2008, 218). By 1931, stocking rates had been reduced but the rabbits were allowed to run free. The country was alive with rabbits with 30 000 rabbit skins being taken from adjacent Rainbow, Tarndale and Molesworth Stations between 1930 and 32 (McIntyre, 2008, 219).

Despite all this, in 1937, the station manager believed that rabbits were not the primary problem to be managed. He spoke of the damage caused by burning the tussock on the sunny slopes where the fire would take hold and burn deep into the root structure of the grasses leaving bare soil exposed. Heavy storms caused the unconsolidated shingle to slide. '*Rabbits did a lot of damage' he said, ' but they didn't range as high as where the shingle first started to slide'* (McIntyre, 2008, 220). The prescient manager believed that the only hope for Molesworth lay in cattle grazing. In 1938 the Department of Lands took over the Molesworth and Tarndale-Rainbow runs, described then as degraded country covered by some 95 000 widely scattered sheep, suffering from soil erosion, with rabbits rampant and the built environment in a sore state of repair (McIntyre, 2008, 220). In 1949 St Helens Station, including the Dillon Run was added to the property now called Molesworth.

The biophysical environment was gradually restored through careful management practices that included rabbit and deer control, revegetation and the replacement of sheep with cattle (DoC, 2013-14, 2; McIntyre, 2008, 228)). A program of grass sowing commenced in 1940 and the station restocked with Angus-Aberdeen and Hereford cattle. Wild pigs, deer and goats were shot to the extent that one shooter killed at least 700 deer in one year, 1939. Returned servicemen were employed to shoot the feral animals. Gradually, rabbit numbers were controlled, burning off was curtailed, the cattle were more selective grazers that the sheep had been, and more and more grassland was sown. Molesworth is often cited as one of New Zealand's conservation and farming success stories (McIntyre, 2008, 231). By 1946 the local press reported that tussock was seeding again all over the station and even some of the shingle slides were becoming revegetated (McIntyre, 2008, 230).

Rabbit control was difficult. In the early 1950s the Marlborough Aero Club dropped strategically placed tins of poisoned oats and carrots in an aerial baiting program (Mcintyre, 2008, 242). In 1957 a large-scale trial of baiting of rabbits, deer, goats and pigs was started using 1080 poison. This successful program was followed by extensive tree planting schemes carried out by the Forest Service. Some 15 000 trees were planted in sixteen years but as early as 1959 the problem of wilding pines was detected. As the rabbit population dwindled young pine saplings accumulated in the gullies. In the late 1980s and early 1990s rabbit populations began to surge in Molesworth. The numbers were very difficult to control. However, the introduction of rabbit haemorrhagic disease (RHD) in 1996 brought about a significant decrease in the rabbit population. Since then the lessee and the department of Conservation has kept numbers in check through shooting programs. Eternal vigilance is the watchword on Molesworth.

There are other animal problems to be managed on Molesworth. The lessees and the New Zealand Animal Health Board, the Department of Conservation and the managers of other adjacent properties are engaged in tuberculosis vector control and the eradication of bovine TB on the Station (DoC, 2003, 15). There has been an increase in vector numbers (possums, pigs, ferrets and goats) possibly as a result of the decline in rabbit numbers. The Nelson Marlborough Fish and Game Council are responsible for the control of Canada geese flocks that threaten pasture production and native plants.

There are a number of problems connected to introduced plants, apart from those referred to above as wilding pines. Two species of hawkweed became dominant across 22 000 hectares of valley bottomland, fans and foot slopes on Molesworth Station (Mcintyre, 2008, 266-7). Other plants that threaten Molesworth's productivity and conservation values are sweet brier, thistle, and ragwort but the most threatening weeds are now woody ones: broom, pines, rowan and willow (DoC, 2003, 12).

Soils and water resources are managed with two main strategies:

- the restoration of vegetative cover where pasture on the lower slopes and valley floors have been aerially sown and top-dressed with fertilizer and stock numbers are carefully controlled to mitigate environmental damage
- strengthening the link between land use and land capability where extensive cattle grazing takes place on the valley floors and gentle slopes and a rotational grazing system is practiced (DoC, 2003, 9).

Another management issue that has arisen is the intrusion electricity pylons and associated infrastructure across Molesworth Station (Mcintyre, 2008, 267-268). The former droving routes from Nelson to the Canterbury Plain that crossed the Station are now used by Transpower New Zealand Ltd. to site electricity transmission lines with strings of tall power poles that link up hydroelectric power stations at Roxburgh in Central Otago with Nelson Province and the Waitaki power scheme, in Canterbury, with North Island via a submarine cable across Cook Strait.

With the power pylons and transmission lines came access roads. The first piece of infrastructure completed in the 1950s traversed the western boundary of Molesworth Station bringing in the curious, the sightseers and recreational users as well as undesirable visitors. In the late 1950s visitors to the tarns at Tarndale, in the west, disturbed the grazing cattle and made extra work for the musterers. As the Station manager at the time remarked that it took only a few careless shots from unthinking visitors to scatter the cattle. The second power line and road, the Acheron Road, developed in the 1960s, allowed further access. The sightseers and anglers were not a real problem but those with guns and dogs spooked the cattle to the extent that the stock stampeded from their allotted winter pastures along the river flats to higher terrain where sudden snowstorms could have fatal consequences.

Dogs are no longer permitted to roam on Molesworth. They must remain in vehicles for the entire journey across the Station; although hunters may apply for written consent to bring a dog into some areas (DoC, 2013-14, 34). Because Molesworth is a working farm, and as a consequence of severe winter conditions, the Acheron Road is closed during calving from November 1<sup>st</sup> to April 10<sup>th</sup>, may be closed as a result of to unfavourable weather conditions or fire danger, but is generally open from October 26<sup>th</sup> to April 21<sup>st</sup>. A permit is required, from the Department of Conservation, for access to the central part of the station, because of potential disturbances to the farming operation. However, permits are not required for visitors who wish to drive straight through the Station on the Acheron Road during the period when the road is open (DoC, 2013-14, 19).

The Department of Conservation grants concessions to a small number, but expert, tour operators with specialist tours that include cycling, rafting, kayaking and horse trekking. A lot of other visitors come for fishing. Some are Canada geese hunters. Others game hunters. The scenery enthrals all. Each tour operator need the approval of the Commissioner of Crown Lands and Department of Conservation. Te Rūnanga o Ngāi Tahu is to be consulted with respect to applications for permits for interpretive visits to Molesworth that may include sites relating to Maori cultural values (DoC, 2003, 26).

Molesworth is a remarkable example of where environmental devastation, conservation practices, farming, recreation and the imperatives of power industry combine to teach us much about managing places and environments.

The multiple use management practices are put forward as a model for other high country stations or catchments in Crown control. (Parry, 2009, 68)





Hydropower pipeline, McKenzie country, New Zealand. Source: Wikimedia Commons

# 'How do worldviews influence decisions on how to manage environmental and social <u>change</u>'? (Year 10)

'The traditional use of the High Country was very much part of the Kiwi way of life and self image. Hunting for deer, thar, chamois and goats was widespread, while excellent fishing is available in rivers, lakes and high altitude irrigation dams. Tramping and camping is also popular, together with fossicking and gold-panning. .... More modern activities include 4WD and trail bike trips, a growing involvement in cross-country skiing and limited snow-mobiling. Commercial tourism includes skiing and heli-skiing, rafting and kayaking, 4WD safaris and farm stays, but much activity is constrained by the terms of the Crown Pastoral leases' (Kearsley & Croy, 2000).

'After a prolonged battle, including the Minaret case in the Land Valuation Court, New Zealand's High Country farmers celebrated the passing of the Crown Pastoral Land (Rent for Pastoral Leases) Amendment Act in 2012. This clarifies pastoral lease farm rents are to be based on pastoral rather than landscape values. It is a major win for High County pastoral leaseholders' (Federated Farmers of NZ, 2014).

There are numerous individuals and actors with a plethora of worldviews about the high country. The complexities that underpin worldviews have been examined elsewhere (Hutchinson, 2013, 12–24). Here

the worldviews of New Zealanders both from within and without the high country are observed.

Environmental geographers have frequently made an over simplistic division between worldviews that express eco-centric versus urban- based 'green' inclinations. Swaffield (1998) offers another perspective on worldviews and these are usefully applied to management issues in the high country.

Those who espouse multiple use management approaches, typically planners, scientists or advocates for Maori, were different from those favouring conservation management. The latter comprised a diverse group of scientists and consultants, including a number of individuals with strong personal views about the high country (Swaffield, 1998, 207). Urban-based lobby groups tended to favour strong government intervention from Wellington whereas those that with a preference for individual improvements were largely run holders or their advisers. Local councillors and some run holders were more prone to esteem local governments as forces of mediation. Then there were several national politicians and government policy advisers that wanted to reform the system of decision making based on arguments and legislation about property rights (Swaffield, 1998, 208).

Firstly, the unashamed and quite romantic view of a high country run holder is presented.

'The Scott family has farmed at the head of Lake Wakatipu for a hundred years. My three kids are the fourth generation to work on the land....

Our mountain landscapes have kept their unspoilt character because they have been extensively farmed. Extensive farming is the art of spreading people and domestic animals thinly over large areas and fits well with the native vegetation. It allows for the native habitats to remain essentially intact over large areas of land, while still permitting economic use. Farming, by definition, means controlling the actions of stock and replacing with fertiliser what is extracted from the land by the harvests.

Contrast this with the philosophy behind Fish and Game NZ, whose predecessors, the Acclimatisation Societies, released all sorts of species for sport with very little intention of managing them, other than ensuring their successful establishment. Degradation of land is much more likely from feral animals than domestic stock and any high country farmer whose stock are degrading their range is not going to gain much at shearing time' (Scott, 2005, 111).

An Emeritus Professor of Range Management tends to agree that run holders are more benign than a number of current developments, 'we are at this stage in history set to have much greater mischief wrought on high country landscapes by peri-urban subdivision and development, second-homing, recreational and touristic developments of one kind and another than was ever likely to come from merino wethers' (O'Connor, 2005, 37).

Journalist, Bruce Ansley, writing in the New Zealand Listener, 1992, savaged the run holders, 'They've been living off the public purse for years by cheap rentals, then by subsidies. And what have they given us in return? They've occupied some of the choicest parts of the mountains and exercised seigneurial rights: the masses enter at the farmers' pleasure. They've steadily run down those beautiful, fragile tracts of country until they're overrun by rabbits and weed' (cited in McIntyre, 2008, 307).

The worldviews of the run holders are difficult to ascertain and they were certainly different worldviews held by such fiercely independent New Zealanders. The New Zealand Historic places Trust (Bray, 2007) explained that some run holders saw that merino wool prices were in decline and the lower parts of the high country were potentially productive and lucrative assets. Some also, no doubt aware of the burgeoning growth in tourism and settlement, particularly in the Queenstown/ Wanaka area, foresaw other opportunities which could surely be more easily realised on freehold property. At the same time, however, many feared that with tenure review would come the passing of the High Country lifestyle' (Bray, 2007, 18). They were also very wary of the motives of the Department of Conservation and doubted that DoC could cope with weed and pest control over an enlarged conservation estate that comprised over 30 per cent of the country.

The worldview of a botanist may be pointed to by the remarks of Alan Mark, Emeritus Professor of Botany, University of Otago when he describes the snow tussock as being very slow growing taking at least fifty years to reach flowering. The snow tussock is described as a perennial plant having many of the *'characteristics of a forest and few of those of a short rotation pasture'* (Mark, 2005, 52-3). Similarly environmental consultant, Kelvin

Below: Tussock grass, NZ high country. Source: Wikimedia Commons



Lloyd, explains that effects of fire on snow tussock grassland vegetation have received considerable research (Lloyd, 2008, 6). Spring burning does stimulate leaf growth but it also sets back further leaf growth, nitrogen concentration levels and flowering for at least fourteen years.

In 2005, the Royal Forest and Bird Protection Society clarified its ideas about stock grazing in the high country, maintaining that, 'stock are being allowed to graze fragile alpine herbfields, and extensive areas of tussock grasslands and shrubland remnants' (McDonald, 2011, 610). Forest & Bird and other conservation and recreational lobby groups were more inclined to support the intervention of DoC over land deemed unsuitable for grazing.

A former mountain guide, bush walker and dedicated conservationist received the following eulogy from Forest & Bird, 'The natural quietness of the mountains was important to him, and he disliked the growing numbers of aircraft filling the skies around the Southern Alps. Even though he could have enriched his guiding business by flying clients to remote huts, he stuck to the longer – and quieter – on-foot route' (Forest & Bird, 2005, cited in McDonald, 374).

Individual worldviews are important and some worldviews are bound to be in conflict. Obviously Forest & Bird would be at odds with the New Zealand Deerstalkers' Association when deer culling programs were under discussion. Similarly, Forest & Bird was in vociferous disagreement with Outdoor Recreation New Zealand, the hunting, shooting and fishing lobby, over the use of 1080 poison (McDonald, 511).

Then there are the clashes between the vast coalitions of interest groups concerned about the future of the high country. The two main protagonists, referred to above, are represented by the graziers website, *High Country Accord* and conservation and recreation groups website titled *Stop Tenure Review*.

Governments of various persuasions too, hold different worldviews. The coalition government, dominated by the Labour Party and supported by the Greens, 1999 to 2008, was generally more favourably inclined towards conservation interests with regard to tenure review whereas the National Party, elected in 2008 have been more amenable to the worldviews of the high country run-holders.

More recent geographical and historical scholarship has looked more favourably on the stewardship of the early run-holders in the high country and have partially redressed the balance from those that espouse conservation values towards the interests of graziers



High country trampingy, New Zealand. Source: Wikimedia Commons

and land developers (Peden & Holland, 2013, Holland, 2013 & Peden, 2011). Robert Peden, in particular, questions the 'self-perpetuating' view (2011, 48) that pastoralists' misunderstanding of the landscape, 'indiscriminate burning' and overstocking have led to ecological disaster across the entire high country. This, he shows, is based on selective evidence that has been accepted by eminent botanists and historians without sufficient interrogation. Peden argues that initial burning off as a pasture management tool was inevitable because dominant tall tussock was unpalatable to sheep, but thereafter fire was generally used in a more controlled manner. Again natural erosion rates have been demonstrated as very potent forces of denudation in precipitous scree covered slopes prone to tectonic forces.

Nevertheless, the conservation and recreational lobby is a forceful one. In 2009 a media release was issued that announced that eight conservation and outdoorrecreation groups had combined to call for stronger protection for New Zealand's remaining wild rivers, many of which are found in the high country. According to Pete McDonald 100,000 Kiwis (McDonald, 2011, 730) were represented by:

- Fish and Game New Zealand,
- Federated Mountain Clubs of New Zealand,
- Royal Forest and Bird Protection Society of New Zealand,
- Whitewater New Zealand,
- Council of Outdoor Recreation Associations of New Zealand,
- New Zealand Rafting Association,
- · New Zealand Federation of Freshwater Anglers,
- Environment and Conservation Organisations of New Zealand

Obviously these conservation and outdoor-recreation bodies were expressing similar worldviews on this environmental issue. They were supported in 2012 when the Parliamentary Commissioner for the Environment, Dr Jan Wright, released an investigation into the conflict between hydroelectric power schemes and the irreversible environmental damage caused to wild and scenic rivers (Wright, 2012). Dr Wright explained that hydroelectric power schemes contributed towards the Government's goal of 90 per cent of the country's electricity coming from renewable sources by 2025 (Wright, 2012, 5), a potentially conflicting worldview from those of the conservation and outdoor-recreation bodies. Urban electricity consumers may value cheap, abundant and relatively carbon friendly power supplies but those involved in the tourism industry, New Zealand's number one export earner (Wright, 2012, 53) may well be persuaded to espouse alternative worldviews.

Dr Wright identified a number of environmental values associated with a wild and scenic river (Wright, 2012, 49):

- different forms of the river itself such as waterfalls, gorges, oxbows, and estuaries
- the native plants and animals that live in the river
- the native plants and animals that live alongside the river
- geological features such as layers of different coloured strata
- recreational opportunities such as kayaking, rafting, and hiking
- the historical significance of the river
- the spiritual significance to iwi.

Some of these attributes would be more appealing to the worldviews of Fish and Game New Zealand where

their members wish to fish trout and salmon others would be more appropriate for outdoor-recreation bodies. Some, such as the Council of Outdoor Recreation Associations of New Zealand represented the collective interests of national bodies in deerstalking, recreational canoeing, salmon and trout fishing, recreational skiing and hunting (McDonald, 2011, 225). The Federated Mountain Clubs of New Zealand was established principally to promote 'freedom of the hills' (Bray, 2007, 17). The Royal Forest and Bird Protection Society of New Zealand represents somewhat different worldviews. The country's largest conservation NGO, with a mission 'to preserve and protect the native plants and animals and natural features of New Zealand' (McDonald, 2011, 426) is a very powerful lobby group. Forest & Bird explains, 'The public has made it clear that it does not want the iconic high country landscape ruined with lakeside subdivision or inappropriate tourism development. They want assurance that significant high country habitats and wildlife are protected and managed in the public interest' (Forest and Bird, ND).

In 2012 a similar coalition of conservation and outdoorrecreation groups to those enumerated above were leading a campaign to raise awareness of Water Conservation Orders (WCOs) which protect some of the country's most outstanding rivers 'for all New Zealanders' (Fish & Game, 2012). A year later the Government appeared to be bent on weakening the WCOs, 'It's appalling that this Government is trying to dupe the public by saying it is 'improving' the WCO process, when in reality its plans will render WCOs useless as a tool to protect rivers from a greedy few for increased irrigation and intensive farming' (Johnson, 2013). Later in 2013



the Government seemed to acquiesce towards the worldviews of the conservation lobby and the Minister for the environment declared that no changes were to be made to WCO protection mechanisms (Deans, 2013).

The contrasting worldviews of the trust, Public Access New Zealand (PANZ) and many of the run holders is instructive. PANZ broad aim was to promote the preservation and improvement of public access to public lands and waters throughout New Zealand, particularly those with public recreation and conservation values (McDonald, 2011, 211–212). As far as the high country was concerned PANZ was worried about *'run holders pushing for total freeholding [sic] of the land or the privatisation of natural and recreational values such as fishing, walking and skiing opportunities'* (McDonald, 2011, 213).

As early as the 1980s many pastoral leaseholders 'had come to see themselves almost as de facto owners of the land' (McIntyre, 2008, 318). Federated Farmers, a professionally staffed landholders' group was a powerful lobby group, representing 18 500 farmers and rural families throughout the country (McDonald, 2011, 287). It distilled its message into a series of concise statements, 'farmland is a place for production, not recreation; agriculture is the backbone of our economy; property rights form a cornerstone of society; what is good for farmers is good for the nation; walking tracks across farms are a nuisance; walkers are a threat; the Queen's Chain<sup>7</sup> is bad; there are few real access problems; a third of *New Zealand is national park; there's nothing wrong with* asking for permission<sup>8</sup>; it's always been done this way; it's common courtesy; access is a privilege; we are farmers, we know best' (McDonald, 2011, 269).

Of course, there are a variety of worldviews held by rural landholders. Pete McDonald, a committed walker, explained that some, perhaps many, who have had their voices subdued in the recent debates over public access to leasehold land, 'accepted the need for change and was not antagonistic towards walkers' (McDonald, 2011, 290).

The concessions offered in the new pastoral lands policies of the current National Government in Wellington, were greeted according to the prevailing worldviews of the two main interest groups. The landowners 'High Country Accord' welcomed the new plan, saying that it would '*put to an end an unfortunate* 



An emergency shelter hut at the top of McKinnon Saddle, Fiordland National Pass Source: Wikimedia Commons

era in which farming families were under constant attack by their own government' (High Country Accord, 2009). Forest and Bird said that 'the Government [had] set back progress in protecting New Zealand's iconic high country by a decade' (Forest & Bird, 2009). The policy change, according to Forest and Bird's general manager Mike Britton, would mean that leasehold properties with significant landscapes would come 'under threat from subdivision, intensive agriculture and other inappropriate development if they [were] privatised' (Forest & Bird, 2009).

The tension between the two worldviews are amplified because what is at stake is not just ownership of land, or even conservation, but control over the way in which the high country and New Zealand as a nation is imagined (Morris, 2009, 97). The run holders are losing their place as guardians of the nation. Their worldviews have been severely challenged as they assume a position that is no longer pivotal in the national identity. Perhaps, unspoiled nature is replacing a productive ruralism as the morally correct relationship of New Zealanders to the high country (Morris, 2009, 100).

Although high country pastoralists continue to constitute themselves through the discourse of the pioneer myth, a portrayal of the early settler battling against the elements to earn a living (Morris, 2009, 99) they are under siege from urban-based nature conservation and recreational organisations, global and local urban elites, overseas venture capital, film and advertising interests, hunters, shooters and fishers, cashed up tourists, dairy farmers, wine growers, electricity suppliers as well rabbits, invading hawkweed and wilding pines. Nevertheless, the image remains of down to earth values in contrast to city sophistication.

Autumn musters; the desiccated Otago tors; the Mackenzie Country's tawny tussock carpet; the remote corrugated iron huts with names of sheltering shepherds scratched in their rafters; the 'red-gold cirrus/Over snow mountain shine' of James K. Baxter are part of a cultural heritage we all share and celebrate, no matter how deep in suburbia we dwell' (White, 2006, 42).

<sup>7</sup> The New Zealand Oxford Dictionary (2004) defines it as 'a strip of public-access land (orig. one chain wide, now 10 to 20 metres) along coasts, lake-shores, and river-banks' (815)

<sup>8</sup> Federated Farmers maintained that research shows 92% of farmers provide access to the public if first asked (McDonald, 2011, 276). However a 2001 Government paper explained that free public access had been curtailed in the 1990s with an increasing application of the user pays principle (McDonald, 2011, 277).

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Mackenzie Country and the Southern Alps. Source: Wikimedia Commons

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# GLOBAL EDUCATION STUDY TOUR CHINA: 22 SEPTEMBER - 1 OCTOBER 2014

The Global Education Project NSW invites teachers and their families to participate in a study tour of China. The tour will incorporate the famous sites including the **Terracotta Warriors**, **Great Wall of China**, **Forbidden City**, and beautiful **Shanghai** – an incredible world city that has an amazing array of architectural periods, from the 1920 Art-deco period to modern-day skyscrapers.

Beginning our tour in Beijing, we move to Xi'an and conclude in Shanghai – and incorporate Chinese history with culture, economics and modernity through the tours and lectures. A school visit is an option for teachers interested in comparing the education systems in Australia and China.

This tour is an easy option for teachers visiting east Asia for the first time and would like the company of experienced educators who tour this region on a regular basis. It will incorporate options, both for independent colleagues and for those who would prefer a more structured tour.

# **AUSTRALIAN CURRICULUM**

**Global Education Study Tour (GEST) to China** focuses on the HSIE, Creative Arts and English Key Learning Areas. Teachers will be able to use their first-hand experience of China to develop teaching and learning programs related to the new BoSTES syllabuses, and in particular the cross-curriculum priority area: *Asia and Australia's engagement with Asia*. The tour will be especially useful for teachers whose schools participate in the Global Education Project NSW Schools Network Program.

# ACCOMMODATION

Hotels are a minimum of three star - standard, clean and with western bathrooms.

# TOUR COORDINATOR

The tour co-ordinator has lead study tours to China on many occasions and is supported by local community personnel and organisations.

# COST

The total tour price will be \$2500. This amount includes single room accommodation (twin/double/ triple share are discounted on request), taxes, breakfasts, tours and tour guides, internal airfares, domestic transport (bus/train), resources for teaching, pre-tour information. International airfares are additional. Participants can arrange the airfares themselves and be picked up at the Beijing International Airport on 21 September 2014, or they can join the tour co-ordinator and come as a group (budget on \$1500 for a return airfare to China). Travel insurance, whilst compulsory for this tour, is not included.

To receive further information, including a comprehensive itinerary, about the **GEST – China**, please complete the details below, scan and email – jennifer.curtis@ptc.nsw.edu.au or post to:

	Grobal Education	,	
GLOBAL EDUCATION PROJECT NEW SOUTH WALES	GEST China: Name Postal Address	22 September -	- 1 October 2014
Australian Government Department of Foreign Affairs and Trade	State Email	Postcode	Phone
PROFESSIONAL TEACHERS' PTC COUNCILNSW Aust	NSW in partnership w ralian Aid to support t	vith the Department of he integration of a glo	f Foreign Affairs and Trade – bal perspective across the curriculum

## Global Education Project NSW, PO Box 577 Leichhardt NSW 2040.

# **BENEFITS OF GTA NSW MEMBERSHIP**

The Geography Teachers' Association of New South Wales (GTA) is a not-for-profit, incorporated body that represents the professional interests of Geography teachers in NSW and Geographical Education more generally. The objectives of the Association are to promote the study and teaching of geography in schools by:

- providing professional learning opportunities for teachers of Geography;
- advocating the interests of Geography teachers on matters in the State and National interest;
- providing forums where teachers of Geography and the wider community can exchange views;
- supporting Geographical Education through the development and dissemination of geographical resources; and
- promoting geographical research and fieldwork.

The GTA seeks to address its objectives via a yearly program of activities and events, which include:

- online publication of the quarterly Geography Bulletin a quality, peer-reviewed journal designed to serve the contemporary interests of Geography teachers and students.
- delivering Teacher Professional Learning Workshops and in metropolitan and regional locations, focussing on current issues, including in Global Education, the use of technology in the classroom, research and fieldwork skills.
- conducting an Annual Conference with keynote addresses from leading geographers on contemporary and emerging geographical issues as well as more practical sessions by geographical practitioners.
- hosting School Certificate and Higher School Certificate Reviews for teachers of Geography. These reviews are held in a number of regional areas across the state.
- For further information about GTA NSW activities and events go to: www.gtansw.org.au

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# **ADVICE TO CONTRIBUTORS**

## Editorial policy attempts to:

- promote material which will assist the study and teaching of geography
- encourage teachers to share their ideas on teaching geography
- provide a means by which teachers can publish articles
- inform readers of developments in geographical education

Articles are sought reflecting research and innovations in teaching practices in schools. From time to time issues of the Bulletin address specific themes.

## Refereeing

All suitable manuscripts submitted to the Geography Bulletin are subject to the process of review. The authors and contributors alone are responsible for the opinions expressed in their articles and while reasonable checks are made to ensure the accuracy of all statements, neither the editor nor the Geography Teachers' Association of New South Wales Inc accepts responsibility for statements or opinions expressed herein.

### Books for review should be sent to:

Mr John Lewis, Review Editor, The GTA NSW Office PO Box 577 Leichhardt NSW 2040

## Deadlines for articles and advertising

Issue 1	– 1 December	Issue 2	– 1 March
Issue 3	– 1 May	Issue 4	– 1 August

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- 1. **Objective:** The Geography Bulletin is the quarterly journal of the New South Wales Geography Teachers' Association, Inc. The role of the Geography Bulletin is to disseminate up-to-date geographical information and to widen access to new geographic teaching ideas and methods. Articles of interest to teachers and students of geography in both secondary and tertiary institutions are invited, and contributions of factually correct, informed analyses, and case studies suitable for use in secondary schools are particularly welcomed.
- 2. Content: Articles, not normally exceeding 5000 words (no minimum specification), should be submitted to the Editor at the following address: PO Box 577, Leichhardt, NSW, 2040

Articles are welcomed from tertiary and secondary teachers, students, business and government representatives. Articles may also be solicited from time to time. Articles submitted will be evaluated according to their ability to meet the objectives outlined above.

- 3. Format: Original in Word format on disk (or forwarded electronically via email attachment) plus one hard copy should be submitted. Tables should be on separate pages, one per page, and figures should be clearly drawn, one per page, in black on opaque paper suitable for reproduction. Photographs should be in high resolution digital format. An indication should be given in the text of approximate location of tables, figures and photographs. Every illustration needs a caption. Photographs, tables and illustrations sourced from the internet must acknowledge the source and have a URL link to the original context.
- 4. *Title:* The title should be short, yet clear and descriptive. The author's name should appear in full, together with a full title of position held and location of employment.
- 5. Covering Letter: A covering letter, with return forwarding address should accompany all submitted articles. If the manuscript has been submitted to another journal, this should be stated clearly.
- 6. *Photo of Contributor:* Contributors should enclose a passport-type photograph and a brief biographical statement.
- 7. *References:* References should follow the conventional author-date format:
  - Abbott, B. K. (1980) *The Historical and Geographical Development of Muswellbrook* Newcastle: Hunter Valley Press.
  - Harrison, T. L. (1973a) *Railway to Jugiong* Adelaide: The Rosebud Press. (2nd Ed.)

Harrison, T. L. (1973b) The Spatial Distribution of Macadamia Plantations on the Far North Coast of New South Wales, *Journal of Rural and Agricultural Problems,* 13, 4, Oct. pp. 347–359.

- O'Donovan, M. J., *et. al.* (1980) "Animal life in the North Star District of New South Wales". In W.W. Murphy, (Ed.) *Readings in Regional Geography (Vol.* 2), Sydney: Williams and Sons.
- 8. Italics should be indicated by underlining.
- 9. **Spelling** should follow the Macquarie Dictionary, and Australian place names should follow the Geographical Place Names Board for the appropriate state.





