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ENNZ provides a forum for debate on environmental topics through the acceptance of peer reviewed and non-peer reviewed articles, as well as book and exhibition reviews and postings on upcoming events, including conferences and seminars.

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Editor's introduction

Paul Star

November 2013 sees the launch of Making a New Land, edited by Eric Pawson and Tom Brooking and published by Otago University Press: a notable event, particularly since this remains the only example of a book devoted exclusively to New Zealand environmental history in all its aspects. While marketed as a new edition of Environmental Histories of New Zealand, published a decade ago by Oxford University Press, Melbourne, a third of the chapters in Making a New Land are altogether new, and the rest (except in two cases in which the authors have died) have been subject to careful revision.

In both editions, in the chapter on New Zealand environmental law, Nicola Wheen repeats the common understanding that ‘the growing politicisation of the environment ... was kick-started by the Manapouri controversy’. Nowhere in the book is there mention of the debate surrounding another power scheme of the same period, in the Waikato region. In the first article in this issue of ENNZ, Jo Whittle meticulously analyses the lead-up to construction of Huntly Thermal Power Station, convincingly showing (to again quote Nicola) that ‘The impact of Manapouri should not be underestimated but must be placed in context’.

In New Zealand’s environmental history, not only some events but also some people have received less mention than is their due. Last year, when reviewing Neville Peat’s biography of Lance Richdale for ENNZ, I instanced five other individuals who had ‘studied, spoken up or cared for’ New Zealand’s environment, but whose biographies have yet to be written. Since then, some progress has been made in each case, and the present issue of ENNZ includes three interim results: Bill Howie assesses the continuing significance of Kenneth Cumberland’s Landmarks; Andrew Gregg details the themes to be highlighted in his biography of Leonard Cockayne; and Simon Nathan describes preparatory work on the transcription of James Hector’s correspondence.
In addition, I myself am returning to material about Thomas Potts, gathered over more years than I care to mention, and Colin Miskelly, Te Papa’s Curator of Terrestrial Vertebrates, continues to follow ‘in the footsteps of Edgar Stead’. Whenever he has the chance, Colin travels to the offshore islands visited by this early Canterbury naturalist, re-taking Stead’s photos from the same photo-point and noting ecological changes that have occurred since Stead’s time. The fascinating results can be found at blog.tepapa.govt.nz

This issue of ENNZ also contains three reviews, one of a popular work and two of books of an academic nature. Ian Tyrrell’s consideration of a volume on the world’s national parks ranks as a ‘review essay’, since his comments provide a valuable summary of information on one of the fundamental ideas studied by environmental historians. Not enough work on New Zealand’s environmental history is comparative. This essay only briefly mentions New Zealand’s national parks, but surely suggests how much our study of them would gain from describing their development more firmly within a global context.

James Beattie, in Empire and Environmental Anxiety (which Ian also reviews in this issue) seeks out the global context when discussing, among other subjects, the course of forestry practice in nineteenth-century New Zealand. Similarly, whenever a full study is attempted of the relationships between New Zealand’s ‘energy history’, environment and environmentalism, let’s hope that it will compare (for instance) not only the debates about Manapouri and Huntly within this country, but also the interchange of ideas between those opposing the Manapouri hydro scheme and their counterparts in Tasmania who, at much the same time, unsuccessfully opposed the flooding of Lake Pedder.
Into the backyard: Huntly Power Station and the history of environmentalism in New Zealand

Jo Whittle

Introduction

The 1000 megawatt (MW) Huntly Thermal Power Station was built on the lower Waikato River from 1973 to 1983. It is the largest thermal power scheme in New Zealand and its construction brought enormous changes to the small town of Huntly and the surrounding rural landscape. The power scheme was constructed in an area that few people considered to be scenic and its construction did not provoke a national-scale environmental protest. This part of the Waikato region, however, was a place where many people lived and worked and where they fished, boated and swam. At Huntly a small number of groups attempted to use the new language of environmentalism to articulate their own views of the impacts that the power station would have on the local area and in particular on the Waikato River. Their representations helped make tangible to the wider community an invisible landscape of water and air pollution, thereby forcing subtle changes in the operation of the completed power station. They strongly asserted that the impacts on people’s lives of a big development scheme were relevant when considering environmental impacts, and used nascent formal environmental planning processes to articulate cultural connections with the land and the river.

The 1969 to 1972 campaign against raising the levels of Lakes Manapouri and Te Anau in Fiordland is commonly accepted as New Zealand’s first national environmental campaign. While not seeking to negate the importance of that campaign this article challenges its singularity in New Zealand’s environmental and environmentalist histories. The widespread protest against development at Manapouri was predominantly a scenery preservation campaign that was also shaped by an emerging

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1 Dr. Jo Whittle works as a research officer at Southern Institute of Technology, Invercargill. This article is based on part of her thesis Electric Landscapes: Electricity and Environment in New Zealand, 1902 to 1980, completed in 2011.
popular ecological and environmental consciousness. Occurring at almost the same time, controversy over the Huntly Power Scheme was conducted in terms of potential environmental impacts expressed within the framework of newly created environmental planning procedures. Events at Huntly had a considerable influence on the development of environmental policy and therefore merit inclusion in the history of the emergence of environmentalism in New Zealand.

Electricity development in the environmental era

The Huntly Thermal Power Station is highly visible to travellers on State Highway One between Auckland and Hamilton. The power station was built from 1973 to 1983 and was designed to burn both coal and gas. From the late 1960s, as commercially viable sites for further hydro-electricity development were becoming scarce, government power planners focused their attention on thermal generation as a way to meet increasing peak electricity demand. With a maximum capacity of 1000 MW Huntly is the largest power scheme in the country, and generates more electricity than all the hydro-electric schemes on the Waikato River combined. A large, angular edifice with two tall chimneys, the station is starkly conspicuous among green paddocks on the western bank of the Waikato River. Cross the river, and the impacts of the power station on the small township of Huntly and on the neighbouring Waahi Marae become more obvious. It was built in an environment that was already highly modified, among farmland and coal-mining communities at a

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2 John E. Martin (ed), People, Politics and Power Stations: Electric Power Generation in New Zealand 1880-1998, 2nd edn, Wellington, 1998, pp 140-41. Large electricity generating schemes built in New Zealand through the greater part of the twentieth century were constructed and operated by the central government. The government also built and operated the transmission network or National Grid. Local distribution was the responsibility of publicly owned electric power boards and municipal electricity departments.

3 Huntly Power Station remains the largest single generating station in New Zealand, providing up to 20% of the country’s electricity. Additional units commissioned during the 2000s increased maximum output of the station to 1,448 MW. Genesis Energy, ‘Huntly Power Station’, online, available at http://www.genesisenergy.co.nz (20 January 2012).
point on the Waikato where the river already served multiple purposes including water supply, water disposal and recreation. Concerns about the Huntly proposal were largely localised in nature, of issue to shop-keepers, coal miners, farmers and local Maori.4

Previous studies of the emergence of environmentalism in New Zealand have focused on the history of nature conservation,5 in which story the Save Manapouri Campaign is accorded iconic status as the first and most influential environmental campaign in New Zealand.6 From 1969 to 1972 Manapouri was the focus of New Zealand’s most renowned environmental campaign, during which a significant cross-section of society was moved to protest

4 The impacts of the power station on the Huntly area and in particular on the Maori community were researched during the 1970s and 1980s. Of particular note, Tom Fookes of the University of Waikato School of Social Sciences published a series of reports and working papers on the social and economic impacts of the power scheme on Huntly. See also: A.R. Ngaparu, ‘A discussion on the planning of public works in relation to Maori marae, using Waahi Marae Huntly as a case study’, Research Essay, University of Auckland, 1978; Evelyn Stokes, Coal Mining Settlements of the Huntly Region, Huntly Social and Economic Impact Monitoring Project, University of Waikato, Working Paper No. 9, Hamilton, November 1978; University of Waikato Centre for Maori Studies and Research, He Aaronga na Tainui: Mo Ngaa Mahi Whakatuituu Wharehiko I Roto o Waikato. The Development of Coal-Fired Power Stations in the Waikato: A Maori Perspective, Centre for Maori Studies and Research, University of Waikato, Hamilton 1984; Peter Horsley, ‘Recent resource use conflicts in New Zealand: Maori perceptions and the evolving environmental ethic’, in Peter Hay et al (eds), Environmental Politics in Australia and New Zealand, Hobart, 1989.


against the potential damage to the scenic beauty of Lakes Manapouri and Te Anau in Fiordland from government plans to raise lake levels as part of the hydro-electric power scheme. Scholars have made large claims for the influence of the Manapouri campaign on the development of environmental policy and resource management legislation. The trends for the two decades after 1965 may be summed up in one word: Manapouri’, writes David Young in his history of conservation. This article was inspired by an examination of the construction of a power scheme begun at the time that the Manapouri Campaign was at its height but in a very different environment. It proposes the broadening of the history of the development of a national environmental consciousness beyond a narrow focus on controversy associated with developments in natural environments, and challenges the dominant influence of the Save Manapouri Campaign on the history of environmentalism and environmental policy in New Zealand in the later part of the twentieth century.

The Huntly thermal scheme raised issues reflective of the international environmental movement in the 1970s, including the consequences of air and water pollution for human and ecological health, and cultural impacts of development. Thomas Dunlap notes that an inclusive meaning of the popular use of the term ‘environment’ was characteristic of New Zealand and Australia from the late 1960s onwards, in contrast to North America where the word typically was interpreted as referring to ‘natural environment’. His claim is borne out at Huntly where the definition of what was included in an assessment of environmental issues was consistently broadened beyond the physical environment to include social and cultural concerns.

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7 In particular, see Wheen, pp 265-66; King, p 441. Some historians are more cautious. For example, see Galbreath’s analysis of the impacts and meaning of the campaign (p 168); also Philippa Katherine Wells, ‘Uncovering “Regimes of Truth”: Locating and Defining Discourses Associated with Hydro-Electric Development in New Zealand’ PhD, Auckland University of Technology, 2004, p 276.
8 Young, Our Islands, Our Selves, p 168.
This paper also highlights the pivotal importance of place as well as time in the environmental history of electricity developments. It argues that distinctive manifestations of environmentalism occurred in response to specific development proposals in unique locations.

By the late 1960s proposed electricity schemes routinely faced new challenges as a result of the emergence in mainstream New Zealand society of an ecological and environmental consciousness. A popularised understanding of ecological concepts and environmentalism offered those members of the public who contested these developments new ways of interpreting major landscape change and of expressing values associated with the existing landscape. Questions of scenery preservation, water pollution and energy efficiency were all expressed as ecological and environmental issues.

A number of international writers chronicle the popularisation of ecological concepts in Western countries in the 1960s and 1970s, whereby a previously scientific term became part of a popular conceptualisation of the natural world. In its migration into popular language the strictly scientific meaning merged with normative values about the way humans should relate to all life on earth, and thereby developed increasing political authority. In New Zealand scientific ecology, which principally developed in relation to the control of agricultural pests, became popularised in the form of a partially-grasped conception of natural systems as a complex, interconnected whole. Ecological concepts first began

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to be popularly associated with landscape change in relation to electricity generation schemes of the 1960s.\(^\text{13}\)

From 1970 ecological ideas were incorporated into a new conception of ‘the environment’, and together these concepts provided an increasingly compelling context for interpretation of the landscape change associated with large electricity projects. The term could be applied in a variety of situations, not just with respect to pristine natural environments but also in the places where most people lived out their daily lives.\(^\text{14}\) Environmentalism ‘widened the terms of debate’ over the value and impacts of development to include ‘not only the whole natural world but also the physical surroundings in which people lived’.\(^\text{15}\) As expressed by Arnold Berleant, environment ‘is the natural process as people live it, however they live it. Environment is nature experienced, nature lived.’\(^\text{16}\)

Historians have written extensively on the rise of environmentalism as a global phenomenon of the 1960s and 1970s.\(^\text{17}\) Young describes an ‘enormous and permanent shift in consciousness’ in New Zealand in the early 1970s,\(^\text{18}\) and James

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\(^{15}\) Galbreath, p 146.


\(^{18}\) Young, Our Islands, Our Selves, p 168.
Belich places the development of an environmental consciousness in the context of major changes in societal attitudes in New Zealand from the late 1960s.\textsuperscript{19} In 1973, the year when construction of the Huntly station began, conservation advocate Lance McCaskill complained about the number of people climbing ‘on the environmental band-waggon [sic]’ who could be heard ‘talking glibly about conservation, pollution, ecology, and other generalisations’.\textsuperscript{20} That same year the editor of the \textit{Otago Daily Times} informed his readers that ‘every human being and every society is totally dependent on the global environment for life’.\textsuperscript{21} Concerns about scenery destruction, water pollution, noise and dust from construction or habitat loss were placed in a broader context through the global language of environmentalism which, as Libby Robin found in Australia, provided ‘a background against which activism made sense on a different level’.\textsuperscript{22}

\textbf{First impressions: Jubilation and fear}

The power station is located near to the township of Huntly, 30 kilometres north of Hamilton. The township is situated on both banks of the Waikato River, with the main shopping centre on the eastern bank off Highway One. Once a busy centre for the Waikato coal-mining industry, the population of the town declined in the 1960s following the closure of many of the mines and in 1971, when the government was seeking a location for a large thermal generating station, it stood at slightly over 5000.\textsuperscript{23} It was


\textsuperscript{22} Robin, p 42.

considered an appropriate location for the scheme by virtue of its ready access to plentiful supplies of coal and cooling water, and its proximity to an efficient connection for transmission to the consumption centres of the upper North Island, especially Auckland. The government's decision was also influenced by a belief among officials that Huntly would be a reasonably uncontroversial choice given that the citizens of a declining coal-mining town would be 'likely to find the power station and the associated coalmining operation more acceptable than the inhabitants of most other communities in the North Island.'

In the early stages of scheme planning the government's assumption of a ready acceptance of the scheme appeared confirmed, as the first response of Huntly residents was largely favourable. There was said to be 'jubilation' in the town in July 1972 when the government announced that Huntly was the preferred location for the biggest power station in New Zealand, and there were high hopes that its construction and associated coal mining activities would bring increased employment opportunities to the town and the wider region.

26 Waikato Times (WT), Hamilton, 2 August 1972, p 4, in Electricorp, AANU 7740, W5159/101, 21/90/5, part 1, Power Station - Huntly - Newspaper Cuttings, ANZ, Wellington (hereafter: 21/90/5 pt 1).
following year local support became tempered by uncertainty about possible negative impacts on the township and the surrounding countryside. In August 1973 the editor of the *Waikato Times*, the major regional daily, assessed the attitudes of Huntly locals as being hopeful that construction would stimulate business in Huntly, burn its coal and be ‘tremendously beneficial from a prosperity point of view’, but, he asked, ‘at what cost?’ He noted the multiplying list of questions inhabitants had about ‘side effects’ on soil, air and water quality, and fears about the social impact on a relatively small community of the influx of a large number of construction workers. According to Michael Minogue, Mayor of Hamilton City, the people of the Waikato ‘want the power station to be established but not on any terms, and at any price.’

At the time that the Huntly scheme was announced consistent pressure for greater public involvement in decision-making over Manapouri and other electricity developments had made an

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28 WT, 16 August 1973, p 4, in Electricorp, 21/90/5 pt 1.
29 WT, 29 March 1973, p 1, in *ibid.*
impression on the government, and officials were aware that in constructing a large scheme in a populated part of the country, relevant local and regional organisations and authorities would need to be kept closely informed. In 1970 E.B. McKenzie, the General Manager of the New Zealand Electricity Department (NZED)\textsuperscript{30}, sent out a circular to his district managers that noted ‘a tendency for members of the general public to take a much greater interest in technical decisions than in the past.’\textsuperscript{31} An internal committee was therefore set up to work out a clear set of goals for the operation and management of thermal stations, including public relations measures aimed at reducing ‘unfavourable impact factors’ and minimising controversy.\textsuperscript{32}

This was a learning process for all those involved that developed over the early years of planning and construction. Engineers and officials at Huntly went to considerable lengths to ensure that residents and other interested parties were informed early about the potential impacts of the scheme. In 1972 NZED officials met with representatives from the Huntly Borough Council, the adjoining Raglan County Council, and the regional Waikato Valley Authority (WVA), as well as with various community representatives and other local and regional interests including the Huntly Progressive Association and the Lower Waikato Conservation Authority.\textsuperscript{33} Officials attended public meetings in Huntly during 1972 and 1973 and provided information about the power scheme to as many local people as possible. NZED

\textsuperscript{30} The New Zealand Electricity Department (NZED) was the government department responsible for the generation and supply of electricity and for the planning and electrical design of electricity projects. Martin, p 329.

\textsuperscript{31} Memorandum from Mackenzie, General Manager, NZED, Wellington to all NZED Districts and Superintendents of Electric Power Stations around New Zealand, 28 July 1970, in Electricorp, 38/11 pt 1.

\textsuperscript{32} NZED, ‘Extract from interim report for circulation to thermal station superintendents...’, 15 February 1974, in Electricorp, AANU 7740, W3223/2, 26/2/2/1/1, part 1, Thermal Power Stations 1970-1973, ANZ, Wellington (hereafter: Electricorp 26/2/2/1/1 pt 1).

Figure 2. Map showing the power station site. The Waahi Marae occupies 12 hectares of land directly south of the power station. The state highway can be seen parallel to the Waikato River and railway line. To the north is the Rakaumanga settlement and school (since relocated), while to the west of the station site are the lands of the Te Kauri community. Source: NZED, *Supplementary Environmental Impact Statement*, p 3.
engineers also regularly attended the Huntly Planning Forum which was established in 1974 in response to local pressure for greater information about the scheme. The forum was strongly supported by Ministry of Works and Development (MWD)\(^{34}\) staff as an innovative means of improving communication over matters of concern to Huntly people, and its membership included elected representatives from local and national government and spokespeople from Waahi Marae, local businesses and rural advocacy group Federated Farmers.\(^{35}\)

Despite the attention given by NZED and MWD to keeping local people informed, information about the project remained limited and unsubstantiated rumours abounded.\(^{36}\) In the absence of any architectural designs at this early stage it was difficult for officials to convey a realistic impression of the size of the scheme, and the MWD architectural team admitted that the massive scale of the buildings was therefore difficult for locals to comprehend.\(^{37}\)

Questions posed to engineers at a public meeting in July 1972 could be answered only in the most general terms, which created unease among the local community. Asked whether the station would be noisy an NZED official replied that ‘probably noise will

\(^{34}\) The Ministry of Works and Development (MWD) was the government department responsible for investigation, civil engineering design and construction of electricity generating schemes. Martin, pp 329-330.


not be too bad.\textsuperscript{38} Information on air pollution was similarly vague and presented in an abstract, technical form that offered little certainty to concerned residents. They were worried that the new power station would produce large amounts of ash and smoke, and they referred to the grim example of Meremere, a coal-fired power station 32 kilometres downstream from the Huntly site. Constructed in 1956 to 1958, by 1970 the station represented outdated technology and the grit and ash emitted from its chimneys often cast a brown haze over the surrounding farmland.\textsuperscript{39} Engineers assured locals that Huntly would produce nowhere near as much air pollution as Meremere, but they did not appear to understand how to communicate technical information in a way that could allay the apprehensions of people who would be living near the power station. One official predicted ‘no hazard to health’ but that there would be ‘some increase in background dustiness around the town’, while another presented this assurance in more precise technical terms, but with equal lack of clarity, in his explanation that ‘dust emission at Huntly will be 1-1¼ times [that from] Meremere, but will be diluted 20 times.’\textsuperscript{40}

Similar uncertainty existed about the potential effects on the Waikato River of the scheme. The power station would extract river water for its once-through cooling system, and would then discharge that water, considerably warmer, back into the Waikato. When the Chief Engineer of the WVA raised concerns about the effects of discharging warm water into the river, an NZED spokesperson failed to allay concerns with his response that this was a technical engineering problem which could be discussed later.\textsuperscript{41} Engineers insisted that this process would have only minor environmental impacts; however the government had not carried out any biological research and little was known about the possible impacts on river fauna and flora.

\textsuperscript{38} Appendix E in ibid, pp 40-43.
\textsuperscript{40} Appendix E in NZED, \textit{Huntly Power Station: Environmental Impact Statement}, pp 40-43.
\textsuperscript{41} Ibid, pp 43, 49; Fookes, \textit{Conclusions}, pp 2-4.
The Huntly inhabitants with the most to lose were the 350 residents of the Waahi Marae and the associated communities of Te Kauri and Rakaumanga, who were the nearest neighbours to the power station (see Figure 2).\textsuperscript{42} They had great difficulty in asserting any influence on the way the scheme was designed. They accepted the rationale for locating a thermal power station in the Waikato region but considered that the chosen site, less than 500 metres from their homes, was totally inappropriate. Waahi Marae, the principle marae of Ngati Mahuta, was the home of the Maori Queen, Dame Te Ata-i-Rangikaahu.\textsuperscript{43} During scheme planning Waahi people expressed anxiety over, among other things: noise from construction and from the operational power station, the possibility of dust from the coal used to fuel the station, loss of privacy, and loss of recreational areas and access points along the riverbank.\textsuperscript{44} They were also greatly concerned about negative impacts on the health of the Waikato River, central to Tainui’s historical and spiritual well-being, and an integral part of the Waahi marae complex.\textsuperscript{45} They petitioned the government for direct input into power station planning, arguing that Maori cultural values should be acknowledged and protected as an integral and yet separate part of the public interest.\textsuperscript{46}

Government officials made a genuine attempt to engage with the people of Waahi as a distinct group within the Huntly community and the government offered compensation in the form of money and structural improvements to the marae.\textsuperscript{47} Officials still had much to learn about how to consult effectively with Maori, however, and their assumption that advising on construction proposals equated to meaningful consultation led to

\textsuperscript{42} Ngaparu, p 17.
\textsuperscript{45} Centre for Maori Studies and Research; Ngaparu, p 15;
\textsuperscript{46} EP, 3 October 1973, in Electricorp, 21/90/5 pt 1.
\textsuperscript{47} Centre for Maori Studies and Research. AS, nd (c. March 1973), in Electricorp, 21/90/5 pt 1.
dissatisfaction. In 1974 when Robert Mahuta, Tainui elder and Waahi spokesperson, accused government departments of a reluctance to consult, NZED manager W.J. Shanks reacted in angry bewilderment, exclaiming: ‘[w]e’ve been talking to them since 1972’. Reflecting on the process some years later Tainui expressed resentment about the assumption by local and government authorities that the concerns of Maori were no different from those of members of the general public, as well as the lack of attention paid to the special meaning to the iwi of their land and of the Waikato River.

Hot water: The debate over the discharge of cooling water into the Waikato River

While NZED and MWD were grappling with the question of how best to consult with local communities at Huntly, the departments were also coming to terms with the need to represent the scheme in terms of its environmental impact. The growing political prominence of environmental issues from 1970 resulted in the expansion of government departments and agencies with environmental responsibilities. Scientists, media and environmental experts within local and central government exhorted engineers to plan electricity developments in ways that showed a greater sensitivity toward issues of pollution and ecological destruction.

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49 WT, 7 May 1974, p 26, in Electricorp, 21/90/5 pt 1.
50 Centre for Maori Studies and Research. Historical assessments of the relationship between the government and Tainui Waikato at Huntly can also be found in Fookes, Generalisations drawn from the Huntly Monitoring Project, p 16; Fookes, Conclusions, p 9; and Horsley, p 131.
procedures were gradually instituted from the late 1960s, motivated as much by the environmental concerns of those within government as by pressure from outside of government. The potential impacts of the Huntly power station were debated within this new framework and the scheme therefore became what one engineer described as ‘a “guinea-pig” for the new emphasis on environmental protection’.

Huntly was one of the earliest government projects affected by the legislative framework of the Water and Soil Conservation Act (WSCA) 1967, under which government departments were required to apply to the National Water and Soil Conservation Authority (NWASCA), chaired by the Minister of Works, for the right to use ‘natural water’ as part of any large development. The WSCA included in its purpose the requirement to make better provision for the use and quality of natural water, and to promote and control the multiple uses of water. The Act constituted an unwelcome constraint on NZED’s automatic right of access to water for the purposes of electricity generation, and on its primacy in determining the location of power schemes.

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55 Roche, p 105. For the background to the WSCA 1967, as well as a full summary of the membership, functions and powers of NWSCA, see ibid, pp 98-108.

56 File note, 8 November 1971; briefing note from General Manager, NZED to Minister of Electricity, Wellington, 18 November 1971, in Electricorp,
NWASCA made the decision on whether to grant water rights, and individuals and organisations who were directly affected had the right to challenge its decisions through the Town and Country Appeal Board.\textsuperscript{57}

Early in 1973 NZED submitted an application for the right to extract, use and discharge the water of the Waikato River for the Huntly Power Station. It requested the right to extract 34,200 tonnes of water an hour – up to 27 percent of the river’s flow at Huntly – for cooling purposes, and to discharge this water back into the river at approximately eight degrees centigrade above ambient river temperature.\textsuperscript{58} In June 1973 NWASCA granted the department these rights, subject to conditions designed to limit negative impacts on water quality in this intensively developed water resource.\textsuperscript{59} Media reports on the water right and associated conditions raised public awareness of the issues associated with the power scheme. Under the WSCA affected parties had the right to appeal the decision, and this presented a formal opportunity for them to influence the environmental impacts of the scheme. There were two appeals made to the Town and Country Appeal Board, of which the first, by the Environmental Defence Society (EDS), was motivated by concern for the ecological condition of the river. Formed in Auckland in 1971, the EDS was modelled on the Environmental Defence Fund in the United States where lawyers and scientists and other expert witnesses volunteered their time to put together cases against projects that ‘would grossly harm the natural or social environment’.\textsuperscript{60} The EDS, ‘dedicated to the preservation, restoration, and rational use of the environment’, was a semi-professional lobby group. Its

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\textsuperscript{57} Roche, pp 103-06.
\textsuperscript{60} Alvin Smith and Gary Taylor (eds), \textit{Conservation in New Zealand: A Citizen’s Guide to the Law}, Auckland, 1985, np.
\end{flushleft}
membership was made up of experts in scientific debate, environmental law and lobbying, who were collectively described in the media as ‘environmentalists’. Its appeal at Huntly was made on the grounds that NWSCA should not have granted NZED the water rights as the potential effects of heated water on the ecology of the river were unknown, and it sought specific amendments to the conditions of the water rights in order to protect river biota. At the appeal hearings in September 1973 expert witnesses for the EDS – lawyers, biologists and botanists – challenged the technical evidence given by government experts and undermined NZED assurances that the government had sufficient evidence that the discharge of heated water would have no adverse effects.

The emphasis on technical matters presented a challenge to the Huntly community who were following the debate. According to the Waikato Times, local people at Huntly were ‘acutely ecology and Waikato River conscious’, but it considered that the less scientifically-minded struggled with the technical details about water quality. Evidence presented by the EDS was of a highly technical nature, and issues of mixing zones, the growth rates of blue-green algae and dissolved oxygen levels created the impression among non-experts of a hidden landscape of

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61 Evening Star, Dunedin, 30 May 1973, in Electricorp, 21/90/5 pt 1; NZH, 22 May 1975, in Electricorp, AANU 7740, W5159/101, 21/90/5, part 2, Power Stations - Huntly Newspaper Cuttings, ANZ, Wellington (hereafter Electricorp, 21/90/5 pt 2); Wilson, pp 7-8. The society had already taken other cases against Waikato River polluters and had previously brought a successful prosecution against the Huntly Borough Council over its permit for the temporary discharge of raw sewage into the river (ODT, 27 April 1974, in Electricorp, 21/90/5 pt 1; Young, Our Islands, Our Selves, p 198; A.H. Brown (ed), ‘EDS Newsletter’, 2, Environmental Defence Society Inc, Auckland, nd. (c. 1972) in R.J. McLean personal papers, Invercargill).


63 WT, 12 September 1973; WT, c. 3 October 1973; NZH, 12 September 1973; WT, c. 8 September 1973, p 3; WT, 13 September 1973, p 26, in Electricorp, 21/90/5 pt 1.

64 WT, 30 March 1973, in ibid.

65 WT, 29 June 1973, in ibid.

66 WT, 12 September 1973; NZH, 12 September 1973, in ibid.
discharges into the river that were unquantified but potentially harmful.

The second appeal against the water rights was made by Tainui elder Robert Mahuta on behalf of Ngati Mahuta and the Tainui hapu of the Huntly area. Mahuta had grown up on the marae and was, in his words, ‘personally acquainted’ with the land and with the Waikato river at Huntly. He declared that granting the water rights would have social and economic impacts on Waahi Maori as users of the river, as landowners and as the customary protectors of the Waikato. He linked his unease about the cultural wellbeing of the community to concerns that the discharge of heated water into the river would be detrimental to fish and plant life and to water quality.

The Waahi appellants experienced difficulties in translating their cultural connection with the river into the language of water resource management. The appeal board dismissed most of Mahuta’s evidence as irrelevant on the basis that it stated ‘generalities’ rather than demonstrating specific effects on water quality. It also ruled that, despite the scientific focus of its appeal, the EDS did not actually have a right of appeal as it was unable to demonstrate that it was directly affected within the narrow terms of the WSCA. Nevertheless the board was impressed by the weight of scientific evidence the EDS presented, and by Mahuta’s apprehension about how little was actually known about the biological conditions of the Waikato River at Huntly and how the power station might affect the river. The combined appellant testimony served to raise considerable doubt over assertions that the power scheme would not impact on water quality.

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Construction was already underway at Huntly by the time the appeals were heard and therefore the appeal board was limited to imposing stricter conditions than those in the rights as originally granted.\(^{69}\) It required NZED to carry out a full biological survey of the river prior to commissioning the power station and subsequently to monitor the effects of the discharge of cooling water against pre-existing biological conditions. It ruled that the survey and the results of monitoring programmes were to be made freely available to the public.\(^{70}\) The EDS and Mahuta therefore had a direct impact on the future effects of the power scheme on the Waikato River. The Herald considered the board’s decision to be a ‘victory’ for the appellants and, furthermore, that it established a precedent whereby NZED would need to carry out ‘environmental studies’ in advance of any future applications for water rights.\(^{71}\) NZED in its turn moved quickly to commission the additional information required under the revised conditions and, in doing so, it somewhat restored public faith in the department’s attitude toward the river.\(^{72}\)

**The first Environmental Impact Report**

In addition to the water right application, Huntly Power Station was also the first power project – and one of the earliest government projects – to be tested under new environmental assessment procedures.\(^{73}\) When Cabinet approved construction of Huntly in 1972 it made this approval subject to receiving from NZED a statement on the environmental impacts of the scheme.\(^{74}\) This was an unprecedented stipulation and it indicates the level of environmental concerns at the highest political levels.\(^{75}\) The


\(^{71}\) NZH, 16 October 1973, p 6, in Electricorp, 21/90/5 pt 1.

\(^{72}\) Officials enlisted the aid of government advisors and scientists, keen to establish ‘meaningful studies’ (Memorandum from D.H. Jones, NZED to Director-General, DSIR, Wellington, 5 November 1973 and other memoranda from 1973 to 1974 in Electricorp, 21/90/2 pt 1). See also: EP, 16 October 1974; WT, 12 August 1974, in Electricorp, 21/90/5 pt 2.
scope and purpose of environmental impact reporting was still in the early stages of policy development at that time. Government ministers envisaged the Environmental Impact Report (EIR) as a confidential written statement by NZED that assured them that any environmental impacts had been identified and addressed.\textsuperscript{76} With planning for the scheme already well underway, any environmental assessment could have only limited impact on its design, but the Huntly EIR was nevertheless an important test case for the impact assessment process. It proved a steep learning curve for NZED which made a serious attempt to address the issues of concern to the public; however, the EIR on Huntly was based on minimal ecological and hydrological investigation.\textsuperscript{77}

In 1973 Cabinet accepted NZED’s report but requested the department to submit a supplementary EIR once the required biological and environmental studies had been completed. Meanwhile there were calls for the current EIR to Cabinet to be publicly released. D. Williams, the director of the EDS, argued that ‘the environmental impact of public works such as power stations is a matter of concern to all citizens and therefore Impact Statements should be open to public scrutiny.’\textsuperscript{78} He was

\textsuperscript{73} Galbreath, p 160. For a background to the international adoption of environmental impact reporting procedures, see O’Riordon, pp 193-99. For a discussion of the adoption and purpose of environmental impact reporting in New Zealand, see Alvin Smith and Gary Taylor (eds), Conservation in New Zealand: A Citizen’s Guide to the Law, Auckland, 1985, pp 129-35.

\textsuperscript{74} Memorandum from Minister for the Environment to Cabinet, 31 October 1972, in Ministry for the Environment 8/2 pt 1; memorandum from Robert G. Norman, Chairman, Officials Committee for the Environment, MoW to Minister for the Environment, Wellington, 7 May 1973, in Electricorp, 21/90/2 pt 1.

\textsuperscript{75} Martin, p 250.

\textsuperscript{76} The language of environmental impact assessment was still being developed at the time the Huntly EIR was announced. The first report by NZED was known as an Environment Impact Statement but in order to avoid confusion, I use ‘Environment Impact Report’ or EIR, which became the officially accepted term from 1973.

\textsuperscript{77} NZED, Huntly Power Station: Environmental Impact Statement, pp 4-5.

\textsuperscript{78} Letter from Dr. A.R. Williams, Director, EDS, Auckland to T.M. McGuigan, Minister of Electricity, Wellington, 21 May 1973, in Electricorp, 21/90/2 pt 1.
supported by the editor of the *Herald* who called upon the government to release the report so as to avoid giving rise to ‘public suspicion’ about potential environmental impacts.\(^{79}\) Thomas McGuigan, Minister of Electricity, resisted publication on the basis that the word of Cabinet ministers that environmental impacts would be dealt with should be sufficient for the public and that the report was too technical anyway for the general public to understand.\(^{80}\) By contrast his colleague Joe Walding, Minister for the Environment, urged Prime Minister Kirk to publish the report, a move he saw as being ‘crucial to Government’s relations with the environmental movement.’\(^{81}\)

Bowing to public pressure in June 1973 the government released the EIR after reworking it into ‘language more suitable to the layman’.\(^{82}\) Publication opened up the government to criticism of the information that it had relied upon in assessing the environmental impacts of the Huntly scheme. Environmentalists and scientists denounced the report in the media as ‘hastily-prepared and far from all-embracing’, and there were calls for the focus of the environmental assessment to be widened beyond the physical river environment to include social impacts.\(^{83}\) Of wider implication, the government announced that all future EIRs on government projects would be published and, in addition, they would be made available for public submissions which would be considered before any decision was taken to proceed on large government projects.\(^{84}\) Another significant change was the recognition among government engineers that environmental

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\(^{80}\) Thomas McGuigan, Minister of Electricity, quoted in WT, 3 May 1973; also 18 May 1973, in Electricorp, 21/90/5 pt 1.

\(^{81}\) Memorandum from J.A. Walding, Minister for the Environment to Prime Minister, Wellington, 25 May 1973, in MfE, 8/2 pt 1.

\(^{82}\) WT, 30 May 1975, in Electricorp, 21/90/5 pt 1.

\(^{83}\) TDP, 15 August 1973, in Electricorp 38/11 pt 3. Similar comments were made in: WT, 7 June 1973; NZH, 8 June 1973, in Electricorp, 21/90/5 pt 1.

\(^{84}\) Directive from Secretary for the Cabinet, Prime Minister’s Office to Minister for the Environment, Wellington, 6 June 1973, in Electricorp, 21/90/2 pt 1.
studies should be carried out much earlier in planning for all future projects and before approval was given to begin construction.\textsuperscript{85} The Huntly EIR, as well as the water rights appeal, considerably raised the bar for the range and quality of environmental information that would in future be required to satisfy an increasingly environmentally-conscious society. Thus policy changes resulting from the Huntly debate in 1972 and 1973 directly shaped the context within which future government projects were constructed.

The second water right application

Increasing familiarity with the use of ecological and environmental concepts expanded the popular audience for the technical aspects of environmental studies. Local communities distrusted evidence presented by NZED and they turned instead to the expertise presented by independent scientists and environmental groups. In 1975 the editor of the \textit{Dominion} warned the government that, unless it was seen to be showing strong leadership in environmental issues, it would find itself supplanted ‘in the public regard as the guardian of the environment’ by ‘ecology groups’ to which ‘the public has begun increasingly to look for guidance’.\textsuperscript{86} This increased pressure on NZED to provide early information to the public on proposed projects and to present evidence to support any statement about how its activities would impact on the environment.\textsuperscript{87} Within government, too, there were a growing number of government agencies scrutinising the environmental impacts of electricity developments including the Commission for the Environment, the Clean Air Council (established under the Clean Air Act 1972) and the Water and Soil Division of the MWD.\textsuperscript{88} NZED struggled to meet the demands of environmental groups and government agencies for sufficient scientific evidence to demonstrate how any

\textsuperscript{85} Memorandum from P.W. Blakely, General Manager, NZED to Director-General, DSIR, Wellington, 3 August 1973, in Electricorp, 38/11 pt 3.
\textsuperscript{86} \textit{The Dominion}, Wellington, 24 February 1975, in ibid.
\textsuperscript{87} Letter from Brian T. Coffey, Scientist (Aquatic Weeds) Ruakura to W.J. Shanks, District Manager, NZED, Hamilton, 7 November 1975, in Electricorp, 21/90/2 pt 2.
\textsuperscript{88} By 1976 there were some 12 government bodies with a specific interest in the environment (WT, 17 February 1976, in Electricorp, 21/90/5 pt 3).
environmental impacts of its projects would be dealt with. At the same time it had to find a way to communicate complicated engineering and environmental information to affected locals unfamiliar with technical language but who were anxious about the impacts of power projects on the quality of their home environments.

These challenges were amply demonstrated in 1975 when NZED applied to NWSCA for a second water right, this time to discharge waste water into the river that contained toxic chemicals used to clean the boilers in the power stations. Its application was supported by studies by scientists in the government's Department of Scientific and Industrial Research (DSIR) which demonstrated that these chemicals would be rendered harmless once they became diluted in the river.\(^89\) NWSCA accepted this evidence and granted the rights, but its decision was appealed by two regional water control authorities (the WVA and the Auckland Regional Authority or ARA), and again by the EDS, and by Mahuta, this time on behalf of the Tainui Maori Trust Board.\(^90\)

The WVA, ARA and the EDS challenged the recommendations of the DSIR scientists with contrary evidence of their own. Ronald Bailey, who had replaced McGuigan as Minister of Electricity the previous year, assured locals that chemicals in the boiler waste would be harmless,\(^91\) but he was contradicted by evidence from EDS that the discharges would 'materially detract from the condition of the River'.\(^92\) The EDS and the ARA accused NZED of failing to make the toxic properties of some of the chemicals

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\(^89\) NZH, 24 July 1975, in Electricorp, 21/90/2 pt 2.

\(^90\) The ARA was motivated to appeal by a concern about the impacts of the boiler cleaning chemicals on the quality of water. It was deemed an affected party under the WSCA on the basis of its intention to take drinking water for Auckland from the Waikato River at some point in the future (\textit{The Evening Standard}, Wellington, 8 October 1977, in Electricorp, 21/90/5 pt 3). Full information on the water rights and appeal processes can be found in Electricorp, 21/90/5 pt 2 and pt 3.

\(^91\) Gisborne Herald, 25 July 1975, in Electricorp, 21/90/5 pt 2.

clearly known,93 and the situation was made more menacing by evidence from an independent chemist asserting that the discharge would be so poisonous as to kill trout in the river.94 The issue became a battle between scientific experts, while words like ‘toxicity’, ‘poisonous chemicals’ and ‘toxic effect’ made people who were dependent upon the river for their water supply understandably fearful about the effects of these pollutants.95 One local asked a DSIR scientist whether he himself would willingly drink water from the river after the boiler cleaning chemicals had been discharged, and another sought reassurance that it would be safe for her to water her vegetable garden with river water following such a discharge.96

The supplementary EIR

In 1976 NZED published the second or supplementary EIR on Huntly as required by Cabinet in 1972.97 The supplementary EIR had been undertaken in a constructive spirit, as the department now appreciated the value of the process as an opportunity to reassure the public, and it sought to include any information ‘which would serve to emphasize how the project is being designed and managed with a view to minimizing any adverse impact on the people in the area as well as on the local ecology’.98 The supplementary report demonstrated greater sophistication by the NZED in commissioning appropriate environmental research than had been the case with the 1972 report, and the department had responded to calls to broaden the contents to include effects on the community as well as on the physical conditions of the Waikato River.

93 Manawatu Evening Standard (MES), Palmerston North, 8 October 1977; WT, 11 October 1977, in Electricorp, 21/90/5 pt 3.
94 NZH, 1 August 1975, in Electricorp, 21/90/5 pt 2.
96 WT, 11 October 1977, in Electricorp, 21/90/5 pt 3.
98 Memorandum from D.H. Jones, Project Liaison Officer, NZED to Project Engineer, NZED, MoW, Huntly, 13 January 1975, in Electricorp, 21/90/2 pt 1.
There was still criticism however that the supplementary EIR was too technical,⁹⁹ and Mahuta criticised the focus on ‘the physical environment’ and a corresponding lack of emphasis ‘on social impacts such as the effect on employment opportunities, housing, community life and recreational amenities.’ He could find no adequate picture of the importance of the Waikato River environment and Huntly area as home to local Maori, and described the EIR as a collection of technical papers ‘for discussion and information of other technical experts’, the accuracy of which he was unable to judge.¹⁰⁰

**Living with the power station**

The social impacts of the scheme had not been identified in any systematic way prior to development but they soon became evident once construction began. The attitude of Huntly townsfolk toward the scheme, largely positive at the time the power scheme was announced, became increasingly ambivalent as they began to grasp the dominating presence of the power station.¹⁰¹ One of the biggest single construction jobs ever undertaken in New Zealand, it employed 2000 people at its peak. It took more than two years just to drive the several thousand foundation piles. The main building rose 20 storeys high and covered an area of nearly three hectares,¹⁰² and by 1975 the twin chimneys, 50 storeys high, were a Waikato landmark.¹⁰³

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⁹⁹ Letter from J.C. Fitzpatrick, Hamilton to the Commissioner for the Environment, 30 August 1976, in Ministry for the Environment, AAUM, W4043/69, ENV 8/2/A, part 1, Huntly Power Station - Submissions - 1976, ANZ, Wellington (hereafter: MfE, 8/2/A pt 1).


¹⁰¹ NZH, 28 May 1974, in Electricorp, 21/90/5 pt 1; Barry Denton, Project Engineer, NZED, Huntly, quoted in AS, 31 July 1975, in Electricorp, 21/90/5 pt 2.


¹⁰³ Barry Denton, Project Engineer, NZED, Huntly, quoted in Transcript, 6:00pm Evening Report, 2YA Radio, 19 December 1975, in Electricorp, 21/90/5 pt 2.
Residents had difficulty retaining a sense of control over their home landscape as township, marae and local farmland were progressively transformed into an electric landscape over a construction period of more than six years. Although different sectors of the Huntly community were impacted on to a variable extent, their lives were disrupted by heavy construction traffic, noise and dust, and by less tangible impacts on local services and social patterns. ‘It has only just filtered into our consciousness that this project is so big it is out of our league’, said D. Carey, the local Federated Farmers spokesperson in 1977.

Construction of the station dominated life in Huntly and, in all the chaos of construction, locals blamed it for what were potentially quite unrelated problems. A parent attributed hearing loss among pupils at a nearby school to engine noise from heavy trucks, and farmers blamed test-drilling for coal to fuel the power station for a sudden drop in the level of water in wells on their land, despite a lack of any evidence that the events were connected. Officials did their best to respond sensitively to such issues but found it was difficult to resolve such complex community debates within the parameters of engineering an electricity scheme.

The Waahi community, living ‘at the giant’s feet’, had good reason to fear that their marae would be ‘completely

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104 Records of the Huntly Planning Forum provide ample examples of multitude local concerns, as do the social monitoring reports produces by Fookes and his team at the University of Waikato. Information from these innovative programmes can be found in MWD; Fookes, Public Participation Initiatives and Conclusions.

105 D. Carey, Rotongaro Federated Farmers, quoted in NZH, 6 April 1977, in Electricorp, 21/90/5 pt 3.

106 MWD, pp 10-11.


overwhelmed’ by the power project. From the meeting house steps the station’s chimneys towered above the roof of the house of the Maori queen like ‘giant pakeha phalluses raping the land’ in Maipi’s graphic description. Some felt dissatisfied with the opportunities available to express their particular understanding of the landscape through formal planning procedures and they sought more direct means of expression. A group created a new haka dedicated to Maori rights issues, and in particular ‘the deep Maori resentment towards the Huntly project’. Waahi residents also threatened to take direct action such as blocking road access to the power project, which created tension between Tainui and government officials.

Figure 3. The Huntly Power Station as viewed from Waahi Marae. Source: Fookes, Expectations and Related Findings, p 4.

In September 1977 George Gair, Minister of Electricity and Energy Resources, confirmed that, as ‘destiny’ had made the marae and the power station close neighbours, the government would give favourable consideration to claims by Ngati Mahuta for

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110 Transcript, TV News, 7:00pm, 8 October 1974, in Electricorp, 21/90/5 pt 2.
111 AS, 27 August 1977, p 18. On the issue of the effects of construction of the power scheme in breaking up Maori kinship groups, particularly by the closure of the local Rakaumanga Primary School, see Centre for Maori Studies and Research, p 45.
112 WT, 6 May 1974, in Electricorp, 21/90/5 pt 1; The Evening Star, Dunedin, 11 April 1977; EP, 12 September 1977, in Electricorp, 21/90/5 pt 3. The vocal protest at Waahi Marae occurred at a time of increasingly overt activism in Maori society in the 1960s and 1970s. See Belich, p 478.
compensation for the impact of the project on their traditional way of life.\textsuperscript{113} It was agreed that compensation would be in the form of a major upgrade to the marae, along with new housing, community, and recreation facilities.\textsuperscript{114} The Government also accepted Mahuta’s suggestion to redevelop Waahi land between the power station and the marae to create a landscaped ‘buffer zone’ between the two.\textsuperscript{115} In 1981, with the power station almost complete, Waahi celebrated the completion of the reconstructed marae, ‘a model of modern redevelopment design’ that, according to some, had actually raised the mana of Tainui.\textsuperscript{116}

The issues at Huntly were not those of scenic beauty and indigenous ecology but water and air pollution, noise, traffic and other disruption to the health and safety of local communities; in other words, issues of the environment as ‘nature experienced, nature lived.’\textsuperscript{117} Debates between environmental groups, locals and the government shaped the way the Huntly power scheme was built and operated in various subtle ways. Concerns expressed through two appeal processes resulted in strict conditions to protect water quality, and monitoring provisions revealed and controlled the previously unseen and feared landscape of water pollution and chemical discharges. Early unease about air pollution from the huge station gave added impetus to the desire by engineers to install effective air quality control technology.\textsuperscript{118}

The Huntly experience also provided a robust test for new environmental assessment procedures, and prompted considerable refinements in their implementation. The input of

\textsuperscript{113} EP, 12 September 1977, in Electricorp, 21/90/5 pt 3.
\textsuperscript{114} EP, 9 October 1978, np, in Electricorp, 21/90/5 pt 4; Martin, p 251.
\textsuperscript{115} Memorandum from J.C. Wilson, Head Office, MWD, Wellington to Project Engineer, Huntly Power Project, MWD, Huntly, 7 April 1977, in Electricorp, 21/90/2 pt 2. Mahuta had made the suggestion in ‘Huntly Thermal Power Station’, August 1976, p 8, in MfE, 8/2/A pt 1.
\textsuperscript{116} \textit{Northern Advocate}, Whangarei, 13 February 1981, in Electricorp, 21/90/5 pt 4.
\textsuperscript{117} Berleant, p 10.
local authorities, environmental groups and spokespeople for the Waahi Marae demonstrated the ability for local people to shape their own concerns in the language of environmental impacts and to define the meaning of ‘the environment’ in relation to their own situation. By participating in formal environmental planning procedures the Waahi community had helped to promote some understanding among engineers and the wider public about Maori connections with their ancestral lands and waters, an issue that would become more prominent in environmental debates of the coming decades.119

Local authorities also received grants from the government as compensation for the negative impacts of construction, and these made it possible to carry out major improvements to civic facilities, roads and recreational facilities.120 As the name of the town became subsumed into that of the giant electricity scheme it was accepted that the future of Huntly was inextricably linked with the power project.121 In the assessment of social scientist Tom Fookes, the fears and expectations of the community in the early years of construction had calmed as the ‘idea’ of the power station became visible in the form of large buildings, tall chimneys and transmission lines.122 When the station was completed and the inconvenience of construction activities had dissipated, some

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121 NZH, 7 July 1977, in Electricorp, 21/90/5 pt 3.

122 Fookes, Huntly Power Project: A Description, p 2.
Huntly residents not only became accustomed to the new feature in their landscape but even proud of it.\textsuperscript{123}

Figure 4. Huntly Power Station today, as seen from the north bank of the Waikato River. Photograph: Mr J.P. Whittle, 2013.

\textbf{Conclusion}

At Huntly, the meaning of ‘the environment’ developed in relation to the unique circumstances at that place to include the complexities and intangibilities of social impacts such as quality of life and community health. While debates on natural environments such as national parks spoke to a national sense of identity, issues of air and water pollution occurred in the places where people lived and revealed ‘the environment’ as a local and even a domestic domain. Local communities and environmental groups brought matters of environment and ecology home, and increasingly defined what could and should be considered as environmental issues. Their voices both influenced the design and operation of the Huntly power station, and helped shape the development of environmental policy and in particular the foundation of the environmental impact assessment process.

\textsuperscript{123} Fookes, \textit{Answers to Peoples' Questions}, p 53.
From 1972, when the power scheme was announced, until the end of the decade, local and regional interests attempted to assert some control over the electricity scheme emerging in their midst. The history of Huntly also reveals the extent to which local, non-expert voices contributed to extending the boundaries of environmental concerns to include social issues. It was an early example of the way in which Maori began to voice their concerns in the language of environmental impacts, thus redefining environmental issues to include cultural perspectives. Much of the public input into scheme planning was channelled through a series of water rights application processes and new policy initiatives for assessing the environmental impacts of government projects. Within these formal procedures decision-makers tended to give greater consideration to evidence about ecological and biological effects, and at times people had difficulty in determining between contradictory assertions presented by rival experts. However some groups managed to express their own concerns within these new frameworks and, in so doing, they helped to make visible potential threats from water pollution to the health of the river. For these reasons Huntly has at least as much right as Manapouri to be considered New Zealand’s first electricity development in the environmental era.
REVIEW ESSAY:


**Ian Tyrrell**

*Civilizing Nature* tackles an important theme in global environmental studies, the spread of the national park as idea and practice. It starts from the premise of the constructed character of the 'national park' with its various motives to categorise and create newly territorialised spaces that were, in practice expressive of modernity and the 'civilizing' of nature through 'protection'. With a remarkably wide geographical coverage, the case studies that follow document the national park's global spread and diversity. The collective research exhibited here avoids simply diffusionist ideas, associated most notably with the work of Roderick Nash, and shows the appropriation of nature channeled into protected spaces, illustrating in turn the interplay of imperial, international organisational and national forces. The book displays the malleability of the concept of national park, its adaptation to different circumstances, and its changing cultural nuances across time. The editors are aware of the problem of definition, and sensibly override the formal nomenclature where necessary. They provide interesting data on the overlap of categories such as state park, national park, nature reserve, wilderness area and natural monument.

The richness of the case studies cannot be fully illustrated in this review. Recurrent themes are the American model and its diverse competitors; the role of empire as an agent of park diffusion and

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transformation of nature; the transnational actors and international agencies that emerged in the interstices of empire but by the 1920s to the 1970s sought to transcend imperial origins; and the various uses of the national park idea for nation-building and nationalism.

Karen Jones tackles head on the issue of American influence. She shows that Yellowstone provided a model for national parks elsewhere, even as she argues that it was typically modified in its transnational applications. The importance of this model is underlined in several of the other essays such as Carolin Roeder’s on Triglav National Park in Slovenia. It is still necessary, however, to emphasise that quite apart from the adaptation of Yellowstone to different circumstances, there was no single U.S. pattern for European and global emulation, at least before 1916 – that is, if we understand ‘model’ to be a coherent system of park categorisation or plan of management. American national park administration and conceptualisation prior to the establishment of the National Park Service in that year indicates as much. American parks were themselves both heterogeneous in structure and subject to external pressures and even removal from the hallowed list. What Yellowstone did do was to provide a broader if vaguer inspiration, and it did so because it became elided with European-projected ideas of receding frontiers and endangered wildlife, themes that Yellowstone and other American parks exemplified along with their ‘grandiloquent Western scenery’ (p 36). Advocating the American example was useful for European supporters of such parks, as more than one of the contributors to this volume indicate (see e.g., p 132). National parks could become identified in European minds with the modern because of the common image of the United States as exemplifying modernity, and because of ‘nation’s’ presence as an organizing idea. As Etienne Benson sensibly notes in his study of animal tracking, scientific practice within national parks also requires closer attention. While it is commonplace to consider a ‘Yellowstone model’, he reminds us, ‘national parks have always been more than a concept or a set of principles.’ They have also involved ‘collections of very concrete practices’ developed in particular locations (p 174).
The experience of empire became a source of conservation sentiment and aided in some cases the transmission of nature protection ideas to metropolitan Europe. This is clear in Bernhard Gissibl’s fascinating discussion of attempts to create nature reserves in German East Africa (now Tanzania) before World War One. He shows the salience for the German case of Romantic notions about wild nature, with similar yearnings to get back in touch with the primitive to those that to some degree motivated American national park creation in the same period. Most interestingly, he shows the impact of these ideas back home in efforts to fashion ‘natural’ spaces that involved the repopulating of chosen areas with wild animals such as the European bison. At the turn of the twentieth century, some Germans were worried about the extinction of that species, worries motivated in part by the knowledge of the bison’s American relative and its perilous condition. Gissibl’s account is particularly useful because of the argument sometimes encountered that metropolitan and colonial policies were disconnected in Europe’s empires. Yet Gissibl shows that feedback loops did operate. The establishment of a post-World War Two idea of a park-oriented approach to the restoration of wilderness as part of urban recreation, and its blending with European cultural landscape ideas, rounds out his incisive treatment.

Jeyamalar Kathirithamby-Wells also deals with the role of colonialism and shows in the process how difficult it is to separate the categories of ‘imperial’ and ‘national’ in influences on park creation. Regarding the development of Malaysia’s large Taman Negara National Park, she documents the changing relationship of nationalism to this park first proclaimed in 1939 by British colonial rulers. The latter saw it as a ‘symbol of unity and national pride’ in ‘a society divided by race and religion’ (pp 90, 91), but after independence nationalists became less suspicious of the exercise since they too sought to forge worthy national symbols. Rising tourism and awareness among the emerging, urbanised middle class of the importance of a ‘natural heritage’ has underpinned these impulses.

Empire itself was a complex thing, as the example of the British settler colonies shows, where colonials also colonised the indigenous and the land in a double relationship. The American
case of national parks is most easily related to that social formation of a ‘settler empire’ in which national park aspirations were evident quite early. Melissa Harper and Richard White take up this question of settler societies, and, in the process, throw light not only on the formation of national identities in and through the appropriation of nature as preserved space, but also the development of settler societies themselves. Their exemplary comparative historical analysis emphasises the nascent national diversity present in the process of what might be called settler state formation, in which national parks played an important crystallizing role. They, too, conclude that there was no one model, and that Yellowstone provided little direct influence or inspiration in the Australian case. In their comparative vignettes, Harper and White also deal insightfully with both Canadian and New Zealand park creation. Given the focus in much of the existing literature on the United States, their chapter is a salutary reminder that the national park idea was gaining favour in the late nineteenth and early twentieth centuries, and that settler societies made pioneering contribution long before there were many such parks in Europe. Australia’s Audley National Park was the second so-called national park in the world, but Australia was not an independent nation, a point that underlines the somewhat arbitrary nature of the concept. Yet Harper and White argue that the independent self-governing British colonies were already beginning to see themselves as nations. Audley’s proximity to a major urban location made it very different from the kinds of tourist and recreational endeavours that were operational in the case in Yellowstone or some other western American national parks. Perhaps as befitted a country bathed in over-blown egalitarian rhetoric, the pioneer Australian park was a more democratic facility in a number of ways, not least in its accessibility to the populace through public transport.

The question of national parks and empire is further complicated because in some countries the terminology differed sharply from the American example, and considerable diversity of categories and practice appeared even within single empires. In discussing

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The Netherlands, Henry van der Windt calls the national park ‘a powerful but flexible concept that inspired various groups’ (p 220) even as untamed or wild nature could not be found in that country and spaces had to be thoroughly created through ‘nature development’ in the post-World War Two period (p 219). But nature reserves created earlier in the Dutch colonies were quite different. Van der Windt highlights discontinuities between metropolitan and colonial conservation, a theme also illustrated in Caroline Ford’s work. In the French case, as Ford shows in a meticulous survey, France had areas reserved for scientific study, located in the colonial realm. Yet Algeria, a colony, was treated differently from other French possessions and was the only one with a French departmental structure. Algeria’s role as a unique French settler society was viewed ‘as an extension of metropolitan France’ (p 77) and meant that it alone received a national park designation in the era of French colonialism. This points to the importance of prospective or de facto incorporation in a nation, and, perhaps, though she does not state this, of citizenship issues. Certainly the case of American national parks would have provided some confirmation of this thesis. These were created only where U.S. citizens could lobby; they did not spread to distant, unincorporated ‘insular possessions’ until the end of colonial rule, but more easily did so to the insular ‘territory’ of Hawaii acquired at the same moment of formal empire in 1898-99, where U.S. citizens could pull strings.4

Inter-imperial connections might have been stressed more in this volume. In the course of her discussion on Malaysia, Kathirithamby-Wells notes the almost simultaneous development, though in different institutional circumstances, of protected areas in the neighboring Dutch East Indies (a theme nicely complementing van der Windt’s discussion of Dutch imperial conservation). This was also the time, incidentally, that the United States in the Philippines was similarly considering a parks program and the trans-imperial exchanges suggested by these cases might well be fruitfully pursued for the whole of South-East Asia. Crossing empires also entailed temporal succession and attendant geo-political and military change. Roeder’s study of

Slovenia’s Triglav National Park in the Julian Alps shows how the major themes of empires, international networks and nation all contributed to the park’s gestation through to the assumption of its boundaries in 1981 – as the area went through a succession of different regimes from imperial, to monarchist, and then socialist, and finally to the present-day Slovenian republic (with disruptive wars in between), thus demonstrating a ‘political dimension of nature conservation’ (p 240).

Though national parks could serve either imperial or nationalist purposes, and sometimes the same park institutions could, over time, serve both, they also benefited from the development of forms of internationalism beyond empire and nation. For the transmission of national park and kindred concepts in an era of increasing internationalist activity, the roles of transnational actors were of particular importance. National park ideals were adopted and adapted through key individuals and the institutions that they supported. These did not always serve nation, though influenced by the pull of both nation and empire. With great clarity Patrick Kupper supplies a convincing overview of Switzerland, an important country for European park development. It was through transnational actors that the Swiss influence operated. At the centre of Europe, Switzerland’s situation as a site of institutional and supranational organisation and its association with peace-making and international diplomacy may provide clues to its influence. So too, the linguistic and cultural segmentation within the country. No wonder that there was no single national model abroad for Switzerland, yet the Swiss National Park was itself to be influential in Europe. Kupper’s account of the German-speaking Swiss naturalist, Paul Sarasin, is a welcome English language exposition of Sarasin’s importance, while the influence of another participant and colleague, the German Hugo Conwentz, is also documented. The latter’s work on natural monuments was ‘surprisingly transnational in character’, Kupper concludes (p 126). Through personal networking, Conwentz’s ideas spread to Switzerland (pp 126-27), the Austro-Hungarian Empire (pp 243-44), Italy and Sweden. (Conwentz’s ideas even reached the United States, a matter not taken up in these studies.) Sarasin is equally obscure in English-language work on conservation. The pioneering 1913 International Conservation Conference in Bern, at which
Conwentz also spoke, owed its development in no small measure to Sarasin’s persistence and his ability to network within zoological and other scientific groups on the threat of species extinction. Anna-Katharina Wöbse likewise notes Sarasin’s ‘avant-garde global nature protection scheme’ (p 152). Yet the 1913 conference in turn is almost unthinkable without the circulation of information on a global basis from the ends of Europe’s empires and from the Americas. Indeed, Sarasin’s views were partly formed from his earlier explorations in South East Asia.

Not only is the work of individual transnational actors illustrated in this volume, but also the activities of supranational institutions: the League of Nations and, after 1945, the United Nations. Wöbse shows how various international organisations ‘translated heterogeneous ideas into a universalist notion of heritage’ (p 153), creating a common terminology and ‘corporate identity’ for the park idea on a global level. Thereby she identifies institutions mediating between diverse national, especially American, park concepts and the global rise of a natural heritage agenda. This process began under the League, which put ‘the protection of natural beauty’ on its program from 1925 to 1928 through its International Committee on Intellectual Cooperation (p 145). Tracing international networks beyond post-World War Two in the attempts to globalise park ‘ambitions’ through UNESCO and the International Union for the Conservation of Nature, Wöbse is careful to note that the process was dominated for decades by westerners and a small elite of white males. Internationalism was not completely free of the political, cultural and economic inheritance of western power.

Another underlying theme is the relations between empire, nation and indigenous people. Scholars of New Zealand’s environmental history will find Harper and White’s contribution helpful here, but Gissibl, Brad Martin, Jones, and Kathirithamby-Wells also provide evidence in this volume. As is well known, indigenous cultures have been frequently disregarded or even erased in national park creation processes. However Martin shows for the Canadian Inuit that in some circumstances a national park could be ‘a tool for indigenous cultural survival’. The Northern Yukon (now Ivavik) National Park was ‘used as a vehicle for making claims upon the
state’ (p 168). Arguably erasure was a much more difficult process in places other than where white settler colonial societies dominated demographically and environmentally. But even within the settler societies, there are differences. Harper and White note the distinctive inception of Tongariro National Park in ‘the way the indigenous sacred was incorporated into the nation’ through Maori paramount chief Te Heuheu Tukino’s gift of land in 1887. This outcome displayed ‘a sense of indigenous participation in the political process not apparent elsewhere’, though Harper and White make clear that power relations in settler societies affected this outcome. Despite Maori presence on the park board, their input seems to have been largely frozen into the moment of historical origins, and the indigenous influence thereafter was small in practice. Nevertheless, this case (and Martin’s) underlines a diversity of racial and social arrangements for national parks in societies now commonly labeled as part of settler colonialism (p 56).

Most interesting as a way of synthesising the themes of the connection between indigenous occupation and supposedly ‘natural’ and ‘wild’ spaces for national parks is Emily Wakild’s study of Mexico. No doubt the distinctive revolutionary circumstances from the 1910s to the 1930s influenced this nation-building exercise. Mexican parks departed from American ones. Being located ‘somewhere between protection and rational use’, they entailed ‘respect for rural livelihoods’ (pp 203, 201). This account is worthy of further scholarly attention in post-colonial settings, and in breaking down boundaries between ideas of sustainability and the national park concept.

Lacunae are rare in this volume. It is perhaps a shame that Sweden, with the first National Park system, is not covered, but we already have the earlier excellent work of Tom Mels on this subject.\(^5\) Moreover, as Kupper states, the case also drew upon American models and this might have limited its application in very different European circumstances. Several leads for future research are revealed, however. Not only might inter-imperial connections have been stressed more, but also indigenous

impacts, compared across empires. These are matters of emphasis, however.

Key moments in national park creation might be hypothesised from these studies, beginning with the role of European imperial globalization, particularly from the 1890s to 1914, drawing attention to species extinctions and asserting colonial controls over both natural resources and indigenous peoples’ occupation. Then came the 1930s when parks spread to many places in the colonial and other non-western world, perhaps under the impact of colonial and other nationalist stirrings and revolutions, perhaps due also to the effects of the Great Depression in shifting priorities over development, or perhaps increasing scientific and even proto-ecological interests. Finally, a key decade was the 1970s when the machinery of contemporary international conservation was being assembled. The impact of globalisation through these waves of economic and international communications change could provide ways of exploring further the globalisation of nature protection. It is significant that India’s tiger and biosphere reserves established in the 1970s and 1980s, studied by Michael Lewis, came at a time when so-called new globalisation spurred debates over international conservation, and this was the same period in which the proliferation of international and transnational non-government organisations became marked. However, ‘effective global governance of protected areas’ (p 236) remains lacking in many developing countries, not just India, and ‘nation’ still provides the most important regulatory arena. The noted authority on national parks, Jane Carruthers, usefully adds an epilogue dealing with the trajectory and present position of the national park concept in this era of new globalisation.

A final question concerns the boundaries between the different types of spatial protection. Though the editors understand the problem of definition and address it in the introduction, its implications for comparisons of park diffusion can be complex indeed. In some respects the original Australian national park was quite similar to some of the state parks established in the eastern United States. The failure, for a long time, to declare national parks in the American East was largely a product of the concentration of federal government public lands in the American west. The Australian pioneering example reflected in part desires
for urban ‘safety valves’ through sites for popular recreation, just as the impulse for state parks in places such as the Adirondacks of upstate New York did. Thus comparisons can be fruitfully made across the different categories of ‘park’.

With an intellectual coherence often missing in the revised proceedings of conferences, *Civilizing Nature* is a path-breaking work in its field of comparative national park history. Both editors and contributors must be commended on the outcome. It is also a valuable contribution to environmental history more broadly and a useful addition to the study of twentieth-century global history.
Landmarks: Cumberland’s magnum opus?

Bill Howie

This article aims to detail the inception and legacy of geographer Kenneth Cumberland’s magnum opus, his 1981 television series Landmarks. The initial inspiration for my research came as a result of the reactions exhibited by my students at St Peters College in Auckland when I showed them clips of the series from the ‘NZ On Screen’ website. The definition of ‘environmental history’ given on the Australia and New Zealand environmental history website (http://environmentalhistory-au-nz.org) is ‘the transformation of the natural world by human action and the consequences for both nature and people’. This correlates precisely with the aim of the series. The scholarly detail and encapsulation of a life’s work is included in a series which set the benchmark for New Zealand geographic documentary making. This article will detail who Cumberland was, what Landmarks was, and argue that simply labelling the whole series as ‘nostalgic’, needlessly consigns valuable scholarly work, which provides excellent material relating to how early European settlers crafted New Zealand, to the archives.

Who was Kenneth Brailey Cumberland?

Cumberland was a geographer and his working life was devoted to this discipline. He set a challenge to himself and to later geographers by suggesting that practising a discipline with two thousand years of history required a ‘rigorous discipline and satisfying philosophy’ (Cumberland 1956). Kenneth Cumberland was born in 1913 in Bradford, England and studied geography and the German language at Nottingham University before attaining a first class honours degree in geography at London University. His resulting fluency in German was a distinct advantage as over fifty percent of all geographic literature prior to 1939 was written in German. He was strongly influenced by the work of Richard Hartshorne, whose The Nature of Geography (1939) drew heavily upon German geography, and this book became Cumberland’s

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1 Bill Howie is currently in the second year of his PhD at Auckland University where he is researching the civic role public intellectuals play in stimulating debate relating to academic disciplines within wider society.
‘vade-mecum’ (Pawson 2011). He immigrated to New Zealand in 1938 to become a geography lecturer at Canterbury University under the watchful eye of George Jobberns. He moved to Auckland University in 1946 as a senior lecturer and to establish the Department of Geography, holding the foundation chair from 1949 until his retirement in 1978. He possessed a keen appetite for passing on his knowledge through work with teacher training and a weekly radio broadcast for the New Zealand Broadcasting Corporation (NZBC) entitled ‘Looking at ourselves’.

Cumberland was a lecturer, academic, farmer, local body politician, geographical politician and public intellectual. The term ‘multiphrenia’ was used by Billig (1995) to describe the splitting of the individual into a multiplicity of self investments, and this could appropriately be applied to Cumberland. Subsequent to his death aged 97 in April 2011 there has been reflection upon his career and achievement. This has been documented in articles by Pawson (2011), Roche (2012), a session at the 2012 New Zealand Geographical Society (NZGS) Conference where this paper was originally presented, and in his memoirs Milestones and Landmarks. The purpose of this article is not to replicate existing material but to provide a background on how Landmarks encapsulated his life’s work. Cumberland himself, reflecting upon his forty years of geographical work in New Zealand, comments in the closing segment of the first programme that it has been ‘a most congenial task I’ve enjoyed, indeed I still savour every moment of it’ (Cumberland 1981).

What was Landmarks?

Landmarks was a 10-part documentary series first screened on Television New Zealand (TVNZ) on 23rd August 1981, written and presented by Kenneth Cumberland. The title of each episode is detailed in Table 1, below. The series examined ‘human intrusion on the New Zealand landscape and how it has been transformed by the destructive and constructive urges of mankind’ (Cumberland 1981). Modelled on the 1972 British Broadcasting Corporation (BBC) series America, Landmarks was a rare New Zealand expression of public intellectualism through geography and attracted the largest viewing audience ever achieved by a local documentary series (Boyd-Bell 1985). George Andrews was
the inspiration behind the series and filming started in late 1978. Cumberland was not the original choice of presenter, but as Andrews (2009) notes, ‘Ken looked believable and sounded good ... We never looked back’. The series received a 1982 Feltex Award for ‘Best Television Documentary’ and Cumberland (1990) notes that ‘My major satisfaction rests on the fact that more than a million New Zealanders regularly watched Landmarks’.

Cumberland’s book, Landmarks: How New Zealanders Remade their Landscape, which was developed in conjunction with the series, was published by Reader’s Digest and sold 70,000 copies. The title of each chapter is also detailed in Table 1, below. The iconic nature of the series led Jeremy Wells to parody Cumberland’s presentation style and appearance in parts of the series The Unauthorised History of New Zealand (Baker, Barinas and Hill 2005), which introduced Landmarks to a new generation.

A teacher ‘kit set’, setting out detailed lesson plans and student activities for each episode, accompanied the initial series and was distributed to schools. A set of posters that teachers could display in classrooms was also provided (see Figure 1). The idea conveyed was that we need to know New Zealand from the land up, inviting the observer to imagine the mud being cleansed from a virgin landscape to create a colonial farm. This invokes the ‘mud on your boots’ geography of W.G. Hoskins (1955). In 1984 the Department of Education distributed a video of the series to schools across the country. The former Director General of the BBC Lord Reith (1924) observed that the aim of broadcasting is to ‘inform, educate and entertain’. Landmarks achieved each of these aims.

Representations of nationhood

The concept of nationhood in relation to New Zealand is perpetually evolving. Landmarks was ‘a historical geography of New Zealand’ (Cumberland 1990) which cited prominent individuals and significant events that shaped early New Zealand European nationhood. As time elapses, this situated knowledge becomes contestable and, as Billig (1995) contends, ‘Nations have
Table 1: Television Episodes and Book Chapter Comparison

<table>
<thead>
<tr>
<th>Episode</th>
<th>Title</th>
<th>Episode Description</th>
<th>Book Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A Land Apart</td>
<td>The physical characteristics of New Zealand</td>
<td>Where No Human Footprint had Trodden</td>
</tr>
<tr>
<td>2</td>
<td>The First Footprints</td>
<td>Origins of first people to reach New Zealand</td>
<td>Castaways in a Cold New World</td>
</tr>
<tr>
<td>3</td>
<td>Ready for the Taking</td>
<td>Early exploitation of resources taking</td>
<td>The Looting of Nature’s Treasures</td>
</tr>
<tr>
<td>4</td>
<td>The Pastoralists</td>
<td>History of sheep farming on Canterbury Plains</td>
<td>Kings of the Tussock Country</td>
</tr>
<tr>
<td>5</td>
<td>Go North Young Man</td>
<td>Development of dairy farming in Waikato and Taranaki</td>
<td>The Little Man gets his Chance</td>
</tr>
<tr>
<td>6</td>
<td>The Bitter and Sweet</td>
<td>North Island hill country</td>
<td>Defeat and Victory in the Hills</td>
</tr>
<tr>
<td>7</td>
<td>Nature Fights Back</td>
<td>Harmful effects of species introduction</td>
<td>Nature Exacts its Revenge</td>
</tr>
<tr>
<td>8</td>
<td>The Main Trunk Line</td>
<td>Development of transport networks</td>
<td>Forging the Links of a Nation</td>
</tr>
<tr>
<td>9</td>
<td>Towns and their Times</td>
<td>History of New Zealand towns</td>
<td>Townsfolk Call the Tune</td>
</tr>
<tr>
<td>10</td>
<td>The Journey Ahead</td>
<td>The 21st century</td>
<td>Tracing the Shape of Tomorrow</td>
</tr>
</tbody>
</table>
to create their own histories’ and ‘national histories are continually being re-written and the re-writing reflects current balances of hegemony.’ The series addressed multiple themes from forest clearing and soil erosion to urban sewerage and hill country farming. These themes developed key geographical imaginaries that it wove into notions of New Zealand national identity (Howie and Lewis 2013).

The programme itself was the only extended and theorised statement of nationhood and nature-society relations available at the time and in this format. It gave meaning to and linked social histories, landscapes, identities and economy. The series screened during a period when New Zealand was attempting to shake off its ‘cultural cringe’ and when a swathe of drama productions such as *The Governor* (1977) and *Children of Fire Mountain* (1979), which had New Zealand landscape and history as their backdrop, was being broadcast.

*Landmarks* placed geography in New Zealand homes and circulated Cumberland’s geographical imaginaries widely. The introduction to each episode stated ‘a personal view’ of Kenneth Cumberland and many of the imaginaries projected were vestiges of the political projects that Cumberland had waged over a long career as an academic and public geographer. Some of the visions of geography were at odds with the academic temper of the time.

**Landmarks: The You Tube legacy**

The influential geographer David Harvey (1990) notes that ‘the study of historical geography ... has a major role to play in understanding how human societies work’. *Landmarks* describes how a small number of individuals altered the landscape of New Zealand in a shorter time frame than anywhere else. This is a compelling narrative but a simple question remains: Why are the mobile-phone using, iPod carrying, internet savvy, Facebook tweeters in my classroom so engaged by this story teller, an older bespectacled man dressed in a jacket and with an English accent?

Modern technology has allowed the series to be separated into visual chunks which appeal to the modern digital consumer, with no clip longer than 11 minutes. Cumberland’s training as a lecturer and radio presenter means that the narrative that
accompanies the clips is articulate, accurate and sharp. Therefore the art of storytelling and the series relating to New Zealand mean that an individual’s ‘common curiosity’ (Cumberland 1945) is stimulated.

Table 2: Landmarks clips available on the Te Ara website

<table>
<thead>
<tr>
<th>Topic</th>
<th>Episode</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geomorphology</td>
<td>Episode 1</td>
<td>White Island</td>
<td>1.09</td>
</tr>
<tr>
<td>Sheep Driving</td>
<td>Episode 4</td>
<td>Mukamuka Rocks, Wellington</td>
<td>1.01</td>
</tr>
<tr>
<td>Establishing pastoralism</td>
<td>Episode 4</td>
<td>Pencarrow Heads</td>
<td>1.03</td>
</tr>
<tr>
<td>Raurimu Spiral</td>
<td>Episode 8</td>
<td>King Country</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Where can clips be found?

The complete series is not available on DVD. However, extracts from the series are available in the following places:

1. The complete series is available on video from the National Library of New Zealand.
2. NZ On Screen provides episodes 1 and 8 broken into 10 minute clips, which are available at www.nzonscreen.com.
5. On ‘You Tube’: Downloaded by TeeVee NZ. See Table 3.

A key element is the availability of a well researched New Zealand narrative that provides accurate insights into how and why settler societies dramatically transformed their landscapes. While the number of views may not correspond with any of the clips going ‘viral’, there is more than simple nostalgia operating. A scholarly aptitude prevails in every aspect of the series: from precise dates of the arrival of sheep from Australia in New Zealand to the use of an original cream separator which helped transform the Waikato dairy industry. The series introduces individuals such as Chow Chong, John MacKenzie, Rudolf Wigley, William Goodfellow and others who each had a major impact upon the development of the
New Zealand landscape yet enjoy little contemporary profile. The referencing of the photographs (see Figure 1) displays the attention to detail displayed in all areas of the series.

Table 3: Landmarks clips and number of views.

<table>
<thead>
<tr>
<th>Title</th>
<th>Episode</th>
<th>Time</th>
<th>Views at 30/11/12</th>
<th>Views at 31/05/13</th>
<th>Views at 30/09/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Maori Kumara Revolution</td>
<td>2</td>
<td>4.55</td>
<td>2,474</td>
<td>2,977</td>
<td>3,428</td>
</tr>
<tr>
<td>NZ Moa</td>
<td>2</td>
<td>8.36</td>
<td>14,331</td>
<td>19,018</td>
<td>21,365</td>
</tr>
<tr>
<td>Moa Hunters</td>
<td>2</td>
<td>4.31</td>
<td>3,179</td>
<td>3,803</td>
<td>4,178</td>
</tr>
<tr>
<td>First Sealers in Fiordland</td>
<td>3</td>
<td>5.07</td>
<td>1,178</td>
<td>1,304</td>
<td>1,376</td>
</tr>
<tr>
<td>The Whalers</td>
<td>3</td>
<td>8.35</td>
<td>731</td>
<td>935</td>
<td>1,046</td>
</tr>
<tr>
<td>Auckland: Polynesian Capital City</td>
<td>2</td>
<td>3.39</td>
<td>270</td>
<td>318</td>
<td>359</td>
</tr>
<tr>
<td>Hobson and Treaty of Waitangi</td>
<td>3</td>
<td>7.49</td>
<td>5,019</td>
<td>6,070</td>
<td>6,463</td>
</tr>
<tr>
<td>Muskets, Flax and Bibles</td>
<td>3</td>
<td>5.25</td>
<td>1,703</td>
<td>2,275</td>
<td>2,567</td>
</tr>
<tr>
<td>Tiwai Point, Bluff NZ, Australia</td>
<td>3</td>
<td>2.02</td>
<td>637</td>
<td>706</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

Landmarks was and still is a well researched New Zealand narrative that tells us about how our land came to look as it does today. George Santayana (1905) stated that ‘Those who cannot remember the past are condemned to repeat it’. While not
suggesting that the environmental management practiced in early colonial times is likely to be repeated, awareness of how decisions taken can rapidly lead to transformation of existing landscapes provides a pool of knowledge that benefits all New Zealand.

Figure 1: Landmarks Episode 6: Poster for schools
Bibliography


Leonard Cockayne: A most enthusiastic gardener

Andrew Gregg

Leonard Cockayne is known as New Zealand’s greatest botanist and first plant ecologist. Not only was Cockayne an influential and forward-thinking individual who promoted the appreciation and preservation of our indigenous flora, he also became New Zealand’s most nationally and internationally recognised pioneer botanist through his life’s work. First and foremost, though, Cockayne was – as the cover of one of his books described him – ‘a most enthusiastic gardener’. Gardening was the activity that stimulated his interest in botany as a career, and the decades he spent observing and experimenting with plants at home and in the field underpinned his scientific authority and expertise.

I first became aware of Leonard Cockayne as a kid growing up near Otari Plant Museum in Wilton, Wellington. My family and I would often explore this open air sanctuary for walks and get lost in the beautiful and diverse flora on display. Each time I visited I found myself standing at Cockayne’s grave, where he and his wife Maude are buried, and wondering what had inspired the man’s fascination with, and dedication to the study and protection of, plants. I did not appreciate at the time that the answer to that question lay before my very eyes.

Fast forward two decades and I found myself revisiting this thought. This time it was research into the evolution of Tongariro National Park, as part of the Waitangi Tribunal claims process, which sparked my interest. Cockayne had conducted a botanical survey in 1908 that proved influential in ensuring that tens of thousands of acres of land around the three iconic mountains, Tongariro, Ngāuruhoe and Ruapehu, were reserved for protection. I wanted to know more about this early New Zealand scientist and

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1 Andrew Gregg is an historian working for Auckland War Memorial Museum and the current Treasurer of PHANZA. Originally from Wellington, Andrew has a Bachelor of Science and a Masters in History from Victoria University. Before moving to Auckland at the beginning of 2013, Andrew was employed as a senior historian at the Waitangi Tribunal.

discovered that little had been written about him. I could see that a biography was justified, so I decided to take on the challenge.

My biography of Leonard Cockayne is based around three broad themes of his life and work. First, I am looking at Cockayne’s involvement in the transition of New Zealand botanical research from the so-called ‘stamp collecting’ phase through to ecological studies of New Zealand’s native flora. Leonard Cockayne was one of the first New Zealand botanists to go beyond simply collecting and cataloguing native plants. The earliest botanists to arrive in New Zealand discovered a land with a unique flora, fuelling their desire to explore and collect specimens. These early explorers wanted to see plants in their native habitats, find new species and send specimens to museums and gardens in their homeland. In general, they saw native plants as mere curiosities, believing that in time the ‘superior’ plants and animals of their homelands would replace the indigenous biota. Consequently, their ‘botanising’ focused on collecting, naming and sending specimens for scientific perpetuity.

Cockayne, however, sought to understand relationships between plants and their environment. In doing so, he helped pioneer a new plant science – plant ecology. In Cockayne’s words, ‘plant ecology is concerned with the study of plants as living organisms, not in the laboratory under artificial conditions, but in the field as they grow naturally’. His substantive research began as a horticulturist, studying plants in his immense garden to see how the form of a species changed in relation to different environmental conditions. This method of studying plants in situ, rather than from herbarium specimens, was an innovative approach within the field of plant science. Moving beyond his garden laboratory, he applied his knowledge to observing plants across the New Zealand landscape. Through his extensive observation and field work, Cockayne made the most thorough exploration of native vegetation of all New Zealand botanists.

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3 Biota refers to all of the organisms, including animals, plants, fungi and micro-organisms, found in a given area.
The transition to this new science was, at times, a lonely pursuit. Few scientists were based in New Zealand during the late nineteenth and early twentieth centuries and those that did reside here were isolated from colleagues in other countries. In 1913, Cockayne remarked that ‘[o]ne is apt to get a little lonely sometimes with so very few interested in the same study. Even [Thomas] Cheeseman and [Donald] Petrie are so wrapped up in deciding whether a certain plant be a species or no, that my perhaps wider pursuits are of little interest to them’. To overcome this isolation, Cockayne corresponded regularly with botanical colleagues overseas, many of whom were leading the way in plant ecology. Cockayne exchanged ideas through these international connections, placing him at the forefront of this new scientific discipline in New Zealand.

The second strand to my biography is Cockayne’s contribution to the modern conservation movement. Cockayne recognised and promoted the protection of New Zealand’s indigenous flora at a time when bush clearance, wetland drainage and timber acquisition were all changing the New Zealand landscape. Through his commissioned botanical surveys, Cockayne collected scientific justifications to impress on governments the need to preserve New Zealand’s flora in its natural habitat. In the late nineteenth and early twentieth centuries, protection of the natural world was very much focused on scenery preservation for the purpose of recreation and spiritual fulfilment. Cockayne argued strongly, however, that ‘the special features of any landscape depend upon the combinations of plants which form its garment’. For him, it was the uniqueness of New Zealand’s flora that justified its protection.

Cockayne was also an influential voice in the development of New Zealand’s earliest national parks and reserves. He saw national parks as ‘havens of refuge’ or ‘great open-air museums’, where plant communities should be protected in their natural state with minimal disturbance from introduced species and human activities. At a time of rapid environmental transformation,

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5 Letter from L. Cockayne to W.B. Hemsley, 5 February 1913.
Cockayne was the scientific voice behind setting aside and protecting unique ecosystems. As mentioned earlier, Cockayne’s influence led to the expansion of Tongariro National Park to over one hundred and thirty thousand acres. While he acknowledged scenery preservation rationales for land reservation, he believed reserves should go further and incorporate representative plant life unique to an area. To him it was a matter of national importance, and in that sense Cockayne was a man ahead of his time.

Cockayne’s influence among the general public, within government and the scientific community is the third broad theme of my biography. Cockayne was a skilful publicist writing extensively in both newspapers and popular books to inform the public of his views, educating New Zealanders about the need to preserve their natural world in the wake of significant change. In 1910, he wrote one of his best known books, *New Zealand Plants and their Story*, to, as he put it, ‘stir up some interest here in the botany of the country’.7 This and subsequent works were influential in shifting attitudes toward our indigenous plant life. His advocacy over many years also led to the establishment and development of gardens, parks and reserves across the country, including Kapiti Island Nature Reserve, Kennedy Bush and my personal favourite, the Otari Native Plant Museum.

Despite Cockayne’s limited university training, he also made a substantial contribution to scientific scholarship. He published more than 280 articles on New Zealand botany and plant ecology at home and abroad. Much of the work published on New Zealand flora before Cockayne’s time focused on plant classification, but Cockayne significantly advanced botanical knowledge in the twentieth century and became an authoritative voice within the scientific community. This work received recognition with numerous awards and distinctions, the most significant being an honorary PhD from the University of Munich in 1903, and his election as a Fellow of the Royal Society of London in 1912. The same Society also honoured him with the Darwin Medal in 1928. Such honours helped Cockayne to gain the funding he needed to

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7 Letter from L. Cockayne to J. Hooker, 26 June 1911.
continue his botanical work, to which he remained committed until the end of his life.

Leonard Cockayne, a most enthusiastic gardener, dominated an exciting and pioneering period in New Zealand science. A key figure of New Zealand’s ‘second generation’ of botanists, Cockayne spent decades studying the relationship between plants and their environment at his home and in the field. What he discovered along the way provided a springboard for his scholarly achievements. But it was Cockayne’s sense of the intrinsic value of our indigenous flora – developed through close association over his lifetime – that inflamed his passion for convincing others of the need to protect it.
Collections of letters written by or about James Hector

Simon Nathan¹

James Hector (1834-1907) was the dominant personality in the late nineteenth century scientific community in New Zealand. As the first professional scientist to be employed by the government, he founded the Geological Survey (now GNS Science), the Colonial Museum (now Te Papa) and the New Zealand Institute (now the Royal Society of New Zealand) as well as supervising weather forecasting, the time service, and the Colonial Botanic Garden.

As part of a forthcoming biographical study of James Hector, several collections of letters have recently been transcribed – more than 800 letters, mainly from the Alexander Turnbull Library, Te Papa archives, the Hocken Library, and the archives of the Royal Botanic Gardens at Kew. This has been undertaken by a small team including Rowan Burns, Esme Mildenhall, Judith Nathan, Simon Nathan and Sascha Nolden. These transcriptions are potentially a useful tool for researchers in a variety of fields, so they have been published by the Geoscience Society of New Zealand as parts of *GSNZ Miscellaneous Publication* 133. They are available as free downloadable PDF files from the GSNZ website, www.gsnz.org.nz – Click on Publications, then Misc. Pub. Series.

So far the following seven volumes have been published:


¹ Dr. Simon Nathan is an Emeritus Scientist with GNS Science. Following a long career as a professional geologist, he now pursues his interest in the history of science.


"A Quick Run Home": Correspondence while James Hector was overseas in 1875-1876 by Rowan Burns and Simon Nathan. *Geoscience Society of New Zealand miscellaneous publication* 133E, 144 pp.

Transcriptions of selected letters from Frederick Wollaston Hutton to James Hector and Julius Haast by Esme Mildenhall, Rowan Burns and Simon Nathan. *Geoscience Society of New Zealand miscellaneous publication* 133F (2nd edition), 175 pp.


As well as information on Hector's scientific interests and his rivalry with Haast and Hutton, there is information on life in each of the four main centres, political gossip, comments on the ‘native problem’, and the workings of government. There are gloriously gossipy letters from R.L. Holmes (MP 133C) and Walter Mantell (2nd part of MP 133E), Hector's concerns about industrial unrest in 1890 (MP 133A), and Hutton's complaints about problems in the flax industry (MP 133F).

Hector kept Joseph Hooker up to date with developments in New Zealand (MP 133A), including notes on earthquakes, volcanic eruptions and other hazards. Hooker often sent extracts from Hector's letters to the newly established scientific journal, *Nature*. 
One of Hector’s concerns was the extent of deforestation, and the speed with which native forests were being milled or burnt. Based on his experience in Canada he advocated planting imported conifers, and used the Colonial Botanic Garden as an experimental nursery to test out which species grew best in New Zealand.

Several more collections of letters are in preparation, including correspondence between Julius Haast and Joseph Hooker, and a bibliography of Hector's publications, including a huge number of reports in the Appendices to the Journal of the House of Representatives. It is hoped that the biography will be published by late 2015, in time for the 150th anniversary of the founding of the Geological Survey and the Colonial Museum.

For more information, please contact Simon Nathan – s.nathan@xtra.co.nz. We would appreciate feedback from readers, information on more letters that may come to light, and the inevitable corrections that will be discovered.

We gratefully acknowledge the award of the VUW-GNS summer scholarship that supported Rowan Burns, and funding from the Brian Mason Scientific and Technical Trust.
REVIEW:


Julian Kuzma

*Ripley's Believe It or Not!* is a franchise featuring bizarre events, strange items and sensational records. *An Extraordinary Land*, with section headings such as 'Mystery Solved', 'Who Knew?' and 'That's Weird', similarly sheds light on New Zealand's astonishing wildlife and unique environments, examining many mysteries and myths. The book usefully consolidates a wide range of recent scientific research, environmental discoveries and conservation initiatives in a way that is both informative and accessible. *An Extraordinary Land* will prove an eye-opening journey of discovery for readers, offering surprising facts about our diversity of species, even those considered familiar to New Zealanders. For example, our national bird, once denigrated as a flightless evolutionary anomaly, is in fact revealed by recent research to be a superbly adapted 'sensory superstar' with one of the biggest brains of any bird in the world!

New Zealanders tend to take much about their environment for granted, but the authors remind us what a unique, intricately diverse land we inhabit. Isolation has 'turned New Zealand into a wild laboratory where evolution could conduct experiments that led to weird and wonderful outcomes'. *Believe It or Not!* facts include the cryogenic ability of the alpine weta, the role of lizards and native bats as pollinators, the remarkable ability of the pohutukawa to spread across the Pacific and colonise the harshest of environments, and the as yet not fully understood movements of whitebait. Genetics is used to explain the suicidal defence mechanism of the bluff weta, the incredible evolutionary provenance of the extinct Haast's giant eagle and the tolerance (or intolerance) of many species to extreme cold. Our little blue penguins are divided into two species north and south of Banks
Peninsula, and the northern penguins do not like living in cold places – who knew?!

The section entitled ‘Mystery Solved’ examines reasons behind our wildlife’s strange behaviour or unusual lifestyles. ‘Who Knew?’ reveals startling facts about some species, with the help of those at the front line of science and conservation. The former, by the way, includes an acknowledgement of the discoveries and contributions of children to our natural history record – scientific inquisitiveness is not solely the provenance of adults. ‘That’s Weird’ investigates the extremes of evolutionary diversity – an alien world of super-sized species, waddling mice and boxing bats. ‘To the Rescue’ deals with the work of preserving native species in
the face of introduced predators, outlining many conservation projects and success stories.

The authors both share a background with the Natural History Unit and they bring the same standards of production quality to this book. Peter Hayden’s text is conversationally engaging, conveying his enthusiasm and reflecting his considerable qualifications for the subject as a writer and producer of documentaries. The text is superbly complemented by Rod Morris’ photography. It is possible to become inured to ubiquitous books of New Zealand nature photography but Morris - with his dramatic and revealingly intimate portraits of birdlife in particular - is an artist at the top of the game, showcasing a career of over 30 years.

Overall, this is a well-researched journey of delight and discovery – a charming and interesting eye-opener of a book to be enjoyed by readers of all ages.
REVIEW:


Ian Tyrrell

James Beattie's *Empire and Environmental Anxiety* is an ambitious book. It surveys the changing perceptions of British colonials, mostly (white) settlers, government officials and scientists, but also artists. Encountering colonial environments generated anxious responses among these people that both reflected environmental critiques of colonial impacts and spurred the exertion of imperial control through more efficient manipulation of resources and bureaucratic intervention. Beattie’s work builds upon the thesis of Richard Grove regarding the colonial origins of early conservation but, alongside a declensionist narrative, Beattie finds a developmental narrative of resource use.

Covering the whole of the nineteenth century and the early twentieth, but with emphasis upon the later nineteenth, the book draws together material on India, Australia and New Zealand as a region with distinctive interactions and common experiences of imperialism and environment as they shared in a ‘cross-fertilisation of environmental anxieties’ (p 167). Beattie follows the careers of individuals who moved across this Indo-Pacific world as officials, settlers and immigrants, such as Alfred Sharpe, the painter whose watercolours of New Zealand influenced park aesthetics in a trans-Tasman context. Beattie shows the cross-colonial linkages, the networks of influence that spread anxieties about British colonial and settler impacts upon the land’s resources and ecosystems, while at the same time he recognises that local circumstances powerfully influenced the policy responses adopted.

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1 Ian Tyrrell is an Emeritus Professor of History at the University of New South Wales, Sydney.
The book identifies environmental anxiety across a range of different topics, showing how colonials worried about unhealthy urban conditions, the aesthetics of environmental change, climate variation, deforestation and its hydrological consequences, and perceived desertification. Thus, for health reasons, Australian eucalyptus species were extensively planted in India to deal with malaria. Beattie shows that healthfulness and environmental aesthetics were closely associated in the mania for planting species such as the blue gum (Eucalyptus globulus). Concern among colonial critics and environmental reformers over the loss of forests also revealed fears for the possible effects on climate. Awareness of sand drift influenced attempts at dune control through afforestation, and the aesthetics of a park-like valuation of nature encouraged environmental change, and simultaneously spurred the setting aside of urban and non-urban parks and reserves. In the process of outlining these concerns about deforestation and reforestation, Beattie contests facile distinctions between early nineteenth-century dislike of indigenous plants and later nineteenth-century appreciation. In this and other respects, colonial environmental views were ‘more complex than many scholars believe’ (p 74).

Beattie’s stimulating arguments raise important questions for debate. One is terminology. Though ‘anxiety’ is his favoured formulation, the epithet of ‘alarmism’ is also discussed among settler concerns that exploited ‘highly alarmist language’ (p 212) and ‘hyperbole’ (p 210). Yet alarmism and anxiety have somewhat different connotations. Perhaps they are part of a continuum, but one can be anxious about environmental issues without raising an alarm over imminent collapse. The distinction might be developed.

Another issue is teasing out from the text exactly what the impact of anxiety is. A general point made is that anxieties had a cumulative effect in promoting greater human intervention, with the implication that greater intervention meant more environmental regulation. One might conclude that environmental anxiety, or even alarm, was useful in prodding people and governments into corrective action, but the overall attitude to the use of hyperbolic rhetoric in goading action is not explicit. If anxieties are fanciful, then time and time again the cry
of ‘wolf’ will undermine the value of the intervention. This argument could be turned into a critique of environmentalism in that time, and in ours.

Beattie makes a vital point by reminding us that Europeans in these colonies worried over environmental change long ago, and took action. He also suggests that though alarm and anxiety are not new, in our age a stark choice of ‘destruction or conservation’ is present (p 216). This categorisation contrasts with the more reserved discussion of the impacts of anxiety over the long haul, given how varied in content as opposed to language these anxieties have been. The relationship between perception and reality over time needs a more explicit analysis here.

A further question concerns the processes whereby anxiety is articulated and spread. Beattie emphasises the role of professionals and their growing use of environmental discourse to enhance their power. But exactly how does the work of professionals or other groups effect change? In the early twenty-first century, alarm sits alongside what appears to be, among influential people, imperviousness towards the dangers, and a temporarily receding sense of public disquiet. What is the role of politics in articulating and channelling alarm? This question is particularly apt, given that the case studies of Australian and New Zealand on the one hand and India on the other had different governmental structures, as Beattie reminds us, though each shared in the nineteenth century a British colonial affiliation. The role of media in this process of dissemination is hinted at in the discussion of soil erosion and the impact of the later Dust Bowl in the United States. But, for the nineteenth century, one wonders whether the spread of literacy and cheaper newspapers, together with the circulation of print materials across the empire through speedier communications, influenced the level of anxiety in ways that could not have occurred earlier, or would not seem unusual later.

Beattie also documents the important role of religion in the promotion of environmental anxiety and reform, but mainly as a sanction for environmental improvement in the husbanding of resources. The actual role of religion in promoting anxiety is not taken up. It is examined as a way of critiquing an aesthetic of
wasteland and neglect (pp 80-81, 187-88) but not in terms of the creation of apocalyptical and declensionist thinking. Were church congregations and news media used to mobilise people for conservation (as happened in the United States)? What, if any, was the role of missionaries in providing comparative data on why and how the experience of some countries stood as warnings to others of a fate to be avoided?

The book raises a tantalising issue about Indo-Pacific conservation (pp 33-34, 163-64): common environmental circumstances seem to have existed through the El Nino/Southern Oscillation, or ENSO and, to some extent, shared patterns of drought and flood can be exhibited. The New Zealand-based surveyor F.S. Peppercorne’s experience drawing solutions to Australian aridity from North India is suggestive of shared perceptions and policies. But were Indo-Pacific regional climatic influences the subject of much wider nineteenth-century discussion, and were observations on flood and drought regularities across the region influential, or was the commonality more one of institutional and personal connections?

Beattie’s work shows wide reading, and admirably emphasises complexity, but perhaps so much so that the nuances prevent us from seeing a clear outline of the impact of anxiety and its relations to imperialism. While the latter is shown to be concerned with colonial development, it also represented settler assertions of power over land and indigenous people. Conservation could be viewed as intrinsically an extension of settler demonstrations of a right to occupation – as marking an effective stake in the land.

There are many important observations in this sound and scholarly study. Its breadth of coverage and integration of the research is admirable, as is its innovative linking of Australia to both New Zealand and India. One testimony to this book’s importance is the many questions it raises for future research. This work will also add to the growing scholarship on Australian-Asian relations from a new, environmental standpoint.