Friederike Gesing

Working with Nature in Aotearoa New Zealand
An Ethnography of Coastal Protection

transcript Culture and Social Practice
Working with nature – and not against it – is a global trend in coastal management. This ethnography of coastal protection follows the increasingly popular approach of «soft» protection to the Aotearoa New Zealand coast. Friederike Gesing analyses a political controversy over hard and soft protection measures, and introduces a growing community of practice involved in projects of working with nature. Dune restoration volunteers, coastal management experts, surfer-scientists, and Maori conservationists are engaged in projects ranging from do-it-yourself erosion control, to the reconstruction of native nature, and soft engineering «in concert with natural processes». With soft protection, Gesing argues, we can witness a new sociotechnical imaginary in the making.

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# Table of Contents

**Acknowledgements** | 9

**Introduction and Outline** | 13

**PART I: INTRODUCING ETHNOGRAPHY TO COASTAL NATURECULTURES**


2. Natureculture Imaginaries | 37
   2.1 Making Multiple Natures | 37
   2.2 “Working with Nature”: A Sociotechnical Imaginary | 48

3. The Context of the Coast | 57
   3.1 Coastal Change and the Bi-Cultural Nation | 57
   3.2 Designing the Field | 62
   3.3 Para-Ethnographic Encounters and Para-Sites | 68

**PART II: BEYOND HARD PROTECTION? THE WAIHI BEACH CASE**

4. Historical Transect of a Coastal Protection Conflict | 81
   4.1 “Have You Seen Waihi Beach?” | 81
   4.2 Coastal Protection History on a Changing Coastline | 89
   4.3 Who Owns the Beach? Defending the Local Coast | 97
   4.4 Narrowing Down the Case: The Environment Court in Search of “The Scientific Viewpoint” on the Conflict | 112

5. Possible Futures | 125
   5.1 Soft Options: “A Sob to the Greenies” | 125
   5.2 Civil Disobedience Continued: The Council Change Petition | 137
   5.3 “Things are Changing”: Tangata Whenua and the Cultural Pillar of Sustainability | 141
   5.4 Dystopia Waihi Beach: Enrolling the Seawall’s Materiality into Future Coastal Policymaking | 148
**PART III: MATERIAL PRACTICES OF WORKING WITH NATURE, OR: MAKING COASTAL NATURECULTURES**

6. **Restoring and Maintaining Nature:**
   An Introduction to Coast Care  | 165

7. **Working with Nature, Working with Communities**  | 177
   7.1 Keeping Busy: Senior Volunteers Doing Their Part  | 178
   7.2 Volunteering as a Means of Working Towards Paid Work  | 181
   7.3 Reclaiming the Public Space of the Beach:
      The Anti-Encroachment Project  | 184
   7.3.1 “I am Concerned About the Plants, not the Politics”:
      Tensions Between Coast Care and Council Objectives  | 188
   7.3.2 “Giving Something Back to the Community”:
      More Unpaid Labour on the Beach  | 190
   7.3.3 “I Hope Prince Harry is Gonna Shake my Hand”:
      The Voluntourists  | 195
   7.4 “It Makes You a Better Person”:
      Suzanne, a “Great Kiwi Example”  | 200

8. **“It’s a Frontline of Defence” – Dune Restoration as Soft Protection**  | 205
   8.1 Erosion is a Natural Process  | 207
   8.2 Do-It-Yourself Erosion Control:
      A “Kick Cowboy” Approach to Coast Care  | 212
   8.3 Beyond Coast Care: Dune-Reshaping
      as an Alternative to Hard Protection?  | 218
   8.4 Changing Paradigms: Coast Care as a
      “Soft Approach to Hard Issues”  | 226
   8.5 Hibernating Through the Financial Crisis:
      The Mōkau Spit Camping Ground Investment  | 231
   8.6 Managing Coastal Naturecultures  | 233
   8.7 Coast Care as Climate Change Adaptation?  | 234
   8.8 “A Moving Target a Little Bit”:
      Coastal Restoration from Foredune to Backdune  | 238

9. **Reconstructing Native Nature**  | 243
   9.1 Why Restore (Native) Nature?  | 244
   9.2 Anthropological Perspectives on Native and Invasive Species  | 247
9.3  Postcolonial Natures: A History of Aotearoa  
New Zealand’s Coastal Dunes  | 255
9.4  Invasive Native Plants: Mangroves  | 260
9.5  Naturally Native: A Sustainable Business  | 261
9.6  Native Naturecultures  | 269
9.7  Universal Nature and Local Crisis: Maketu Spit  | 274
9.8  “Soft Is What We Can Do Ourselves”: Natureculture Restoration  
as Employment Project for Māori Youth  | 281
9.9  Working with Native Natures  | 286

10.  Understanding Nature, Making Waves:  
    Multipurpose Reefs  | 287
10.1  The Dream of Artificial Surfing Breaks  | 288
10.2  Towards Multifunctionality – A Soft Option?  | 296
10.3  Working Economically: Artificial Reefs  
as Coastal Development Projects  | 301
10.4  The Future: Managed Advance?  | 305

Conclusion: Working with Nature,  
Making Coastal Naturecultures  | 311

Bibliography  | 319

List of Interviews  | 353

Table of Figures  | 355
Introduction and Outline

This book employs ethnography for the analysis of emerging soft coastal protection practices in Aotearoa New Zealand\(^1\). My goal is to understand coastal protection projects as situated, material practices of making coastal natures that are meaningful in a specific cultural, social and political context. In the limited space of the coast, erosion emerges as a sociomaterial phenomenon that is neither fully attributable to a natural sphere outside human influence, nor to human actions, values and perception alone. In this book, I develop a take on coastal natures as naturecultures (Haraway 2008; Choy et al. 2009; de la Cadena and Weiss 2010) while I analyse exemplary practices of soft coastal protection situated in Aotearoa New Zealand. Drawing upon a formulation I encountered in the field (Trade Publications Ltd 2003), I argue that the discourses and practices emerging beyond hard coastal protection can be understood as a new “sociotechnical imaginary” (Jasanoff and Kim 2009; 2013; 2015). This imaginary provides a shared vision about the common future that is framed as ‘working with nature’ (and not against it).

The importance of the topic itself is by no means limited to Aotearoa New Zealand. Significant problems with coastal erosion are experienced on coastlines worldwide and bound to be aggravated by the effects of climate change as well.

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1 Here and in the following, I will use a composite for the name of the country in both official languages: New Zealand in English language, and Aotearoa in native Te Reo Māori. After its use was discouraged throughout the 20\(^{th}\) century, Te Reo Māori has undergone a massive revitalisation in recent decades, and was declared an official language (besides English and New Zealand sign language) with the Māori Language Act in 1987 (Ministry for Culture and Heritage: 2013b). A number of institutions now refer to Aotearoa New Zealand (with or without separating the two terms by a slash), including the Green Party, most churches, and the Association of Social Anthropologists of Aotearoa/New Zealand (ASAA/NZ).
as coastal change, including residential development and increasing concentration of the world’s population in coastal areas (McGrahanan et al. 2007; Nicholls et al. 2007; Church et al. 2013; Wong et al. 2014). At the same time, a growing community of coastal management experts argues against the widespread use of coastal protection structures like seawalls, groynes or revetments which are common ways of protecting public and private assets against erosion and flooding. They suggest that instead and wherever possible, so-called soft approaches should be preferred. A conglomeration of ideas and practices is emerging in relation to soft coastal protection, including the restoration of natural barriers, the adaptation of human uses of the coast (including retreat from the shoreline), and soft engineering options like beach renourishment or artificial reefs. Widespread discussions around the notion of the Anthropocene (Crutzen and Stoermer 2000; Johnson et al. 2014; Sayre 2012) are likely to accelerate this rethinking of coastal protection policies currently happening around the globe. Chapter 1 discusses examples for recent developments in coastal management and engineering along the binary of soft and hard measures that is constantly reproduced in this field. The framing of soft protection as ‘working with nature’ is shown to be entangled with normative questions as well: what is the right coastal management for the Anthropocene? How to deal with the threats of eroding coastlines in the light of climate change and ongoing coastal development booms worldwide emerges as a sociotechnical question, and to tackle it means engaging in the politics of nature.

In Chapter 2 I develop my take on natural-cultural imaginaries and practices of nature-making that I see realized in the projects I encountered during my fieldwork in Aotearoa New Zealand. I argue for a refined attention to the role of more-than-human practices and material forces and introduce the main aim of the book: to show how coastal protection practices are engaging in the production of natural and cultural orders. To this end, I followed the practices of a loosely defined community of practice (Wenger 1998) consisting of restoration volunteers, coastal management practitioners, scientists and others, who promote the use of soft coastal protection measures in Aotearoa New Zealand. In Chapter 3 I provide a description of my research design and problematize the concept of the field site for doing multi-sited research on coastal protection. I elaborate on conceptual collaborations with coastal management experts, and the challenges of bringing ethnographic work back to the field by discussing the concepts of para-ethnography and the para-site (Holmes/Marcus 2008). Chapter 3 also puts the beach and coast into the context of Aotearoa New Zealand’s historical and contemporary political landscape. I discuss the role of the beach “bach” myth and the family campsite in the national imaginary, and the perceived threat to iconic
INTRODUCTION AND OUTLINE | 15

landscapes posed by the ongoing coastal boom. In relation to the contested space of the foreshore and seabed, I show how coastal conflicts reveal deep-seating anxieties over the future of the bi-cultural nation.

While Aotearoa New Zealand’s coastlines remain relatively sparsely populated compared to many other coastal nations, coastal hazard risk is growing, as increasing development of coastal areas factors in with the anticipated effects of climate change. Coastlines that feature accessible sandy beaches are mostly characterized by “traditional ‘new world’ low density individual dwelling subdivisional development” (Healy and Soomere 2008: 456). However, many of these settlements (for example in the North Island’s Bay of Plenty, but also on the Coromandel Peninsula and other places) were located very close to the shoreline when they were first developed during the second half of the 20th century (Blackett et al. 2010). It was common practice to level the foredunes with bulldozers to allow houses to be built directly bordering the beach, offering unimpeded sea views. The limited space between private properties, the public space of the beach and the ocean means, according to coastal scientists from the National Institute of Water and Atmosphere (NIWA), that “communities and coastal margins in many localities are on a slow, but sure, collision course” (Bell et al. 2001: 12).

About a quarter of Aotearoa New Zealand coasts are subject to coastal erosion (De Lange 2012), and where seaside developments are impacted, the preferred answer is usually the construction of (hard) coastal protection structures (Pilkey and Hume 2001). Such approaches however have come under critique for their negative effects on sandy beaches, ranging from aesthetic impact to the complete loss of high tide beaches (see Chapter 1). Mike Jacobson, a government commissioned coastal hazard management expert (Jacobson 2004a/b), argues that seawalls threaten to destroy a coastal nature of nation-building character:

Coastal hazards, property protection works and coastline natural character are intimately connected in a story that goes to the heart of a Kiwi icon – holidays at the beach, the beach bach, and generally the important part that the coast plays in growing up as a Kiwi. Unfortunately, it is a story that has yet to take root in the national psyche in the same way as the stories related to New Zealand’s native forests or endangered species. It is a story that needs to be adopted and acted on by communities before development (and the seawalls built to protect that development) ‘kill the golden goose’. The important place of natural beaches and dunes in the lives of most Kiwis is rapidly becoming a thing of the past. (Jacobson 2005: 6)
Recent developments in New Zealand’s national coastal policy are also evidence to a longer-term trend of policy-making that aims to move beyond hard-protection structures (Department of Conservation 1994; 2010). Orrin Pilkey and Terry Hume, two coastal scientists that have been vocal in criticising hard protection approaches, argue that Aotearoa New Zealand as a relative late-comer in coastal development and hazard protection law could benefit from the lessons learned elsewhere, in terms of scientific knowledge as well as legislation:

While it is still not easy to solve the erosion problem, we can conclude on a bright note. The New Zealand circumstances, our much-improved scientific knowledge of coastal processes, and the uptake of this knowledge into coastal hazard and erosion management initiatives by regional Councils, mean there should be no excuses for not ‘living by the rules of the sea’ and getting it right from now on. (Pilkey and Hume 2001: 23)

This statement however reveals a rather linear understanding of how scientific knowledge production informs political processes, which does not shed too much light on the role of others with vested interests in the politics of coastal nature. Scientists from Waikato Regional Council on the North Island of Aotearoa New Zealand have tried to investigate “how coastal residents react” towards approaches of what they call “living with nature”. Comparing the level of agreement with the statement that “we must accept that coastal erosion is a natural process at the coast” with peoples’ preferences in terms of coastal management options, they found that respondents who favour the construction of hard defen-

2 The current 2010 New Zealand Coastal Policy Statement (NZCPS), issued by the Department of Conservation (DOC) under the Resource Management Act (RMA) is a binding reference for regional-level coastal policy-making. Policy 25 requires to “discourage hard protection structures and promote the use of alternatives to them, including natural defences” (Department of Conservation 2010: 24f.); the use of public land for the protection of private property should be prevented in the future. As mandatory guidelines, the NZCPS provisions are mirrored on the regional level. New Zealand is divided into 16 regions governed by Regional Councils which are responsible for questions of coastal management (besides other aspects of resource management, land use and transport). The Proposed Bay of Plenty Regional Policy Statement (Bay of Plenty Regional Council 2013b), for example, includes policies on “Discouraging hard protection structures” for areas potentially affected by coastal hazards over at least the next 100 years (Policy CE 10XB), on “Avoiding inappropriate hard protection structures in the coastal environment” (Policy CE 11B) and for “Protecting and restoring natural coastal margins” (Policy CE 4A).
ces are less likely to agree, while those who prefer a “doing nothing” approach towards coastal hazard, perhaps not surprisingly, show higher agreement with the statement that coastal erosion should be accepted as a natural process. The authors conclude that this phenomenon is partly a result of people’s “day to day experience of living at the coast” (Stewart et al. 2011: vi) – something that geographers Collins and Kearns might call “everyday” or “emotional geographies” (Collins and Kearns 2012: 948). On the other hand, they write,

[these findings perhaps indicate a link between accepting coastal erosion as natural and being willing to work within a management paradigm of ‘living with natural processes’ as opposed to ‘taming natural processes’ (Stewart et al. 2011: vi).

This mirrors my own initial fieldwork experience, where I encountered a small number of coastal experts who put much effort into spreading the message of sustainable coastal management through public lectures, workshops, and the media. Often, these pioneers were “preaching to the converted”, as a listener put it after a public lecture entitled “The BOP Coast in 2050: How Today’s Decisions Will Affect Our Grandchildren’s Future” held in Tauranga in March 2010 (Fieldnotes March 2010). The speaker, who worked for a consultancy and a volunteer dune restoration programme, presented geomorphological insights into the mechanisms of coastal erosion in the Bay of Plenty, spoke about the anticipated effects of climate change and sea-level rise, discussed policy provisions like hazard lines and sets backs, and finally showed a number of impressive pictures from elsewhere: houses on stilts in Massachusetts and others that had fallen off eroding dune scarps into the sea. He did not have the solution himself, the speaker declared, “but we have to get our head around this”. He defined adapting to coastal hazard as “living with nature”, asking: “is it nature’s problem or ours?”

His dramaturgy seemed to point strongly to the conclusion that managed retreat, the relocation of existing buildings and infrastructure, would be the only viable strategy in the long run, but he did not explicate this point. His audience understood his argument nonetheless and commented correspondingly. During the question and answer session, a man who introduced himself as a volunteer with the community dune restoration programme Coast Care and member of the Waihi Beach Environment Society requested, “Can you give this talk at Waihi Beach?” Everybody in the room knew where he was coming from: a small coastal settlement at the fringes of the Bay of Plenty that has become the scene of a decade-long conflict over the use of hard coastal protection measures. My analysis of the Waihi Beach case in Chapter 4 and 5 will serve as the opening for
the empirical parts of the book. Since I worked simultaneously on/in several field sites, starting the narrative with the Waihi Beach case is a dramaturgical decision, taken because it allows me to show how the sociotechnical imaginary of ‘working with nature’ emerges in the scope of a conflict about hard and soft protection. Controversies are useful as entry points because they explicate what usually goes without saying. By unwinding a local history of coastal development and coastal protection measures, and by analysing the decision-making process for the common future, I show coastal erosion has emerged as a long-term problem. Eventually, a massive seawall protecting multi-million dollar houses has been built on a public beach, notwithstanding widespread agreement that in the long run, coastal protection should acknowledge and work with natural coastal processes.

Chapter 4 provides a short history of the coastal settlement at Waihi Beach and the coastal protection works that have been built to protect it. I go back to the beginnings of coastal development at Waihi Beach and identify three crucial points in time with wide-ranging consequences for today’s situation. I unravel an (unsuccessful) Environment Court appeal lodged by local residents opposing the unpopular coastal protection scheme, which was proposed by the local Council and backed by beachfront residents. Following the conflict into the courtroom and drawing from court proceedings, witness statements and other material, I observe how the case was decided by the judge as a question of science, not politics.

Chapter 5 broadens the perspective towards the socio-technical and political future of the Waihi Beach protection scheme, looking beyond the preliminary closure of the conflict after construction of the seawall. Picking up on the idea of the coproduction of social and natural orders, I focus on the political repercussions of the conflict, including changing understandings of what it means to be a community for the locals, including tangata whenua (local Māori). The chapter zooms in on the role that the materiality of the seawall itself might play in the coastal policy arena in the near future. Can Waihi Beach serve as a last example of its kind before the tides will eventually turn against hard protection measures?

The second empirical part (Part III of the book) focuses on practices of caring for the coast, or ‘making coastal naturecultures’. Spanning from the use of dune plants as a means of do-it-yourself coastal protection to the development of large-scale soft-engineering technologies, Part III engages with exemplary cases of soft coastal protection. The chapters show how the socio-technical imaginary to ‘work with nature’, as well as specific coastal naturecultures, are coproduced in the process. With the current move beyond hard protection advocated by a growing number of coastal experts in the country, the dunes are receiving more
and more attention as a central feature of natural coastal protection, and their widespread modification is now increasingly considered a historical mistake. The majority of dune restoration projects in Aotearoa New Zealand are carried out by organized volunteers. Chapter 6 introduces the country’s first and today largest volunteer dune restoration programme Coast Care Bay of Plenty (BOP) and describes its shared practices of planting, weeding and pest control, which are all part of what could be called maintenance work in the dunes. Chapter 7 looks at ‘working with nature’ by zooming in on the meaning of work and community. I analyse a large-scale dune restoration project in suburban Papamoa Beach, where Coast Care collaborates with the local authorities to tackle private gardens that have been extended into the dune reserve. This anti encroachment project uses dune restoration to reclaim the dune as public space. The project becomes possible only by harnessing the workforce of international volunteers, school classes and people on periodic detention serving community labour hours. I discuss the complex economies of Coast Care work, the diversity of volunteers’ motivations, and show how a continuum of paid and unpaid, voluntary and involuntary work is emerging through practices of caring for coastal nature-cultures.

Chapter 8 focuses on examples where dune restoration is explicitly used as a means of natural coastal protection, in the scope of Coast Care projects and also beyond. Serving as low cost ‘do-it-yourself’ protection, dune restoration and dune-scraping techniques build upon people accepting erosion as a natural process. Instead of settling things once and for all, these soft measures require ongoing human maintenance work, including the replacement of “sacrificial plants” washed away in returning storms. The chapter shows how people’s enthusiasm for Coast Care is used by dune management experts to promote soft approaches in general, and addresses the connection between dune restoration and climate change politics.

Chapter 9 addresses once again the question “which nature(s)?”, but more specifically aims to unwind the role of native nature as a concept that drives dune restoration practices as they are embedded into the naturecultural assemblages of postcolonial Aotearoa New Zealand. Erosion control remains a central goal of Coast Care, though many projects increasingly focus on coastal protection in a different sense: the protection, preservation and reconstruction of native coastal nature. The contemporary renaissance of native nature and culture in Aotearoa New Zealand, spanning across biodiversity conservation and bicultural politics, forms a backdrop against which the ‘working with nature’ imaginary currently fuels coastal restoration practices. This reconstruction of an imagined New Zealand coastal nature is another example for the coproduction of natural
and cultural order. Restoration practice emerges as a way of translating the ongo-
ing self-reflection about the country’s bicultural past, present, and future into practices of nature. What is at stake here is the distinctiveness of Aotearoa New Zealand’s natureculture, that is at least partly expressed through the native plants and the coastal landscapes they inhabit.

Chapter 10 broadens the scope of caring for the coast to multipurpose reefs, a so-called soft engineering technology used for coastal protection, but also to enhance marine biodiversity and surfing conditions. The chapter focuses on fieldwork conducted at ASR, a former New Zealand-based company which developed artificial reefs for multiple uses. It deals with this high-tech intervention whose merits are argued on basis of its innovative and science-based character, and which has been promoted by ASR as an approach to coastal protection working “in concert with nature”. The chapter illustrates the integral role that coastal science and surfing as well as the dream of artificial surf breaks have played for this technology in order to work technically, socially and economically and discusses how the approach has been framed as soft and multifunctional.

In the conclusion, I discuss how these different practices of ‘working with nature’ coproduce specific understandings of coastal nature and culture for the Aotearoa New Zealand context. I finally argue that practices claiming to ‘work with nature’ can be understood as strategic attempts to naturalize nature by less powerful actors. Against the backdrop of the increasing popularity of concepts that claim to enhance nature or use it as (green) infrastructure (Carse 2012), however, I call for a close ethnographic look at such practices. What natures are actually made by whom, and to whose benefit remains a contested political question that cannot be answered by simply referring to a singular, universal concept of nature. Instead, the theoretical challenge of thinking multiple natures makes it possible to analyse coastal protection and other practices as a politics of nature.