



**ENTIRE  
OF  
ITSELF?**

# Towards an Environmental History of Islands

edited by Milica Prokić and Pavla Šimková

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of Islands

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**Milica Prokić and Pavla Šimková**



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# Introduction

Milica Prokić and Pavla Šimková

Nobody can leave an island. An island is a cosmos in a nutshell, where the stars slumber in the grass beneath the snow.<sup>1</sup>

Barrøy, this ‘cosmos in a nutshell’, is a fictional island off Norway’s coast and the setting of Roy Jacobsen’s tetralogy of novels. It is also an unassuming place of wonder. It is large enough to sustain a family that grows and shrinks as the story progresses, but not large enough to justify the presence of a horse. For mainlanders who occasionally come to visit, it offers a baffling new perspective on their homes, suddenly small and insignificant when seen from the margins. For stranded creatures and people, it is a safe haven, the difference between life and death in the freezing water. For the Barrøy islanders, their tiny island represents their fate, a fact of life that cannot be abandoned. At one time or another, each of them tries to leave, only to eventually come back. The ultimate periphery for most, Barrøy is the whole world to the people who call it home.

An island is, in the famous words of John Donne, ‘entire of itself’. In contrast to ‘man’, who belongs to the larger whole of humanity and is always ‘a part of the main’, an island is a self-contained, self-sufficient body outlined by the waves of the world ocean. Despite their professed difference, the comparison between islands and humans is telling: islands have contours that tempt us to read them as bodies or at least objects.<sup>2</sup> The biologists Robert MacArthur and Edward O. Wilson noted in 1967: ‘An island is ... simpler than a continent or an ocean, a visibly discrete object that can be labelled with a name and its resident populations identified thereby.’<sup>3</sup> Through their distinctiveness, so reminiscent of the human body, islands tickle the imagination. Through their

1 Roy Jacobsen, *The Unseen* (London: MacLehose Press, 2017), p. 22.

2 Peter Conrad, *Islands: A Trip through Time and Space* (London: Thames & Hudson, 2009), p. 7.

3 Robert H. MacArthur and Edward O. Wilson, *The Theory of Island Biogeography* (Princeton: Princeton University Press, 1967), p. 3.



boundedness, they seem like worlds in miniature, downscaled, controllable models of the universe that can tell us more about how life on Earth has evolved, how we as humans have interacted with more-than-human environment, and about our own nature. As the biologist and historian of science Merlin Sheldrake has argued, ‘what is and isn’t an island is fundamental to the studies of ecology and evolution’. Islands – ranging from metaphorical to physical, from tiny specks of land to the idea of entire planets as islands, distinct bodies hurtling through space – have proven both intriguing and fruitful to think with.<sup>4</sup>

In a world dominated by continental cultures, islands are the exception to the rule. At the same time, they are *heterotopias*: Michel Foucault’s ‘other places’ that simultaneously represent, contest, and invert the standard, ‘real’ spaces of a society.<sup>5</sup> In this way, islands reflect the world of the mainland and can shed better light on it through their otherness. This way of thinking can lead to regarding islands as clean slates, capable of absorbing contradictory visions of the world and human nature and society. Islands, as places apart, provide an equally easy home to earthly reflections of paradise and to visions of hell. Thomas More’s *Utopia* is an island; so is the setting of William Golding’s *Lord of the Flies*. Neither is a coincidence: both have their real-life counterparts. The German author Judith Schalansky has, in her 2009 book *Atlas of Remote Islands*, collected fifty bizarre island stories that involve both utopian communities and hellscape of oppression and murder (which, more often than not, tend to overlap).<sup>6</sup> However, whether as visions of a perfect world or as bleak, isolated places that allow human nature to unfold in all its horror, in this way of thinking islands are no more than mirrors reflecting other places: no more than, as Schalansky writes, ‘footnotes to the mainland’.<sup>7</sup>

In the past several decades, scholars from various disciplines, united in their interest in island lore, have worked towards problematising this familiar stereotype. The loose interdisciplinary field of island studies, or nissology, has proposed to study islands ‘on their own terms’, not as tiny continents and

4 Merlin Sheldrake, *Entangled Life: How Fungi Make Our Worlds, Change Our Minds, and Shape Our Futures* (London: Bodley Head, 2020), p. 86; David Lowenthal, ‘Islands, Lovers, and Others’, *Geographical Review* 97 (2) (2007): 202–29.

5 Michel Foucault, ‘Of Other Spaces: Utopias and Heterotopias’, *Architecture/Mouvement/Continuité* (Oct. 1984): 3.

6 Judith Schalansky, *Atlas of Remote Islands: Fifty Islands I Have Never Set Foot on and Never Will* (London: Penguin Books, 2010).

7 *Ibid.*, p. 18.

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abstract representations of all humanity, but as specific places with specific conditions and specific histories.<sup>8</sup> Anthropology has identified islands as laboratories of both natural and societal processes and as sites fostering cultural peculiarities. Biology and ecology have studied them as breeding grounds of endemism and as living museums of evolution.<sup>9</sup> Literary scholars have mapped out islands' importance for human cultural imagination.<sup>10</sup> Recently, they have become key figures and indicators of the Anthropocene.<sup>11</sup>

The discipline of history has also been part of this uptick in island studies. Global historians, such as Daniel Immerwahr in his study of the American empire and its island territories, have shown that islands have played a crucial role in imperial expansions throughout history: as bases from which power could be exercised, as expendable grounds where new weapons could be tested, as sites of resource extraction.<sup>12</sup> Historians of political violence have exposed islands' role as 'natural' prisons and sites of exile, punishment, and internment.<sup>13</sup> Cultural historians have explored the past and present of

- 8 Godfrey Baldacchino, 'The Lure of the Island: A Spatial Analysis of Power Relations', *Journal of Marine and Island Cultures* 1 (2) (2012): 55–62; Grant McCall, 'Nissology: A Proposal for Consideration', *Journal of the Pacific Society* 17 (63–64) (1994): 1–14; James Randall, *An Introduction to Island Studies* (Lanham: Rowman and Littlefield, 2020); Godfrey Baldacchino (ed.), *The Routledge International Handbook of Island Studies: A World of Islands* (London: Routledge, 2018).
- 9 MacArthur and Wilson, *The Theory of Island Biogeography*, p. 3.
- 10 Diana Loxley, *Problematic Shores: The Literature of Islands* (London: Macmillan, 1990); Johannes Riquet, *The Aesthetics of Island Space: Perception, Ideology, Geopoetics* (Oxford: Oxford University Press, 2019).
- 11 Jonathan Pugh and David Chandler, *Anthropocene Islands: Entangled Worlds* (London: University of Westminster Press, 2021); Alastair Bonnett, *Elsewhere: A Journey into Our Age of Islands* (Chicago: University of Chicago Press, 2020).
- 12 Daniel Immerwahr, *How to Hide an Empire: A History of the Greater United States* (New York: Farrar, Straus and Giroux, 2019); for African examples, see Toyin Falola, Joseph R. Parrott and Danielle Porter Sanchez (eds), *African Islands: Leading Edges of Empire and Globalization* (Rochester, NY: University of Rochester Press, 2019).
- 13 Michael R. Ebner, *Ordinary Violence in Mussolini's Italy* (Cambridge: Cambridge University Press, 2011), pp. 1–23; Joseph Pugliese, 'Transnational Carceral Archipelagos: Lampedusa and Christmas Island', in *Transmediterranean: Diasporas, Histories, Geopolitical Spaces*, ed. by Joseph Pugliese (New York: Peter Lang, 2010), pp. 105–25; Milica Prokić, 'Contrasting the Sunny Side: Goli otok and the Islandness of the Political Prison in Croatian Adriatic', in *Environmentalism in Central and Southeastern Europe*, ed. by Hrvoje Petrić and Ivana Žebec Šilj (Lanham: Lexington Books, 2017), pp. 197–222.

Western culture's fascination with islands and their role as indispensable metaphors which help us make sense of the world we live in.<sup>14</sup> Together, they have shown islands as very far from the ahistorical places they are sometimes perceived as.

## Environmental history of islands

This volume is dedicated to a crucial dimension of island history that has so far often been missing from these accounts: their natural environment. The work of anthropologists, literary scholars and cultural historians has taught us a lot about how islands have been imagined, lived on and represented by different cultures at different times. In this volume, we ask what role the islands' environment, and human interactions with and perceptions of this environment, have played in their history. We argue that to understand why an island became a penal colony, an atomic test site, a sugarcane plantation or a tourist destination we must take a close look at its geology, its topography, its climate and ecology, and its position vis-à-vis other places. We also cannot understand an island's place in history without considering the changing ways in which its materiality has been perceived, used, valued or dismissed, protected or mistreated over time.

*Entire of Itself? Towards an Environmental History of Islands* argues for islands as a distinct category of environmental history analysis. The – surprisingly few – existing studies on the environmental history of islands have shown them as entities whose geographical characteristics make them the perfect sites to study phenomena present elsewhere, but not in such distinctiveness or concentration. The discreteness of their shape, their idiosyncratic nature and their very resemblance to the human body has even invited a way of thinking about islands' history in terms of 'biography'. Peter Coates has offered what he calls a 'bio-biography' of the North American island of Amchitka, arguing that islands in their distinctiveness lend themselves particularly well to an analysis of Braudelian 'deep time in a single place'.<sup>15</sup> Richard H. Grove in his classic study of colonialism and early conserva-

14 John R. Gillis, *Islands of the Mind: How the Human Imagination Created the Atlantic World* (New York: Palgrave Macmillan, 2004); Rod Edmond and Vanessa Smith (eds), *Islands in History and Representation* (London: Routledge, 2003).

15 Peter Coates, 'Amchitka, Alaska: Toward the Bio-Biography of an Island', *Environmental History* 1 (4) (1996): 23.

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tion efforts identified tropical oceanic islands as critical sites where a new conservationist consciousness was born: precisely because the islands were so easily conceived of as an ‘allegory of a whole world’.<sup>16</sup> Stefan Dorondel and his team have been divining the active role that islands in the Lower Danube have played in the lives of riparian communities and in the histories of Romania, Bulgaria and Ukraine.<sup>17</sup> Uwe Lübken and Rebecca Hofmann have shown small islands as places particularly susceptible to natural forces and thus representative of the environmental challenges facing today’s world.<sup>18</sup> Finally, a recent special issue of the journal *Coastal Studies and Society* has made a case for strengthening the ties between environmental history and island studies and for studying islands as places in their own right, while pointing towards the fundamental ambiguity of some of their defining traits: their limits, their isolation and their vulnerability.<sup>19</sup>

This volume’s understanding of the importance of islands’ environmental history builds on these approaches: we regard islands as concentrative samples of environments, societies and their entanglements; as ‘hotspots’ where different – and often contradictory – ways of human interaction with the environment converge and crystallise. Island history is a history of vigorous conservation efforts as well as large-scale experimentation and ruthless exploitation. Out of the fifteen islands and island groups included in this volume, more than half currently enjoy some form of nature protection; eight are UNESCO World Heritage or national park sites, or both. Almost all of them are renowned as places of natural beauty and sought-after tourist destinations. At the same time, most of their histories include extreme forms of extraction and environmental transformation. They are places that have been summarily made over to accommodate certain uses; places that

16 Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860* (Cambridge: Cambridge University Press, 1995), p. 9.

17 Stefan Dorondel et al., ‘State, Communities and Nature of the Lower Danube Islands: An Environmental History (1830–2020)’: <https://danislandsproject.wordpress.com/about/> (accessed 15 Feb. 2024).

18 Rebecca Hofmann and Uwe Lübken, ‘Shrinking, Sinking, Resurfacing: Small Islands and Natural Hazards in Historical and Current Perspective’, *Global Environment* 8 (2015): 4–15.

19 Romain Grancher, ‘Hybrid Islands: Some Reflections on the Intersection between Island Studies and Environmental History’, *Coastal Studies and Society* 2 (2) (2023): 155–70.

have been violently split open to yield valuable resources; and places where new ways of relating to and managing the environment have been tried out, sometimes with disastrous results. The way these extreme forms of interacting with the environment tend to converge on islands makes them a particularly rewarding category of places for environmental history to study.

For all their distinctiveness, it is hard to find a single answer to the crucial question of what makes islands a source of endless fascination. Biology sees in islands downscaled models of the world, nature-made laboratories of evolution. Anthropology and cultural history cite the influence of centuries of European cultural imagination that has seen islands as 'the other'. Literature has long constructed them as 'locales of desire'.<sup>20</sup> But, wherever they come from, these answers always sound somehow insufficient. It is equally hard to pinpoint islands' defining traits. They come in all shapes and sizes, in colours ranging from tropical-forest green to volcanic-rock black, in the flocks of archipelagos and as lone outposts in the sea. However, an island is always first and foremost characterised in terms of its relation to other places. Defining an island means making sense of the space surrounding us: interrogating the (supposed) dichotomies of centre and periphery, connection and isolation, boundaries and continuity. The chapters of this volume can be read along the lines of these spatial categories, since all of them, so often applied in the study of islands, are of eminent interest to environmental historians.

Islands have been often seen as the ultimate periphery. The literary scholar Peter Conrad, himself born in Tasmania, has observed that an island location 'is by definition eccentric, because it acknowledges that there is a centre elsewhere'.<sup>21</sup> Mainland cultures have regarded islands as places that, through their very distance from what is considered central, are well suited for uses undesirable in more exposed locations: waste dumps, weapons-testing sites, prison camps.<sup>22</sup> Alternatively, their seclusion has been interpreted as guardian of pristine conditions, superimposing on islands a vision of would-be Edens. If we flip the angle, however, and put islands front and centre, if we view history from the island, we see the familiar through different eyes. Periphery, after all, is solely a matter of perspective. Island dwellers themselves have hardly ever regarded their homes as a fringe of other places: to

20 Baldacchino, 'The Lure of the Island', 55.

21 Conrad, *Islands*, p. 6.

22 For concrete examples, see the chapters by Pavla Šimková, Todd A. Hanson, Gitte Westergaard and Milica Prokić in this volume.

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them, they have been the centre of their world. By critically examining the centre-periphery relationship between island and mainland, we can gain new insights about which environments different cultures have seen as marginal, peripheral and ultimately expendable over time, and why.

The push and pull of isolation and connection to which island places have historically been subjected is one of the most prominent topics of island studies. In Western culture, islands have long been universally accepted symbols of isolation and remoteness; however, this perspective, too, can be overturned, as the anthropologist Epeli Hau'ofa famously did for Oceania, seeing a 'sea of islands' connected to each other instead of a cluster of small, isolated pieces of land floating in the sea.<sup>23</sup> Not a few islands are characterised as much by their connection to the nearest mainland and to each other as by their separation from the larger landmass. Oscillating between remoteness and accessibility, and the inherent ambiguity and overlapping of these categories has been one of the major forces shaping island 'ecobiographies'. Islands' position vis-à-vis other places and the perceptions of this position have influenced human interactions with their environment in multiple ways. Their human uses have often been based on their perceived or actual distance from the part of the world that 'really mattered'<sup>24</sup> and on the difficulties of getting to them, as well as of getting away. Such remoteness-based interactions bafflingly often overlapped with uses governed by islands' accessibility and controllability. By delving into the ambiguous relationship between isolation and connection, we can explore various roles that islands' geographical situation has played for the history of their environment.

Having a shape and clear boundaries seems the most readily discernible trait of islands. Unlike mainland places, the contours of islands, the lines determining what is island and what is not, seem unambiguous. However, if we employ a geological, ecological or archaeological perspective, island boundaries get more permeable, porous and blurry. Islands have emerged and submerged within geological and sometimes even historical time; their shapes and sizes change with the tides; and some of them wander along with

23 Epeli Hau'ofa, 'Our Sea of Islands', *Contemporary Pacific* 6 (1) (Spring 1994): 148–61.

24 The distinction between the part of the world that 'really mattered' and the rest was famously made by the Massachusetts historian Walter Muir Whitehill in reference to colonial Boston's spatial orientation toward the sea and, hence, England. Walter Muir Whitehill and Lawrence W. Kennedy, *Boston: A Topographical History* (Cambridge, MA: Harvard University Press, 2000), p. 21.

the river current.<sup>25</sup> ‘Island’ may then emerge as mere visual construct that fails to take into account the temporal dimension of things as well as the fluid division between water and land.<sup>26</sup> Are we imagining clear separation where there is in fact continuity? Would it be more accurate to think of islands as ‘islandscapes’, including what is submerged? Or would, conversely, ignoring these divisions mean disregarding a defining aspect of islands, their boundedness? This volume sets out to study a range of island boundaries and continuities and the role these divisions, or lack of them, have played for the way humans have interacted with island environments. The question of island boundaries also has another, internal, dimension: as Jonathan Pugh and David Chandler note, islands can be seen as ‘entangled worlds’ that break down the ‘human/nature divide of modernity’ – a concept key to environmental history scholarship.<sup>27</sup> Islands are entities that can at once embody isolation and the dense entanglements between the human and the non-human as well as those between island and mainland. Studying them allows us to think with their simultaneous state of being isolated and interconnected, human and more than human, materially present and imagined.

## Structure of the volume

Islands seem to almost actively resist classification through their immense diversity. The fourteen chapters that form *Entire of Itself?* include islands that range from oceanic to coastal to riverine; islands distributed across the Pacific, Indian and Atlantic Oceans, with several sojourns into the Mediterranean Sea; and island histories that span time periods from the second century CE, when the harbour islands of ancient Ephesus were threatened by siltation, to January 2022 when a volcanic eruption destroyed the infant island of Hunga Tonga–Hunga Ha’apai. Alongside historians, this volume includes contributions by anthropologists, geographers, archaeologists and political ecologists, all of whom undertook the task of engaging with ‘their’ islands in an environ-

25 Stefan Dorondel, Stelu Serban and Daniel Cain, ‘The Play of Islands: Emerging Borders and Danube Dynamics in Modern Southeast Europe (1830–1900)’, *Environment and History* 25 (2019): 521–47; Jenia Mukherjee, Raktima Ghosh and Pritwinath Ghosh in this volume.

26 Cyprian Broodbank, *An Island Archaeology of the Early Cyclades* (Cambridge: Cambridge University Press, 2002); Todd A. Hanson in this volume.

27 Pugh and Chandler, *Anthropocene Islands*, p. x.



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mental history context, while bringing with them the conceptual frameworks of their own fields to reflect the islands' multifaceted nature. The volume's aim is not to try and tame the booming interdisciplinary field of island studies, but rather to bring islands into environmental history as a distinct category of analysis, and from there to establish and proliferate further connections.

This volume is organised into sections according to three prominent categories of human engagement with islands over time: conservation, exploitation and experimentation. The choice of these resoundingly anthropocentric categories is deliberate. The chapters in each section, on the one hand, speak of human ideas, actions or intentions: to protect, harness, extract from or experiment with island environments. On the other, the stories told in each of the chapters show that these unique and peculiar environments routinely thwart human expectations. The eloquent words of Jeffrey Jerome Cohen about stone apply here, too: 'The lithic is likely to rebuke the arrogance of expecting the nonhuman to be like us and for us.'<sup>28</sup> The chapters in each category thus stress the active role the islands' environments have played in their histories: shaping, as much as being shaped by, the interactions with humans in unexpected ways. As with all attempts to lace dynamic, multispecies, multilateral and multifaceted interrelations into the corset of a formal framework, these categories tend to overlap and spill into one another, and may seem altogether too loose or too tight in places, but they nonetheless capture some of the most conspicuous human-island entanglements throughout history.

Section I, 'Islands of Conservation', focuses on the ideas and practices that divided island environments into the valuable and worthy of preserving on the one hand, and those which enjoy no human attention or protection on the other. It explores the diverse reasons why islands have been valued by humanity over the course of history, islands as landscapes of prestige and power, as well as islands' role in conflicts over what has or has not been worth conserving in different societies at different points in time.

The section opens with a look at three islands that have long disappeared under layers of silt, and turned into a 'part of the main'. The harbour islands of late-ancient Ephesus, as Travis W. Proctor argues in his chapter, can serve as indicators of the city's environmental and religious transformations, as

28 Jeffrey Jerome Cohen, 'Geophilia, or the Love of Stone', *Continent* 4(5) (2015): <https://continentcontinent.cc/archives/issues/issue-4-2-2015/geophilia-or-the-love-of-stone> (accessed 15 Feb. 2024).



well as their active shapers. Over the space of several centuries, the islands' fate was interwoven with the protection of Ephesus's all-important shipping trade: while the gradual landlocking of the harbour island of Syrie signalled the imminent demise of the city's deepwater harbour, artificial islands were built at the harbour's mouth in the second century CE to help retain Ephesus's port capability. In the early Christian era, an outer-harbour island gained significance as an entry point to the city's complex of religious sites. The islands thus mirrored both Ephesus's changing environment and its shifting religious identity and values.

Brijuni islands in the Northern Adriatic may be among the most conspicuous examples of island exceptionality. Valued for their natural beauty since antiquity, over the course of the twentieth century the islands went through several incarnations as an exclusive resort, from the crown jewel of the 'Austrian Riviera' to the favoured playground of the Italian fascist elite and the extravagant summer residence of Yugoslav president Tito, each time bound with fascinating changes of their flora, fauna and human-made infrastructure. Milica Prokić and Hrvoje Petrić map out the curious ways in which Brijuni's exceptional natural beauty and their human history converged in transforming their islandscape into a concentrate of prestige and power.

Some 170 kilometres down the Croatian coast as the boat sails lies an archipelago suspended between protection and exploitation – valued for its idiosyncratic islandscape and the locals' traditional way of life on the one hand, and for its tourist potential on the other. In his chapter about the conflicts surrounding the establishment of the Kornati National Park, Josef Djordjevski looks at the way the Kornati archipelago has been simultaneously slated for protection and viewed as a source of revenue by the government of socialist Yugoslavia. Linking the transformation of the islands' identity to that of the national park and the efforts to conserve its biophysical environment and juxtaposing them with the lure of profit from elite international (yet environmentally detrimental) nautical tourism, the chapter also showcases the general trend of regarding islands as unique and worthy of protection while trying to capitalise on this very uniqueness.

Island exceptionality and nature protection competing with other, more exploitative, uses is also the topic of Gitte Westergaard's study of the Caribbean island of Culebra. Culebra, a small island near Puerto Rico, has been assumed to be the home of *Anolis roosevelti*, a giant lizard species not seen in the wild since the 1930s. The lizard's hypothetical presence has been the reason for establishing a protected area on Culebra, a place formerly used by

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the US military for bombing practice. The chapter opens themes of island endemism, island species extinction and the strange coexistence of perceptions of islands as valuable habitats and expendable periphery. Moreover, it brings in the important notion that conservation attempts on islandscapes are often preceded by the transformation of their identity.

The many ways in which island environments can be valued, dismissed, or just plain ignored, are explored in the section's last chapter on Nirmal Char, a Ganga river island in Indian West Bengal. Jenia Mukherjee, Raktima Ghosh and Pritwinath Ghosh regard the fluid islandscape of Nirmal from historical, geographical and anthropological perspectives, offering a complex reading of the island's existence in the ever-changing riverine environment and its relative value (or lack thereof) for colonial administrators, the Indian nation-state and the *choruas*, river islanders who depend on it for their livelihoods – perhaps the only people to whom the island really matters.

Section II zeroes in on another phenomenon that came to define human interactions with island environments: resource extraction and exploitation. Thematising notions of islands as no man's land and extractive periphery, the chapters in this section tackle the various ways in which island environments have been appropriated and exploited, often by 'outlanders': conquerors, colonisers, merchants and venturers. The section also explores the significance of islands' spatial situation – their remoteness and isolation, or else accessibility and connectedness – for their environmental history.

'Exploitation' may be an exaggerated way of describing how pirates and buccaneers operating in the Pacific Ocean in the seventeenth and eighteenth centuries relied on the islands of Isabela in the Galápagos archipelago and Más a Tierra, today's Robinson Crusoe Island, off the coast of Chile. The sea robbers used the islands as hideaways and as sources of food and fresh water that allowed them to prowl the waters of the Pacific for months and even years on end. Wim De Winter reconstructs the ways in which these temporary guests perceived the islands' environments, exploited their remoteness and inaccessibility, and employed them for their own ends; conversely, he teases out how the island environments enabled the buccaneers' long-term survival on the inhospitable ocean.

Remoteness and isolation have played a prominent role in the history of Japan's Amami islands, albeit in a very different way. From the seventeenth until the nineteenth century, the islands were ruled by a powerful outside domain and transformed into a sugar colony. This transformation hinged on an enforced sugarcane monoculture and on often brutal repression of the lo-

cal population. The islands' remoteness served primarily to keep people from leaving. In his chapter, Thomas Monaghan shows the direct links between isolation and exploitation and the way the interplay between them resulted in a complete makeover of the island environment.

Perhaps the most extreme case of exploiting an island's isolation is the twentieth-century history of Enewetak Atoll in the Marshall Islands. As Todd A. Hanson explains in his chapter, the island's attributes of isolation, seclusion and relative accessibility, as well as the tractability of its inhabitants, made it, in the eyes of the US defence establishment, an ideal site for nuclear-weapons testing. Taken over by military and scientific infrastructure and subjected to 43 nuclear tests over the space of ten years, the originally idyllic atoll became the ultimate example of an environment treated as expendable – and transformed and contaminated irreversibly as a result.

While the environmental history of many islands has been shaped by their remoteness, in the case of Gallops Island in Boston Harbor, the decisive factor has been its proximity to the city of Boston. Pavla Šimková traces in her chapter the multiple ways in which Bostonians have made use of the island, its resources and its position in the middle of their harbour, extracting stone and gravel and exploiting its ambivalent position vis-à-vis the city: separate yet accessible, relatively remote yet close enough, the interpretation of its position changing according to the city's current needs and values.

A common feature of island histories is treating islands as *terra nullius*, no man's land that can be appropriated for purposes deemed desirable by the current overlord. This was the case with Neil Island in the Andaman archipelago, settled in the late 1960s in the course of an Indian state-building project. Raka Banerjee follows in her chapter the ways in which the mainland Indian settlers strived to make sense of their new environment. Employing oral history methods, she juxtaposes the settlers' mental geographies, dominated by a vision of the island as a landscape of labour which it had been their mission to develop and make profitable, with its current parallel identity as a domestic and international tourist destination, its environment exploited to support both of these readings.

Section III, 'Islands of Experimentation', takes on the familiar concept of islands as laboratories. Due to their widespread perception as worlds in miniature, islands have seemed well suited for all kinds of experiments, be these ecological, economic or social. Their exposed position on the frontlines of the Anthropocene (complete with the increasing baggage of the term, reflected particularly on the island and coastal communities of the Global

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South), makes them into environments where we can most readily observe the impacts of anthropogenic changes.<sup>29</sup> The chapters in this section focus on the environmental aspect of island laboratories: on how island environments have been used as bases for experiments, have been transformed by them, have resisted them and have themselves been an (unintended) result of experimentation.

The history of the island of Réunion evinces the character of both an economic and a social experiment. Claimed by the French *Compagnie de l'Orient* in the early seventeenth century, the previously uninhabited island subsequently came to be almost completely dominated by a plantation economy. The plantations relied on the labour of imported slaves and indentured workers and caused a dramatic transformation of the island ecosystem, culminating in the nineteenth century in a sugarcane monoculture. Philippe Holstein, Jehanne-Emmanuelle Monnier and Pablo Corral-Broto trace the environmental repercussions of subjecting the whole island to a single economic imperative: an experiment resulting in sinking agricultural productivity, food vulnerability and spread of epidemics.

On other islands, the project of achieving economic efficiency did not take root so thoroughly. Joshua Meeks recounts in his chapter the Corsican people and environment's stubborn resistance to the French state's 'civilising mission' in the eighteenth century. Over the course of some fifty years, various private individuals, often acting with the support of the French state, put forward plans to make Corsica profitable, with mixed success at best. Despite seeming fit to be modernised, both Corsicans and their island's environment long withstood what Meeks calls the 'tyranny of connectivity'. He argues that the local population's very relationship to the land played an important part in this resistance and, in so doing, discusses the layered notion of the island's agency in its own history, a theme that threads through several other chapters in the volume.

The mid-twentieth-century history of the Goli otok island in today's Croatia, as told by Milica Prokić, can be read as a sinister socio-environmental experiment. From 1949 until 1956, the Yugoslav secret police ran a prison camp for alleged political opponents on the island, where they were sent to

29 See, for example, S Faizi, 'Climate Change is not Man-made — the West and its Capitalism are Largely Culprits', *The Indian Express*, 29 July 2023: <https://indianexpress.com/article/opinion/columns/climate-change-west-capitalism-culprits-8865331/>; Jason W. Moore, *Capitalism in the Web Of Life: Ecology and the Accumulation of Capital* (London & New York: Verso, 2015).

‘revise their political stance’ by hard labour. Soon, the exceptionally harsh environmental conditions of the island and the brutality of the camp regime began reinforcing each other, creating a unique – and extreme – environment of violence.

The last chapter of the volume introduces the readers to an island that can be conceived of as a laboratory of the future. Jeff Wescott looks at what is perhaps the ultimate Anthropocene island: Hunga Tonga–Hunga Ha’apai in the Pacific Kingdom of Tonga has lived its life fully in the era shaped by humans. Surfacing in 2014 as a result of volcanic activity, it was largely destroyed again in January 2022 following another eruption of a submerged volcano. A scientific expedition which the author took part in found the supposedly pristine new landmass to consist of a bewildering assemblage of natural materials and human artefacts, most prominently ocean plastic. The chapter conceptualises the island as a site to explore the impacts of the Anthropocene, challenges our comprehension of the division between the natural and the cultural, and invites us to engage with the ‘patchwork ontologies’ that will likely govern the environments of the Earth’s new geological epoch.

More than other places, islands capture the imagination, invite identification and inspire humans to form close relationships to them. The authors of this volume are no exception: while working on our chapters, we caught ourselves more than once referring to the objects of our writing as ‘our’ islands – although none of us hail from ‘their’ islands and some of us have never even set foot on them. The small features preceding each chapter express this extraordinary degree of identification. They are reflections on the authors’ personal relationships to the islands they write about: variations on a sentiment succinctly summed up by the Tasmanian-born Peter Conrad: ‘Everyone who was not allotted an island of their own at birth seems to have adopted or acquired one.’ These personal accounts tackle the theme of human-island interaction on the individual level, bringing home the idea of humanity’s special kinship with islands.

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**Part I.**  
**Islands of Conservation**





# 1. The Environments of Late Ancient Ephesus:

## A History in Three Islands

Travis W. Proctor

*What struck me the most were the farmers. It was my fourth year of graduate school, and I was on a research trip to the ancient city of Ephesus. I probably shouldn't have been there: my dissertation was on an unrelated topic, and the trip was a diversion from some necessary research and writing. But I had what every graduate student dreams of: funding.*

*A free trip abroad for ancillary research seemed luxurious and exotic. And yet what I found there seemed so familiar: agrarian countryside, tractors, farmers and livestock, dotting the roadside landscape between the nearby town of Selçuk (where I stayed) and ancient Ephesus.*

*The farmers reminded me of my father and mother, the livestock of the cattle they tended on our small farm in Kansas, and the tractors of the same machines that my father often spent whole weekends repairing – the mechanical work seemingly taking up much more time than the agricultural. In a place so far from home, I'd found its double.*

*To the ancient inhabitants of Ephesus, however, such a setting would have been all too foreign – those fertile plains were once the deep-water Gulf of Ephesus, now infilled by layers of silt from local rivers, and the hills that now interrupt the flat farmlands were once islands in the midst of Ephesus's waterways. Those islands would have constituted the more familiar 'landscape' to ancient Ephesians, who experienced Ephesus as a thriving seaside port city. And yet by the time I had arrived, the islands were gone, leaving me free to think of home, and consider how the effects of the distant past are never as foreign as they seem.*

There is, one knows not what sweet mystery about this sea, whose gently awful stirrings seem to speak of some hidden soul beneath; like those fabled undulations of the Ephesian sod over the buried Evangelist St. John.

‘The Pacific’, from Herman Melville, *Moby-Dick*

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Call it a miracle: the ground moved. That was the claim, at least, according to the Christian pilgrims who visited the famous tomb of John the apostle in the ancient city of Ephesus. There, legend has it, the saint had been buried while still alive, and his miraculous posthumous breaths were made manifest by the stirring of the ground above his crypt. This miracle was famous. It can be traced all the way back to Augustine of Hippo, who deridingly attributes it to ‘apocryphal’ storytelling,<sup>1</sup> but perdured into modernity, making its way into, of all places, Melville’s story of Ahab and the Whale.

John’s grave wasn’t the only Ephesian sod on the move. The city’s surrounding rivers, including the Cayster and Selinus, carried with them large amounts of silt that, over time, infilled local waterways (such as the Ephesian gulf and harbour), creating new land and bringing major shifts in the Ephesian landscape. This, in turn, eventually contributed to a major change in the city’s location: from seaside harbour city to inland fortress. At the same time, the city experienced a significant religious change: from thriving centre of polytheistic worship to a Christian-majority city, centred on the undulating tomb of John.

The territorial and cultural flux of Ephesus is perhaps best encapsulated in the islands that populated its surrounding waterways. These include both natural and ‘artificial’ islands located in Ephesus’s gulf and harbour, which collectively speak to the evolution of its coastal environments. In this essay, using a combination of textual and geoarchaeological studies, I will explore the entwined evolution of island environments and religious cultures within the city of Ephesus and its surrounding areas, with a focus on the Roman and late antique eras (ca. 200–700 CE). In the first part of the text, I examine how islands played a key role as dynamic entities that both shaped the city’s history and were shaped as part of it. Here the essay will focus on the Island of Syrie, an isle that stood in Ephesus’s ancient gulf. Over time, silt from local

1 *Tractates on the Gospel of John* 124.2.

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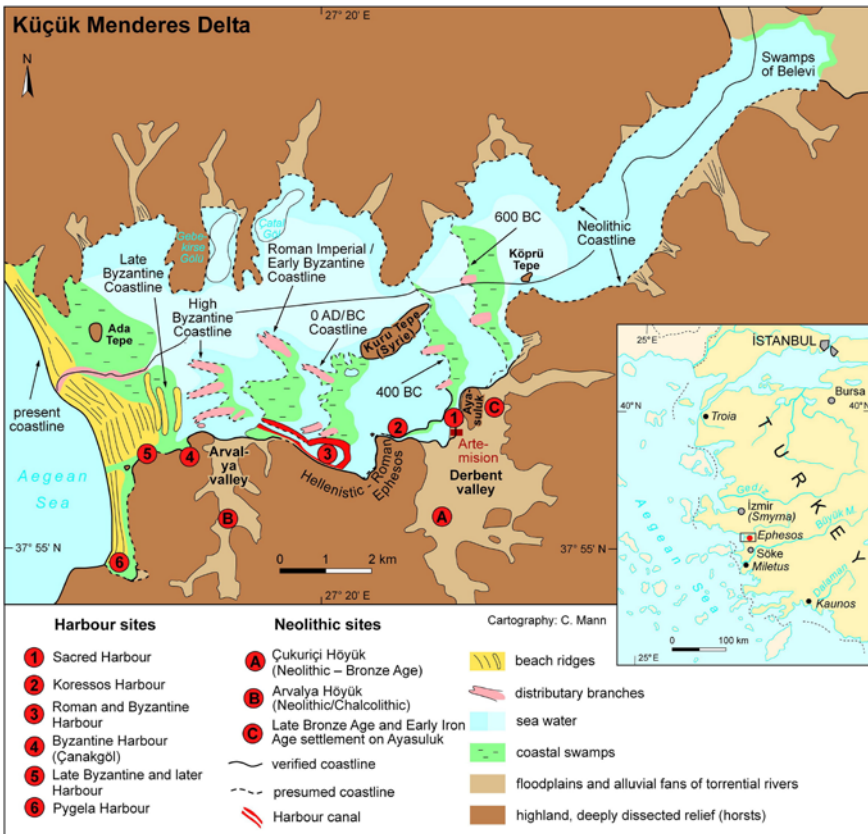
rivers infilled the gulf, landlocking Syrie and threatening Ephesus's access to a deep-water harbour. In response to this problem of siltation, Ephesian citizens constructed artificial islands in the mouth of the city's harbour, a necessary step to maintain docking capability due to the shoaling of Ephesus's gulf and main harbour. The history of both Syrie and the artificial islands, I propose, underscores how islands were an important part of Ephesus's social and environmental history, both in their signalling of environmental challenges and their dynamic role in attempting to address those challenges.

In the second part, I lay out how islands in Ephesus's vicinity contributed to shifting understandings of its civic space and religious identity. I note how Ephesus's religious centre increasingly moved from its seaside city centre to the inland Ayasoluk Hill, a promontory that became landlocked due to the infilling of its adjacent waterways. Ayasoluk was famous as the site of the legendary tomb of John the apostle, and became a central destination for Christian pilgrimage. The changes in Ephesus's landscape are encapsulated in the significance of a third island, the outer harbour island, which in late antiquity gained new prominence as a site of a so-called 'Pilgrimage Church' and the starting point in Ephesus's pilgrim route for seagoing travellers.

Through these three islands, my essay considers how the environmental and religious identities of Ephesus shifted and responded to each other. As Ephesus's islands were destroyed or created, abandoned or built upon, they both marked and informed the ecological and social realities of the city. Thus, these three islands of ancient Ephesus were not just environmental 'backdrops', but active indicators and influencers of the cultures, societies and topographies with which they became interwoven. In this way, the essay demonstrates how islands can serve as a metaphor for the flows of contingency that attend cultural change, but also as material elements that inform and shape cultural outcomes.

### **The Island of Syrie and a city on the move**

At 18 metres above sea level, the Korudağ Hill today towers over the tracts of farmland that blanket its surrounding landscape. Located northwest of the modern Turkish market city of Selçuk, the Korudağ is adjacent to the Küçükmenderes River, which flows north of the hill towards the Mediterranean Sea to the west. Roughly 3,000 years ago, however, the Korudağ was situated much differently: the Küçükmenderes (then called the Cayster River) was far to the east, not yet flowing near the hill, and the Korudağ



**Figure 1.**

Scenario of delta progradation of the Ephesian gulf, Helmut Brückner. Maximum inland transgression of the gulf shown in top right corner. Prograding coastline indicated by green 'duck feet' coastal formations, shown progressing seaward (left) such that they landlock the island of Syrie (centre). Modern coastline indicated by line on left of figure.

Source: Helmut Brückner, Alexander Herda, Michael Kerschner, Marc Müllenhoff and Friederike Stock, 'Life cycle of estuarine islands – From the formation to the landlocking of former islands in the environs of Miletos and Ephesos in Western Asia Minor (Turkey)', *Journal of Archaeological Science: Reports* **12** (April 2017): 876–894, at 888; CC BY-NC-ND 4.0.

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(then called 'Syrie') was an island horst jutting up, not over rural farmlands, but over a deep-water gulf.

On the gulf's shores perched the ancient city of Ephesus, which originated as a small settlement to the southeast of the island Syrie. This 'Ephesian Gulf', as it was called, was created by sea level rise of the Mediterranean, which resulted in the flooding of the local river valleys, such that by the Classical and Hellenistic periods, the gulf stretched nineteen kilometres inland.<sup>2</sup> Syrie was located roughly in the centre of the gulf (see Figure 1).

By the early Hellenistic period, however, the island was in danger of becoming landlocked. With the stagnation of sea-level rise, area rivers began to deposit silt into the gulf, pushing the coast westward, toward the sea.<sup>3</sup> According to Pliny the Elder's *Natural History*, in the Ephesian Gulf the 'accumulation of silt [from local rivers] builds-up land and has left the island Syrie situated in the middle of a plain' (V.115).<sup>4</sup>

In addition to Syrie, Ephesus's deep-water harbour was also threatened with becoming landlocked. Ephesus was initially a seaside city, abutting the Ephesian Gulf, which provided it easy access to the Mediterranean Sea. This was essential for visitors traveling to the seaside Temple of Artemis,<sup>5</sup> as well as for Ephesus's connection to the shipping networks of the Mediterranean. The earliest harbour of Ephesus was the so-called 'sacred harbour', named due to its placement next to the Temple of Artemis.<sup>6</sup> The same 'mud' that landlocked the island of Syrie, however, began to infill this harbour and undermine its viability.<sup>7</sup>

Ephesian leaders recognised the environmental problem that the advanc-

- 2 Martin Steskal, 'Ephesos and its Harbors: A City in Search of its Place', in Sabine Ladstätter, Felix Pirson and Thomas Schmidts (eds), *Harbors and Harbor Cities in the Eastern Mediterranean*, BYZAS 19 (Istanbul: Ege Yayinlari. 2014), pp. 325–38, at 331.
- 3 Friederike Stock, Michael Kerschner, John C. Kraft, Anna Pint, Peter Frenzel and Helmut Brückner, 'The Palaeogeographies of Ephesos (Turkey), its Harbours, and the Artemision – a Geoarchaeological Reconstruction for the Timespan 1500–300 BC', *Zeitschrift für Geomorphologie* 58 (2014): 33–66, at 48.
- 4 Translation from Brian Turner and Richard J.A. Talbert (trans.), *Pliny the Elder's World: Natural History, Books 2–6* (Cambridge: Cambridge University Press: 2022). See also *Natural History* II.204.
- 5 John C. Kraft, Helmut Brückner, İlhan Kayan and Helmut Engelmann, 'The Geographies of Ancient Ephesus and the Artemision in Anatolia', *Geoarchaeology: An International Journal* 22 (1) (2007): 121–49, at 128.
- 6 Ibid., 130.
- 7 Helmut Brückner, 'Rapid Delta Growth in Historical Times at Ephesus and Miletus – The Examples of the Küçük and the Büyük Menderes Rivers', Ch. 13 in C. Kuzucuoğlu

ing coastline presented to their city, and so replaced the Sacred Harbour with a westward alternative, the so-called ‘Koressian Harbour’.<sup>8</sup> The seaward advancement of the coastline threatened this harbour, too, which eventually forced a later ruler of Ephesus, the Hellenistic King Lysimachus (r. 294–281 BCE), to relocate the city to a location between Mounts Pion and Preon.<sup>9</sup> Lysimachus’s civic transfer was likely in response to the threats posed by the prograding coastline: the new city was adjacent to a deep-water harbour that, for the time being, was not yet surrounded by the advancing delta.<sup>10</sup> Lysimachus’s efforts were ultimately successful: Ephesus became one of the most important cities of the Mediterranean, thriving up until the late antique period. Ephesus’s successes, however, were in spite of the continued threats its prograding coastline posed to its deep-water harbour.

The ongoing hazard of the moving coastline is best evidenced in the changing fate of the island Syrie. By around 400 BCE, Syrie became a peninsula, connected to the eastern coastline of the gulf by fluvial sediments that created new land masses.<sup>11</sup> Eventually this resulted in Syrie’s complete landlocking, which took place near the turn of the millennium (ca. first century BCE).<sup>12</sup> A similar fate endangered even Lysimachus’s resituated city of Ephesus. The Hellenistic and Roman-era harbour’s problems were exacerbated by its location in a low-wave-energy area, so that deposited silt tended to settle in the harbour’s basin rather than be carried out to sea.<sup>13</sup> The catchment area of the local rivers, moreover, consisted partly of ‘easily erodible rocks such as highly weathered mica schists and gneisses as well as marlstones’, leading

et al. (eds), *Landscapes and Landforms of Turkey* (Berlin: Springer-Verlag, 2019), pp. 293–306, at 295.

8 Ibid., p. 295.

9 Peter Scherrer, ‘The Historical Topography of Ephesus’, in David Parrish and Halûk Abbasoğlu (eds), *Urbanism in Western Asia Minor: New Studies on Aphrodisias, Ephesos, Hierapolis, Pergamon, Perge, and Xanthos*. *Journal of Roman Archaeology*. Supplementary Series, no. 45 (Portsmouth: Journal of Roman Archaeology, 2001): 57–93, at 62.

10 Kraft et al., ‘The Geographies of Ancient Ephesus’, 135.

11 Brückner et al., ‘Life cycle of Estuarine Islands’, 889.

12 Ibid.

13 Edward J. Anthony, Nick Marriner and Christophe Morhange, ‘Human Influence and the Changing Geomorphology of Mediterranean Deltas and Coasts Over the Last 6,000 Years: From Progradation to Destruction Phase?’ *Earth-Science Reviews* 139 (2014): 336–61, at 341.

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to a higher 'denudation rate' than comparable river systems.<sup>14</sup>

The infilling of the Ephesian gulf and landlocking of Syrie highlights the fluid and dynamic nature of the physical environments in which the city was embedded. Just as John's tomb at Ephesus purportedly 'undulated', so were the waterways and territories around it in constant flux, contributing to the shifts in the Ephesian landscapes. From this perspective, the island of Syrie's creation (through sea level rise) and destruction (through riverine siltation) provides an important opportunity to reflect on the material fluidity of natural environments. In his work on ocean environments, Philip Steinberg has highlighted how coastlines are areas of 'dynamic mobility and continual reformation', thus providing 'a new perspective from which to encounter a world increasingly characterized by connections and flow'.<sup>15</sup> Steinberg argues that the liquidity of water environments is useful in making 'readily apparent' the fluidity of material change.<sup>16</sup> From this perspective, islands, as meeting points between land and water, combine dynamic fluidity and (apparent) terrestrial solidity, thus underscoring the interconnected mobility and flow in environmental change.

### The Islands of Damianus

Lysimachus's urban reconfiguration forestalled the environmental challenges to Ephesus's harbour, but only temporarily. Due to silt deposition by local rivers, the coastline of the Ephesian gulf continued to advance westward, toward the sea. This threatened the new Hellenistic (and later, Roman) harbour in two ways. First, floods from the river delta carried silt into the harbour basin, thus creating shoals and jeopardising safe passage for large ships. Second, the continual progradation of the coastline threatened to landlock the mouth of the harbour, which would render it completely inaccessible to ships.<sup>17</sup> As evidenced already with the case of Pliny, ancient observers were

14 Helmut Brückner, 'Holocene Shoreline Displacements and Their Consequences for Human Societies: the Example of Ephesus in Western Turkey', *Zeitschrift für Geomorphologie* s.v. 137 (2005): 11–22, at 12.

15 Philip E. Steinberg, 'Of Other Seas: Metaphors and Materialities in Maritime Regions,' *Atlantic Studies* 10 (2) (2013): 156–69, at 160.

16 Ibid.

17 Myrto Veikou, 'Mediterranean Byzantine Ports and Harbours in the Complex Interplay Between Environment and Society. Spatial, Socio-Economic and Cultural Consider-



well aware of these threats. Livy commented that the Roman-era harbour of Ephesus was ‘like a river, long and narrow and full of shoals’ (37.14–15).<sup>18</sup>

Ephesian civic leaders carried out several environmental management projects to deal with these challenges. These included attempts at dredging the harbour, redirecting river flows away from threatened areas using moles, and the drainage of adjacent wetlands.<sup>19</sup> The Hellenistic king Attalos II Philadelphos (r. 159–138 BCE), for example, dredged the harbour and installed a breakwater, with the rationale that it would protect the harbour from sand-carrying waves.<sup>20</sup> This was a miscalculation, however: the breakwater had the effect of hemming in the flows of the rivers and the silt they carried, thus exacerbating harbour infill in the centuries to follow.<sup>21</sup> Perhaps the most intensive intervention was carried out by the second-century CE Ephesian sophist and benefactor Titus Flavius Damianus. According to an account by Philostratus, Damianus had ‘artificial islands’ and ‘moles’ constructed so as to allow safe harbour access for trading vessels.<sup>22</sup> Damianus’s projects likely reflect continued struggles with the infilling of Ephesus’s harbours, which thus necessitated artificial anchorage sites so that cargo could be reloaded onto smaller ships.<sup>23</sup>

Previous treatments of Ephesus’s issues with siltation have viewed it as a case of ‘humanity versus nature’.<sup>24</sup> And yet, the case of Damianus’s islands

ations Based on Archaeological Evidence from Greece, Cyprus, and Asia Minor’, in Johannes Preiser-Kapeller and Falko Daim (eds), *Harbours and Maritime Networks as Complex Adaptive Systems* (Mainz: Römisch-Germanisches Zentralmuseum, 2015), pp. 39–59, at 42.

18 From Kraft et al., ‘The Geographies of Ancient Ephesus’, 139.

19 Veikou, ‘Mediterranean Byzantine Ports’, 42; John C. Kraft, George Rapp, Helmut Brückner, and İlhan Kayan, ‘Results of the Struggle at Ancient Ephesus: Natural Processes 1, Human Intervention 0’, in *Human Interactions with the Geosphere: The Geoarchaeological Perspective*, ed. by L. Wilson (London: Geological Society, 2011), pp. 27–36, at 27–32.

20 Steskal, ‘City in Search of its Place’, 333, citing Strabo, 14.1.24.

21 Ibid., 333.

22 Philostratus, *Soph.* 23 (LCL, Wright). For discussion see John C. Kraft, İlhan Kayan, Helmut Brückner and George Rapp, Jr., ‘A Geological Analysis of Ancient Landscapes and the Harbors of Ephesus and the Artemision in Anatolia’, *Jahreshefte des Österreichischen Archäologischen Institutes in Wien* 69 (2000): 175–233, at 199.

23 Steskal, ‘City in Search of its Place’, 336.

24 See e.g. Kraft et al., ‘Results of the Struggle at Ancient Ephesus’. As I have argued elsewhere, this piece portrays natural and anthropogenic causes as separate and opposing

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underscores how much the coastlines of Ephesus were not only ‘natural’ phenomena, but the result of the complex intersection of nonhuman and human forces. As noted already, Ephesian leaders and citizens completed many projects that had significant (if sometimes only temporary) impacts on local water flows and landscapes, including the construction of dams and moles, harbour dredging, and water drainage. The land adjacent to the Roman-era harbour, moreover, was also human-made; recent studies have revealed that much of the lower harbour area (where ships docked) was formerly shallow marine environment that was filled in using building debris and other materials.<sup>25</sup> Human activities were, however, also contributing to the environmental challenges that necessitated such interventions. These included deforestation, which led to advanced erosion and thus greater supply of sediment in the riverine flows in the area.<sup>26</sup> Animal husbandry and agricultural practices (e.g., ploughing) also likely contributed to the loss of foliage coverage and topsoil, respectively, thus further increasing erosion and soil flow into local waterways.<sup>27</sup> Finally, there is evidence that some Ephesian citizens began using the harbour (and, in the Roman period, its canal) as a waste dump, thus exacerbating problems with harbour infill.<sup>28</sup>

The harbour islands constructed by Damianus, therefore, must be seen not as a purely human response to a ‘natural’ disaster, but one aspect of the broader intermixing of human and nonhuman forces that shaped Ephesian ecosystems. Martin Steskal likewise emphasises that the Ephesian landscape

is marked by constant geomorphological and ecological changes. Complex processes of sedimentation and erosion as well as shifting ground and sea water levels led to these continual shifts ... Erosion processes though stem

forces, rather than interconnected and inter-informing (‘Environmental Change, the Acts of John, and Shifting Cultic Landscapes in Late Antique Ephesus’, *Studies in Late Antiquity* 5 (2) (Summer 2021): 176–215).

25 Brückner, ‘Holocene Shoreline Displacements’, 20.

26 Brückner et al., ‘Life Cycle of Estuarine Islands’, 891.

27 Clive Foss, *Ephesus after Antiquity: A Late Antique, Byzantine and Turkish City* (Cambridge: Cambridge University Press, 1979), p. 187; Steskal, ‘City in Search of its Place’, 326; Anthony et al., ‘Human Influence’, 346.

28 Christophe Morhange, Nick Marriner and Nicolas Carayon, ‘The Eco-history of Ancient Mediterranean Harbours’, in *The Inland Seas, Towards an Ecohistory of the Mediterranean and the Black Sea*, ed. by T. Bekker-Nielsen and R. Gertwagen (Stuttgart: Franz Steiner, 2016), pp. 85–106, at 97.

from human influences on the environment: massive deforestation, irrigation and agricultural use of land greatly affect the development of the landscape.<sup>29</sup>

Building on Steinberg's theorisation of oceans and adjacent environments, therefore, I would push to see the islands of Ephesus as "more-than-human" assemblages', which are 'continually being reconstituted by a variety of elements: the non-human and human, the biological and geophysical, the historic and the contemporary'.<sup>30</sup> Indeed, Steinberg has argued that islands and coasts 'are useful spaces for unpacking the fundamental binary between land and water (or dry space and wet space)'.<sup>31</sup> In the case of Ephesus, we might come to see the Ephesians' struggles as stemming not from a 'battle' between humans and nature, but from an attempted imposition of particular ecology (i.e., a deep water harbour adjacent to accessible land) in an area where the dividing lines between water and land, as well as 'artificial' and 'natural', were increasingly unclear. If the disappearing island of Syrie encapsulated the Ephesian landscape's material fluidity, then Damianus's islands underscored how this fluidity stemmed at least in part from a combination of human and nonhuman factors. Like the tomb of the slumbering apostle, the landscapes of Ephesus moved with a vibrancy that, while seemingly 'natural,' was all too human.

## Christianisation, pilgrimage and the island church of Ephesus

Tombs and landscapes were not the only things shifting under the Ephesians' feet. Simultaneous with its environmental changes in late antiquity, Ephesus was undergoing an important shift in religious demographics, from Greco-Roman polytheism to Christianity. In this concluding section, I explore how these two shifts – environmental and cultural – merged to create a new sacred landscape in the city. I do so through a third and final island: an outer harbour isle that gained new religious significance in late antiquity, as the site of a Christian 'pilgrimage church'. This island encapsulates the dual environmental and cultural changes that Ephesus was undergoing in late antiquity, thus providing an illustrative materialisation of the city's evolution,

29 Steskal, 'City in Search of its Place', 326.

30 Steinberg, 'Of Other Seas', 157, 159.

31 *Ibid.*, 163.

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as well as an important opportunity to reflect on the human/nonhuman assemblages that comprised the city's civic realities.

Up through the Roman era, Ephesus was home to a diverse array of cultic traditions. The city was most famous for its Temple of Artemis, an ancient wonder of the world described as 'the ornament of the whole province' by one Ephesian inscription.<sup>32</sup> The city also boasted several temples dedicated to other Greco-Roman gods and goddesses, multiple Imperial Cults, Egyptian-affiliated temples such as the Serapion, and some pre-Greek cults, for instance a Kybele sanctuary. There was also a substantial Jewish community in Ephesus.<sup>33</sup> Beginning sometime in the first or second centuries CE, however, Christianity began to exert influence in the area, and gradually became the majority religious tradition in the city. Similar to other cities of the Mediterranean basin, Ephesus's Christian community likely remained a marginal civic presence within the first few centuries of the Common Era. By the fourth and fifth centuries, however, we begin to see evidence for the Christianisation of the city. Several crosses were inscribed on prominent civic monuments, for example, and many of the polytheistic temples of the city were abandoned, torn down or repurposed.<sup>34</sup> The eventual dominance of Christianity in late antique Ephesus had great significance for the city's spaces and landscapes. As Blake Leyerle has stressed, 'landscape is far from being just an inert backdrop for human activity; it should instead be understood as a human product'.<sup>35</sup> Ancient Ephesus provides a particularly pertinent case study in how seemingly-natural landscapes emerge, at least in part, from human-influenced processes.

Due to the ongoing siltation of the harbour, Ephesus gradually shifted its civic core away from the harbour-adjacent 'old' city, and toward an inland fortified city located on what came to be called Ayasoluk Hill.<sup>36</sup> While the

32 IvEph 18b.1–3. The inscription dates to 44 CE.

33 Foss, *Ephesus after Antiquity*, p. 45.

34 Troels Myrup Kristensen, *Making and Breaking the Gods: Christian Responses to Pagan Sculpture in Late Antiquity* (Aarhus: Aarhus University Press, 2013), pp. 9–14; Scherrer, 'Historical Topography of Ephesus', 18–25; Foss, *Ephesus after Antiquity*, pp. 80–87.

35 Blake Leyerle, 'Landscape as Cartography in Early Christian Pilgrimage Narratives', *Journal of the American Academy of Religion* 64 (1) (1996): 119–43, at 120.

36 Sabine Ladstätter and Andreas Pülz, 'Ephesus in the Late Roman and Early Byzantine Period: Changes in its Urban Character from the Third to the Seventh Century AD', in *The Transition to Late Antiquity, on the Danube and Beyond* ed. by Andrew Poulter (Oxford: Oxford University Press, 2007), pp. 391–433, at p. 417.

classical Greco-Roman city of Ephesus would continue to be inhabited or utilised through most of late antiquity, by the medieval period (ca twelfth century) it was completely abandoned in favour of the area around Ayasoluk.<sup>37</sup> This settlement was the basis for the Turkish provincial capital and modern market village of Selçuk.<sup>38</sup> The city's topographical shift was due to a confluence of environmental and cultural issues: namely, the silting of the harbour and the Christianisation of the city, respectively.<sup>39</sup> The impact of Christianisation on the city's landscape can be seen most clearly in the development of Ayasoluk as a central hub of Ephesian civic life. This hill had formerly been located on the periphery of the Roman-era city, and had not been a central location of Ephesian settlement since pre-Hellenistic times.<sup>40</sup> In the second century, however, local Christians began to report legends that the apostle John had been buried on Ayasoluk Hill.<sup>41</sup> John's tomb grew in popularity and became a central node in the wider Mediterranean network of Christian pilgrimage sites. Especially popular among pilgrims was to partake of the 'dust miracle', wherein John's posthumous breath stirred dust above his tomb that had miraculous healing properties.<sup>42</sup>

In this way, Ephesus's Christianisation and the popularity of John's tomb provided a new mapping of the city which, over time, began to shape

37 Sabine Ladstätter, 'Ephesos from Late Antiquity until the Middle Ages. An Archaeological Introduction', in *Ephesos from Late Antiquity Until the Late Middle Ages*, ed. by Sabine Ladstätter and Paul Magdalino (Vienna: Holzhausen, 2019), pp. 11–72, at p. 63.

38 Çağla Caner Yüksel, 'A Tale of Two Port Cities: Ayasuluk (Ephesus) and Balat (Miletus) during the Beyliks Period', *Journal of the Medieval Mediterranean* 31 (3) (2019): 338–65, at 344.

39 Andreas Pülz, 'Das Stadtbild von Ephesos in byzantinischer Zeit', in *Ephesos in byzantinischer Zeit*, ed. by Falko Daim and Sabine Ladstätter (Mainz: Römisch-Germanisches Zentralmuseum, 2011), pp. 51–81, at p. 53. These could have included earthquakes, political instability, a volatile or declining economy, demographic shifts, climate change and foreign invasions. For discussion and additional analysis, see Travis Proctor, 'Environmental Change, the *Acts of John*, and Shifting Cultic Landscapes in Late Antique Ephesus', *Studies in Late Antiquity* 5 (2) (Summer 2021): 176–215, esp. 184–212. See also Idem, 'A Cartography of Kinship: Domestic Space, Tomb Cult, and the Re-Mapping of Ephesus in the *Acts of John*', *Journal of Early Christian Studies* 29 (4) (Winter 2021): 463–93; Idem, 'Hospitality, not Honors: Portraits and Patronage in the *Acts of John*', *Harvard Theological Review* 115 (1) (2022): 69–89.

40 Foss, *Ephesus after Antiquity*, p. 87.

41 Ladstätter and Pülz, 'Ephesus in the Late Roman and Early Byzantine Period', 410.

42 Ladstätter, 'Archaeological Introduction', 55.

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local residents and visitors' interactions with the city. This new Christian cartography, in turn, had economic ramifications: the fame of John's tomb among pilgrims turned Ayasoluk Hill into a 'religious marketplace', where 'secondary industries' such as food service, hospitality, pilgrimage guides and souvenir shops flourished.<sup>43</sup> Revenue from travelling pilgrims as well as associated donations, in turn, helped an 'economic revival' in late antique Ephesus.<sup>44</sup> Residents and benefactors financed the construction of pilgrimage infrastructure, including road maintenance, visitor accommodations, an aqueduct and other services aimed at pilgrims.<sup>45</sup> Because of its economic and religious significance, therefore, Ayasoluk Hill would increasingly become the focal point of the city of Ephesus.<sup>46</sup>

### *The island church of Ephesus*

West of Ayasoluk Hill, near the modern coastline, lies a small hill, around nine metres tall. Today, abutted to the west by the beachside resorts of Pamučak, the nondescript hill attracts little attention from visiting tourists. In late antiquity, however, this site was an integral component of Christian pilgrimage to the city of Ephesus. Like Korudağ (Syrie), the hill was formerly an island in the Ephesian gulf, but, beginning around the fourth century CE, a tombolo developed connecting the island to the mainland, thus turning it into a peninsula.<sup>47</sup> This made the site more easily accessible for development and foot traffic.<sup>48</sup> By the fifth century, local residents had constructed a three-aisled basilica, the so-called 'Pilgrimage Church', at the site (see 'Church in Pamučak', Figure 2).

43 For my language of pilgrimage as 'religious marketplace' with associated 'secondary industries', I here draw from Rebecca Stephens Falcasantos, 'Wandering Wombs, Inspired Intellectuals: Christian Religious Travel in Late Antiquity', *Journal of Early Christian Studies* 25 (2017): 89–117, at 113.

44 Sabine Ladstätter, 'Ephesos in byzantinischer Zeit: Das letzte Kapitel der Geschichte einer antiken Großstadt', in Daim and Ladstätter, *Ephesos in byzantinischer Zeit*, pp. 3–29, at 17. See also Ladstätter, 'Archaeological Introduction', 52.

45 Ladstätter, 'Archaeological Introduction', 52, 55.

46 Foss, *Ephesus after Antiquity*, p. 92.

47 Friederike Stock, Stefan Halder, Stephan Opitz, Anna Pint, Sirri Seren, Sabine Ladstätter and Helmut Brückner, 'Late Holocene Coastline and Landscape Changes to the West of Ephesus, Turkey', *Quaternary International* 501 (2019): 349–63, at 360.

48 Ibid., 360.





**Figure 2.**  
Christian pilgrimage sites in Ephesus, by Christian Kurtze.

Source: Katinka Sewing, 'A late antique pilgrimage church at the Harbor Canal of Ephesus and its interaction with its religious center', in Nikos D. Kontogiannis and Tolga B. Uyar (eds), *Space and Communities in Byzantine Anatolia, Papers from the Fifth International Sevgi Gönül Byzantine Studies Symposium* (Istanbul: Koç University Stavros Niarchos Foundation Center for Late Antique and Byzantine Studies, 2021), pp. 243–261, at 244.

Recent studies have suggested that this seaside church played an important role in the pilgrimage network of Ephesus. Friederike Stock has noted, for example, that the church's 'very conspicuous' placement on a large hill overlooking the coastline would have marked the entrance to the ever-westward harbour of Ephesus, 'showing the arriving visitors the way to the city',<sup>49</sup> Thus, as Katinka Sewing has argued, it is probably best to see the pilgrimage church not as a singular site, but as part of the larger pilgrimage 'unit' of the city of Ephesus.<sup>50</sup> That is, pilgrims likely used the seaside church as a first stopping

49 Ibid., 352.

50 Katinka Sewing, 'A New Pilgrimage Site at Late Antique Ephesus: Transfer of Religious Ideas in Western Asia Minor', in *Transmitting and Circulating the Late Antique*

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point, where they might explore this site, obtain a contact relic, then move on to the other pilgrimage designations in Ephesus.<sup>51</sup> Beyond the tomb and Basilica of John, prominent Ephesian pilgrimage destinations included the Seven Sleeper Church and Cemetery, the so-called Tomb of Luke, and the Grotto of Paul and Thecla, among others (see Figure 2).<sup>52</sup> Sewing notes that two of these sites – the Tomb of Luke and Seven Sleeper complex – were, like the pilgrimage church, established in the fifth century; this suggests that the founding of the pilgrimage church was part of a broader campaign to expand the pilgrimage infrastructure of Ephesus and extend the influence and clout of local ecclesial leaders.<sup>53</sup>

Within this broader network of pilgrimage sites, the pilgrimage church served a distinctive purpose: the widening of the church's pilgrimage 'territory' and influence to areas encompassing the outer harbour and coast.<sup>54</sup> The location's former status as an island, and newfound 'life' as a coastal land spur, made it an ideal place for ships to land in the outer harbour.<sup>55</sup> Such locations were becoming increasingly necessary as the inner harbour became intensively silted and thus less accessible to larger ships.<sup>56</sup> In a similar way to Damianus's islands, the land spur at Pamučak likely served as an anchorage site, where goods or people could be transferred to smaller boats and taken into the inner harbour of Ephesus.<sup>57</sup> This is probably what made the site such an attractive place for the construction of a pilgrimage church in the fifth century: it will have been one of the first Ephesian structures seen by visitors arriving from sea (see Figure 3), and will have also been the ideal location for many visitors to disembark from their larger ships and transfer to smaller vessels.<sup>58</sup>

*and Byzantine Worlds*, ed. by Mirela Ivanova and Hugh Jeffery (Boston: Brill, 2020), pp. 78–101, at 93.

51 Ibid., 94; Sewing, 'Late Antique Pilgrimage Church', 260.

52 On Christian churches and other sacred sites in Ephesus, see Scherrer, 'Historical Topography of Ephesus', 80; Ladstätter and Pülz, 'Ephesus in the Late Roman and Early Byzantine Period', 408–09.

53 Sewing, 'Late Antique Pilgrimage Church', 258–59.

54 Sewing, 'New Pilgrimage Site', 95.

55 Ibid., 94; Sewing, 'Late Antique Pilgrimage Church', 246, 260.

56 This is evident in the remains of a small landing place near the site, which was in use up until the 11<sup>th</sup> century (Sewing, 'Late Antique Pilgrimage Church', 253).

57 Ibid., 260.

58 Ibid.





**Figure 3.** Visualisation of the outer harbour pilgrimage church, by Juergen Süß.

Source: Sewing, 'A late antique pilgrimage church', 261.

In this way, the outer harbour pilgrimage church, and the former island on which it was perched, encapsulates the intertwining of environmental change and religious practice: the development of a shoaled harbour, as well as a land bridge from the mainland to the pilgrimage church island, made it advantageous to found a pilgrimage site here, which will have in turn shaped the religious experience and cultic activities of those who visited Ephesus. Sewing has suggested further connections between the church's 'natural' landscape and its religious significance. She notes, for example, that the church's architecture 'takes the topography strongly into account by incorporating the small hill' into its building design.<sup>59</sup> What is more, Sewing notes how the 'visual axes' of the pilgrimage church and the Basilica of John 'complement each other': 'The great church becomes visible right after leaving Pamučak and [as one] goes further down the harbour canal towards Ephesus.'<sup>60</sup> Through this church located on a former island,

59 Ibid., 248.

60 Ibid., 260.

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therefore, we begin to see how the environments and religious cultures of Ephesus were intertwined. The disembarking in the outer harbour was necessary in late antiquity due to the (partly-anthropogenic) environmental challenges faced by the city's gulf and harbour; and yet these challenges also shaped the materialisation of religious practices in the city – where pilgrims walked and performed their rituals, in which parts of the city churches were located, where relics could be accessed and how local Christians related to their surrounding landscapes.

### Conclusion

This essay has traced the entwined environmental and religious history in the city of Ephesus during late antiquity. I have reconstructed these relationships through a focus on the islands of the city, noting how the environmental and religious identities of Ephesus shifted and changed in response to each other. As the island of Syrie, Damianus's artificial islands and the pilgrimage church island were created or destroyed, abandoned or built upon, they both marked and informed the ecological and social realities of the city. The island of Syrie brought attention to the shifting environmental materialities of the ancient city. As silt infilled the Ephesian gulf and harbours, Syrie and other land formations experienced marked changes. The case of Syrie underscores, therefore, the need to recognise the dynamic fluidity of environmental change. The artificial anchorage sites, constructed in the second century CE by Damianus, shows that these evolving materialities were not merely 'natural', but an 'assemblage' of human and nonhuman factors. The amount of silt carried by Ephesian rivers into the gulf and harbours, for example, increased due to anthropogenic erosion, and water management projects carried out by local Ephesians had substantial impacts on the waterways. Damianus's islands, therefore, encapsulate not only the ongoing 'natural' challenges faced by Ephesus, but the intensive intersection between human social activity and nonhuman ecosystems.

The site of the so-called 'pilgrimage church' near Pamučak comprises a final example of the intersections of cultural and natural forces. This site became an important part of the broader Ephesian pilgrimage network, as well as an important anchorage site for harbour traffic. The church's natural setting on a seaside former island contributed to its religious significance as an initial stop on pilgrims' sacred tours of Ephesus; its role as a significant church, in turn, influenced the physical alterations of the island itself as well

as the human experience of the Ephesian cityscape and surrounding areas. My exploration of the islands of Ephesus demonstrates, therefore, that these islands were not just environmental ‘backdrops,’ but active indicators and influencers of the cultures, societies and topographies with which they became interwoven. Far from passive settings for human activity, such islands were both products and producers of the complex assemblage of human and nonhuman forces that comprised Ephesus’s civic ecosystems.

The islands of Ephesus are significant, in turn, for reflecting on contemporary theories of materiality and the environment. Maia Kotrosits has noted how the recent ‘material turn’ seems to have been occasioned by ‘a desire on the part of the humanities to touch something more solid, to make contact with certain externalities that have been foreclosed in the self-referential focus of poststructuralist theory’.<sup>61</sup> In pursuit of this firmer grounding, as it were, studies of materiality have tended ‘to reproduce a sense of matter as fixed and grounded’.<sup>62</sup> And yet the islands of Ephesus underscore how the ecosystems of our world, which are no doubt ‘stubbornly material,’ are nonetheless ‘unmistakably undergoing continual re-formation’.<sup>63</sup> Following Philip Steinberg and Kimberly Peters, therefore, the islands of Ephesus may push us toward adopting a ‘wet ontology’ of materiality – here encapsulated by the aqueous creation and silt-driven destruction of Ephesus’s islands – which highlights the fluidity and flow of material ecosystems. With Melville, we might be better able to recognise the stirrings and undulations of the seas and sods that make up our world, not due to some ‘hidden soul beneath’, as with John’s tomb, but to the material flows and flux that accompany environmental change – the very kind that first created, then destroyed, the islands of Ephesus.

61 Maia Kotrosits, *The Lives of Objects: Material Culture, Experience, and the Real in the History of Early Christianity* (Chicago: University of Chicago Press, 2020), p. 4.

62 Philip E. Steinberg and Kimberly Peters, ‘Wet Ontologies, Fluid Spaces: Giving Depth to Volume Through Oceanic Thinking’, *Environment and Planning D: Society and Space* 33 (2) (2015): 247–64, at 247.

63 *Ibid.*, 247.

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## 2. Nature(s) of Power:

### Environment, Politics and Prestige on Brijuni Islands in the Twentieth Century

Milica Prokić and Hrvoje Petrić

*With their past as layered as a slice of Esterházy torte, to researchers Brijuni are irresistible – if at times a bit rich. Embodying two archetypes from the island lore: that of the enchanting paradise, and that of an elite private haven, they are iconic. Their flora and fauna are a whimsical combination, bringing Jan Breughel the Elder's Earthly Paradise to mind and coming with a pedigree to boot. Brijuni's zebras, elephants, white fallow deer and crowned cranes, Chinese palms and mandarins were gifted by the world leaders, or brought by the islands' exclusive residents from their exotic world-wide travels throughout the last century and a bit before. More recently, the talking cockatoo from these smallish islands in the Northern Adriatic conversed with the likes of Caroline of Monaco and John Malkovich.*

*Brijuni had served as a summer residence to affluent Roman families of antiquity, as a spa resort for Archduke Franz Ferdinand, and as a polo playground to Nazi and Fascist propagandists Goebbels and Alfieri. As for the post-World War II period, they could well be Yugoslav socialism's Mediterranean nod to Princess Margaret's digs on Mustique: after all, during Josip Broz Tito's reign as Yugoslavia's life-long president, Margaret's sister Elizabeth II frequented both. On Brijuni Tito also hosted world leaders including Brandt, Selassie, Pahlavi or Nasser, and celebrities such as Richard Burton, Elizabeth Taylor or Sophia Loren.*

*However, there were times when the idyll and the lavishness were intersected with long periods of the islands being pestilence-ridden locales of death, forsaken by humans. This is exactly what they were before their twentieth-century iteration of luxury and prestige. Then, an Austrian steel magnate embarked on an extensive landscape (re)making mission to reclaim the islands from malarial mosquitoes and turn them into a holiday destination for high society. This extensive project established Brijuni as a fascinating hybrid result of an interplay (and powerplay) of environment and society.*



## Introduction

The fourteen islands of Brijuni (or Brioni) lie opposite the city of Pula across the narrow Fažana channel, framing the west coast of the Istrian Peninsula in present-day Croatia. Because of its beauty, mild Mediterranean climate and rich historical heritage, Istria is often referred to as *terra magica*, and the 740 hectares of emerald-green Brijuni are seen as the region's crown jewels.<sup>1</sup> Geologically speaking, Brijuni are composed of horizontal layers of cretaceous limestone.<sup>2</sup> Their human past is remarkably layered too: inhabited by humans at least since the Neolithic Age (around 4000 BC), the islands harbour abundant traces of the various forces and cultures that claimed them through the millennia. Over the course of the twentieth century alone, the islands changed hands several times. Austrians held Brijuni during the final decades of the Habsburg rule; Italians in the interwar period; Nazi Germany in World War II; socialist Yugoslavia in the post-war era up until the country's dissolution in the 1990s. Though the twentieth-century accounts about Brijuni reflect how these conflicting political forces (each in its own way) shaped life on the islands, they all agree on one thing – painting a picture of the small archipelago as an extravagant earthly paradise which attracted international VIPs including political leaders, royalty and celebrities.

Brijuni's landscape played the starring role in this international spectacle of fame and power. Recalling life on the islands in the 1900s and 1910s, when Istria was part of the 'Austrian Riviera' and Brijuni the site of a luxurious spa for European aristocracy, memoirist Maria Lenz Guttenberg, the wife of Brijuni's resident physician Otto Lenz, wrote of them as 'islands of eternal spring'. On the Brijuni of her recollections, flowers bloomed even in winter, 'shielded from the winds in the old Venetian quarries', with a 'new spectacle' of colours and scents announcing itself each season.<sup>3</sup> In 1936, in the period of Fascist Italy's rule over Istria, during which the islands retained their status as an exclusive holiday destination for blue bloods and economic elites, Edith Haspel, a guest from New Orleans, wrote about the transformative power of the islands' environment. She gushed about the beauty of the landscape and

- 1 Stella Fatović-Frenčić, 'Brijuni Archipelago: Story of Kupelwieser, Koch, and Cultivation of 14 Islands', *Croatian Medical Journal* 47 (3) (2006): 369–71, at 369.
- 2 Josip Roglić, 'Brijunski otoci', *Enciklopedija Jugoslavije 2* (Zagreb: Jugoslavenski leksikografski zavod, 1982), pp. 455–56, at 455.
- 3 Maria Lenz Guttenberg, *Izgubljeni raj. Brijuni* (Zagreb: Antibarbarus – Nacionalni park Brijuni, 2007), p. 41.

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the tranquillity of the sea ‘freeing visitors’ personalities’ and turning women into ‘beautiful sun-kissed queens’ the moment they set foot on the islands.<sup>4</sup> Upon his visit to Brijuni several decades later, in 1989, the *New York Times* journalist Henry Kamm described the curious legacy of the islands’ time as second home to Yugoslavia’s president-for-life, Josip Broz Tito: an island menagerie where ‘Jawaharlal Nehru’s and Kenneth Kaunda’s gift antelopes ... cavort among Sekou Toure’s zebras, while Muammar el-Qaddafi’s camels graze under the gaze of Indira Gandhi’s elephants’.<sup>5</sup> All this, in a forest of native holm oak and Mediterranean plants, olive, cedar, lemon and mandarin trees, home to hundreds of bird species including songbirds and peacocks, surrounded by a sea swarming with fish and diverse marine fauna, has made Brijuni a place where the lavish environmental diversity matches and mirrors societal affluence.

When sociologists and political geographers refer to *landscapes of power*, they see their role as fourfold: ‘to show who is in charge; to remind people of dominant ideologies or economic interests; to broadcast a statement about the status of a place; and to engender a sense of loyalty to a place, an elite or a dominant creed’.<sup>6</sup> In her book *Landscapes of Power*, Sharon Zukin examines how political and economic power shapes the places we inhabit. Looking at the locales such as the industrial complexes and malls of American suburbia, or Disney World, she defines landscape as ‘not only ... physical surroundings’ but also ‘an ensemble of material and social practices and their symbolic representation’.<sup>7</sup> Environmental historians, such as Cynthia Radding in her book *Landscapes of Power and Identity*, also consider the materiality of such landscapes. Rather than seeing it as a static image, Radding examines landscape through ‘the tension between human and natural agencies’ over time.<sup>8</sup>

In a kindred manner of thinking, the following chapter examines Brijuni

4 Nataša Urošević, ‘Brioni rivista illustrata di sport e mondanità (1929–1940) – Models of Media Promotion and Branding of the Brijuni Islands as the Destination of Sport, Health and Culture’, *Fažanski libar* 5 (1) (2012): 57–68, at 64.

5 Henry Kamm, ‘Tito’s Retreat Goes Public’, *The New York Times* 29 Jan. 1989.

6 Martin Jones, Rhys Jones and Michael Woods, *An Introduction to Political Geography: Space, Place and Politics* (New York: Routledge, 2004), p. 119.

7 Sharon Zukin, *Landscapes of Power: From Detroit to Disney World* (Berkeley, Los Angeles, London: University of California Press, 1991), p. 16.

8 Cynthia Radding, *Landscapes of Power and Identity: Comparative Histories in the Sonoran Desert and The Forests of Amazonia from Colony to Republic* (Durham & London: Duke University Press, 2005), p. 3.

in the context of islands as power-soaked landscapes. As Godfrey Baldacchino notes, islands lend themselves particularly well to various forms of exclusivity, including havens for the rich, the famous and the mighty.<sup>9</sup> With this perspective in mind, the chapter looks at how power has shaped the landscape or, more pertinently, the *islandscape* of Brijuni in material terms. Drawing on diverse materials, including archaeological finds, memoirs, journals and periodicals, it seeks to identify the key aspects of Brijuni's islandness that made them the chosen place for flaunting and displaying political and economic power over millennia. In particular, it discusses Brijuni in the twentieth century, when the islands were a place where power was forged and wielded, as alliances that shaped global politics were made in the shade of their ancient olive groves.

### From splendour to swamp: The power of mosquitocratia

Brijuni have a long history as a landscape of prestige and economic power. The abundant remnants of ancient Roman villas show that Brijuni were a summer refuge of affluent patricians. The remains of the most impressive one are located on Veli Brijun, or Great Brijun, the largest island in the archipelago. Some scholars think that the villa could have been an emperor's summer residence because of its prominent position at the centre of the Verige Bay, its mighty walls and its rich interior decorations, frescoes and mosaics, and also because Roman emperors indeed used to build summer houses in Istria, starting with Augustus in the first century AD.<sup>10</sup> In antiquity, Brijuni were also an important centre of maritime trade. Remnants of a large irrigation system, the largest in Istria at that time, oil presses, and 75 preserved trees of an ancient olive grove also point to a rich tradition of viticulture and olive cultivation on the islands.<sup>11</sup>

- 9 Godfrey Baldacchino, 'The Lure of the Island: A Spatial Analysis of Power Relations', *Journal of Marine and Island Cultures* 1 (2) (2012): 55–62, 55.
- 10 Štefan Mlakar, 'Brijunski otoci (Brioni)', *Likovna enciklopedija Jugoslavije* 1, no.1 (Zagreb: Jugoslavenski leksikografski zavod Miroslav Krleža, 1984), p. 194.
- 11 Anton Vitasović, 'Ostaci antičkog maslinika u šumi na padinama brda Antunovac', *Fažanski libar* 3 (1) (2008): 53–56; Vesna Girardi Jurkić, 'Rimski vodoopskrbni sustavi na fažanskom priobalju', *Fažanski libar* 5 (1) (2012): 39–40.

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**Figure 1.**  
The 1,600 year-old olive tree on Veli Brijun still bearing fruit. Photograph by the author, Hrvoje Petrić.



**Figure 2.**  
The beach in Verige bay with the remnants of a Roman villa in the background. Photograph by the author, Hrvoje Petrić.

Over the centuries after the fall of the Western Roman Empire, Brijuni changed hands several times: from the Benedictine Order that brought a Slavic population to the islands for the first time, to the Knights Templar who further fortified the islands, to the Patriarchate of Aquileia that held the islands in the thirteenth century, and to the Venetian Republic that ruled them from the fourteenth century on.<sup>12</sup> The olive and vine cultivation which had dominated in antiquity were replaced by growing grain, cattle rearing, salt production and stone quarrying in medieval and early modern times. According to Petar Kopic's (Pietro Coppo) 1540 work *Del sito de l'Istria*, 'the limestone of Brijuni yielded nicely to shaping, and was therefore often used as building material for 'the splendid constructions of Venice'.<sup>13</sup> Built into the mighty walls of the metropolis, the islands' stone thus represented a material bond with the centre of power, even at times when the islanders were separated from its main currents by the islandness of their home.

The islands' terrain, however, was arguably better suited to viticulture and olive cultivation than cattle rearing and grain growing. What is more, the salt production in combination with the insular, warm and verdant environment of Brijuni brought about the proliferation of mosquitoes – a powerful force that disrupted human habitation of the islands for centuries.

As many island studies scholars argue, islands amplify any phenomena they foster, natural and cultural alike – from plant and animal endemism to peculiarities in human communities.<sup>14</sup> The same is true for pestilence, particularly devastating when it hits island spaces. This can be readily observed on Brijuni, as plague and malaria decimated their human population in several merciless bouts over the course of the islands' history.

The earliest mention of the plague on Brijuni can be found in sources from the thirteenth century.<sup>15</sup> It came back to wipe out the humans again

12 Ivan Ostojić, *Benediktinci u Hrvatskoj i ostalim našim krajevima* (Split: Benediktinski priorat Tkon, 1965), pp. 171–72; Đuro Fabjanović and Robert Matijašić, 'Brijunski otoci', *Istarska enciklopedija* (Zagreb: Leksikografski zavod Miroslav Krleža, 2005), p. 101.

13 Mlakar, *Brioni*, p. 15; Jasenka Gudelj, *Europska renesansa antičke Pule* (Zagreb: Školska knjiga, 2014), p. 27.

14 See, for example, Peter Conrad, *Islands: A Trip through Time and Space* (London: Thames & Hudson, 2009); Robert H. MacArthur and Edward O. Wilson, *The Theory of Island Biogeography* (Princeton: Princeton University Press, 1967).

15 Ivan Rudelić, 'Kuga', *Istarska enciklopedija* (Zagreb: Leksikografski zavod Miroslav Krleža, 2005), p. 425.



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in 1412, after which the islands had to be repopulated from scratch. In 1504, when the church of St Roch, the protector from plague, was built on Veli Brijun, the pestilence returned, as it did also in 1590 and 1631.<sup>16</sup> The fragility of human existence on the beautiful, yet at those times also deadly, islands is reflected in a source from 1681 which notes that the people of Brijuni are poor and ‘do not live long’ because of the unfavourable climate conditions and diseases.<sup>17</sup>

Indeed, the mild and pleasant climate of the islands was both the boon and the bane of the islanders’ lives: the warmth and the abundant greenery as well as the human-made, frequently abandoned salterns made Brijuni perfect breeding grounds for mosquitoes. In this sense, the struggle for power on Brijuni was often not just between various human armies and other forces that claimed the islands. Of equal importance for the everyday lives of the islanders since the introduction of salterns was the struggle between the humans and the various species of mosquitoes, spearheaded by the deadly, malaria-bearing *anopheles*. The mosquitoes were at times decisively victorious in this multispecies struggle for dominion.<sup>18</sup> Running from the disease, the people of Brijuni would abandon the islands, leaving the uncleared marshes to grow over, the salterns to turn to swamps, and the mosquitoes to breed freely. The humans would come back each time, trying to combat and re-conquer more-than-human nature and reclaim the islands as a human domain. The *mosquitocratia*, as we could perhaps define the non-human sovereignty on Brijuni of the time, would, however, kick back with malaria, perpetuating what was a vicious circle for the islanders: disease–abandonment–return–disease.<sup>19</sup>

Glory and splendour of antiquity, raging plague and malaria in the times of Aquileia and Venice, and the resulting intermittent inhabitation

16 Mlakar, *Brioni*, p. 16.

17 Ibid., p. 17.

18 The power of *anopheles* has also commanded attention of environmental historians such as J.R. McNeill, who discusses them as one of the ‘key actors in the geopolitical struggles of the early modern Atlantic world’ in his seminal work *Mosquito Empires*. And though ‘malaria helped turn the fortunes of nations’ there, it could not wipe out or chase away all the humans of this vast region. In the insular micro-world of Brijuni, however, the *anopheles* at times reigned supreme. See J.R. McNeill, *Mosquito Empires: Ecology and War in the Greater Caribbean, 1620–1914* (Cambridge: Cambridge University Press, 2010), p. 3.

19 Dubravka Mlinarić, ‘Medicinski aktivizam Roberta Kocha na Brijunima kao dio ekološko-gospodarske vizije “jednog starog Austrijanca”’ *DG Jahrbuch* 17 (1) (2010): 65–80, at 67–68; Fabjanović and Matijašić, ‘Brijunski otoci’, 101.

and abandonment depending on the epidemic status can point us towards Brijuni's fluctuating strategic importance for whichever centre of power claimed the islands. On the cusp of the nineteenth century, after the end of the Venetian rule, there is no mention of human domiciles on Brijuni. The islands experienced a temporary slide to the periphery, suspended in a power-limbo of the whole Istrian region: between the fading influence of the collapsing Venice, the Habsburgs who looked to expand to this part of the Adriatic, and Napoleon, who managed, however briefly, to claim the islands in 1805. Interested in Brijuni because of their strategic position, Napoleon asked Governor Auguste Marmont to map the archipelago and carry out a population census for the purposes of the restoration of human domiciles in 1807. The plan was, however, never realised; only five years later the islands came under Austrian rule.<sup>20</sup>

The importance of the city of Pula grew in the period that followed, as it developed into the main port of the Habsburg monarchy by the second half of the nineteenth century. With it, Brijuni swept back to the front and centre of military power. The islands became part of the military defence system of the empire, with seven new fortifications built on them.<sup>21</sup> At first, the archipelago was seen strictly as a good strategic spot: no mind was paid to the melioration of the 'wild and malaric islands', nor to the betterment of life of their scarce human population.<sup>22</sup> However, fortifying Pula (and Brijuni) strengthened imperial interest in the region and led to the construction of a railway connecting it to the imperial heartland. The railway construction, in turn, laid the foundations for the development of tourism.

Nataša Urošević, historian of tourism and a leading authority on Brijuni, noted in one of her works that 'the completion of the Southern Railway in 1857, connecting Vienna with Trieste, brought the Viennese upper classes to the Adriatic'. Further development of the railway from Divača down to Pula in 1876 provided access into Istria, the coast of which was soon to become the swanky 'Austrian Riviera', hosting international aristocracy and Austrian royalty.<sup>23</sup> Within this social and infrastructural shapeshift of

20 Mirko Urošević, *Brioni. Kulturno-povijesni vodič* (Zagreb: Vjesnik, 1985), p. 18.

21 Štefan Mlakar, 'Brionska ostrva', *Vojna enciklopedija 2* (Beograd: Redakcija Vojne enciklopedije, 1959), p. 73.

22 Guido Calza, *Pola* (Roma-Milano: Alfieri & Lacroix: cca 1920), p. 65.

23 Nataša Urošević, 'The Brijuni Islands – Recreating Paradise: Media Representations of an Elite Mediterranean Resort in the First Tourist Magazines', *Journal of Tourism*

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the Istrian landscape, Brijuni would transform from malaric swamps to the centre of splendour and the meeting place of those who wielded political and economic power in Europe. However, this was not before the concluding battle against the islands' *mosquitocratia*, which, as we shall see in the following section, was finally defeated by a steel magnate with gargantuan ambition, a physician with a research project and a forester with exceptionally green fingers.

### From swamp to splendour: One's own, personal Eden

In 1893, the Austrian steel magnate Paul Kupelwieser acquired the malaria-ridden and scarcely populated Brijuni.<sup>24</sup> After visiting Istria he noted 'the unusual economic backwardness of the country' and 'wished to be[come] personally engaged in the advancement' of the region, now defined as 'the Austrian south'.<sup>25</sup> Kupelwieser's ambition, which took the form of a colossal holistic project of (re)making the landscape of Brijuni, was on the one hand driven by this personal mission and on the other by prospect of economic gain from tourism. Some scholars, like Dubravka Mlinarić, also hypothesise that Kupelwieser's yearning was to create a utopia to contrast with the life he knew: 'as an industrialist who lived in the environmentally vulnerable and polluted part of Europe, in the steel centres of Austria, Germany and Bohemia [he] found a welcome counterpoint in melioration of the Brijuni swamps and turning them into an environmental paradise' of his own making.<sup>26</sup> In his 1918 memoir, *Aus den Erinnerungen eines alten Österreichers* (*Memories of an old Austrian*), Kupelwieser noted: 'I had a strong feeling that one could, using reason, patience, and of course significant financial resources, make this lump of land healthy, fecund and ... beautiful.'<sup>27</sup> On his first visit, he noted 'a lone cypress tree', 'ten oak trees' along the small, silt-filled swampy

*History* 6 (2–3) (2014): 122–38, at 123; Josip Orbančić, 'Željeznice', *Istarska enciklopedija* (Zagreb: Leksikografski zavod Miroslav Krleža, 2005), p. 921.

24 'Paul Kupelwieser', National Park Brijuni Website: <https://www.np-brijuni.hr/en/explore-brijuni/persons-worth-knowing-about/paul-kupelwieser> (accessed 15 Feb. 2024).

25 Urošević, 'Recreating Paradise', 126.

26 Mlinarić, 'Medicinski aktivizam Roberta Kocha', 66.

27 Paul Kupelwieser, *Iz sjećanja starog Austrijanca. Aus der Erinnerung eines alten Österreichers* (Wien: Verold & co., 1918); Parkovi Hrvatske, 'Brijunske priče: Sjećanja Paula



port, 'a few old olive trees, and plethora of laurel bushes along the very few existing paths', as well as 'two small vineyards in a very bad state' as the only flora to speak of – arguably perceiving the weeds and wild shrubbery of the old swampy salterns not as flora but as the uncharismatic habitat of the non-human enemy.

At the time of the purchase, it was said that one only had to stay on the islands for a couple of hours to contract a bad case of malaria. This was what happened to Kupelwieser when he first went to inspect his new property, nearly costing him his life.<sup>28</sup> Undiscouraged, Kupelwieser decided to eradicate malaria from the islands, without the use of insecticide.<sup>29</sup> Serendipitously, his personal experiment aligned with the research of Robert Koch, pioneering German physician, microbiologist and bacteriologist, who was at the time deep into the study of the causes of malaria.<sup>30</sup> Immediately intrigued by 'the dynamic, multifaceted, and in many ways contradictory ecosystem of Brijuni,' Koch accepted Kupelwieser's offer to set up a research base on the islands.<sup>31</sup> Though the concept of *islands as laboratories* for the study of both environmental and social processes has been abundantly discussed within island studies, perhaps to the point of oversaturation, it is too fitting to the story of Brijuni not to be mentioned here. The enclosed environment of the Brijuni islands indeed worked as a discrete laboratory for Koch, as well as for other scientists who followed, working on malaria and other research themes, including marine biology and microbiology.<sup>32</sup>

Koch's insular, vanguard anti-malaric programme was an absolute success. Within a year, from 1901 to 1902, there were no more new cases of malaria on Brijuni, following meticulously undertaken quinine treatments of the islands' population and commuting labourers, the clearing of the maquis and the draining of the swamps.<sup>33</sup> As the malaria-bearing *anopheles* were

Kuppleweisera': <https://www.np-brijuni.hr/hr/istrazi-brijune/brijunske-price/sjecanja-paula-kupelwiesera> (accessed 15 Feb. 2024).

28 Kupelwieser, *Brijuni*, pp. 35, 43; Mlakar, *Brioni*, p. 17.

29 Mlinarić, 'Medicinski aktivizam Roberta Kocha', 66.

30 Rudelić, 'Robert Koch', *Istarska enciklopedija* (Zagreb: Leksikografski zavod Miroslav Krleža, 2005), p. 402.

31 Mlinarić, 'Medicinski aktivizam Roberta Kocha', 66.

32 Lenz Gutttenberg, *Izgubljeni raj. Brijuni*, pp. 120, 144.

33 Ivica Vučak, 'Dr. Otto Lenz i suzbijanje malarije na Brijunima', *Liječničke novine* 93 (1) (2010): 56; Milan Radošević, *Smrt na krilima siromaštva. Tuberkuloza i malarija u Istarskoj provinciji 1918–1940*. (Zagreb: Srednja Europa, 2015), p. 156.

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eradicated with the disappearance of their swamp habitat, so were all other mosquito species. This quickly made Brijuni the preferred, as opposed to the generally avoided, place to visit in the summer.<sup>34</sup>

Seven years prior, Kupelwieser had begun work on creating the flora of Brijuni anew with the help of Slovenian forestry expert and estate manager Alojz Čufar. Kupelwieser learned of Čufar's talents by chance, and promptly wrote to offer him the landscaping job in 1893 which, among other things, entailed (re)creating the Brijuni arboretum.<sup>35</sup> Čufar soon came to the islands with his wife and children and immediately began planting a large experimental forest of pine, cypress, almond, Chinese palm trees and magnolias, using seeds acquired from London and Paris, alongside 600 vine saplings.<sup>36</sup> By the time Koch had implemented his programme, the beautiful green forest with lavish Mediterranean flora and exquisite exotic flowers thrived in Čufar's hands, while the old, abandoned stone quarries were turning into promenades interconnected by shady footpaths. Over the course of about two decades, with Čufar's expertise and practice, the islandscape was transformed into an English-style park.<sup>37</sup> Swamps, mosquitoes and salty wetlands yielded, as Kupelwieser noted in his memoir, 'so my wish to make the islands as beautiful as possible would come true'.<sup>38</sup>

Born in 1843 in Vienna, just before the wide-scale uprisings known as the 1848 revolutions in the Austrian Empire, Kupelwieser's childhood coincided with the advent of English-style urban landscapes in Central Europe: landscapes which Robert Rotenberg defines as *gardens of liberty*, where everything grows with seemingly minimal grooming. In his seminal work *Landscape and Power in Vienna*, Rotenberg observes that 'the [Viennese] metropolitan landscape provided a mirror for social relations'.<sup>39</sup> Indeed, away from the metropolis, in his newly acquired insular outpost, Kupelwieser was bending to his wishes the nature he found, as a nod to the Viennese gardens of his youth, albeit with the Mediterranean and other exotic flora. In other words, through this act of careful botanical curation, Kupelwieser

34 Kupelwieser, *Brijuni*, p. 127.

35 Ibid., pp. 53–55.

36 Ibid., p. 39.

37 Urošević, 'Recreating Paradise' 126.

38 Kupelwieser, *Brijuni*, p. 59.

39 Robert Rotenberg, *Landscape and Power in Vienna* (Baltimore and London: The Johns Hopkins University Press, 1995), p. 20.

groomed the islands to become the new social space for the metropolitan elites – away from the metropolis but adhering to its rules. The space he created by overpowering the swampy nature of the islands was to serve the purpose of attracting the rich and the powerful to his personal Eden.

Soon after the decisive human victory in the multispecies scramble for power over the islands, Brijuni turned into a large building site. The Brioni Hotel with fourteen rooms was built as early as 1901, alongside a few luxurious villas, a boat house, the beautiful Saluga lido, a solarium and tennis courts. Kupelwieser, who poured lavish amounts of money into his project, did not shy away from experimentation in this expensive infrastructural adventure. His initial plans included a Brijuni-exclusive underwater aqueduct that would, alongside the islands' own post office with a newly-designated postcode, a telephone and telegraph line, underscore the archipelago's self-reliance and distinctiveness from the mainland. The aqueduct project, complete with an elaborate pipe system and specially appointed plumber (who was also a diver) quickly flopped.<sup>40</sup> Nevertheless, the islands were otherwise fast taking shape as an exclusive health resort whose target clientele was the who's who of the Austrian high society.

### 'Taming the South': The royalty returns

As the premises developed, the gardens thrived and new animals were introduced, including axis and fallow deer and other game, advertisements in travel journals spread word of the empire's new idyllic, luxurious health resort, reflecting the common goal of Austro-Hungarian state administration, entrepreneurs and travel writers to market the new Riviera.<sup>41</sup> The 1908–1909 issue of the *Almanach der österreichischen Riviera (Almanac of the Austrian Riviera)* sought to build up Brijuni's prestige by praising them in the highest terms:

A nature park in the highest style with hundreds of cozy places, baths and natural terraces facing the sea; old quarries transformed into tropical gardens; thirty-five kilometres of avenues lined with rare trees, a paradise for strollers and cyclists. Those favouring hunting would be delighted by hundreds of rabbits romping in the meadows and thousands of pheasants, crawling

40 Lenz Gutttenberg, *Izgubljeni raj. Brijuni*, p. 54.

41 *Ibid.*, p. 128

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in the bushes ... no predators, no poisonous snakes and no automobiles on the whole island! Pula got the loveliest Sunday outing resort, a unique kind of spa, a garden by the sea, a rarity, perhaps only comparable to the Isle of Wight, but in eternal spring, suited to both the healthy and sick.<sup>42</sup>

The same edition of the *Almanach* portrayed Kupelwieser's cultivation of Brijuni as an 'exciting and dramatic struggle against nature'.<sup>43</sup> Another travel publication, *Illustrierte Österreichische Riviera-Zeitung* noted that 'those who visit the island today cannot imagine how much money, energy and expert knowledge was invested to bring Brijuni to today's state of *civilisation* [our emphasis]'. The 'harmonious' combination of '[t]he ancient and the modern times, the Nordic culture and the magnificent Mediterranean vegetation' turned Brijuni 'into what they once were – a happy paradise', gushed the *Riviera-Zeitung*.<sup>44</sup>

Therefore, through taming the unruly shrubbery of the islands, another sort of 'taming' was also underway: the archipelago turned into an outpost of the Austrian 'cultural mission' on the Eastern Adriatic. Nataša Urošević notes that the travel literature of the turn of the century reflected 'imperialistic ambitions and power relations during a time when imperial ideology, and the entire modernist developmental philosophy reached its apogee'.<sup>45</sup> Indeed, both the ambitions and the power relations in question were tangible on the islands. They were obvious, for example, in the selection and presentation of content in the travel magazines. Written in German and richly illustrated with high-quality photographs, the publications indicated that 'specific cultural, social and ethnic groups were targeted'.<sup>46</sup> The clientele of the 'happy paradise', built on the premise of the 'Nordic' element providing modernity, civilisation and culture, was therefore in its first iteration unsurprisingly homogenous. Before the First World War it was 'almost exclusively Austrian

42 Emil Bayer and Franc Krbalek (eds), *Almanach der österreichischen Riviera 1908–1909* (Laibach: Dragotin Hribar, 1908), p. 24. Translation from Urošević, 'Recreating Paradise', 129.

43 Nataša Urošević, 'Fažansko područje u prvim turističkim publikacijama', *Fažanski libar* 7 (1) (2014): 95–120, at 109.

44 *Illustrierte Österreichische Riviera-Zeitung* 6–7 (1905): 47–48, trans. by Urošević: 'Fažansko područje u prvim turističkim publikacijama', 108.

45 Urošević, 'Recreating Paradise', 125.

46 *Ibid.*, 130.

and consisted primarily of the entourage of the Imperial Court'.<sup>47</sup> In 1910, Franz Ferdinand himself visited for the first time, alongside his wife Sophie, and even considered buying land on the islands for their own residence.<sup>48</sup>

It did not take long before the islands also attracted a 'cosmopolitan colony of artists and intellectuals'. The archipelago's own travel magazine, *Brioni Insel-Zeitung* (published between 1910 and 1914) reported a visit by the writer Thomas Mann and his wife in May 1911. This visit was not Mann's last, some hypothesise: 'it is very likely that the action in the novel *Death in Venice* (1912) was conceived on Brijuni, where just that summer the islands' newspaper broke the disturbing news of an outbreak of Asiatic cholera in Trieste'.<sup>49</sup> Sigmund Freud arrived for the first time in the summer of 1912 and kept coming back.<sup>50</sup> The growing leisure empire flexed its power, flaunting, through a guest list (*Kurliste*) published with each issue of the *Insel-Zeitung*, the 'frequent and extended stays of Habsburg imperial family' and the 'leading artists and other celebrities', alongside Kupelwieser's 'close relations with European heavy industry and banks' and high military circles.<sup>51</sup>

A number of hotels of the highest standard were built to match the soaring popularity of the resort, totalling some 330 rooms and about 500 beds. Industrialists such as Hugo Stinnes also built private villas on Brijuni. In 1912, a sleeper wagon was added to the fast Vienna-Pula train, enhancing tourist accessibility.<sup>52</sup> The opening of the region's first indoor swimming pool with heated sea water, connected to each hotel room by a heated corridor, marked the 1913 season.<sup>53</sup> The millennia-old building traditions of Istria, including the archaeological finds in situ, however, seemed not to have impressed the owner, as 'Nordic culture and skills' were implemented in the construction of all the new buildings without exception: Kupelwieser hired young Viennese architect Eduard Kramer who also devised the urbanistic

47 Ibid., 132.

48 Nataša Urošević, 'Brijuni kao destinacija kulturnog, zdravstvenog i ekoturizma – kako graditi održivu budućnost na lokalnoj turističkoj tradiciji', in *Paul Kupelwieser na Brijunima*, ed. by Brigitta Mader and Bruno Dobrić (Pula: Sveučilište Jurja Dobrile u Puli, 2021), pp. 169–88.

49 Urošević, 'Recreating Paradise', 134.

50 Ibid.

51 Ibid., 133–34.

52 Ivan Blažević, *Povijest turizma Istre i Kvarnera* (Opatija: Otokar Keršovani, 1987), p. 99.

53 Urošević, 'Recreating Paradise', 135.

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plan of the whole tourist centre. The whole project thus embodied the new power relations – putting the ancient cultural heritage squarely in the past, with the Roman ruins contextualised as part of the tourist offer, complementing the luscious park of Mediterranean flora, while the ruling power of the Habsburg Empire was materialised and displayed through the newly built infrastructure.<sup>54</sup>

This was, however, soon to change as the Great War brought the crumbling of the empire, and therefore also a rupture for Kupelwieser's colossal project. In 1917, with Brijuni reinstalled as part of the Austrian defence system and serving as a submarine base, Emperor Charles I came to Brijuni with his entourage – the last Habsburg to visit before the collapse of the monarchy. After the war, the islands, alongside the rest of Istria, came under Italian rule.<sup>55</sup> Paul Kupelwieser died in the spring of 1919. He was succeeded by his son Karl, who took over the venture. Under him, the islandscape of Brijuni was reconfigured to better suit the power relations of the interwar period, as well as the new dominant ideology of the region.

### Fascist playground: The sting of nature, the dung of prestige

The first couple of years of the interwar period looked dire for the recreation business on Brijuni, though the summer of 1920 saw the return of the pre-war regulars from Vienna and Trieste, at least those whose coffers were not depleted by after-war inflation. Karl Kupelwieser therefore decided to cast the net wider in terms of the targeted clientele. In 1922 he created an eighteen-hole golf course on Veli Brijun, taking advantage of the natural grass cover of the island (a rarity in this part of the Adriatic), to attract wealthy English and other international guests.<sup>56</sup> Business grew further as word of mouth reached Rome and Milan from where new guests started to arrive in 1923–24.<sup>57</sup> The English followed suit.

As before the war, Brijuni were a rendezvous of the rich and famous. The

54 Viki Jakaša Borić and Biserka Dumbović Biluš, 'Kompleks hotela Neptun (Brioni) na Brijunu Velom – izgradnja i transformacije', *Portal. Godišnjak Hrvatskog restoratorskog zavoda* 10 (1) (2019): 131–43.

55 Lenz Gutttenberg, *Izgubljeni raj. Brijuni*, pp. 64–65, 68, 70, 77–79.

56 *Fažanski libar*, p. 57.

57 Lenz Gutttenberg, *Izgubljeni raj. Brijuni*, p. 82.

pastimes on offer developed accordingly: in 1925, the Polo Club di Brioni was founded. English naval officers shipped their own horses from Malta for the game which would be watched by the 'elegant international crowds', as noted by painter Hermann Ebers, himself a regular.<sup>58</sup> Baron Rothschild, who was the president of the Viennese polo club, kept his eighteen horses on Brijuni for several months a year in the interwar period.<sup>59</sup> After the day of sport events, the guests enjoyed dances, masked parties and open air concerts.<sup>60</sup> A casino opened in the interwar period too. Movie, sport and literary stars such as George Bernard Shaw or the boxing champion Gene Tunney rubbed shoulders with international royalty such as Prince Takamatsu, reconfirming the islands' pre-war prestige.<sup>61</sup>

This time around, the shaping of the islandscape reflected a new dominant ideology of the region, as well as the new owner's allegiance. The island travel journal of the time, *Brioni Rivista Illustrata di Sport e Mondanità* (*The Brijuni Review of Sport and Leisure*) ran a special issue on Karl Kupelwieser, emphasising his 'feelings of Italianity', which 'led him, from the very first signs of fascism, to sympathise openly with what was to become the movement of renewal of national life'. Having lived on the islands since his youth, Kupelwieser Jr considered himself Italian and was an avid fascist throughout his life. *Rivista* even reported that, out of fear that the islands would become 'infected by Bolshevism', Kupelwieser replaced almost all his foreign (largely Slavic) staff with Italians, many of whom were fascists, reportedly 'making arrangements with the Fascio of Pula for the establishment of the Fascio on Brijuni'.<sup>62</sup>

Its shiny surface notwithstanding, Kupelwieser's management sank ever deeper into financial trouble. As the enterprise became unable to pay salaries to its employees and declared bankruptcy shortly after, the Kupelwieser family lost all rights over the islands and had to leave. The devastated Karl Kupelwieser committed suicide in 1930.<sup>63</sup> The islands passed into the ownership of the Italian state.

Despite the new owner, the enterprise itself did not change much:

58 Ibid., pp. 100, 106.

59 Blažević, *Povijest turizma Istre i Kvarnera*, p. 259.

60 Urošević, 'Brioni rivista illustrata di sport e mondanità (1929–1940)', 64.

61 Urošević, 'Recreating Paradise', 136.

62 Ibid., 137.

63 Blažević, *Povijest turizma Istre i Kvarnera*, pp. 220, 259–60.



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the affluent guests, the elegance, the polo games and the fascist ideology remained the islands' trademarks in the interwar era.<sup>64</sup> 'While the world struggled with the Great Depression and totalitarian regimes gained power in Europe', Urošević notes, 'high society on Brijuni invented new forms of entertainment such as elegant parties on luxurious yachts and battle ships of the British Mediterranean fleet.'<sup>65</sup> The islands became one of the biggest and the most sought-after polo and golf centres in Europe, not least because of the Italian military school for polo founded in 1934.<sup>66</sup>

While in the pre-war period the islands were advertised as a health spa and sanatorium for those suffering from neuralgia and migraines, asthma, scrofula and other ailments of body and soul, the islands' business model under Karl Kupelwieser evolved into one of a 'sports haven'.<sup>67</sup> Besides favouring younger and more able-bodied patrons, this pivoting also changed the landscape, adding more sports courts and changing the dynamics of life and leisure on the islands. For example, polo, with its more-than-human players, generated large amounts of dung. Maria Lenz Guttenberg who lived on Brijuni from 1904 noted in her memoir *Izgubljeni raj (The Lost Eden)* the changes in the landscape:

[i]t is different [now] when horses incessantly gallop across the shallowly planted grass, ripping the flowers out root and stem. Because of the exuberant horse dung, the flies have multiplied enormously, and the stinging horse flies in particular bother walkers.<sup>68</sup>

The dung, however, did not seem to dim the prestige of the fascist playground. In August 1939, German propaganda minister Joseph Goebbels and his Italian counterpart, Minister of Culture Dino Alfieri, attended a polo tournament on Brijuni after enjoying a walk in the gardens.<sup>69</sup> As Urošević notes, 'in the last preserved issues of the *Rivista*, "[t]he new life of the dream islands" was projected in the context of the fascist state, a continuation of the prestige and power of the Roman Empire.'<sup>70</sup> Veli Brijun's ruins of Roman

64 Lenz Guttenberg, *Izgubljeni raj. Brijuni*, pp. 108–09.

65 Urošević, 'Recreating Paradise', 135.

66 Blažević, *Povijest turizma Istre i Kvarnera*, p. 200.

67 *Ibid.*, 192.

68 Lenz Guttenberg, *Izgubljeni raj. Brijuni*, p. 85.

69 *Ibid.*

70 Urošević 'Recreating Paradise', 138.



villas were now seen as the embodiment of this continuation, rather than a mere element to complement the Mediterranean flora of Kupelweiser Senior's English-style garden. Italian fascist leaders thus built their own villas on Veli Brijun, using them as summer residences until the beginning of the Second World War.<sup>71</sup> For instance, the Duke of Spoleto and Aosta, between 1941 and 1943 the king of the Nazi puppet Independent State of Croatia, acquired one.<sup>72</sup>

The Second World War halted all tourism on the islands. Following the 1943 capitulation of Italy and the subsequent German occupation, the hotels were looted and emptied as the entirety of their valuables, including furniture, were shipped to Germany.<sup>73</sup> As Brijuni were turned into a submarine base during the war – this time a German one – they suffered Allied bombardments on several occasions.<sup>74</sup> Towards the end of the war, the Germans retreated from Pula to Brijuni, which provoked further bombardments of all the buildings in the port.<sup>75</sup> The archaeological sites were, however, spared as the islands came under the dominion of the Southern Slavs, following the victory of their partisan guerrilla over the Nazis. Thus, for the first time in Brijuni's history, the Slavic locals went from being servants and labourers to becoming power holders themselves.

## The (very important) people's islands: State-Making on Brijuni in the Tito era

The post-World War II era saw Istria become part of the newly forged People's Federative Republic of Yugoslavia, and Brijuni snapped up for the summer home of the freshly retired commander of the partisan forces and the country's future life-long president Josip Broz Tito.<sup>76</sup> During Tito's reign, however, Brijuni remained everything but the 'people's': they retained

71 Mlakar, *Brioni*, p. 19.

72 Tajana Ujčić, 'Dva otoka narodnih dobara. Podržavljenje imovine u Istri na primjerima otoka Sv. Andrija kraj Rovinja i Brionskog otočja (1945–1947/1948)', *Vjesnik Istarskog arhiva* 25 (1) (2018): 159–181, at 161.

73 Lenz Guttenberg, *Izgubljeni raj. Brijuni*, pp. 113, 114.

74 Raul Marsetič, *I bombardamenti Alleati su Pola 1944–1945*, (Rovigno – Trieste, Centro di Ricerche Storiche, 2004), p. 137.

75 Lenz Guttenberg, *Izgubljeni raj. Brijuni*, p. 114.

76 Kamm, 'Tito's Retreat Goes Public'.

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a strictly VIP status throughout the socialist period and were out of reach for the masses.<sup>77</sup> Moreover, in this time they were not only Tito's exclusive summer residence, but also a venue for many historic political meetings.<sup>78</sup> From an exclusive Austrian resort, where the power wielders gathered for leisure, and a fascist playground where power was flaunted and paraded, the islands now became the place where power was forged in earnest: they became the centre of Yugoslav state-making and a hotspot for meetings that shaped alliances of global import.

In 1956, the leaders of the countries which would several years later form the Non-Aligned Movement, an initiative crucial for Yugoslavia's international status in the Cold War period, met on Brijuni. India's Prime Minister Nehru and Egyptian Prime Minister Nasser visited the islands and signed a declaration effectively founding the movement.<sup>79</sup> The event was meticulously planned. In the international media image of Tito's Brijuni meeting with Nehru and Nasser, no details were to reveal the opulent aristocratic past of the islands. This meant that the looks of most buildings on the islands needed to be transformed in the greatest of haste. The task was given to Slovenian architect Vinko Glanz. Pressed for time to get rid of the traces of the bourgeois past, while on the other hand striving to display a historical continuity with the region's culture, Glanz opted for a compromise: a combination of modern and classical architecture – a new(ish) material manifestation of the power relations in the islandscape.<sup>80</sup>

Notwithstanding this cosmetic 'de-splendouring', Tito's era seamlessly clicked into the image of Brijuni as a place of prestige. The islands continued to be a meeting spot of royalty and celebrities from all over the world in the decades to come. Queen Elizabeth II visited in 1972, Chancellor Willy Brandt of West Germany in 1973 and King Hussein of Jordan in 1978. As reported by the BBC journalist Frank Partridge, they were 'entertained in decidedly un-Communist manner', with Tito '[c]utting a dash for the

77 Milica Prokic, 'Contrasting the "Sunny Side": Goli Otok and the Islandness of the Political Prison in the Croatian Adriatic'. In *Environmentalism in Central and South-eastern Europe*, ed. by Hrvoje Petric and Ivana Žebec Šilj (Lanham, Boulder, New York, London: Lexington Books, 2017), pp. 206–07.

78 Urošević, 'Recreating Paradise', 138.

79 Franjo Radišić, *Spomen područje Vanga* (Zagreb: Privredni vjesnik, 1986), pp. 13–50; Ivan Blažević, 'Vanga', *Istarska enciklopedija* (Zagreb: Leksikografski zavod Miroslav Krleža, 2005), p. 855.

80 Jakaša Borić and Dumbović Biluš, 'Kompleks hotela Neptun', 137.

cameras, kitted out in double-breasted suits from New York's Fifth Avenue'. Internationally known as a bon vivant, a womaniser with penchant for food, film, expensive cigars, hunting and golf, Tito took his pleasures seriously too. His glamorous friends and Brijuni guests included Sophia Loren, Gina Lollobrigida, Elizabeth Taylor and Richard Burton, who played the role of Tito in a lavishly financed 1973 partisan film *The Battle of Sutjeska*.

Rounding his caricature of the communist 'playboy president', Partridge described 'Tito's glassy, open-plan villa [with] brilliant white walls, futuristic furniture and artwork, including a Picasso, [being] so 1960s it could be the villain's lair in a James Bond movie'.<sup>81</sup> While Brijuni were strictly VIP until Tito's death in 1980, the coastal part of the mainland opposite the islands was also only accessible to a hand-picked few. It was designated as a vacation resort for people close to the government helm, high-ranking army and police officers, and members of the Central Committee of the Yugoslav Communist League: a further solidification of Brijuni's role as the seat of power.<sup>82</sup>

When on Brijuni, Tito spent time horse-riding, attending to his growing zoo and visiting the cultural heritage and monuments, vineyards and orchards. He also relished growing flowers and especially liked the islands' rose groves.<sup>83</sup> On Vanga Island, Tito began his own landscaping project with a small orchard containing lemons, mandarins and other rare and exotic plants, which he brought from his various world travels. The landscaping was done with a nod to the local peasant style of drywall building, enthusiastically carried out by the island personnel, as well as by members of the Yugoslav army who were a constant presence on Brijuni of that time.<sup>84</sup> The fruit was distributed to childcare institutions across Yugoslavia.

Presenting Tito (and Yugoslavia) with a live gift became a custom among the members of the Non-Aligned Movement. Joining Nehru's antelopes, Sekou Toure's zebras and Qaddafi's camels, Sony the elephant arrived to Brijuni in 1974 as a two-year-old baby, followed by his female companion Lanka, as present to Tito from the Indian prime minister Indira Gandhi.

81 Frank Partridge, 'Inside Tito's Luxury Playground', *BBC News*, 8 Aug. 2009: [http://news.bbc.co.uk/1/hi/programmes/from\\_our\\_own\\_correspondent/8189530.stm](http://news.bbc.co.uk/1/hi/programmes/from_our_own_correspondent/8189530.stm) (accessed 15 Feb. 2024).

82 Peroković, 'Od Kupelwiesera do male ribarske akademije', 59; D. Duda, 'Komunisti kao turisti. Godišni odmor u vili CK SKH u Fažani', *Fažanski libar 7* (Fažana: Općina Fažana, 2014), pp. 137–45.

83 Urošević, *Brioni. Kulturno-povijesni vodič*, p. 72.

84 *Ibid.*, p. 65.

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**Figure 3.**

Detail of Brijuni safari park with zebras. Photograph by the author, Hrvoje Petrić.

These remarkably political animals bore manifold meanings for Yugoslavia, but more resoundingly for Tito himself: an emblematic display of his diplomacy, an exotic token of thriving international relations, ‘an accessory to [his] personal charm and the symbol of his widely known love for animals (notwithstanding his also widely known passion for hunting)’.<sup>85</sup> Until his death in 1980, Tito’s residence within a ‘non-aligned’ safari park and presidential exotic gardens thus embodied a final iteration of Brijuni as a landscape of power in the twentieth century.

85 Prokić, ‘Contrasting the “Sunny Side”’, 213.

## Conclusion

In 1983, when they were declared a national park, Brijuni became open to the wider public for the first time in their modern history.<sup>86</sup> The islands' past is today meticulously curated and advertised mainly as a combination of natural and archaeological wonders, Kupelwieser's man-made Eden and Tito's hedonist haven. Tourists are able to engage both with the animate and non-animate remnants of Brijuni's history – from Koch's microscope which he used to research the causative agent of malaria on the islands, to the chatty, over half-a-century-old cockatoo Koki, Tito's 1977 birthday gift to his granddaughter Saša.<sup>87</sup> Apart from entertaining visitors by saying profanities in Croatian, Koki often reminds the public that he is also a witness of history, saying phrases in Tito's voice and words like 'Tito' and 'Stari' (one of Tito's nicknames).<sup>88</sup> Tito's villas and golf courses are regularly maintained. Some animals from the Brijuni safari park were stuffed after death, so a large collection of taxidermy developed, and has been on display since 1986, a constant reminder that, in places like Brijuni, not even animals or plants are apolitical: rather, they are a materialisation of the power relations that shaped the archipelago over time.<sup>89</sup>

The long-exclusive Brijuni represent a space with at least two degrees of enclosure. One comes from their environmental trait – that of islandness. Another is that of exclusivity, power and prestige. The combinations of these traits seeped into their islandscape, shaping it in various ways. Their islandness at times made Brijuni the locus of an intra-species scramble for power: a prodigiously deadly place for humans, where they had been annihilated several times over by the *mosquitocratia* and pestilence-bearing microbes. Islandness combined with prestige and exclusivity, embodied in the human-made interventions and infrastructure, transformed the small archipelago with each incarnation of power: from the emperors' place of leisure to one man's experimental garden of Eden peppered by Viennese-style hotels, a self-given prize for a 'civilising mission'; the laboratory where *mosquitocaratia* was

86 Vesna Klunić, '25 godina turizma u nacionalnom parku Brijuni', *Fažanski libar* 4 (1) (2011): 105–12, at 105.

87 Prokić, 'Contrasting the "Sunny Side"', 212.

88 'Koki the cockatoo', Brijuni National Park Website: [http://www.np-brijuni.hr/en/natural\\_heritage/fauna/koki\\_the\\_parrot](http://www.np-brijuni.hr/en/natural_heritage/fauna/koki_the_parrot) (accessed 15 Feb. 2024).

89 Prokić, 'Contrasting the "Sunny Side"', 213.

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vanquished; the playground of the proponents of the fascist ideology; and the menagerie of international political influence. In all these incarnations of their islandscape, Brijuni have been a place where nature and power relations are impossible to pull asunder. Their interplay has created head-spinning abundance, whimsical diversity and unlikely cohabitations, the history of which is as layered as the limestone sediments of which the islands are formed.

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### 3. Sailing Through Heritage:

## Nautical Tourism, Environmental Protection, Conflict and the Making of the Kornati National Park in Socialist Yugoslavia

Josef Djordjevski

*Growing up in a family of Yugoslav immigrants, I often heard stories about the Adriatic Sea, and in my childhood I dreamt about visiting its multiple islands like Odysseus getting lost on his way to Ithaca. To my young mind, the Kornati Archipelago, already a national park by the time I was born, represented everything that my imagination conjured up about the Adriatic Sea, and simultaneously reflected what tourism boards and companies were marketing to tourists: adventure and untouched wilderness. As history shows, however, tourism marketing and place branding often attempt to sell an unrealistic picture, commodifying places and communities in the process. Kornati is by no means untouched by humans. Ancient ruins, centuries-old stone walls, current landowners and luxury sailboats all attest to its long history of being touched.*

*Having travelled to Croatia's Eastern Adriatic coastline on multiple occasions, visiting friends and family and conducting dissertation research in regional archives, I visited some of the major Croatian islands and most of the major coastal cities. Despite the time I spent in the region, for various reasons I could never seem to find my way to National Park Kornati. To me, it became an unreachable place. Unlike Hvar and Šolta, no large Jadrolinija ferryboat takes passengers back and forth to Kornati from the mainland.*

*Unable to find the chance to take a daytrip with one of the local tour operators from the mainland, I spent an entire summer wondering how long it would take to swim or paddleboard to Kornati's galaxyscape of arid islands, some large and some tiny, like little yellowish drops contrasted by the bright blue sea. Much to my surprise, in addition to watching from the shore, Kornati came up frequently in the bureaucratic documents I examined at the Croatian State Archives in Zagreb while conducting research on the historical development of Adriatic tourism. National Park Kornati was never a major focus of my dissertation work, but it was very present in the process.*

*Gazing at Kornati from the shore and in the dusty archival collections I couldn't help but wonder why this particular island formation became a national park under Socialist Yugoslavia. Not that national parks were an anomaly in Socialist Yugoslavia – there were several of them – it's just that the archipelago was not much farther from the littoral than islands like Hvar, which became a mass tourist destination. Also, since we know that the touristic marketing of the island chain reflects cultural constructions, I wanted to know more about how and why it has been touched, and by whom. Increasingly, however, I wanted to know more and more about how this island environment has done some touching of its own. All of this has played a large role in leading me to this chapter. While I've never been physically present in National Park Kornati, it has had a great impact on me and my research, and an even greater impact on the people who have lived and laboured in and near it.*

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The Kornati islands in the upper Dalmatian region of Croatia, between the coastal cities of Zadar and Šibenik, make up the largest archipelago in the Mediterranean.<sup>1</sup> A mostly uninhabited island group with declining agricultural communities,<sup>2</sup> Kornati was declared a national park (*Nacionalni park*) by the leadership of the Socialist Federative Republic of Yugoslavia in 1980. The 89 islands and islets of the Kornati National Park are characterised by landscapes of arid and rocky – mainly limestone – terrain with rare endemic flora and fauna and are surrounded by a marine ecosystem that many observers have considered to be ‘intact’.<sup>3</sup> The clear blue, low-nutrient waters and reefs around the islands are home to around 3,000 different species of marine fauna.<sup>4</sup> In addition to its physical makeup, the archipelago also has a history of anthropogenic influences including the cultivation of vineyards and olive groves, sheep and cattle raising and fisheries. While the larger islands of the archipelago were inhabited by Illyrian tribes in antiquity, the Romans and later the Venetians – who administered the islands until the end of the eighteenth century – built various structures such as marinas, fortresses and churches on the islands, including on Kornat, Žut, Vela Panitula and Piškera.<sup>5</sup> In addition, islanders used the land for goat, sheep and cattle raising and the sea for fishing and, in the latter part of the nineteenth century, residents from the nearby island of Murter began to buy up property on the Kornati islands.<sup>6</sup> The farmers transformed the landscape, most conspicuously through the construction of stone walls used to divide up agricultural land.<sup>7</sup> Due to harsh climate, lack of vegetation and surface water, however, there were very few permanent residents and the majority of locals using the land continued to reside in Murter. The pastoralisation and

- 1 René J.H.G. Henkens et al. (eds), *Alterra-Report 1963 – Biodiversity Monitoring in the Kornati Archipelago, Croatia: Protocols for the Monitoring of Natura 2000 and Croatian Red List Habitats and Species* (Wageningen: Alterra Wageningen UR, 2010), p. 11.
- 2 Sven Kulušić, ‘Kornatska otočna skupina (Prilog poznavanju kolonizacije)’, *Geografski Glasnik* 27 (1965): 233.
- 3 Anja Ilenič et al., ‘Is the Kornati National Park Still an Acceptable Reference Area for Environmental Studies?’ *Geosciences* 8 (385) (2018): 1–12, at 1.
- 4 Ibid., 2.
- 5 Kulušić, ‘Kornatska’, 221.
- 6 Ibid., 239–40.
- 7 Josip Faričić and Zdenko Simičić, ‘Kornati na starim geografskim i pomorskim kartama / Kornati Islands on Old Geographic Maps and Charts’, *Kartografija i geoinformacije* 4 (4) (2005): 58–77, 60, 61.

cutting down of trees for various agricultural purposes, in turn, contributed to the islands' aridity.<sup>8</sup> Therefore, an inter-island network existed between the people of Murter and the Kornati archipelago for centuries before the Yugoslav authorities designated the latter a national park.

By the 1980s, human cultivation of the islands had declined due to lack of arable land.<sup>9</sup> At the same time, Yugoslav scientists and local leaders labelled Kornati a unique and important monument to the intersections and interdependencies between the region's human history and its natural environment.<sup>10</sup> After becoming a national park, Kornati quickly came to serve as a showpiece for the success of Socialist Yugoslavia's measures to protect the coastal environment of the Adriatic. The archipelago even appeared on Yugoslav postal stamps in the early 1980s as part of a series celebrating environmental protection in the country (Figure 1). However, the national park was also advertised to tourists and soon became a popular destination for international yachters (Figure 2). Thus, the Kornati archipelago would be simultaneously framed as a site of extremely well-preserved natural and cultural heritage, and as a 'nautical paradise'.<sup>11</sup> An additional major factor, and one that makes Kornati unique in the socialist context, is that much of the land in the archipelago remained privately-owned by the people inhabiting the nearby, more densely populated, island of Murter.<sup>12</sup>

That the Mediterranean Sea's largest archipelago was placed under protection, remained largely privately owned and was reserved for nautical tourists by a socialist state might be surprising, given that socialist states, including Yugoslavia, were often founded on principles of rapid modernisation with an emphasis on industrialisation and the nationalisation of property.<sup>13</sup> This raises

8 Ibid., 60, 61.

9 Kulušić, 'Kornatska', 238–39.

10 Republički zavod za zaštitu prirode SR Hrvatske, Urbanistički institute SR Hrvatske, Nacionalni Park Kornati: prostorni plan područja posebne namjene, Završni izvještaj (Zagreb, 1978), p. 1, in (Hrvatski Državni Arhiv-Croatian State Archive) HR-HDA-Republički komitet za građevinarstvo, stambene i komunalne poslove i zaštitu čovjekove okoline SR Hrvatske, 1947-89-160.

11 Nacionalni Park Kornati, 'Kornati National Park... 89 unforgettable islands, islets and reefs': <http://www.np-kornati.hr/index.php?lang=en> (accessed 15 Feb. 2024).

12 The owners of Kornati land residing in Murter are known locally as Kurnatari.

13 Milica Uvalić, 'The Rise and Fall of Market Socialism in Yugoslavia', *DOC Research Institute* (2018): 1–49, at 4; John R. Lampe, *Yugoslavia as History: Twice There Was a Country*, 2nd ed. (New York: Cambridge University Press, 2000), p. 233; Sabrina P.

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**Figure 1.**

A Yugoslav stamp featuring the Kornati archipelago with a monk seal. Photograph by the author, Josef Djordjevski; item in author's collection.

some important questions. Firstly, what can the creation of a national park in the Kornati archipelago tell us about the entanglements between tourism and environmental protection in less-populated islands? Also, what do the politics of heritage-making in Kornati reveal about the roles of private and public forces in managing an island national park under socialism? Finally, in what ways did Kornati's materiality and islandness influence and interact with these processes?

This chapter tells the story of the origins of the Kornati National Park. I argue that the creation of the Kornati National Park served as a testing ground for Yugoslav experts' visions of harmonising environmental protection with economic exploitation. The successes and failures of this project would testify to the ability of Yugoslavia's unique structure of workers' self-

Ramet, *Nationalism and Federalism in Yugoslavia, 1962–1991*, 2nd ed. (Bloomington and Indianapolis: Indiana University Press, 1992), p. 29.



**Figure 2.**

The natural harbours of the Kornati Archipelago, with a section of one of the unique handmade drywalls in the foreground. Photograph by Tihomir Gržinčić via Wikimedia Commons ([https://commons.wikimedia.org/wiki/File:Otok\\_Kornat.jpg](https://commons.wikimedia.org/wiki/File:Otok_Kornat.jpg)), CC BY-SA 4.0.

management and decentralisation,<sup>14</sup> and its policy of ‘rational use’ to create, cultivate and utilise the archipelago’s heritage. Despite some successes in terms of Kornati’s environmental conservation, tensions between protection and economic use led to conflicts that have shaped the national park and transformed the archipelago.

‘Rational use’ was a policy adopted by the Yugoslav leadership in its approach towards the economic development of the entire Adriatic region, and coastal mass tourism became a major factor in this process. In the case of Kornati, however, rational use mainly referred to the continuation of traditional local economies, but also engagement with a relatively new and more exclusive form of tourism – nautical tourism.<sup>15</sup> Nautical tourism

14 These policies included the social ownership of enterprises by workers councils, and the autonomy of each Yugoslav Republic (six in total) to administer their own policies.

15 Vjekoslav Koljatić, ‘Ekološki aspekti nautičkog turizma’, *Pomorski zbornik* 38 (1) (2000): 373–82, at 374; and Alen Jugović, Mirjana Kovačić and Ana Hadžić, ‘Sustainable Development Model for Nautical Tourism Ports’, *Tourism and Hospitality Management* 17 (2) (2011): 175–96, 175.



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played a crucial role in the justification for environmental protection of the archipelago. Yet, while tourism and environmental protection were seen as compatible, and in fact inseparable, by Yugoslavia's leaders, experts, and local stakeholders, their coexistence directly led to a series of conflicts.

While there is an abundance of literature on national parks and protected areas, including analyses of conflicts between their exploitation and conservation, few studies pay sufficient attention to how these tensions played out in the setting of a Socialist – in this case Yugoslav – national park. This chapter demonstrates that Socialist Yugoslavia's approach towards balancing conservation and economic interests at Kornati produced results similar to those in non-Socialist countries. It also pays attention to the role of nautical tourism as a supposedly environmentally friendly, yet at the same time more elitist, form of recreation in the development of the national park. Although the Kornati National Park did not experience the intensive development and mass tourism of other parts of Croatia's Adriatic coastline,<sup>16</sup> it was still subject to tensions between tourism and nature protection and between local actors and the environment of the archipelago. This history therefore connects Kornati to other national parks in and beyond former Yugoslavia and other formerly Socialist countries that have experienced similar kinds of conflicts. It does this by showing how the conservation of island heritage can be complicated by several factors, including the introduction of tourism, competing ideas over proper degrees of protection and the physical makeup of the islands themselves.

In examining the creation of the Kornati National Park, I view its land and seascapes as hybrid, or as constructed by both material and cultural factors. This approach can help us understand how heritage was created and managed in the context of the national park. In order to better examine the relationship between human actors and the archipelago, William Cronon's assertion that nature, especially 'wilderness', is 'quite profoundly a human creation' should be taken seriously.<sup>17</sup> We should also, however, take the materiality of environments into consideration, since, in human-environment interactions, materiality becomes expressed through different webs of interaction and entanglements.<sup>18</sup> In

16 For more on this, see Hannes Grandits and Karen Taylor (eds), *Yugoslavia's Sunny Side: A History of Tourism in Socialism, 1950s–1980s* (Budapest, New York: Central European University Press, 2010).

17 William Cronon, 'The Trouble with Wilderness, Or Getting Back to the Wrong Nature', *Environmental History* 1 (1) (Jan. 1996): 7–28, at 7.

18 Serenella Iovino and Serpil Opperman (eds), *Material Ecocriticism* (Bloomington: Indiana University Press, 2014), p. 3.



the case of Kornati, this expression can be understood as stemming from the fragility of the archipelago's ecosystems, the difficult terrain of its islands and islets, its proximity to the Adriatic littoral, the attractiveness of its land and seascapes to tourists, and its severely limited but valuable natural resources.

In addition to highlighting the hybridity of environments, it is also essential to examine how physical sites are co-produced in the process of heritage-making. This is especially useful in examining the creation of heritage for touristic purposes. As Rodney Harrison suggests, heritage making is 'fundamentally an economic activity',<sup>19</sup> especially due to the fact that 'tourism is required to pay for the promotion and maintenance of heritage, while heritage is required to bring in the tourism that buys services and promotes a state's, region's or locality's "brand"'.<sup>20</sup> Therefore, heritage and tourism are often co-dependent. They also, however, both draw on and are shaped by their physical environments, which can be seen in the case of Kornati National Park.

### **'A very powerful ally': Tourism and environmental protection in the 'rational use' of the Adriatic coast under socialism**

Tourism played an important role in the making of heritage on the Adriatic coast, with a tradition going back to the late nineteenth century when much of the region was under Austro-Hungarian rule, as well as to the interwar Kingdom of Yugoslavia.<sup>21</sup> Tourism also played a major role in the proliferation and institutionalisation of environmental protection in Socialist Yugoslavia, including the creation of a national park at Kornati. Beginning in the 1960s, Yugoslav leaders and experts, including planners and members of various – mainly Croatian – institutes, would come to see the country's Adriatic coast, the bulk of which lay in Croatia, as both environmentally pristine and ripe for an expansion of touristic development. Tourism, in its dual role as a justification for environmental protection and as a driver of development, became a powerful force in environmental management, and has continued

19 Rodney Harrison, *Understanding the Politics of Heritage* (Manchester: Manchester University Press, 2010), p. 12.

20 Ibid., p. 21.

21 See Boris Vukonić, *Povijest Hrvatskog Turizma* (Zagreb: Prometej, 2005).

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to influence policies in Croatia up to the present.<sup>22</sup> This approach towards using tourism as a motor for a more sustainable method of development was referred to by Yugoslav leaders as ‘rational use’ or ‘rational development’, which reflects the terms adopted by the United Nations Environmental Programme (UNEP) in the 1972 Stockholm Declaration.

Socialist Yugoslavia’s leadership had previously favoured rapid industrialisation of the country, including the coastal regions, and a fast-track path to modernity through electrification, urbanisation, shipbuilding and heavy industry.<sup>23</sup> However, after Yugoslavia’s ties with the Soviet Union were severed in 1948, the country began to look to international and domestic tourism as an alternative source of economic security.<sup>24</sup> This new emphasis on tourism already bore staggering results in the 1950s with a dramatic rise in tourist visits, but became especially discernible in the 1960s. Between 1960 and 1971 the yearly number of foreign guests to Yugoslavia increased by 500 per cent, from just under 900,000 to over 5 million.<sup>25</sup>

With the spike in the numbers of tourists in the 1960s, Yugoslav planners and political leaders were well aware of the draws of the built and natural heritage of the coastline, and quickly came to the conclusion that further development needed to be carefully managed.<sup>26</sup> The recognition of the need to protect the environment as a tourist asset motivated official environmental management and protection efforts on the Yugoslav coast throughout the remainder of the federation’s existence. The degree to which tourism and environmental protection became intertwined and co-dependent is most clearly observable in the three ‘Adriatic Projects’. These three projects, which lasted between 1967 and 1979, were co-funded by the United Nations Development Programme (UNDP), and were meant to provide blueprints for the implementation of the

22 Josef Djordjevski, “‘The (Still) Beautiful Blue Adriatic’: Tourism, Yugoslav Socialism, and the Adoption and Limitations of Visual Preservation on the Eastern Adriatic Seaside, 1960s–1990s’, *Balkanologie* 16 (2) (2021): 1–24.

23 George W. Hoffman, ‘Yugoslavia in Transition: Industrial Expansion and Resource Bases’, *Economic Geography* 32 (4) (1956): 294–315, at 297.

24 Igor Tchoukarine, ‘The Yugoslav Road to International Tourism: Opening, Decentralization, and Propaganda in the Early 1950s’, in *Yugoslavia’s Sunny Side*, p. 107.

25 Mohamed Tangi, ‘Tourism and the Environment’, *Ambio* 6 (6) The Mediterranean: A Special Issue (1977): 336–41, at 340.

26 United Nations, ‘An Evaluation of the Basic Factors’, United Nations Archives. UN. TE 322/Yugoslavia (140-1).

‘rational development’, ‘rational use’, and ‘rational planning’ of the coastline.<sup>27</sup>

While the projects promised to usher in a new era of coastal modernisation through coexistence of different economic activities, they each placed major value on tourism and considered it to be the economic activity best capable of balancing development and preservation. In general, the planners of the projects considered tourism to be the main engine of economic development for most of the coast, especially among the islands.<sup>28</sup> While there is a degree of variety among the Eastern Adriatic’s islands, the planners believed that the Dalmatian islands were mostly unified in terms of their ‘Mediterraneanness’: characterised by medieval urban centres overlooking clear blue waters, relatively dry landscapes with some forested areas, limited water sources and some agricultural use.<sup>29</sup> Developing island areas based on the appearance of their landscapes, the planners believed, would lead to less construction and ‘leave large parts of the islands in their natural state’.<sup>30</sup> Kornati, on the other hand, differed from many of the other Croatian islands due to its lack of historical town centres, permanent residents, agricultural opportunities and flora, especially any forested areas. The planners’ faith in the ability of tourism to simultaneously support local economies and ensure aesthetic environmental protection, or the implementation of efforts to preserve the visual components of landscapes, became the official approach for coastal development and would drive the plans to designate Kornati as a national park. As Franjo Gašparović, a Croatian architect and university professor who directed the Third Adriatic Project, put it, ‘tourism, if meaningfully developed, could become, and should be activated to become, a very powerful ally in ... environmental pollution abatement, since it uses the environment and space as basic resources being indirectly included into the tourist services sale price’.<sup>31</sup> As we will see, the implementation of environmental protec-

27 Djordjevski, ‘Beautiful Blue’, 6.

28 Informacija o traženju sredstava specijalnog fonda Ujedinjenih Nacija za izradu planova, projekata, investicionih programa turističkog razvoja Jadranskog područja i posebno Južnog Jadrana. AJ, F.130, Savezno Izvršno Veće (Međunarodno odnosi 1953-1970). Box 662, Folder 1965.

29 Ibid.

30 UNDP, *Physical Development Plan for the South Adriatic Region: Projekt Južni Jadran, Split Regional Plan* (Shankland Cox & Associates, Urbanistički Zavod Dalmacije, March 1970), p. 1.

31 Franjo Gašparović, ‘The Project on the Protection of Human Environment in the Yugoslav Adriatic Region (The Adriatic III Project)’, in *The Second Conference of Me-*

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tion measures in a decentralised Yugoslavia would become inseparable from questions regarding the development of coastal tourism.<sup>32</sup>

#### **‘A beautiful, untouched and unspoiled image of the past’: The Kornati archipelago as a site of heritage and exploitation**

Despite the official stance that tourism and environmental protection would develop harmoniously on the islands, there were signs that tourism could have potentially destructive impacts on their environments, and some experts realised this relatively early on.<sup>33</sup> In 1965 local geographer Sven Kulušić, a native of Murter, produced a study of Kornati’s unique physical features that can be considered the first detailed proposal for the protection of Kornati. He pointed out that the islands had very limited potential in terms of economic development mainly due to their aridity, rocky karstic terrain and lack of flora.<sup>34</sup> Kulušić noted the archipelago’s tourist potential was based mainly on the islands’ lack of other economic uses and what he considered to be a unique natural beauty.<sup>35</sup> However, Kulušić also asserted that tourism, if indeed it were to be introduced, would only be viable ‘if [the archipelago] remains as it was until a few years ago: a beautiful, untouched and unspoiled image of the past, a monument of human labour and a witness to the hard struggle for life’.<sup>36</sup> In conclusion, he suggested that the establishment of a national park involving the local community would help preserve Kornati’s unique features. Two years later, in 1967, the Croatian Parliament adopted a resolution placing the archipelago under protection as a nature reserve, reportedly directly inspired by Kulušić’s study.<sup>37</sup>

*diterranean Towns* (Rijeka: October 27–29, 1976), p. 13.

32 Sabrina P. Ramet and Ivo Goldstein, ‘Politics in Croatia since 1990’, in Sabrina P. Ramet and Christine M. Hassenstab (eds), *Central and Southeast European Politics since 1989* (Cambridge: Cambridge University Press, 2019), p. 274.

33 UNDP, *Upper Adriatic Project – Coordinating Physical Plan for the Upper Adriatic Region Final Report* (Rijeka, 1972), p. 81.

34 Kulušić, ‘Kornatska’, 219.

35 *Ibid.*, 239.

36 *Ibid.*, 239.

37 Nacionalni Park Kornati, History of Kornati National Park: [http://www.np-kornati.hr/index.php?option=com\\_content&view=article&id=59&Itemid=248&lang=en](http://www.np-kornati.hr/index.php?option=com_content&view=article&id=59&Itemid=248&lang=en) (accessed 15 Feb. 2024).

By the 1960s the Kornati archipelago, according to contemporary studies, was largely uninhabited – at least on a permanent basis – due to its almost complete lack of vegetation and sources of fresh water.<sup>38</sup> The aridity and lack of flora were due to a mix of both climatic and anthropogenic factors, mainly through pastoralisation, that led Kulušić to label the islands in general as ‘degraded’.<sup>39</sup> This degradation, demonstrating a clear contradiction to the idea that the archipelago was untouched, was part of what made the archipelago so unique, with its architectural ruins and traces of past agriculture and cultivation. Despite the diminishing use of the archipelago by locals, however, most of the land on the archipelago was privately owned by Murter residents but also by the people of the island of Dugi otok, which borders the Kornati archipelago.<sup>40</sup>

In 1978 the Republic Institute for Nature Protection of the Socialist Republic of Croatia and the Urban Institute drew up plans for making Kornati a national park. The initial request came from the municipality of Šibenik, under whose jurisdiction the majority of the prospective park would fall.<sup>41</sup> While Kornati had been a nature preserve since 1967, the experts involved in the 1978 spatial plan believed that the existing type of protection was too mild and that the area needed to be managed more strictly as a national park with a centralised park service.<sup>42</sup> In their final report, both institutes sought to define the measures needed for protecting Kornati as natural and cultural heritage, which was necessary in order to achieve ‘optimal harmonisation’. Directly reflecting the Adriatic Projects, the institutes also declared that ‘rational use’ would be implemented for the Kornati islands.<sup>43</sup> Citing the archipelago as a ‘natural wonder’, the authors of the spatial plan declared that the entire archipelago was in need of protection due to its uniqueness in the Adriatic and Mediterranean contexts.<sup>44</sup> Despite this emphasis on protection, tourism was still a major factor in the proposals and used as justification for this very protection.<sup>45</sup>

38 Kulušić, ‘Kornatska’, 219, 244.

39 Ibid.

40 Urbanistički institute SR Hrvatske, *Kornati* (1978), p. 16.

41 Ibid., p. 1.

42 Ibid., Introduction.

43 Ibid., p. 1.

44 Ibid., p. 16.

45 Ibid., p. 52.

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As part of the goal to carry on the spirit of the Adriatic Projects, the Kornati planners considered tourism to be a fundamental aspect of the proposed national park. In so doing, they echoed Kulušić's 1965 study which stated that the archipelago was ripe for tourism, but it would need to be a strictly controlled and more sustainable type of tourism. In the 1978 plan, the institutes remarked that, due to Kornati's unique features, nautical tourism was the most suitable form of economic utilisation for the islands.<sup>46</sup> By reserving the national park for guests travelling mainly on yachts and small vessels, they reasoned, the revenue created by these nautical tourists would help fund the park's protection while also avoiding the elements of environmental degradation caused by mass tourism elsewhere.<sup>47</sup> To put it bluntly, what the planners were suggesting was that nautical tourism would attract a more select type of traveller with generally greater financial means. Therefore, according to their logic, a more restrictive type of small-scale tourism would produce beneficial economic results while keeping the national park intact. This, however, was a relatively untested theory.

Nautical tourism had already been present on the Adriatic coast before mass tourism expanded in Socialist Yugoslavia. During the interwar period, Adriatic yachting in the Kingdom of Yugoslavia was promoted to foreign visitors by *Putnik (Traveller)*, the national tourism agency based in Belgrade.<sup>48</sup> It was in the 1970s, however, that nautical tourism accelerated and began to capture the attention of stakeholders on the coast as a significant branch of the tourist economy. In 1972 alone over 16,000 boats were recorded as visiting the Yugoslav Adriatic, which was an eye-catching upsurge from the mere 2,000 recorded a decade prior in 1962. By 1982 the number would increase to over 47,000.<sup>49</sup> Following this continuous increase in the number of foreign visitors arriving by private vessel, in 1974 a department dedicated to promoting and studying nautical tourism was established at the Pedagogical Academy in Zadar, the first of its kind in Yugoslavia.<sup>50</sup> Despite this

46 Ibid., p. 16.

47 Ibid., p. 28.

48 Dr F. Mišić, 'Vrbnik: An Homeric Idyll', *Jugoslavija: Jugoslovenski Turizam* 9 (11) (1938): 344–45, at 344.

49 Mladen Vukčević, 'Doprinos međunarodnog nautičkog turizma ekonomskoj stabilizaciji u Jugoslaviji', *Naše More* 34 (3–4) (1987): 141–47, at 141.

50 Tihomir Luković, 'Nautički turizam - definije i dileme / Nautical Tourism – Definitions and Dilemmas', *Naše More* 54 (1–2) (2007): 22–31, at 23.

increased attention, however, tourism experts considered Yugoslav nautical tourism, when compared to other Mediterranean destinations, to still be underdeveloped in the 1980s since Yugoslavia had a weaker tourist offer than places like Italy or Spain, where yachtsmen spent more money.<sup>51</sup>

Kornati's spatial planners, while singling out nautical tourism as a major factor in the 'rational use' of the national park, recommended small excursions to the islands from the numerous harbours on the mainland, especially from the seaside town of Biograd na Moru near Šibenik.<sup>52</sup> Despite a lack of more detailed plans, the Kornati archipelago became Kornati National Park by a resolution of the Croatian Parliament in 1980. Kornati would now be managed by a park service authority, and the land use would be limited to traditional agriculture, traditional small-scale fisheries and nautical tourism, broadly defined. Thus, Kornati became a heritage site valued for its environment, including both natural and cultural factors, as well as its potential for serving as an exclusive tourist site. As we will see, however, the restrictions on activities within the national park would lead to conflicts that have not only shaped the national park, but also demonstrated the social effects of placing the archipelago under protection.

### **'Connected to the land by blood and sweat': Conflicts around use and environmental protection in the Kornati archipelago**

While the Croatian government and the drafters of the spatial plan converting the Kornati archipelago into a national park were confident that the designation would introduce 'optimal harmonisation' and 'rational use' by balancing conservation and exploitation of the archipelago, the act immediately led to conflict, especially between local stakeholders and property owners, and the state authorities, park management and at least one socially-owned nautical tourism company.

After the plans to create a national park in the Kornati archipelago became public, locals from the town of Sali on the island of Dugi otok, which would sit at the northern edge of the protected area, along with inhabitants of Murter, complained in two separate letters to the Croatian Parliament

51 Vukčević, 'Doprinos', 143.

52 Urbanistički institute SR Hrvatske, *Kornati* (1978), p. 16.



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that their rights to use the land on the archipelago were being threatened by the conservationist aims of the national park. In 1979 both communities argued that they had not been consulted in any of the discussions regarding the national park, and that they resented the idea that the archipelago's islands and islets were 'uninhabited', since they and their ancestors had been using the area for agricultural, horticultural and fisheries purposes for centuries.<sup>53</sup>

The community of Sali sent a 'protest' letter directly to the Croatian Parliament's president, Jure Bilić, condemning the idea that Kornati could be compared to other national parks in the country, like the Plitvice Lakes National Park, that were either abandoned or not privately owned. Arguing that the locals were the rightful owners of areas that would be included in the national park, in the letter the people of Sali asked Bilić to help them ensure that they would continue to have access to their property, since, as they wrote, 'we are living people connected by blood and sweat to this land of ours, which would become a national park'.<sup>54</sup>

Despite the protests, the 1980 parliamentary session considering the proposal for making Kornati a national park decided that the plans would go ahead as outlined in the 1978 spatial plan. Criticising the parliamentary representatives from Zadar, who also represented the interests of Dugi otok and its residents' objections to the national park, parliament member Živko Lazinica claimed that the protest letter served as evidence for why a national park was needed in the first place, since it seemed to hint at the greed of private owners. For him, the declaration of the national park went beyond private interests, and he argued that 'our future generations will be grateful if we declare this area a national park'.<sup>55</sup> Echoing this sentiment, another member of the parliamentary session, environmentalist and leading member of the League of Communists of Croatia, Dr Stipe Šuvar, assured the discussants that traditional economies like agriculture and small fisher-

53 Letter from *vlasnici posjeda na Kornatima i profesionalni ribari to Sabor Socijalističke Republike Hrvatske*, 'Proglašenje kornata nacionalnim parkom – predstavka', 14 Jan. 1979, p. 1. HR-HDA-1081 – Sabor SRH, box 1232; and *Mještani sela Sali – Dugi Otok, zbor radnih ljudi i građana to Jure Bilić*, 'Protest protiv javnog informisanja radija i TV Zagreb, i na koncept Republičkog zavoda za zaštitu prirode u vez nacionalnog parka 'Kornati' ...'. 14 Jan. 1979, 1, in *Ibid.*

54 *Ibid.*, 2.

55 *Prijedlog zakona o proglašenju Kornata i kornatskih otoka Nacionalnim parkom* (24 July 1980), 171, in HR-HDA- Republički komitet za građevinarstvo, stambene i komunalne poslove i zaštitu čovjekove okoline SR Hrvatske, 1947-89-160.



ies would continue to be fostered in the national park, while tourism would also be developed, but in a way that would not be uncontrolled or wild and 'dictated ... by private-ownership interests'.<sup>56</sup>

After the Kornati archipelago was declared a national park in 1980, most of the land on the islands and islets remained private property, and local owners were allowed to continue using the land in traditional ways. However, new construction and any form of development that did not adhere to the spatial plan would be strictly limited.<sup>57</sup> Despite the local communities being able to maintain land ownership in the national park, the municipality of Zadar, the largest city in the region, was tasked with co-managing the Kornati National Park in partnership with the neighbouring municipality of Šibenik. The municipality of Zadar, however, protested against the inclusion of Telašćica Bay, the northernmost section of Kornati, in the national park on behalf of the citizens of Sali, since the bay had been included in Zadar's own plans to expand tourist facilities.<sup>58</sup> Because of this conflict over resource use, Zadar refused to jointly manage Kornati with Šibenik and, in the end, two separate park administrations were established: one in Sali representing the interests of Zadar, and one in Murter representing the interests of Šibenik and the official plans for Kornati National Park. This conflict over the management of the park would last until Telašćica was separated from Kornati National Park and made into a less restrictive 'nature park' in 1988.<sup>59</sup>

During the period of schism in terms of park management, conflicts continued between stakeholders while members of the Croatian government and different state institutes tasked with nature protection struggled to determine the degrees of the park's protection, and how to manage the introduction of exclusive nautical tourism to the archipelago. Despite the

56 Ibid.

57 Vladimir Skračić, 'Kolonatsko gospodarstvo u zaštićenom prostoru Nacionalnog parka Kornati', *Sociologija sela* 39 (1/4) (2001): 297–317, at 298. Irena Ateljevic and Stephen Doorne, 'Unpacking the Local: A Cultural Analysis of Tourism Entrepreneurship in Murter, Croatia', *Tourism Geographies* 5 (2) (2003): 123–50, at 134. Urbanistički institute SR Hrvatske, *Kornati* (1978), p. 4.

58 *Socijalistička Republika Hrvatska – Republički komitet za prosvjetu kulturu, fizičku i tehničku kulturu*, 'Podsjednik o problematici nacionalnog parka "Kornati"', 1, in HR-HDA- Republički komitet za građevinarstvo, stambene i komunalne poslove i zaštitu čovjekove okoline SR Hrvatske, 1947-89-160.

59 Damir Magaš, 'Nature Park Telašćica on Dugi Otok – Some Aspects of Environmental Planning', *Geoadria* 3 (1998): 81-92, 81, 87, 91.

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promise of nautical tourism to offer a more sustainable and environmentally friendly alternative to mass tourism, its development also ran into some conflicts with the preservation goals of the plan. Despite the leadership's reiteration that the main purpose of the national park would continue to be environmental protection, conflicts between preservation and development continued throughout the decade as the possibilities for developing nautical tourism were enticing.

As an example highlighting these tensions, the Adriatic Club of Yugoslavia, a socially-owned nautical tourist agency founded in 1983, was able to take advantage of the lack of a coherent development policy in the national park and began to build and expand a marina on the small island of Vela Panitula near the larger island of Piškera, both located within the park. In 1985 the Executive Council of the Croatian Government sent a letter to the State Committee for Tourism on behalf of President Ante Marković asking for the committee's opinion about a complaint by a local named Berislav Turčinov. Turčinov had sent Marković an emotional, indeed frantic, letter about how the Adriatic Club of Yugoslavia was illegally building a marina on or near his private property on the island of Vela Panitula. Turčinov claimed that the Adriatic Club had built facilities on the protected archipelago without adhering to laws on expropriation, the protection of nature or permissible construction.<sup>60</sup> He also informed Marković that he was writing to him personally since he had filed a lawsuit with the court in the city of Šibenik and brought his complaints to the construction inspectorate. Neither body did anything to solve the problem, however, and Turčinov accused them of merely 'philosophising' over the matter. He therefore asked Marković to get involved personally to help address the 'anarchy' and 'bullying' by the yacht club.<sup>61</sup> While there is no evidence of a response from Marković or the State Committee for Tourism to Turčinov, the construction of the marina was never expanded and Turčinov was able to use his property on the island for a small-scale beekeeping business.<sup>62</sup>

60 Letter from Berislav Turčinov to *Izvršno Vijeće Sabora SR Hrvatske, na ruke predsjednika Ante Marković*, 'bespravna gradnja/divlja gradnja/na otoku Velika Panitula-Kornati-INTERVENCIJA – TRAŽI SE,'01-3307 (Mar. 22, 1985), in HR-HDA-Republički komitet za turizam, box 57.

61 Ibid.

62 Nacionalni Park Kornati, *Associations, family farms and private citizens*, 'Boris Turčinov Family Farm': [http://www.np-kornati.hr/index.php?option=com\\_content&view=article&id=261&Itemid=390&lang=en](http://www.np-kornati.hr/index.php?option=com_content&view=article&id=261&Itemid=390&lang=en) (accessed 15 Feb. 2024).

Although the official plans for the creation and management of the Kornati National Park sought to achieve ‘optimal harmonisation’ in the simultaneous exploitation and preservation of the park’s heritage, limitations to the goals set out in the original 1978 spatial plan arose due to the tensions between these two at times contradictory uses of the national park. Although nautical tourism was meant to ensure a more ‘rational’ and sustainable economic use of the protected archipelago, it also generated conflicts and its effects contradicted plans to preserve the islands’ environment. In his important study on the historical relationship between environmental protection and tourism, Scott Moranda contends that, while advocates of tourism have often characterised it as more environmentally sustainable than other forms of economic development, even more specific types of tourism limited to niches, such as agrotourism, ecotourism or nautical tourism, can have adverse effects on the environment: ‘While meeting tourist expectations for natural beauty and wild nature, these types of tourist activities frequently hide or overlook the damage done to the land caused by them.’<sup>63</sup>

More recent studies show, too, that nautical tourism can be a source of marine pollution through discharge of wastewater, oil and chemicals.<sup>64</sup> Despite pollution threats posed by boats in the national park waters, post-socialist Croatia has continued to follow the official policies of ‘rational planning’ and ‘optimal harmonisation’ of tourism and preservation outlined by its socialist predecessor. After Croatia’s declaration of independence from Yugoslavia, its leadership continued to view tourism as the basis for development on the Adriatic islands. Croatia’s 1997 National Islands Development Programme reflected the earlier Adriatic Projects’ conviction that tourism was the most dependable engine for future economic growth on all the islands due to the attractiveness of their climate, geographical position and landscapes, and a ‘healthy environment’ that was ‘not contaminated anywhere.’<sup>65</sup>

63 Scott Moranda, ‘The Emergence of an Environmental History of Tourism’, *Journal of Tourism History* 7 (3) (2015): 268–89, at 270.

64 Hrvoje Carić, Neven Cukrov and Dario Omanović, ‘Nautical Tourism in Marine Protected Areas (MPAs): Evaluating an Impact of Copper Emission from Antifouling Coating’, *Sustainability* 13 (11897) (2021): 2; Ilenič et al., ‘Kornati’, 10.

65 Ministry of Development and Reconstruction, *National Islands Development Programme* (1997), 44: [http://www.globalislands.net/greenislands/docs/croatia\\_080306-NPRO-engl.pdf](http://www.globalislands.net/greenislands/docs/croatia_080306-NPRO-engl.pdf)

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## Conclusion

The Kornati archipelago was designated as a national park due to a belief among Yugoslavia's leaders that tourism and environmental protection were compatible. While 'rational use' was a policy adopted by Yugoslav planners and the leadership for the entire Adriatic coastal region, it took a specific form regarding the creation of the Kornati National Park. This included preserving the private ownership of the islands' land by local residents while balancing conservation with economic exploitation in the form of nautical tourism. With the involvement of local actors, the planners created a site of cultural and natural heritage which remains under protection in Croatia. Scientific observations have expressed various degrees of approval regarding the success of conservation in the national park.<sup>66</sup> Indeed, pollution caused by humans has remained limited in the area. On the other hand, some degree of pollution caused by tourism still exists. Tourism has also led to conflicts that have shaped the boundaries of the national park. In addition, the archipelago itself, with its physical properties that have been attractive to tourists and limited the islands' agricultural uses, also played a significant role in the creation of the national park. This demonstrates that, even in the context of Yugoslav Socialism, interconnections between private and public interests, conservation and exploitation, and the material and cultural constructions of heritage have all co-produced the national park in the Mediterranean's largest archipelago.

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## 4. Ghostly Presences:

### Giant Lizards and Conservation on Culebra Island

Gitte Westergaard

*I came to know about Culebra Island (Isla Culebra) after I saw three specimens of giant lizards, which have not been sighted on the island for almost a century, displayed at the Zoological Museum in Copenhagen. When I have encountered extinction in museums, it has always made me wonder: how did the species suddenly disappear and what does the loss mean to the place where it no longer exists? In the case of Culebra giant lizards, I learned that they are only known from the islands of St John, Tortola, Culebra and Vieques in the Caribbean Sea. Those islands were once linked together into one landmass but have since been separated due to the rise in sea level. They shared a richness of flora and fauna that has rapidly disappeared with increasing human influence. The last time the giant lizard was observed on Culebra Island was in the 1930s. Since then, the island, like many throughout the world given their often strategic locations, has been used as a military base. But the island is also recognised as an important wildlife refuge and, when the US Navy abandoned its facilities on the island, I observed how the lizard's ghost and the belief in its continuing existence played a role in renegotiating the preservation of its remaining forest habitat. This area is still protected even at a time when the island is being developed to accommodate a high demand for tourism. Following reports of unconfirmed sightings of the giant lizards and its listing as being critically endangered, recovery plans and field reports have given me an insight into how the natural environment is valued and protected on Culebra Island.*



In 1931, Chapman Grant, an expert in reptiles, travelled to the small island of Culebra in Puerto Rico in the Caribbean. There he found two specimens of a new species of anole, an approximately sixteen-centimetre-long lizard. He called it *Anolis roosevelti* after Puerto Rico's governor Theodore Roosevelt. Since then, there have been no sightings of the large lizard. But in 1986 six museum specimens appeared, all identified and labelled in 1863, long before Grant's description of the animal.<sup>1</sup>

I stood before three of the six specimens mentioned when I visited the Zoological Museum in Copenhagen one afternoon in March 2020.<sup>2</sup> They were all preserved in alcohol. Their brownish-grey colour had faded into almost see-through bodies floating in awkward positions inside the glasses (see Figure 1). Only four of the six specimens identified in 1986 exist as preserved museum specimens today; the other two specimens have been lost and exist only in the written record.<sup>3</sup> The specimens were collected from different Caribbean islands in the nineteenth century by a Danish pharmacist who lived in the Danish West Indies and saw it as his duty to collect nature for museums and researchers.<sup>4</sup> Inside the museum, the collected giant lizards continue to exist but, in their original habitat, they have not been observed for decades, even though they are classified as a critically endangered species. This chapter examines how the bodies of the giant lizards preserved inside museums have affected the trajectory of environmental protection on Culebra Island.

Isla de Culebra (Culebra Island) consists of a thirty-square-kilometre main island and approximately twenty cays located southeast of Puerto Rico in the Caribbean Sea. It is a municipality of Puerto Rico, an unincorporated territory of the United States, and a longstanding site of US military pres-

1 Quote from museum label 'the giant anoles' in the exhibition *Precious Things* at the Zoological Museum in Copenhagen, March 2020.

2 Even though there are five specimens in the picture, only three of them are *A. roosevelti*. The two specimens displayed alongside them are *A. cuvieri*. The three specimens of *A. roosevelti* had wrongly been identified as *A. cuvieri* for a century before they were identified as *A. roosevelti*.

3 Two collected from Vieques (R37642 and R37643), one from either St John or Tortola (no label) is preserved in the Zoological Museum in Copenhagen and one specimen is preserved in the Swedish Museum of Natural History. A specimen collected from Vieques (Cope 1861) and one from either Tortola or St John (Reinhard and Luthen 1863) are only known from the written records of them today.

4 H.O. Loldrup, *A.H. Riises Apotek på St Thomas og i Vejle* (Loldrup Forlag, 2017), p. 71.

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ence. The giant lizards have not been seen in the wild since they were initially sighted on Culebra Island in 1931. The next sighting of them was in a far different context: in 1986, as preserved museum specimens collected in the nineteenth century. The lizard was thought to be endemic only to Culebra, but specimens had in fact been collected from neighbouring islands – Vieques, Tortola and St John – once linked in the Puerto Rican Bank of the Caribbean Sea. They had been classified wrongly under the taxonomic category of *Anolis velifer*<sup>5</sup> and placed in the storeroom for over a century before Gregory C. Mayer, a doctoral candidate at Harvard University working on Caribbean reptiles, became aware of their existence and identified them as *Anolis roosevelti*.<sup>6</sup> This case of the Culebra giant lizard is not unusual. In museum collections of millions of specimens from across the world, a specimen can remain unidentified, misidentified or simply forgotten about for decades.<sup>7</sup>

The preservation of these giant lizards in the museum has since been interwoven into the question of whether they still exist today on the island of Culebra. Islands have suffered significantly from human-induced extinction in the last few centuries, partly because they have been subject to human imaginations of them as ‘isolated, atemporal island spaces’ that could be used for mainland purposes.<sup>8</sup> The majority of extinct species are island species: almost forty per cent of all organisms listed as critically endangered only exist on islands.<sup>9</sup> This makes islands into conservation hotspots as they are

5 J. Reinhardt and C.F. Luthen, ‘Bidrag til det Vestindiske Øriges og navnlig til de dansk-vestindiske Øers Herpetologie’, *Videnskabelige meddelelser fra den Naturhistoriske Forening i Kjøbenhavn* (1862): 260–61.

6 The six specimens of *Anolis roosevelti* were discovered by Gregory C. Mayer in 1986. See Mayer’s dissertation, ‘Deterministic Aspect of Community Structure in West Indian Amphibians and Reptiles’ (Ph.D. Diss., Cambridge, Massachusetts: Harvard University, 1989), p. 98.

7 C. Kemp, *The Lost Species: Great Expeditions in the Collections of Natural History Museums*. (SD Books, 2020); J. Davis, ‘Dinosaurs and Meteorites: Museum Scientists Described 552 new Species in 2021’, *Natural History Museum*, 30 Dec. 2021: <https://www.nhm.ac.uk/discover/news/2021/december/natural-history-museum-scientists-describe-552-new-species-in-2021.html> (accessed 15 Feb. 2024).

8 E.M. DeLoughrey, ‘“The Litany of Islands, the Rosary of Archipelagoes”: Caribbean and Pacific Archipelagraphy’, *ARIEL: A Review of International English Literature* **32** (1) (2001): 21–51.

9 B.R. Thershy, K.-W. Shen, K.M. Newton, N.D. Holmes and D.A. Croll, ‘The Importance of Islands for the Protection of Biological and Linguistic Diversity’, *BioScience* (2015).

still home to many endemic species vulnerable to sudden changes wrought in their environments. The extinction of a species, however, does not always result in its complete disappearance. On the contrary, species from the past may continue to shape conservation trajectories in the present. Since islands are especially subject to human-induced extinction, they are compellingly fecund sites for exploring the nature of ‘haunting’ and how non-human ghosts play a role in how nature is valued.

This chapter begins by discussing theories of hauntology and spectralities to introduce the notion of ghostly presences, and the ways in which non-humans inside museums exercise an agency that informs the future direction of environmental protection. The museum displays of the giant lizards are the only physical trace remaining of the species today and yet, as I will show, it keeps them alive. They represent a distant past captured inside a jar but, looking at them through the glass today, they bridge the past and present. The lizards in jars confront the viewer with a ‘past present’ that keeps alive an imagined future of the species. However, they do not only exist inside

**Figure 1.**

Five specimens of *Anolis roosevelti* on display in the exhibition ‘Precious Things’ at the Zoological Museum in Copenhagen. Photograph by the author, Gitte Westergaard.



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the jars; their ghosts also haunt their previous environment. The environmental history of Culebra presented in this chapter unfolds through the story of giant lizards in two parts. First, *Creating a Ghost* explores the way in which two Culebra giant lizards were found and preserved at a time when the landscape was shaped by the US for military purposes. Second, *Caring for Ghosts* investigates the way in which the US Fish and Wildlife service reclaimed the giant lizard and put it in the service of habitat protection and preservation. This leads to a discussion of *Ghostly Presences* and how past natures impact present understandings of Culebra and visions of its future.

### Captured ghosts and haunted environments

Theories of spectres or spectralities are concerned with what is simultaneously here and not here, the in-between presence and absence that keeps haunting the present. The term hauntology was coined by Jacques Derrida in the book *Specters of Marx* as a way of theorising the continued effect of the past on the present, especially that past which has been overlooked or silenced.<sup>10</sup> The past comes to haunt the present when the present is out of balance with itself as an absent-presence that, according to Derrida, can be more powerful than the actual presence of something.<sup>11</sup>

The absent-presence of species has been investigated by various scholars.<sup>12</sup> Literary scholar Ursula K. Heise refers to it as ‘the “ghost species” phenomenon’.<sup>13</sup> This includes unscientific sightings or traces of a species whose existence cannot be confirmed, as well as sighting of a few individu-

10 J. Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning, the New International* (New York and London: Routledge, 1994).

11 T. Whyman, ‘The Ghosts of Our Lives’, *New Statesman*, 31 July 2019: <https://www.newstatesman.com/politics/2019/07/the-ghosts-of-our-lives> (accessed 15 Feb. 2024).

12 D. Jørgensen, ‘Extinction and the End of Futures’, *History and Theory* (2022) (Open-Access Online); F. Nayrat, ‘Ghosts of Extinction: An Essay in Spectral Ecopolitics’, *The Oxford Literary Review* 41 (1) (2019): 88–106; S. McCorristine and W.M. Adams, ‘Ghost Species: Spectral Geographies of Biodiversity Conservation’, *Cultural Geographies* 27 (1) (2020): 101–15; and B. Bersaglio and J. Margulies, ‘Extinctionscapes: Spatializing the Commodification of Animal Lives and Afterlives in Conservation Landscape’, *Social & Cultural Geography* 23 (1) (2022): 10–28.

13 U.K. Heise, *Imagining Extinction: The Cultural Meanings of Endangered Species* (Chicago and London: University of Chicago Press, 2016), p. 38.

als of a species that no longer play a role in an ecosystem.<sup>14</sup> The ghostly presence of a species through traces and sightings maintains a hope that the species could still exist in certain pockets of environments. In their study of the commodification of endangered species conservation, Brock Bersaglio and Jared Margulies define absence-presence as a concept that ‘draws attention to the ways in which the absent deceased exert agency in the physical world through spatial practices of the living’.<sup>15</sup> Not only does an absence have a presence; it is a presence that can have a direct influence on the habitat to which the species belonged. In this way, the species ‘live on’ through its absent-presence in the landscape. This concept is especially relevant to islands, environments that have endured high levels of extinction over the past centuries. Biologist Lindsey Gillson writes: ‘islands remained haunted by their ghosts: trees with elaborate herbivore defences and seeds that are too big to be dispersed, and flowers with no pollinators’.<sup>16</sup> Even when a species is lost from an ecosystem it remains present in its absence.

There is often an underlying unease and insecurity about labelling a species as extinct and thereby creating a ghostly presence. Environmental historian Dolly Jørgensen argues that extinction is an ‘elongated nonlinear transition between extant to extinct. Extinction can be contested; extinction status can flip back and forth if a species is rediscovered or recreated.’<sup>17</sup> The species can exist in a limbo between alive and dead, where no individuals are observed or captured in nature, but the species are not declared extinct. Cultural historian Shane McCorristine and geographer William M. Adams further explain that a species can continue to exist ‘in that it leaves traces, signs and clues, and can provoke recurring reappearances’<sup>18</sup> that preserve an open-endedness concerning the continued existence of the species. When a species is in a transition from extant to extinct, it is *no longer* and *not yet*.<sup>19</sup> It makes possible alternative futures – futures in which the species could still exist.

14 N. Langston, *Climate Ghosts: Migratory Species in the Anthropocene* (Waltham, Massachusetts: Brandeis University Press, 2021), pp. 1–11.

15 Bersaglio and Margulies, ‘Extinctionscapes’, 17.

16 L. Gillson, *Biodiversity Conservation and Environmental Change: Using Palaeoecology to Manage Dynamic Landscapes in the Anthropocene* (Oxford: Oxford University Press, 2015), p. 48.

17 Jørgensen, ‘Extinction and the End of Futures’, 6.

18 McCorristine and Adams, ‘Ghost Species’, 105.

19 M. Fisher, ‘What is Hauntology?’, *Film Quarterly* 66 (1) (2012): 16–24, at 19.

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In her book *Climate Ghosts*, historian Nancy Langston shows how the ghostly presence of declining species populations maintains a desire to restore them. Organised searches for the species may continue, as well as the preservation of their habitats, based on limited evidence and the hope that they still exist unbeknownst to us. If a species has disappeared completely, and we cannot recollect it, Langston argues that the will to restore it equally disappears.<sup>20</sup> An example of this is the disappearance of the ivory-billed woodpecker in south-eastern United States.<sup>21</sup> It continues to exist, even though only one of a number of intermittent sightings since 1944 has been officially confirmed.<sup>22</sup> When in 2021 the US Fish and Wildlife Service proposed to remove the ivory-billed woodpecker from the List of Endangered and Threatened Wildlife, a final determination as to its status could not be reached due to disagreement over whether it is extinct or not.<sup>23</sup> If the ivory-billed woodpecker was delisted, then conservationists would have a hard time arguing for the continuation of its preservation. The case of the Culebra giant lizard is similar in that it lives in people's imaginations more than it, at least verifiably, inhabits the natural landscape.

Belief in the continuing existence of presumably extinct species relies on their ghostly presence. As ghost species, they do not just haunt the landscape: they also protect the landscape. 'Ghostliness both reflect the precarious and vulnerable status of the disappeared body and provide that body with the power of making itself and its history known through haunting and/or reappearance.'<sup>24</sup> The absence of something can thus have a larger impact than

20 Langston, *Climate Ghosts*.

21 M. Saikku, "Home in the Big Forest". Decline of the Ivory-Billed Woodpecker and Its Habitat in the United States', in *Encountering the Past in Nature*, ed. by T. Myllyntaus and M. Saikku (Athens, Ohio: Ohio University Press, 2001), pp. 94–141.

22 J.W. Fitzpatrick, M. Lammertink, M.D. Luneau Jr, T.W. Gallagher, B.R. Harrison, G.M. Sparling, K.V. Rosenberg, R.W. Rohrbaugh, E.C.H. Swarthout, P.H. Wrege, S.B. Swarthout, M.S. Dantzker, R.A. Charif, T.R. Barksdale, J.V. Remsen Jr, S.D. Simon and D. Zollner, 'Ivory-billed Woodpecker (*Campephilus principalis*) Persists in Continental North America', *Science* **308** (2005).

23 FWS (US Fish and Wildlife Service), 'Endangered and Threatened Wildlife and Plants; 6-Month Extension of Final Determination on the Proposed Removal of the Ivory-Billed Woodpecker from the List of Endangered and Threatened Wildlife', *Federal Register: The Daily Journal of the United States Government*, 7 July 2022: <https://www.federalregister.gov/documents/2022/07/07/2022-14336/endangered-and-threatened-wildlife-and-plants-6-month-extension-of-final-determination-on-the> (accessed 15 Feb. 2024).

24 McCorristine and Adams, 'Ghost Species', 106.

its actual presence. But species that continue to exist beyond the threshold of death are often also entangled in politics in which their absence-presence can be used as a tool of power to maintain or change existing structures in society.<sup>25</sup> To overcome the present environmental crisis, philosopher Frédéric Neyrat has therefore articulated the need for a *spectral ecopolitics*, where we ‘listen to what our own ghosts – the ghosts of ourselves, the spectre of humankind swept away from Earth – have to tell us’.<sup>26</sup> Where extinction is simply just happening, the ghosts of extinction are not just accepting their own extinction. In their non-existence, they haunt from a potential future that is *not yet* and demand justice for what is *no longer*. According to Neyrat, it is therefore important that they be included as actors when it comes to formulating ecopolitics.

Even the remnants of species that are stored on museum shelves can be classified as ghost species that continue to haunt the habitat from which they have been disconnected. As their body, or parts of it, have been preserved beyond death, species are in a liminal state – between life and death.<sup>27</sup> Inside the museum, their lives have not yet ended. Historian of science Samuel Alberti refers to specimens as ‘the afterlives’ of a species and literary scholar Rachel Poliquin to the museum as a ‘breathless zoo’ that points to the in-between space within which museum specimens are trapped.<sup>28</sup> Natural history museums contain wide collections of specimens from islands in particular because islands were considered ideal places for scientists to study the evolutionary development of life.<sup>29</sup> It was islands’ high number of endemic species and their vulnerability to dramatic changes in their environments that enabled Charles Darwin and Alfred Russel Wallace to formulate their theories on evolution. It was from their observations and collection of species from the Galápagos Islands and the Malay Archipelago that they put

25 Bersaglio and Margulies, ‘Extinctionscapes’, 24.

26 Neyrat, ‘Ghosts of Extinction’, 89.

27 G. Westergaard and D. Jørgensen, ‘Making Specimens Sacred. Putting the Bodies of Solitario Jorge and Cü Rúa on Display’, in *Animal Remains*, ed. by S. Bezan and R. McKay (New York and London: Routledge, 2021), pp. 68–86, at 80.

28 Samuel J.M.M. Alberti, *The Afterlives of Animals: A Museum Menagerie* (Charlottesville, Virginia: University of Virginia Press, 2011); and R. Poliquin, *The Breathless Zoo: Taxidermy and the Cultures of Longing* (University Park, Pennsylvania: Penn State University Press, 2012).

29 M.V. Barrow Jr, *Nature’s Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology* (Chicago & London: University Press of Chicago, 2009), pp. 47–78.



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forward theories concerning the development of the natural world.<sup>30</sup> At the same time, natural history museums in Europe were blossoming, establishing collections of specimens from a global natural world. Island specimens were collected, studied and shipped to museums from around the world to enhance understanding of natural evolution.

The specimens of island species can still be connected to their original habitats both to understand the environment better and to detect the enormous environmental losses suffered by islands from anthropogenic activities.<sup>31</sup> The following is an example of how the ghosts of the Culebra giant lizards, preserved within museums, have had a direct role in renegotiating the preservation of the natural environment of Culebra Island.

### Creating a ghost: A naval wildlife refuge

Culebra Island was under Spanish control in the nineteenth century before Spain ceded Puerto Rico, including Culebra, to the United States as part of the Treaty of Paris (1898) that officially ended the Spanish-American war.<sup>32</sup> Puerto Rico became a non-incorporated territory of the US. As social anthropologist Carlo A. Cubero writes, ‘any plots of land that were unclaimed or whose claimants could not provide documentation, were to become the property of the U.S. government’.<sup>33</sup> All public land of Puerto Rico came under the jurisdiction of the Navy Department when in 1903 President Theodore Roosevelt signed a proclamation determining that ‘public lands and buildings belonging to the United States in the Islands of Puerto Rico’ should be subject to ‘military, naval, light-house, marine hospital, post offices, custom houses, United States Courts and other public uses’.<sup>34</sup> This

30 Ibid., p. 66.

31 Poliquin, *The Breathless Zoo*.

32 US Congress, ‘A Treaty of Peace Between the United States and Spain’, *Lillian Goldman Law Library*, 10 Dec. 1898: [https://avalon.law.yale.edu/19th\\_century/sp1898.asp](https://avalon.law.yale.edu/19th_century/sp1898.asp) (accessed 15 Feb. 2024).

33 C.A. Cubero, *Caribbean Island Movements: Culebra’s Transinsularities* (London & New York: Rowman & Littlefield International, 2017), p. 40.

34 T. Roosevelt, ‘Proclamation 502 – Reservation of Lands in Puerto Rico for Naval Purposes’, *American Presidency Project* 26 June 1903: <https://www.presidency.ucsb.edu/documents/proclamation-502-reservation-lands-puerto-rico-for-naval-purposes> (accessed 15 Feb. 2024).

turned Culebra into a military base aligned with the United States' strategy of building a military network that could control the sea traffic across the Atlantic and Pacific Ocean.<sup>35</sup> But at the same time, Roosevelt also signed an executive order stating that the islands of the Culebra archipelago, except Culebra Island itself, should be 'set apart for the use of the Department of Agriculture as a reserve and breeding ground for native birds'.<sup>36</sup> Roosevelt was the first US president to pass executive orders for the protection of wildlife reservations. During his mandate, he supported many conservation initiatives and had a personal interest in both bird watching and collecting.<sup>37</sup> Culebra became one of the first wildlife refuges in the United States where it became unlawful for 'any person to hunt, trap, capture, wilfully disturb, or kill any bird of any kind whatsoever, or take the eggs of such birds within the limits of this reservation'.<sup>38</sup>

US policy framed Culebra in two potentially conflicting ways. On the one hand, it was recognised as an important nesting ground for colonies of different residential and migratory birds that annually came to the island to breed.<sup>39</sup> Islands in general provide good nesting grounds for birds because there are often fewer predators to disturb their nests. On the other hand, the Culebra archipelago was also used for US military purposes because of its strategic location in the Caribbean. Already in 1901, the Navy established the military base, Lower Camp, which forced the Culebrenses to relocate their town San Ildefonso to where the main city of the island, Dewey, is located today. The US Naval Fleet then began using the island for amphibious landings and ground manoeuvre training.<sup>40</sup> It meant that huge numbers of US Marines populated the island, which at first created a boom in the local economy.<sup>41</sup> But in 1936, the Navy started to use some of the cays and

35 Cubero, *Caribbean Island Movements*, p. 46.

36 T. Roosevelt, 'Executive Order 1042', *Wikisource*, 27 Feb. 1909: [https://en.wikisource.org/wiki/Executive\\_Order\\_1042](https://en.wikisource.org/wiki/Executive_Order_1042) (accessed 15 Feb. 2024).

37 Barrow, *Nature's Ghosts*, p. 106.

38 Roosevelt, 'Executive Order 1042'.

39 Caribbean Birding Trail, 'Culebra National Wildlife Refuge', *Caribbean Birding Trail*: <https://caribbeanbirdingtrail.org/sites/puerto-rico/culebra-nwr/> (accessed 15 Feb. 2024).

40 USACE (US Army Corps of Engineers), 'Deference Environmental Restoration Program for Formerly Used Defence Sites Ordnance and Explosive Waste, Archives Search Report, Finding for Culebra Island National Wildlife Refuge' (Rock Island Illinois: US Army Corps of Engineers, 1995), 12-13.

41 Cubero, *Caribbean Island Movements*, pp. 42-43.

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the Flamenco Peninsula on the main island for naval bombardment (see Map 1). Culebra and the cays were now used for aerial strafing, bombing and naval gunnery training which only intensified with the Vietnam War in the 1960s. The sea three miles around Culebra was militarised and could no longer be used as fishing grounds, which had been one of the main livelihoods on the island. Carlo Cubero describes how life on the island became increasingly more difficult and dangerous: the Culebrenses lived in constant fear of the missiles and were forced to relocate from the north side of the island during the bombing season, only to find their land and crops destroyed on their return.<sup>42</sup>

When the anti-Navy movement broke out on the island and gained international attention, it was especially its destructive effect on the environment that led to the closing of the Navy facilities on 1 July 1975. Richard D. Copaken, a Washington-based lawyer involved in the eviction of the US Navy from Culebra, 'found reports that showed the bombing destroying maritime environments that were crucial for the reproduction of endangered species'.<sup>43</sup> Most of the land that had been acquired by the Navy was transferred to the US Department of the Interior under the management of the Fish and Wildlife Service (FWS). It is therefore possible to argue that Culebra returned to being a National Wildlife Refuge. It was, however, only 1,500 acres of the total land area of 7,300 acres that came under the custody of the FWS. The rest was handed over to the government of Puerto Rico, primarily the Department of Natural Resources, or was in the possession of private landowners.<sup>44</sup> Carlo Cubero writes that 'the challenge these post-Navy agencies have faced is to contend with the vertiginous rise in tourist visits while keeping their remit to conserve the island's natural resources'.<sup>45</sup> What is interesting here is how the FWS managed to secure more land for natural preservation at a time when the island was also being developed to accommodate the high demand for tourism.

Before the Navy's bombardments of Flamenco Peninsula, which is still closed for public entry to this day for safety reasons, a local boy, Dimas Vil-

42 Cubero, *Caribbean Island Movements*, pp. 46–48.

43 Cubero, *Caribbean Island Movements*, p. 56. See also R.D. Copaken, *Target Culebra: How 743 Islanders Took on the Entire U.S. Navy and Won* (San Juan: University of Puerto Rico Press, 2009).

44 USACE, 'Archives Search Report Findings', 3.

45 Cubero, *Caribbean Island Movements*, p. 61.



**Map 1.**

Map of Isla de Culebra (Culebra Island) that shows the areas used for Naval bombardment and the area designated for wildlife protection.

Source: OpenStreetMap Foundation (ODbL license).

lanueva, found a rare specimen of a lizard. The remoteness of the island had created environmental conditions for an unusual evolutionary development seen in the increased body size of this lizard – also referred to as island gigantism.<sup>46</sup> He sold it to US Army Major and practicing herpetologist, Chapman Grant, in 1931. Grant had a background in the natural sciences from Williams College. Before he began his military career, he had also worked as an assistant curator of entomology at the Children’s Museum of the Brooklyn Institute of Arts and Sciences. He continued his scientific studies in the military and completed several expeditions in the 1930s for American

46 See A. Runemark, K. Sagonas and E. I. Svensson, ‘Ecological Explanations to Island Gigantism: Dietary Niche Divergence, Predation, and Size in an Endemic Lizard’, *Ecology* **98** (8) (2015): 2077–92.

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natural history museums to collect and study Caribbean herpetofauna.<sup>47</sup> In an interview from 1986, Villanueva ‘told [Ava Gaa Ojeda Kessler] that Grant paid fifty cents, a significant amount then, for each lizard or snake delivered to him... [Villanueva] vividly recalled having caught the ‘strange’ large brownish-grey lizard with a big bulky head. He said that was the first and last time he ever saw this type of lizard or any other one similar to it.’<sup>48</sup>

Chapman Grant had also never seen such a specimen and based on this one individual he identified it as belonging to a new taxonomic group of anoles. He named it *Anolis roosevelti* after the governor of Puerto Rico at the time and son of US President Theodore Roosevelt, Theodore Roosevelt Jr.<sup>49</sup> The name of the species demonstrates the role Culebra Island played in the relationship between Puerto Rico and the United States: the presence of the US Navy on Culebra was a necessity for Puerto Rico to maintain its social and economic benefits as a territory of the US. At the same time, it points to a problem common in scientific naming of species. The naming of species has been critiqued for how it reinforces inequalities. Paul Rummy and Jessica Thevamalar Rummy write that ‘there have been instances where Indigenous species found by western scientists have been named after prominent western Presidents, or white males that are considered to be of a privileged [sic] position, an act that we call as parachute science’.<sup>50</sup> Instead of recognising local names or local collectors of natural species, the species become associated with structural power dynamics that linger in the classification of natural flora and fauna, and overshadow the cultural significance of the island itself. In this case, it is the colonial governor rather than the local boy who is heralded with the naming.

A year after Villanueva had collected the first anole, Grant received another specimen from another local, J.M. Ortiz.<sup>51</sup> This specimen turned out to be the last and one of only two recorded specimens of the Culebra giant lizard. They are preserved within the Museum of Comparative Zoology, Harvard

47 Military Wiki, ‘Chapman Grant’, *Military Wiki*: [https://military-history.fandom.com/wiki/Chapman\\_Grant](https://military-history.fandom.com/wiki/Chapman_Grant) (accessed 15 Feb. 2024).

48 A.G.O. Kessler, ‘Status of the Culebra Island Giant Anole (*Anolis Roosevelti*)’, *Herpetological Conservation and Biology* 5 (2) (2009): 223–32.

49 C. Grant, ‘A New Species and Two New Sub-Species of the Genus *Anolis*’, *Journal of the Department of Agriculture of Puerto Rico* 15 (1) (1931): 219–24, at 219–222.

50 P. Rummy and J.T. Rummy, ‘Recontextualising the Style of Naming in Nomenclature’, *Humanities & Social Sciences Communications* 8 (283) (2021): 1–6, at 3.

51 C. Grant, ‘Herpetological Notes from the Puerto Rico Area’, *Journal of the Department of Agriculture of Puerto Rico* 16 (2) (1932): 161–165, at 163.

University, and the Museum of Zoology, University of Michigan. No other specimens have been found since. Despite having only two unremarkable specimens of the species, the giant lizards' ghosts have played a significant role in ensuring the survival of 'the remaining patches of the virgin forest habitat'<sup>52</sup> after the Navy ceased their military operations on Culebra.

## Caring for ghosts: Saving the 'virgin' vegetation

Even before the Navy withdrew from the island, the Culebra Conservation and Development Act (Law 66, 10 June 1975) had been passed to 'preserve and maintain the ecological integrity of Culebra'.<sup>53</sup> The FWS now recommended the giant lizards, that had not been seen since the original sighting in 1932, to be listed as an endangered species under the Endangered Species Act of 1973, and its critical habitat to be designated for preservation.

Culebra had lost eighty per cent of its original forest vegetation to deforestation, agriculture and other uses of the island.<sup>54</sup> The FWS proposed to preserve the patches of forest that remained on Mount Resaca. As the lizards' habitat was 'an area extremely difficult to penetrate', the FWS believed that 'it may still exist on Mt. Resaca in small numbers'.<sup>55</sup> Simultaneously, locals maintained that the species was still alive and occasionally reported having seen it. Scholars of extinction studies have claimed that what counts as acceptable evidence for knowing and seeing a species depends on how we culturally perceive it. In other words, just because the species cannot be observed does not necessarily mean that the species is extinct.<sup>56</sup>

52 FWS, *Culebra Island: Giant Anole Recovery Plan* (Atlanta Georgia: US Fish and Wildlife Service, 1982), p. 2.

53 Puerto Rico Office of Management and Budget, 'Culebra Conservation and Development Act' June 22 1975: [https://presupuesto.pr.gov/Budget\\_2012\\_2013/Aprobado2013Ingles/suppdocs/baselegal\\_ingles/186/186.pdf](https://presupuesto.pr.gov/Budget_2012_2013/Aprobado2013Ingles/suppdocs/baselegal_ingles/186/186.pdf) (accessed 26 April 2022), p. 2.

54 OGPB (Office of the Governor Planning Board). *A Master Plan for Culebra*, 1975: <https://www.govinfo.gov/content/pkg/CZIC-ht395-p8-p84-1975/html/CZIC-ht395-p8-p84-1975.htm> (accessed 15 Feb. 2024), p. 7.

55 FWS, 'Proposed Endangered Status and Critical Habitat for Giant Anole (*Anolis roosevelti*)' (1977), 2101.

56 Jørgensen, 'Presence of Absence, Absence of Presence'; A. Mitchell, 'Beyond Biodiversity and Species: Problematizing Extinction', *Theory, Culture & Society* **33** (5) (2016): 23–42.

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In the case of the giant lizards, their absence in the wild was not a reason to declare them extinct; rather it was rationalised as humans' inability to locate them in an area that was impossible to infiltrate. In that way, the FWS could argue for the existence of the giant lizards – even though no new specimens had been collected for over forty years. In listing the giant lizards as an endangered species, the FWS argued that the only way to ensure the survival of the rare lizards was to safeguard the remaining forest vegetation:

The giant anole is a rare lizard which may survive only in the canopy of mountain forest on Mt. Resaca. The fan-leaved palm is the tallest tree in such forest, and, as with the semi-moist forest in general, is quickly disappearing because of man's activities. Unless the remaining forest on the slopes of Mt. Resaca is preserved the specialised habitat of this lizard is threatened with destruction.<sup>57</sup>

The giant anole was accepted as an endangered species in 1977 on the assumption that the 'lizard could become extinct within the foreseeable future' unless its critical habitat was preserved.<sup>58</sup> This habitat amounted to around 950 acres, where 547 acres was federally owned, and 375 acres were incorporated into the National Wildlife Refuge.<sup>59</sup> But the development and conservation of the natural environment has been a subject of constant debate. The Department of Interior issued an environmental impact statement in 1981 as part of a potential property transfer of the FWS holdings on Culebra to Puerto Rico. This report assessed the consequences of using some of the critical habitat designated for the giant lizards to enhance the local economic and social conditions of the population, as Culebra was considered 'one of the more economically depressed areas within the commonwealth of Puerto Rico'.<sup>60</sup>

It is therefore not surprising that the FWS issued a recovery plan for the Culebra giant anole in 1982, the main purpose of which was to confirm the existence of the species by conducting field surveys of the area. Howard

57 FWS, 'Proposed Endangered Status', 2101.

58 FWS, 'Final Determination of Endangered Status and Critical Habitat for Giant Anole; (*Anolis roosevelti*)' (1977), 37371.

59 DOI (US Department of the Interior), *Final Environmental Impact Statement: Proposed Disposition and Administration of Lands Declared Excess by the U.S. Navy on the Islands of Culebra and Culebrita in Puerto Rico* (Atlanta, Georgia: US Fish and Wildlife Service, 1981), Appendix E, p. 2.

60 DOI, *Final Environmental Impact Statement*, p. 40.



W. Campbell from Denver Wildlife Research Center, and Kenneth Dodd from the Office of Endangered Species write in their concluding remarks of Culebra Island Giant Anole Recovery Plan that ‘we should make every effort to protect the few remaining patches of fig forest on Culebra until such time that we can be assured that the species is extinct or until it is rediscovered, and its precise habitat requirements are determined’.<sup>61</sup> Several attempts to locate the lizards have since been conducted: first by the FWS in 1984 and again in 1985 by Dr Richard Thomas of the University of Puerto Rico, but no specimens were found.<sup>62</sup> An extensive search for the giant lizards was last conducted by biologist Ava Gaa Ojeda Kessler in 1986. Her field surveys of forest areas also did not show any indications of the existence of giant lizards; interviews with residents older than sixty years provided no evidence of sightings of the species since the 1930s and seminars with teenagers at public high schools confirmed that present ‘sightings’ of the giant lizards were confused with the introduced exotic lizard species, *Iguana iguana*. In her article from 2010, Kessler therefore recommended declaring *Anolis roosevelti* extinct on Culebra.<sup>63</sup>

However, in 1986 four ‘new’ specimens of the species were rediscovered at the Zoological Museum in Copenhagen. They had been misidentified as *Anolis velifer* when the specimens were described by Reinhardt and Lüthen in the 1860s. The specimens had originally been collected by a Danish pharmacist, Albert H. Riise, who had established a pharmacy in Charlotte Amalie on St Thomas – an island that belonged to the Danish West Indies. He had a great interest in botany and zoology and, although he did not carry out research on the specimens that he collected himself, he did contribute many specimens to museums, school collections and researchers alike. He both collected the specimens himself and organised expeditions to collect fauna on various other Caribbean islands.<sup>64</sup> Two of the giant lizards were collected from the island of Vieques, one from Tortola and yet another from St John.<sup>65</sup>

The two specimens of the Culebra lizards were suddenly not the only individuals of the species to exist inside museums, nor the first to have been

61 FWS, *Recovery Plan*, p. 1.

62 A.G.O. Kessler, ‘Status of the Culebra Island Giant Anole (*Anolis Roosevelti*)’, *Herpetological Conservation and Biology* 5 (2) (2009): 223–32, at 225.

63 *Ibid.*, 231.

64 Loldrup, *A.H. Riises Apotek på St Thomas og i Vejle*, pp. 71–86.

65 Reinhardt and Lüthen, ‘Bidrag til det Vestindiske Ørige’, 260–61.

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found in nature. Furthermore, they extended the geographical distribution of the *Anolis roosevelti* to other neighbouring islands, breaking the perception of Culebra as an isolated island group. Yet again, the discovery of new museum specimens came to the rescue of the species. In the listing of the giant lizards on the IUCN Red List of Threatened Species, the rediscovery of the museum specimens was used as one of the main reasons not to declare the species extinct. The reappearance of the lizards allowed the leading scientists who evaluated the giant lizard for the Red List to claim that ‘a gap of some 70 years in collections of the species between the 1860s and the 1930s gives some hope that the current long gap since the last collection might not indicate the species is extinct’.<sup>66</sup> And so, the giant lizard continues to figure on the FWS list of endangered species that still exist on the island.<sup>67</sup> It also means that the forest remains protected as its critical habitat, which hinders recreation and development of the area for other purposes.

### Ghostly presences and imaging island futures

When two specimens of a previously unknown species of giant lizards were found on Culebra Island in the 1930s, it was unforeseen that they would obtain such a significant role in saving the last remaining patches of the forest on the island. At first, the findings of the specimens went almost completely unnoticed on the island. It was only following local protests against the environmental destruction caused by the US Army’s practices, and only after government agencies, both federal and Puerto Rican, took over the land ownership from the military, that the idea of conserving the natural environment – and the elusive lizards – gained currency on Culebra. The lizards’ preserved bodies were reconnected to the island after they had been disconnected from their original habitat for decades. Their absence started to obtain an agency in a landscape from which it had previously been excluded.

For the past ninety years, there has been no sighting of the Culebra giant lizard. Even if one specimen of the lizard was found today, the population

66 R. Platenberg, K. de Queiroz and D. L. Mahler, ‘*Anolis roosevelti*, Culebra Giant Anole’, p. 4, *The IUCN Red List of Threatened Species*, 2020: <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T1319A18967413.en> (accessed 15 Feb. 2024).

67 FWS, ‘Peer Review Plan for the 5-year Status Reviews – Multiple Species’, *Fish & Wild Service Catalog*, 2021: <https://ecos.fws.gov/ServCat/DownloadFile/201634> (accessed 15 Feb. 2024).

could be so small that the species would be functionally extinct, unable to sustain a healthy population. But in the case of the Culebra giant lizards, the question is not so much whether the species is extinct or not. The significance of the debate over its extinction is the normative claim of land use that prioritises the protection of forest over the development of the land and the way in which an invisible non-human has affected the decision. By not declaring the lizards extinct, it opens for alternative futures – in this case, an imagined future that returns to an island before military presence. Within the last few decades, this imagery of Culebra as a ‘virginal tropical landscape’<sup>68</sup> has attracted many foreigners to visit the island and led to an increase in tourism development that ironically put the natural environment at risk today. The preserved bodies of the lizards thus influence the island space with their continuing ghostly presence.

This chapter claims that extinct species can, despite their absence, maintain a presence. They exist only as historically collected specimens preserved in jars inside museums, yet their ghosts are connected to their previous habitat, in spite of the fact that they have not been seen in decades. The ghostly existence of the lizards is an imagination of a past environment that it might still be possible to restore, and the preserved lizards were incorporated into a ‘new’ narrative about the island and what it is and should be. In that sense, it is not just about the lizards in the jars, it is about the imagination of the living lizards and an environment in which they could still exist.

As islands have been desired sites of collecting nature, museums contain a significant number of island specimens in their collections. Many of these species are extinct today as a consequence of the use and exploitation of islands in the past. They represent a time where islands were richer in endemic flora and fauna and their ghostly appearances can be used to renegotiate the conservation of the ‘original’ island environments which maintains a vision of islands as ‘unspoiled’ utopias. The story of the giant lizard on Culebra serves as a reminder of islands as both hotspots of extinction and havens of conservation.

68 Cubero, *Caribbean Island Movements*, p. 69. See also E. Hernandez, P. Méndez-Lázaro, C.E. Ramos-Scharron and J. Melendez-Díaz, ‘Long-Term Impacts of Non-Sustainable Tourism and Urban Development in Small Tropical Islands Coastal Habitats in a Changing Climate: Lessons Learn...’, in *Visions from Global Tourism Industry—Creating and Sustaining Competitive Strategies*, ed. by M. Kasimoglu (Rijeka: Intech, 2012), pp. 357–98, at 377–79.

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# 5. Quilting the 'Brown Hole' in Environmental History: Muddy Materialities of Bengal

Jenia Mukherjee, Raktima Ghosh and Pritwinath Ghosh

*That 'land (with) in water' and 'land on the move' assume greater magnitude when the river reaches her lower stretch to 'become the ocean', as Gibran expresses it in The River Cannot Go Back, would not have gained ground in my perception, if I (Jenia Mukherjee) had not personally encountered river islands (locally known as chars in the Bengal dialect) eleven years back. Visits and constant exposure to chars during different seasons and phases (of peaceful existence and disasters) have been instrumental in shaping us, our felt realisations about the inadequacies ingrained in binary reductionisms (land versus water; risk versus resilience; crises versus opportunity), and our research convictions, to collectively understand complex, uncertain, (un)stable eco-scapes, nurturing transdisciplinarity as 'the way of life'. Chars are microcosmic ephemeral patches, constantly dissolving, yet indelibly asserting the strength and significance of flexible-fluid approaches over indelibly etched standardised prescriptions to deal with the risks of the Anthropocene.*

## Introduction

In 2011, when John Gillis was apprehending ‘The Future of Environmental History’, he pointed out the need for ‘filling the blue hole’ in the discipline by taking the seaward direction, overcoming its ‘landlocked’ present. He went on to describe environmental historians’ reluctance to explore seas and oceans and their tendency to see them as ‘the “other”, as alien and exotic’.<sup>1</sup> During the last decade, with intensifying shocks of the Anthropocene, with shifting baselines and frequent climatic perturbations, super cyclones and extreme flood events, hitherto under-profiled coastal and island histories have drawn wider academic attention.<sup>2</sup> Along with the ‘blue hole’ of the sea, the ‘brown hole’ where the islands should be is being addressed by historical scholarship.<sup>3</sup> But what about river islands? Kuntala Lahiri-Dutt lamented that South Asian river islands, those microcosmic, malleable patches in the middle of the region’s tropical rivers, exist ‘in the vocabulary neither of those who study rivers, nor those who study islands’.<sup>4</sup>

In a recent book chapter, Jenia Mukherjee and Lahiri-Dutt have argued that river islands, known as *chars* in Bengali, are ‘destabilisers’ by their very existence: they demolish a number of dearly held scientific convictions, such as that land and water are two fundamentally separate physical elements.<sup>5</sup> As metaphors and materialities of destabilisation, fluid geographies of river islands complicate meanings and perceptions of ‘stable’ and ‘unstable’, as Katie Ritson argues in her study on silt:

In our age of shifting baselines and unstable climate, the ground beneath our feet seems unreliable. Melting icecaps, tsunamis, and warming water temperatures are eating away at our ideas of stability. But in some places,

- 1 John Gillis, ‘Filling the Blue Hole in Environmental History’, *RCC Perspectives*, No. 3, ‘The Future of Environmental History: Needs and Opportunities’ (2011), p. 16.
- 2 This includes works by Godfrey Baldacchino, journals such as *Shima, Island Studies Journal* and *Urban Island Studies* and organisations like the International Small Island Studies Association (ISISA) dedicated to islands.
- 3 Sujit Sivasundaram, *Islanded: Britain, Sri Lanka, and the Bounds of an Indian Ocean Colony* (Chicago: University of Chicago Press, 2013).
- 4 Kuntala Lahiri-Dutt, ‘Chars: Islands that Float within Rivers’, *Shima: The International Journal of Research into Island Cultures* 8 (2) (2014): 22.
- 5 Jenia Mukherjee and Kuntala Lahiri-Dutt, ‘South Asian Chars as Destabilizers’, in *Living on the Edge: Char Dwellers in Bangladesh*, ed. by M. Zaman and M. Alam (Switzerland: Springer Nature, 2021).

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the ground was never quite stable in the first place. On the seashores and on the coastal lowlands, the ground is a half-liquid, seeping, shifting edge between land and water: a mutable boundary of mud, sand, and silt. People have lived on these littorals for millennia, adapting or rebuilding their settlements along with the flux of the tides and the movements of the land.<sup>6</sup>

South Asian environmental and water history have shown that colonial anxieties about moving terrains and their legacy of technochauvinism, as well as the impulses to 'fix' fluid landscapes led to socio-ecological catastrophes.<sup>7</sup> Water historians have critiqued colonial hydrological interventions for manipulating, re-ordering and realigning Indian deltascapes to suit imperial revenue interests. Colonial accounts of the Mahanadi delta in Orissa and the Ganga delta in Bengal show how marshes, swamps and shoals were considered to be 'treacherous' landscapes with no pecuniary value.<sup>8</sup> In the words of Rohan D'Souza,

Land exorcised of water was transformed into property, to be then elaborated as socio-economic-legal objects. Flowing waters telescoped into contained channels ... were revealed principally as engineering visions.<sup>9</sup>

Thus the land-water binary was imposed on the estuaries and deltas of tropical South Asia, to be dealt with forever! Unique techno-legal apparatuses were deployed to fix revenue regimes on these fluid ecologies and geographies,<sup>10</sup> adding further socio-economic complexities to this alluviated and diluviated mass of sediments.<sup>11</sup>

6 Katie Ritson, 'Silt', *Environmental Humanities* **11** (2) (2019): 461.

7 Jenia Mukherjee, 'From Hydrology to Hydrosociality: Historiography of Waters in India', in *Routledge Handbook of the History of Sustainability*, ed. by Jeremy Caradonna (Oxford: Routledge, 2018), pp. 254–72.

8 Jenia Mukherjee, Raphaël Morera, Joana Guerrin and René Véron, 'Histories of Urban Deltascapes: A Comparison of Arles and Kolkata', *Global Environment* **14** (3) (2021): 505–34.

9 Rohan D'Souza, 'River as Resource and Land to Own: The Great Hydraulic Transition in Eastern India', paper presented at *Asian Environments Shaping the World: Conceptions of Nature and Environmental Practices* (Singapore, 2009), p. 3.

10 Debjani Bhattacharyya, *Empire and Ecology in the Bengal Delta: The Making of Calcutta* (Cambridge: Cambridge University Press, 2018).

11 In 1825, the British colonisers enacted the Bengal Alluvion and Diluvion Regulation Act (BADA) to establish claims on lands emerging out of accretion and erosion. Against payment of fixed and continuous rents, the state ensured the ownership rights of the person/family on re-alluviated land.

Social scientists have recently started exploring river islands from the perspective of islanders and the islands themselves, in an effort to quilt the colonial historical error.<sup>12</sup> However, while the narratives of historical political ecology on *chars* remain overtly declensionist, with scholars discussing poverty, uncertainty, displacement and criminality shaped by the state's persistent apathy,<sup>13</sup> to environmental economists *chars* are lucrative ecosystem resources. In their view, they should be 'valued,' mapped and documented as potential 'nature-based solutions' to the risk of ecological disasters on the vulnerable coasts and deltas of the Anthropocene.<sup>14</sup>

So, are river islands 'hazardscapes' or 'muddyscapes of opportunity'? How can we evoke more comprehensive, unembellished, just and responsible historical accounts of islands – floating, obliterated and resurrected in the middle of rivers in repetitive cycles? How can environmental history borrow from, rely upon, but also inform and advance natural sciences such as geomorphology or cartography? How can it integrate empirical knowledge from the field, complementing archival and oral history methods? Cross-disciplinary frameworks of natural and social sciences and the humanities, enabling a cross-fertilisation of methods and methodologies, have the potential to offer (more) inclusive explorations of complex socio-natural entities. Our case study on Nirmal Char in Bengal is an inceptive effort towards such an inclusive representation.

We personally encountered river islands a decade back, in the winter of 2011, when we were tasked with mapping ecosystem resources on the *chars* of the Malda and Murshidabad districts of West Bengal as part of the IUCN

- 12 Mukherjee and Lahiri-Dutt, 'South Asian Chars as Destabilizers' provides a detailed historiographical account on social science island scholarship, especially focusing on South Asian research directions.
- 13 Gorky Chakraborty, 'Victims of Suspicious Identity: The Char Dwellers of Assam', in *Population and Development in North East India*, ed. by B.J. Deb (Delhi: Concept Publishing Company Pvt. Ltd., 2010); Gorky Chakraborty, 'From Isolation to Desolation: Analysing Social Exclusion Among the Char Dwellers of Assam', *Man and Society* 8 (2011); Gorky Chakraborty, 'The "Ubiquitous" Bangladeshis', *Economic and Political Weekly* 47 (38) (2012): 21–23; Madhurilata Basu, Rajat Roy and Ranabir Samaddar (eds), *Political Ecology of Survival: Life and Labour in The River Lands of East And North-East India* (New Delhi: Orient Blackswan, 2018).
- 14 One such project was the IUCN sponsored Ecosystems for Life (E4L) conducted between 2010 and 2014 where Indian and Bangladeshi researchers conducted environmental valuation exercises to analyse ecosystem services provided by selected chars of the Ganga-Padma system dispersed across the two countries.

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project *Ecosystems for Life*.<sup>15</sup> The environmental valuation project was successfully completed, but our visits continued and we were amazed to experience the same *chars* yet different landscapes during different seasons – winter, summer and monsoons. Sometimes the entire *char* got submerged during floods, only to re-emerge a few kilometres away in the middle of the river. The field visits continued as part of our personal research interest and more formal funding schemes, providing us with the opportunity to deploy multi-modal qualitative methods including key informant interviews, focus group discussions, informal on-site conversations, transect walks, case narratives, etc.<sup>16</sup> Our ethnographic exposure to the field has been complemented by oral narratives passed down from generation to generation and, sporadically, by colonial and contemporary land survey records, maps, correspondence, gazetteers and revenue reports. Through our historical-phenomenological approach, we narrate the story of Nirmal Char, a large river island in the Padma, a major Ganga distributary, in the border region between India and Bangladesh. We present fluid accounts of lives and livelihoods that complicate and blur conventional boundaries between land and water, crises and opportunities, risks and resilience and the vulnerability and viability of *chars* and their communities.

### The soaked geographies of an elusive sedimentary mass

The Bengal Basin, also known as Lower Ganga Basin (Map 1), is a massive sedimentary province of the Indian subcontinent, richly endowed with pre-Quaternary and Quaternary alluvium. Stretching from the south of the mighty Himalayas to the edge of the Bay of Bengal, it contains the Ganga-Brahmaputra-Meghna delta. The basin constitutes both submerged and above-water sedimentary materials, crisscrossed by streams, abandoned meanders, narrow tidal creeks and marshes. The combined flows of the Ganga, the Brahmaputra and the Meghna rivers, with their wide-spread tributaries, have sculpted the Lower Ganga Basin for the last 150 million years, carrying an enormous amount of silt from the surrounding hills and

15 Here, 'we' implies Jenia and Pritwi. Jenia was teaching at the Institute of Development Studies Kolkata then and Pritwi assisted her on this project, especially in conducting field surveys.

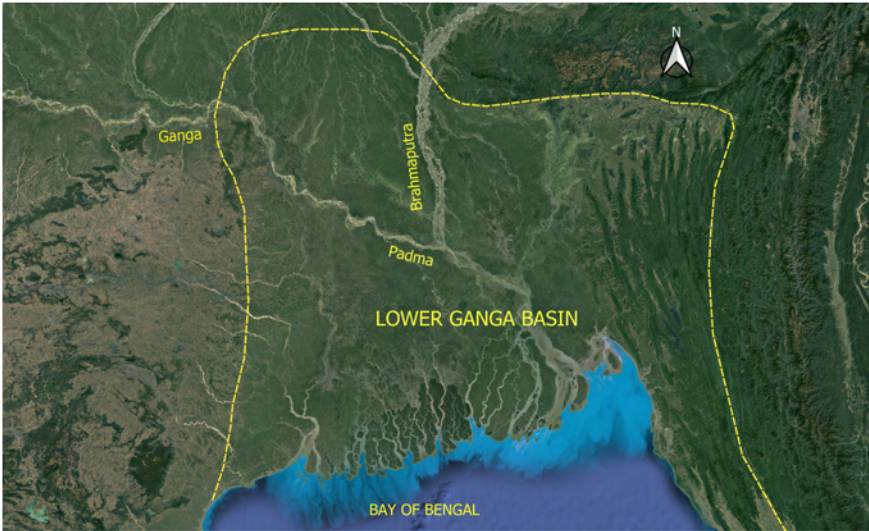
16 These include: the UNIL-ICSSR Scholars' Exchange Grant 2016-17, ISIRD IIT Kharagpur Project (2017-2021) and the EU-ICSSR funded EqUIP Project (2019-2023).

mountains.<sup>17</sup> A total of approximately 8,500 cubic kilometres of Holocene sediments have determined the morphological evolution of the basin, inscribing dynamic fluvial processes into the landscape.<sup>18</sup> Heavy silt and mud sequences, up to five kilometres deep in places, produced a near-flat corridor in which the Ganga and Brahmaputra rivers and their mazy tributaries move along sluggishly as complex combinations of water, sediment, aquatic organisms and riparian vegetation – interacting, collaborating, competing along the journey from their source towards the Bay of Bengal.<sup>19</sup> During monsoons, the rivers discharge sediment and often cut through the deposits, erode sideways and shift their courses in unpredictable directions.<sup>20</sup> They flow over this elusive sedimentary mass, feeding up the basin, carving out lands, inscribing new courses, rejecting older ones, overflowing and accumulating ‘life-giving silt’ that has nurtured riverine ways of life, memories and culture for thousands of years.<sup>21</sup> Beyond its dynamic materialities, the contemporary geomorphological pattern of this region reflects the ways in which colonial and postcolonial mediations have produced its social, political and environmental complexities. The Lower Ganga Basin’s soaked materiality is not just limited to inanimate matter, but conveys lifeworlds<sup>22</sup> of living

- 17 About one billion tons per year. Sunando Bandyopadhyay, ‘Evolution of the Ganga Brahmaputra Delta: A Review’, *Geographical Review of India* 69 (3) (2007): 235–68.
- 18 Sayantan Das, Evolution of Drainage and Morphology of Upper Bhagirathi Ganga Interfluvial Region of West Bengal with Special Reference to Palaeochannels. Ph.D. Thesis. University of Calcutta, 2017; B. Nishat, ‘Landscape Narrative of the Sundarban: Towards Collaborative Management by Bangladesh and India’, *The World Bank Document* 133378 (2019).
- 19 P.J. Wampler, ‘Rivers and Streams – Water and Sediment in Motion’, *Nature Education Knowledge* 3 (10) (2012).
- 20 Pranab Kumar Parua, *The Ganga: Water Use in the Indian Subcontinent*, Vol. 64, Water Science and Technology Library (Springer, 2010); Bandyopadhyay, ‘Evolution of the Ganga Brahmaputra Delta’.
- 21 Lahiri-Dutt, ‘Chars’, 514.
- 22 The lifeworld concept provides a philosophical basis for understanding individual perspectives within the seamlessness of everyday life and realities. According to Hörberg et al., the lifeworld is an individual’s approach to world and life, which also shapes approaches to their daily living and depends on the historical, cultural, social as well as ecological contexts they are involved in. It can be understood as ‘a world of experiences’ as it continually evolves through experiences. U.K. Hörberg, K. Galvin, M. Ekebergh and L.L. Ozolins. ‘Using Lifeworld Philosophy in Education to Intertwine Caring and Learning: An Illustration of Ways of Learning How to Care’. *Reflective Practice* 20 (1) (2019): 56–69.



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**Map 1.**

The Lower Ganga Basin.

Source: Google Earth (accessed 27 October 2023).

entities, recently making way into the South Asian river island narrative.<sup>23</sup>

Traversing state boundaries in a sinuous form, the Ganga enters her deltaic passage in Bengal, downstream of the town of Rajmahal. Near Suti in the Murshidabad district, the river divides into two distributaries – the right-hand channel, Bhagirathi-Hugli, veering southward and eventually merging into the mangrove swamps of the Indian Sundarbans, and the left-hand artery, Padma, traveling south-eastward to meet the Brahmaputra River in present-day Bangladesh, contemplating in her solitude the partition chronicles buried deep beneath her submerged soil. The fluvial tapestry of Lower Bengal bears irreversible imprints of political decision-making, techno-legal manoeuvrings and development interventions under the various political regimes. Unearthing its history can be likened to a ‘sediment approach’ – the present predicaments of islandscapes representing the top-most strata, followed by multiple layers of eventualities across transforming politicised temporalities.

23 Mukherjee and Lahiri-Dutt, ‘South Asian Chars as Destabilizers’.



This 'unstable' sedimentary mass permeated colonial narratives, with contradictory moments of awe, amazement, anxiety and apprehension against constant cycles of sedimentation (alluviation) and erosion (diluviation). The colonial administrator Robert Hyde Colebrooke, in his essay 'On the Course of the Ganges, through Bengal', provided an account of large-scale devastations caused by the river in the Murshidabad District.<sup>24</sup> He appreciated that the land loss was compensated by newly formed fertile lands in the midst of meandering river channels: 'The quantity of land, which has been destroyed by the river in course of a few years, will amount, upon most moderate calculation, to 40 square miles, or 25,600 acres: but this is counter-balanced, in a great measure, by alluviation which has taken place on the opposite shore.'<sup>25</sup> In 1876, the statistician W.W. Hunter observed how an acre of land was engulfed by the gnawing Padma within half an hour. These floating terrains also made their way onto the maps drawn by British cartographers.<sup>26</sup> For instance, in James Rennell's *The Cossimbazar Island Map* (1764–77) (Map 2), some scattered dots are visible along the Ganga-Padma channel: its bends embrace several mid-channel bars, locally referred to as *chars*.<sup>27</sup> An 'amphibian'<sup>28</sup> entity – neither solely land nor fully water – *chars* are primarily shifting mass of sediment. For centuries, *chars* in the Ganga River had been products of channel deviations, bank erosion and flooding that devoured lands, especially during the wet months of July and August. They enjoyed longer lifecycles in pre-colonial Bengal, sustaining the growth of a variety of grasses and reeds, the organic breakdown of which enabled soil fertility. The colonial rulers embanked the rivers with only limited consideration for the social and ecological implications of floods, causing flow alterations and drainage congestion, shortening the life of the *chars*.<sup>29</sup> Adding to the problem, railways and roads were built without adequate outlets

24 Robert Hyde Colebrooke, 'On the Course of the Ganges through Bengal', *Asiatic Researches* 7 (1801): 1–31.

25 Ibid, 14.

26 W.W. Hunter, *A Statistical Account of Bengal, Vol. 9 (Districts of Murshidabad and Pabna)* (London: Trubner and Co., 1876).

27 James Rennell, 'Bengal and Bihar' (1776): <http://www.columbia.edu/itc/mealac/pritchett/00maplinks/colonial/rennellmaps/bengalbihar/bengalbihar.html>.

28 Franz Krause, 'Towards an Amphibious Anthropology of Delta Life', *Human Ecology* 45 (3) (2017): 403–08.

29 Kalyan Rudra, *Rivers of the Ganga-Brahmaputra-Meghna Delta: A Fluvial Account of Bengal* (Cham: Springer, 2018).

## 5. Quilting the 'Brown Hole' in Environmental History



### Map 2.

Rennell's Map showing the Ganga-Padma River stretch near Bhagwangola in Murshidabad.

Source: Rennell, 'Bengal and Bihar'.

for flood water.<sup>30</sup> But are *chars* simply a geomorphological entity, achieving prominence by their materiality and negotiations with other physical agents along transforming temporal scales? Are the morphological forces shaping the character of *chars* purely physical in nature? The apparent strength and fecundity that *chars* attain with vegetation make the ever-transforming river islands a 'fluid habitat' for *choruas* (river islanders); *chars* become sites of social interactions,<sup>31</sup> planes of political decision-making and 'development' interventions, influencing and getting influenced by these processes.

30 Iftekhar Iqbal, *The Bengal Delta: Ecology, State and Social Change, 1840–1943* (New York: Palgrave Macmillan, 2010).

31 Flore Lafaye de Micheaux, Jenia Mukherjee and Christian A. Kull, 'When Hydrosociality Encounters Sediments: Transformed Lives and Livelihoods in the Lower Basin of the Ganges River', *Environment and Planning E: Nature and Space* 1 (4) (2018): 641–63; Jenia Mukherjee and Pritwanath Ghosh, 'Fluid Epistemology: The Social Saga of Sediment in Bengal', *Ecology, Economy and Society – The INSEE Journal* (Special Section: 'New Epistemologies of Water in India') 3 (2) (2020): 135–48; Jenia Mukherjee, Kuntala Lahiri-Dutt and Raktima Ghosh, 'Beyond (Un)stable: Chars as Dynamic Destabilisers of Problematic Binaries', *Social Anthropology/Anthropologie Sociale* (June 2023): 1–18.

## Manipulated materialities of muddyscapes

The construction of the Farakka Barrage on the upper section of the Lower Ganga Basin demonstrated technocratic-bureaucratic ignorance as well as the arrogance of the state towards fluid materialities and hydrosocial relations, with consequences for the water regime and river island ecologies of Bengal. This literal ‘bridge over troubled water’<sup>32</sup> is one of the largest dams of its kind in the world, 2.6 kilometres long, with 109 lock-gates monitoring the water flow of the ‘unruly’ river. Commissioned during the first five-year plan (1951–56) of independent India, the Farakka Barrage Project has a deep historical root. From the maps drawn by the Dutch and British cartographers van den Broucke and Rennell during the seventeenth and eighteenth centuries respectively, and from the observations made by colonial administrators like Sherwill (1858), Oldham (1870), Hirst (1915) and Reaks (1919), it is evident that the seventeenth and eighteenth centuries were eras of change in the river channel. The Bhagirathi-Hugli showed signs of dissipation and the Padma started to receive the main volume of water from the Ganga.

To rejuvenate the navigability of the Bhagirathi-Hugli, which fed the vital port of Calcutta, several proposals were put forward in the course of almost a century to artificially regulate the flow of the river through the creation of a barrage and a feeder canal that would flush more water into the Ganga’s right-bank distributary. The plan only materialised after India achieved independence.<sup>33</sup> With a target to transfer a portion of the Ganga waters to the Bhagirathi-Hugli via a 38.3-kilometre-long Feeder Canal, the

32 *Bridge over Troubled Water* is the fifth and final studio album of the American folk rock duo Paul Simon and Art Garfunkel, released in January 1970 by Columbia Records.

33 Land allocations during the period of partition encountered bitter contestations involving different representatives of diverse political groups such as the Indian National Congress (INC) and the Muslim League. It is interesting to note how development concerns were prioritised, even deviating from the Boundary Commission’s partition principle on religious lines which implied that while states with Hindu contiguous population would remain in India, Pakistan would be formed of states dominated by Muslims. However, the FBP design and development plans prompted the Indian nationalist leaders to compromise and compensate Murshidabad (a Muslim majority district, where Farakka is located) with Khulna (the Hindu majority district) joining former East Pakistan (and present Bangladesh). *The Farakka Barrage* (New Delhi: Ministry of External Affairs, 1976). The INC argued that, to maintain the Hooghly river system, Murshidabad (and also the adjacent Nadia district) should remain in the Indian state of West Bengal, *Partition Proceedings Volume VI, Reports of the Members and Awards of the Chairman of the Boundary Commissions* (Superintendent, Government Printing West Bengal Government Press, 1950).

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project commenced in 1962 and continued for the next twelve years (Map 3). Even though the barrage was projected to divert 40,000 cubic feet (1,133 cubic metres) per second of water to the Bhagirathi, the actual result fell far short of expectations.<sup>34</sup>

Contrary to the initial assumption that the barrage would also restrict flood hazards at some parts of the river,<sup>35</sup> it is now clear that this technocratic 'solution' that cautiously bypassed the hydro-eco-geomorphological interplays in the region is, in reality, a 'wicked problem' for not only the river regime at the Lower Ganga Basin but also for the Sundarbans delta which is challenged by dwindling freshwater flow from upstream and salinisation of the tidal rivers. The barrage has triggered intense sedimentation, augmenting channel avulsions, bank failures and catastrophic torrents in Malda and Murshidabad districts upstream and downstream of the barrage.

Due to the altered flow prompted by the construction of the Farakka Barrage, the right bank of the Ganga in the downstream district of Murshidabad has undergone recurrent erosion. In the following two decades, bank failures along the edge of Ganga-Padma had catastrophic implications for the livelihoods of agrarian communities.<sup>36</sup> Between 1988 and 1994, the impinging river consumed 207 square kilometres of land in Murshidabad where more than 79,000 people had been uprooted.<sup>37</sup> The most vulnerable reach is Akheriganj where the left and right-hand channels have merged, aggravating erosion along that stretch. Dhulian and its adjoining sites in Murshidabad were also ravaged as the river wiped out fifty *mouzas* (administrative areas covering one or more village settlements) and approximately 10,000 hectares of arable land in the mid-1970s.<sup>38</sup> By modifying the aggradation-degradation patterns of the riverbed and causing complex changes in the usual behaviour of the river, the Farakka Barrage has disrupted the

34 Kalyan Rudra, 'The Farakka Barrage Project – An Interruption to Fluvial Regime', *Indian Journal of Landscape System and Ecological Studies* 19 (2) (1996); Kumar Parua, *The Ganga*; Jenia Mukherjee, 'No Voice, No Choice: Riverine Changes and Human Vulnerability in the "Chars" of Malda and Murshidabad', *Occasional Paper 28* (Kolkata: Institute of Development Studies, 2011): 1–30.

35 Kumar Parua, *The Ganga*.

36 Kalyan Rudra, *The Encroaching Ganga and Social Conflicts: The Case of West Bengal, India* (West Bengal: Department of Geography, Habra H.C. Mahavidyalaya, 2003).

37 Rudra, 'The Farakka Barrage Project'.

38 Kalyan Rudra, 'Dynamics of the Ganga in West Bengal, India (1764–2007): Implications for Science–Policy Interaction', *Quaternary International* 227 (2) (2010): 161–69.

processes of formation, deformation and dissolution of *chars*. Constant cycles of settlement-displacement-re-settlement-re-displacement among *choruas* have been expedited through repetitive rhythms of emergence-submergence of *chars* in the Bengal Basin during the post-Farakka period.<sup>39</sup>

Yet, life goes on. The *choruas* navigate through ecological risks and associated crises by innovating and adhering to adaptive strategies and ‘tactics’.<sup>40</sup> Through our explorations on Nirmal Char, in this chapter, we argue that *chars* are emblems of diverse, lively and vibrant interplay of agencies, imaginations, predicaments and negotiations attached to the rhythmic nature of the river, beyond fetishising the *choruas* as ‘environmental refugees’.<sup>41</sup>

## Muddy, mundane materialities of Nirmal Char

There was a time when Amjad Ali Hossain lived on Nirmal Char (Map 5). His evocative eyes spilled the memories of departed days as he described how the stories of his life are tied to Nirmal’s capricious fate which revolves around a perpetual cycle of emergence and submergence, formation and dissolution in the post-Farakka period. Following the devastating flood of 1983, he sold his ten or fifteen *bighas*<sup>42</sup> of land to investors from mainland Murshidabad and migrated to Calcutta. Many families had been displaced due to river bank erosion and submergence of land, leading to loss of occupation and associated challenges. *Choruas* also keep migrating from one *char* to the other. Current inhabitants of Nirmal Char share memories of island-to-island migration and the apathy of the state when it came to pursuing infrastructural interventions and welfare schemes, due to the ephemerality of the landscape.

After travelling in an almost straight line to Lalgola, the Ganga River takes a left turn and then moves to the right above Akherigunj, literally ‘the last settlement’ before the border with Bangladesh. It was in 1925 that a small mound appeared after the monsoonal floods that blanketed the northern stretch of Akherigunj. Erosion along the deep, narrow thalweg pools caused

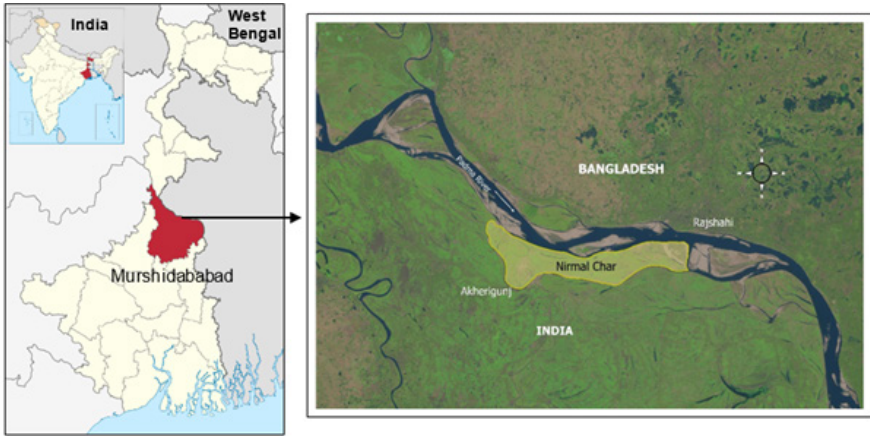
39 Mukherjee, ‘No Voice, No Choice’.

40 Benoit Ivars, ‘Alluvial tactics: Land access and control on the Ayeyarwady River’, *Journal of Burma Studies* 24 (4) (2020): 37–78.

41 Basu, Roy and Samaddar (eds), *Political Ecology of Survival*.

42 Bigha is a unit of land measurement prevalent in India, Bangladesh and Bhutan. One *bigha* is equivalent to 0.619 acres.

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**Map 3.**  
Nirmal Char in Murshidabad.

Source: Copernicus Sentinel-2B Data, 1 January 2022.

enormous silt accumulation at the opposite bank of the river – Nirmal Char was the outcome of this ceaseless cycle. According to oral tradition, the *char* was named after a fisherman who settled on it permanently during the 1920s. According to another popular tale, Nirmal implies ‘clean’ and the *choruas* named the *char* Nirmal due to the fine texture of its soil (Figure 1). In time, more silt accumulated and consolidated, fattening the char and attracting marginalised agrarian communities (sharecroppers) from adjoining areas. Meanwhile, the deep channel on the right-hand side of the river kept catalysing severe erosion near Akherigunj and Jalangi *bazar* area from the 1930s and for the next several decades.

India became independent in 1947, with the painful saga of her partition marking the birth of the state of Pakistan. A significant portion of the border was delineated through the middle of the Ganga-Padma rivers whose shifting routes are further complicated by the unstable *chars* sprouting up and dissolving within the meandering course of the river. During the 1940s, these drifting landmasses intervened in the strategic bargains, conflicts and decision-making of the two countries’ bureaucrats.<sup>43</sup> The 1950s and 1960s

43 Amit Ranjan, ‘Rivers and Canals as “Other Factors” in the Partition of India’, *Water History* 13 (3) (2021): 319–35.





**Figure 1.**  
Nirmal Char. Photograph by the author, Pritwinath Ghosh (2019).

were tumultuous not only in terms of controversies over transboundary water sharing, but also for internal schisms between East and West Pakistan on critical questions of identity and language.<sup>44</sup> In 1971, the Bangladesh Liberation War (or Bangladesh War of Independence) drew a firm border along the amenable, yet shifting river avenues between the two countries. Transboundary water allocation and sharing, shifting boundaries of river

44 In the post-independence period, the ethno-linguistic identity of the people of East Pakistan became a source of otherisation in West Pakistan's nation-building process and the elites of West Pakistan were unwilling to account for the Bengali language and culture in the national identity of Pakistan (Dorothy Deb, 'Language, Culture and the Creation of Bangladesh', *Journal of Defence Studies* 15 (4) (2021): 59–76). A series of denials of recognition and representation aggravated the demand for autonomy and independent East Pakistan. In addition, the success of the Bangladesh Liberation War was vital behind forging of the Bengali identity through the creation of the independent state of Bangladesh in 1971.



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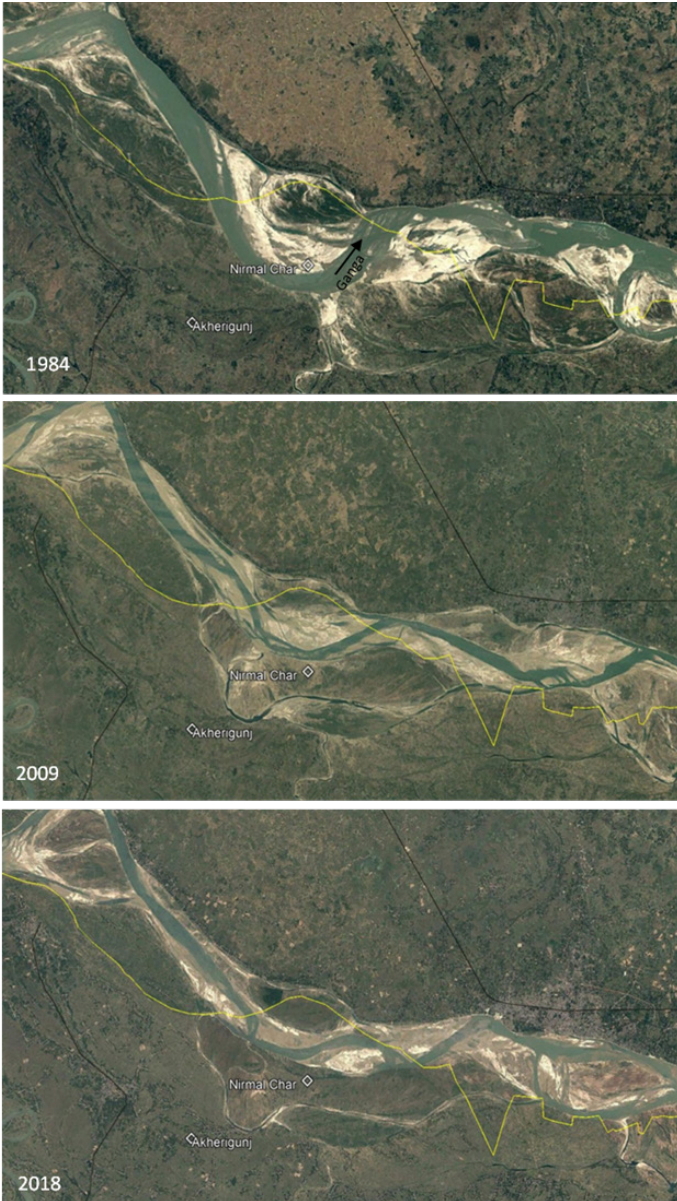
islands, etc. have remained constant bones of contention so far as the Indo-Bangladesh geopolitical context is concerned.

The Farakka Barrage proposal was imposed upon downstream Bangladesh who had 'no voice, no choice' to upset the Indian national design, especially since India was funding the Bangladesh Liberation War against Pakistan. Needless to say, splitting and controlling the water flow through the Farakka Barrage significantly hindered the discharge downstream, affecting fisheries, forests, agriculture, navigation and salinity gradients in the tidal rivers in Bangladesh.

In the years following the installation of the barrage, most of the distributaries of the Ganga-Padma system remained clogged with sediments during the dry winters, causing the parent rivers to retain only a feeble connection with their tributaries and distributaries. During the abundant monsoon rainfall, the discharge of the Ganga increases remarkably, rejuvenating all the connections and the rivers' flow. However, the monsoon runoff becomes a flood if it exceeds the carrying capacity of the tributaries. The situation worsens when tropical storms stray into the western plateaus or interior parts of the region, causing persistent downpours for days. Nirmal Char emerged in its present form after the catastrophic flood of 1989 and 1990: the disastrous erosion that created the island swept away 2,766 houses, left 23,394 persons homeless and, in many places, the boundary posts were obliterated due to riverbank failures. Geospatial images from 1973 and 1989 illustrate that during that time the Ganga channel travelled southward to Akherigunj, while in the last few decades the main channel migrated northward to flow around Nirmal Char (Map 4). Between 1990 and 1992, Nirmal cropped up at the northern bank of the river and generously furnished a space for many flood-afflicted people. Six years later, Nirmal was again hit by a massive flood and according to the *choruas*, it survived eight devastating floods between 1983 and 2019 (Map 5), compelling the *choruas* to migrate to the surrounding mainland areas in Akherigunj, Jiagunj and Bhagawangola where they took temporary shelter.

### *Survival and sustenance*

During the monsoon season (June to September), the older alluvial layers of the *char* are veneered by the newer, finer sediments of silt and clay, making the soil of the *char* fertile and productive. As the flooding retreats by the end of the wet months, the *char* offers a prolific platform for agriculture. Soil composition varies at different *chars*: Nirmal Char is constituted primarily

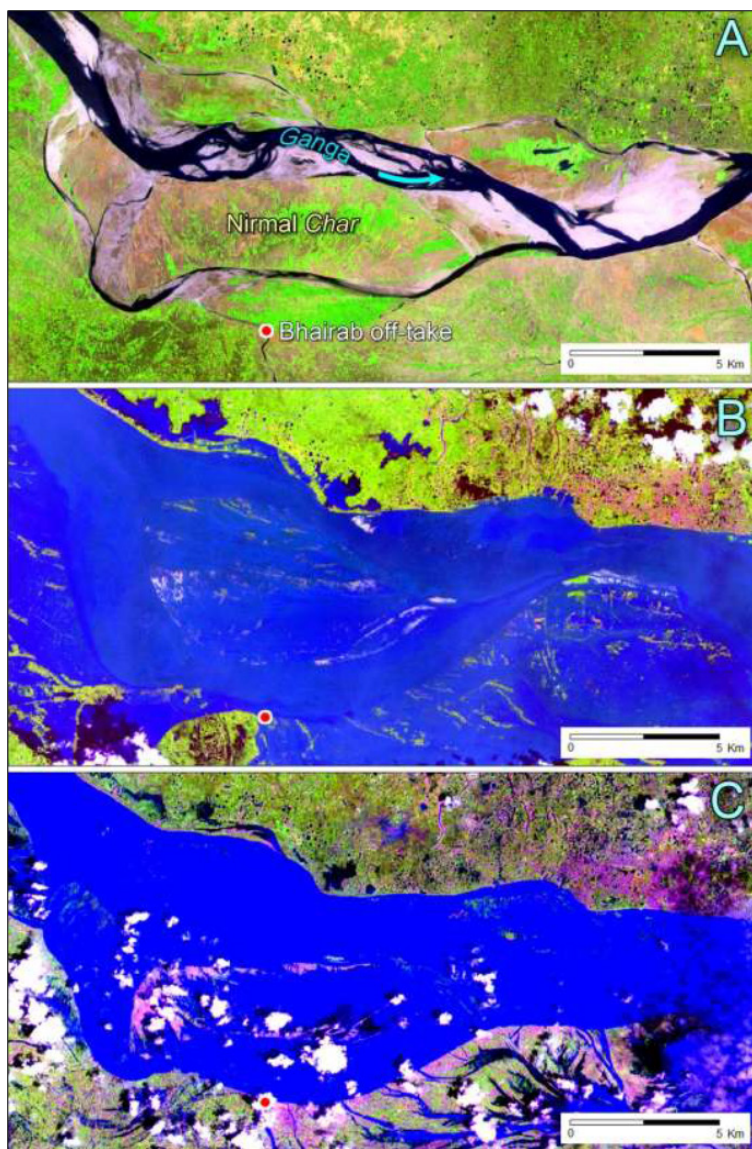


**Map 4.**

Shifting course (1984–2018) of the Ganga-Padma River at Akherigunj, 90 kilometres downstream from the Farakka Barrage.

Source: Google Earth (accessed 12 June 2022).

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### Map 5.

Flood scenarios. Nirmal Char is entirely submerged during floods and a greater amount of discharge passes through the Bhairab off-take.

Source: Image CC BY-NC-SA 4.0 from: S. Das, 'Evolution of Drainage and Morphology of Upper Bhagirathi Ganga Interfluvial Region of West Bengal with Special Reference to Palaeochannels'. Ph.D. Thesis, University of Calcutta (2017). <http://hdl.handle.net/10603/248812>.

of sandy and sandy loam soils whereas some other *chars* in the same stretch are dominated by loamy surface. Post-monsoon, Nirmal Char is a mosaic of farmland in which various types of crops are grown by traditional methods twice a year: wheat, pulses, maize, mustard and paddy (*aman* variety) are harvested as winter crops while jute, paddy (*boro* variety) and cattle fodder are grown during monsoon months. Maize is the staple crop across seasons, while *ekani* (a type of crop often used as fish food) and *kalai* (local variety of pulse) are cultivated intensively during monsoons. However, *choruas* buy vegetables from the mainland as these do not thrive in sandy soil. In an effort to prolong soil fertility, crop rotation is practiced by *choruas*: after the cultivation of jute and rice four or five times in a particular plot of land, they replace it with winter crops to preserve the richness and productive qualities of the soil. Irrigation-induced intensification of agriculture is a more recent scenario here. Due to the absence of electricity, diesel-driven pump irrigation is commonplace during lean seasons. For areas where pump irrigation is not feasible, *choruas* rely on rains to grow pulses, jute, and other crops.

Most *choruas* are farmers, but many also engage in livestock rearing and fishing; about one third of them earn their living as migrant labourers. Different social groups have developed their own agricultural practices as well as complex social and hierarchical relations. Only a minor portion of the population are landowners; many small and medium farmers subsist as tenants. Because large tracts of the *char* remain fertile for most of the year, cultivation is possible without extensive land preparation. There are delegated volunteers locally called *jogandars* who are tasked with protecting the farmland and crops from theft. In exchange for a monthly salary and a share of the harvest, three to four *jogandars* look after forty or fifty *bighas* of land. Local traders buy the produce from small-scale farmers to sell to wholesalers on the mainland.

Some landless farmers also move to other states and even outside the country to work as labourers on construction sites. Usually, they work in nearby areas for a period of time before migrating to other states for the remainder of the year, while others continue to work locally as daily wage labourers all year round, only returning to the *chars* during holidays or festivals. Due to repeated cycles of floods and erosions, the lives of *choruas* remain precarious, and migrations lead to an oversupply of agricultural labour, squeezing wages.

The riverine ecology offers a rich ground for fishing, making this another economic mainstay for the *choruas*, especially during rainy seasons. The fishers capture a rich variety of freshwater fish mainly from three types of



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bodies of water: deep thalweg pools of the main channel of Ganga, ponds and low-lying canals or *bils*. The fish is sold at local markets at Shibnagar and Bhagawangola. Some fishers also lease agricultural lands or migrate to other districts as labourers.

The constantly migrating population of *choruas* suffers from landlessness; women are compelled to shoulder the burden of providing financial support to their families. Most of the women on Nirmal are involved in livestock rearing (Figure 2), agricultural activities, and sewing in addition to their day-to-day household chores. Many of them eke out a living by cooking at households in mainland towns like Jiagunj, Bhagawangola, Akherigunj and Lalgola. A large number of women who belong to the poorest strata of the *chorua* community make their living by collecting crop residues from fields after the crops are harvested.

### *Risks and resilience*

The floods shape *choruas'* adaptive responses and coping practices. Some well-off *choruas* find transitory shelter at their relatives' residence in mainland towns. *Choruas* describe how monsoonal downpours and floods last for three to four months annually, destroying low-lying arable lands that take longer than three months to regain fertility, even if the floodwaters recede within fifteen days. Although there are a number of flood relief centres, lack of public



**Figure 2.** Livestock herders on Nirmal Char (*left*); women play a major role in rearing livestock (*right*). Photographs by the author, Pritwinath Ghosh (2019).

hospitals and health facilities are key impediments shaping vulnerabilities and affecting the wellbeing of *choruas*. During our field survey, *choruas* recounted their memory of the heavy flood of 2000, which devastated almost 95 per cent of households and erased 98 per cent of farmlands. Furthermore, the floodwater lingered for thirty or forty days, culminating in an outbreak of cholera and other water-borne diseases, destroying lives and livelihoods on the *char*. Amidst the dire absence of governmental intervention, the more affluent inhabitants of the mainland often provided *tripal* (sturdy cloth used for making roofs) and dry foods to the flood-affected *chorua* community. While there are no NGOs on Nirmal, *choruas* often collectively organise blood donation camps or provide support to orphans.

Their long-term exposure to risks have made the *choruas* adapt to their dynamic landscapes. In waterlogged charlands, where all other avenues of communication are disrupted for several days due to floods, the locally designed and manufactured boats, made of tin sheets called *donga*, ensure internal mobility. *Choruas* subsist on stocked rice and pulses, cooked in a locally innovated oven made of tin. When the friable houses made of clay and straw dissolve in the gushing floodwaters, *choruas* construct makeshift storm-resistant raised platforms or *machas* using *tripal* and bamboo poles.

*Choruas'* lives are entangled with those of the cattle they protect and care for. During floods, cows, buffaloes and oxen are carefully transported to nearby *chars* or the mainland. Often, bamboo *machas* are constructed for the cattle to protect them from the rising water levels. This care-based relationship is disrupted when *choruas* are compelled to sell cattle to *fonre* (middlemen) at meagre prices as an alternative economic practice due to crop losses during floods. The value chain of the produced crops includes *fonre* who buy the produce from the *choruas* and sell at the mainland markets in Bhagawangola, Lalbagh and Bahrapur. Often the *choruas* are compelled to sell the crops to *fonre* as they are unable to directly sell the produce through the government platform, called Kisan Mandi. Moreover, with the intervention of a number of middlemen in such a platform, prices are often reduced by ten to fifteen percent. In times when market prices drop significantly, farmers stash their harvests for a year or more until prices climb again.

During wet months, the mainland is accessible via one fragile bamboo bridge which provides access for bullock carts (Figure 3). The bridge is used to transport agrarian produce and fish to the mainland centres. During lean seasons, the fish and crops are directly transported to mainland with tractors or trucks and sold at mainland markets. Apart from interlacing muddy trails,

## 5. Quilting the 'Brown Hole' in Environmental History



**Figure 3.** Bullock cart (*left*) and bamboo bridge (*right*) on Nirmal Char. Photographs by the author, Pritwinath Ghosh (2021).

there are narrow, undulating brick roads which remain submerged during the monsoon months. Longer routes and more complex modes of communication imply a lower margin of profit for the inhabitants of the floating *chars*.

The *chars* are also sites of illegal cattle trafficking to Bangladesh, pursued by a nexus of local political leaders and mafia groups who profit from this porous border. Cattle traffickers from both mainland and *chars* collaborate in peddling cattle to Bangladesh. Mainland traffickers send the herds of cattle to *chorua* agents who keep the cattle at secured shelters. Here the herds containing 500–1,000 animals each are looked after by around ten to fifteen local traffickers. The transfer of cattle to Bangladesh is made possible both by negotiating with the Border Security Force (BSF) guards and by making use of unfenced areas along the river.

Conflicts and contestations relating to land ownership and cultivation on the *char* get determined by an array of (geo)political and economic variables. Due to acute poverty, especially after floods, competing claims among the



farmers of the two countries intensify when *choruas* from both sides of the border are keen to set up farming operations on the *chars* of Murshidabad such as Nirmal or Jalangi. The oscillating river has intensified transboundary complexities: the bulk of the sedimentary mass of Nirmal Char is more conveniently accessible from the Rajshahi district of Bangladesh than the Murshidabad district of Bengal. Despite security restrictions imposed at the border, violations continue, sometimes leading to violent clashes between Indian and Bangladeshi farmers. A number of *choruas* also complained about the guards of Border Security Force snatching farmers' identity cards and claiming a share of their produce in exchange for tolerating cross-border movements. 'We have seen the rage of the river Padma as well as her charity. But when it comes to the BSF, they only have to offer a blow of the bayonet', says a *chorua*.<sup>45</sup>

The *choruas* adapt and adjust to everyday volatilities, navigating through furies of nature, statecraft and transboundary conflicts around access to their resource base – the uncertain yet fertile muddy landscapes of their agrarian patches. Ecosystem services nurtured with human labour make the *char* a lucrative landscape to live in, despite manifold uncertainties looming large, such as frequent cycles of floods and river bank erosion that have intensified in the post-Farakka period. Makeshift and need-based disaster response strategies are deployed by *choruas* when they unite, take decisions and implement actions during crises. Lives and livelihoods take complex turns when some *choruas* make use of non-legal means such as cattle trafficking along the border of Bangladesh to give a tough fight to economic uncertainties – an outcome of coupled ecological challenges and inadequate intervention of the state in charlands. Yet, life goes on!

## Conclusion

By unravelling the dynamics of lives and livelihoods in hybrid geographies of tropical Bengal, this chapter is anchored in the larger agenda of giving voice to voiceless actors – islanders and (river) islands – suffering yet adjusting to the whims of natural hazards and their intensified implications due to 'development' initiatives and interventions in the fluid tapestry of the river

45 News Report, 'Phushchhe Padma, raat jaagaa Nirmal char', *Anandabazar Patrika*, 1 Aug. 2018: <https://www.anandabazar.com/west-bengal/nadia-murshidabad/padma-river-is-approaching-to-erosion-at-bhagabangola-1.840965?ref=nadia-murshidabad-new-stry>.

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landscape. Our case study on Nirmal Char attests how *chars*, the floating ecotonal liminal landscapes, blur binaries of risks and resilience by thrusting uncertainties upon the *choruas*, who sustain a 'stateless' existence on the one hand, and on the other hand incur an array of opportunities through contingent adjustments to the volatilities of the charlands. Here, material vicissitudes get compensated with relational wellbeing, with the *choruas* evolving as communities to overcome multifarious challenges. Beyond being passive spectators of furies of nature, they are compelled and somewhat equipped to perpetually adapt and adjust to its ephemerality. Our case study advances the conceptual analytic of the 'fluidscapes', juxtaposing its prominence over 'fixities' from an onto-epistemological perspective. *Chars* as microcosmic amphibian entities denounce binary categorisations between solid and liquid, risks and resilience, adaptation and adjustments, instigating environmental historians and human geographers to delve deeper into hydrosocial dialectics shaping muddy materialities of South Asia.

### Acknowledgements

The EqUIP (EU-ICSSR) Project on comparative 'fluid governance' explorations of the Rhone and the Ganga deltascapes has sponsored recent field investigations in *chars* of Bengal. We would like to acknowledge Souradip Pathak, Research Scholar, Indian Institute of Technology Kharagpur, for providing technical support during the final-phase developments of the chapter. We are sincerely grateful to the *choruas* of Murshidabad and Malda who have always remained patient about our continuous probing and spontaneously embraced us without any expectations during a series of field visits conducted between 2019 and 2021.

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**Part II.**

**Islands of Exploitation**





## 6. Refuge and Hell Itself:

### How Two Pacific Islands Shaped the Buccaneer Presence from the Seventeenth to the Eighteenth Century

Wim De Winter

*A fascination for temporary possibilities of escape brings me to islands. As remote places outside the grasp and haunting demands of economy and society, they can form autonomous zones for intentional being. One's presence in such zones is lived more directly, within a natural environment. For me, such revelations came on a maritime voyage between the Scottish Hebrides, looking out at the ocean from the woods at the end of the world. A sense of something wider engulfing us and our histories. Islands can thus be a vantage point from which to observe the unfolding flow of human interactions on and around them. The element enabling this flow is water, connecting human history in close proximity with the natural world: overwhelming, threatening, yet encompassing us all. Historically, the vast stretch of ocean known as the Pacific exactly allows us to study island groups as spaces which no one could ever truly 'own', where human-environment interaction was always temporary and where nature finally had the upper hand. As for the human agents looking for such islands as places of escape or refuge, who else stimulates our fascination as much as pirates? They inspire an imagination of escape as much as their real-life brutality appals us, rejecting and plundering established societies around them. Comparing the Galápagos and Juan Fernández island groups reveals how strikingly different an island environment can appear – from hell to verdant green – as a resource, as a place of risk, as a temporary refuge. In this fascinating diversity, island environments present themselves as almost larger than one's own imagination. Inherently evasive to being fully grasped in data or models, island environments humbly put us in our place, in a living landscape surrounded by difficult currents flowing all around us. As they did for pirates, islands form places to which we are returning, always returning.*

## Introduction

As Spanish Manila galleons crossed the Pacific, connecting the opulent Philippines trade with the Spanish colonial settlements in Mexico and Peru from 1565 to 1815, tales of abundant wealth reached Europe.<sup>1</sup> They attracted the attention of Spain's enemies, in particular Dutch, British and French pirates who sought to disturb Spanish colonial trade and plunder along the galleon route. Four buccaneers declared to the French governor of Tortuga and the coast of Santo Domingo that they had decided to cruise before Acapulco in 1684, while awaiting a rich 'galleon from the Philippines ... charged with gold, pearls, precious stones, porcelain, and other rich merchandise and silks'.<sup>2</sup> Consciously emulating sixteenth-century precursors such as Francis Drake or Thomas Cavendish, they decided to rob Spanish shipping and plunder coastal settlements. These plundering expeditions were enabled by the buccaneers' use of remote Pacific islands as temporary bases. As part of a transnational flow of cartographic and navigational information, the buccaneers' logs and journals put Pacific islands on the map for subsequent French and British expeditions, enabling French transpacific crossings from 1708 onwards.<sup>3</sup> In this movement of maritime predation, islands served as crucial hideaways and provided resources for buccaneers and pirates venturing into the Pacific. In this context, two islands deserve a closer comparison: Isabela in the Galápagos island group and Más a Tierra, today's Robinson Crusoe Island, in the Juan Fernández island group. Both routinely served as bases from where seventeenth-century buccaneers preyed on coastal settlements and shipping. These island groups were not inhabited by humans before the sixteenth century. Combined with their specific ecosystems, this made them the perfect places of refuge for pirates. As Glyndwr Williams points out, 'there were no welcoming, garlanded islanders thronging the beaches of Juan Fernandez, Tinian or the Galapagos islands. They were deserted, silent places, except for the beating

1 Shirley Fish, *The Manila-Acapulco Galleons: The Treasure Ships of the Pacific* (Central Milton Keynes: AuthorHouse, 2011), p. 454.

2 Translated from Archives Nationales (Paris) MAR B/4/9 'Declaration of some French buccaneers that were in the South Sea between 1684 and 1688 to the governor of Santo Domingo and Tortuga' (or.: 'Desclaration'), fo. 456–57.

3 Wim De Winter, 'Kennis over Verre Zeeën: Maritieme en Etnografische Kennisontwikkeling van Franse Transpacifische Reizen tot de Oostendse Azië-handel (1684–1723)', *Nieuwe Tijdingen* 6 (Nov. 2022): 99–129.

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of the surf and the calling of the sea-birds.’<sup>4</sup> These island ecosystems enabled pirates to remain in the Pacific for years, as they provided fresh water, wood for careening, or repairing, their ships, and fish, sea turtles and tortoises as victuals. This chapter draws attention to the importance of pirate interactions with the islands’ ecology that enabled their sustained presence. More than intermediary stopovers along navigational routes, islands can thus be acknowledged as entities facilitating a global history of maritime predation. This chapter looks at sailors’ perceptions of and interactions with these island environments through the lens of Tim Ingold’s notion of a ‘sentient ecology’ – that is, the way in which humans relate to the components of their environment through activities of subsistence procurement.<sup>5</sup> This involves knowledge based on feeling, skills and orientations shaped by conducting one’s life in a particular environment.<sup>6</sup> For sailors and pirates interacting with Pacific islands this mostly concerned ‘first encounters’, as they tried to make temporary dwellings and engaged in hunting or foraging. This chapter considers sailors as hunter-gatherers, immersed in both practical and perceptual engagement with what Ingold defines as a dwelt-in world.<sup>7</sup> Following Ingold, we may claim that the resulting ‘ontology of island dwelling’ consisted of four elements: the perception of the marine island environment, interactions with the island ecosystem, ways in which the island ecosystem enabled these perceptions and interactions, and the learning process by which sailors learned strategies of interaction and resource procurement. The latter in particular involves the notion of *enskillment*, or the learning process by which sailors fine-tuned their perceptions and actions towards the island environment, as they familiarised themselves with it.<sup>8</sup> The perception of the island environment also involved its imaginative construction in logbooks, buccaneer journals and maps. This chapter draws on both published and unpublished buccaneer logbooks and navigators’ journals and letters, allowing a reconstruction of their interactions with island ecologies.

4 Glyndwr Williams, *The Great South Sea: English Voyages and Encounters, 1570–1750* (New Haven: Yale University Press, 2009), p. 183.

5 Tim Ingold, *The Perception of the Environment. Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000), p. 9.

6 Ibid., p. 25.

7 Ibid., pp. 37–42.

8 Ibid., p. 37.

## Buccaneer presence in the Pacific

The term 'buccaneers' signifies loose groups of soldiers and sailors of French, British, Flemish and Caribbean origins, which mostly operated in the French Caribbean from the 1640s onwards. Often previously engaged in privateering during periods of maritime warfare, these men made their living from a combination of tobacco harvesting, plunder and smuggling to Spanish colonial settlements. As James Pritchard mentions, they chose to live as 'masterless men', unbound by authority.<sup>9</sup> Though based in the Caribbean, they also crossed over into the Pacific Ocean.<sup>10</sup> Kris Lane traces the buccaneers' eventual choice of Pacific piracy back to sixteenth-century English pirates such as Drake or Cavendish, whom they consciously emulated in their attempts to break the Spanish commercial monopoly by plunder.<sup>11</sup> The French and English buccaneers venturing into the Pacific were a particular subset of pirates who managed to carry on plundering for a remarkably long time: the ten-year period from 1679 to 1689, with outliers up to 1701.<sup>12</sup>

Buccaneers produced multiple testimonies detailing their knowledge and information gathering, both written by themselves and in various collaborations.<sup>13</sup> Their writings mostly concern maritime plundering exploits and navigation. However, scholars such as Diana and Michael Preston, Glyn Williams or Kris Lane have also noted that Pacific pirates and buccaneers had a remarkable interest in the natural environment.<sup>14</sup> This places them in a longer lineage of pirate knowledge-gatherers. The navigational knowledge

9 James Pritchard, *In Search of Empire. The French in the Americas, 1670–1730* (Cambridge: Cambridge University Press, 2004), pp. 60–61.

10 Kenneth J. Banks, *Chasing Empire across the Sea: Communications and the State in the French Atlantic, 1713–1763* (Montreal: McGill-Queen's University Press, 2006), p. 21.

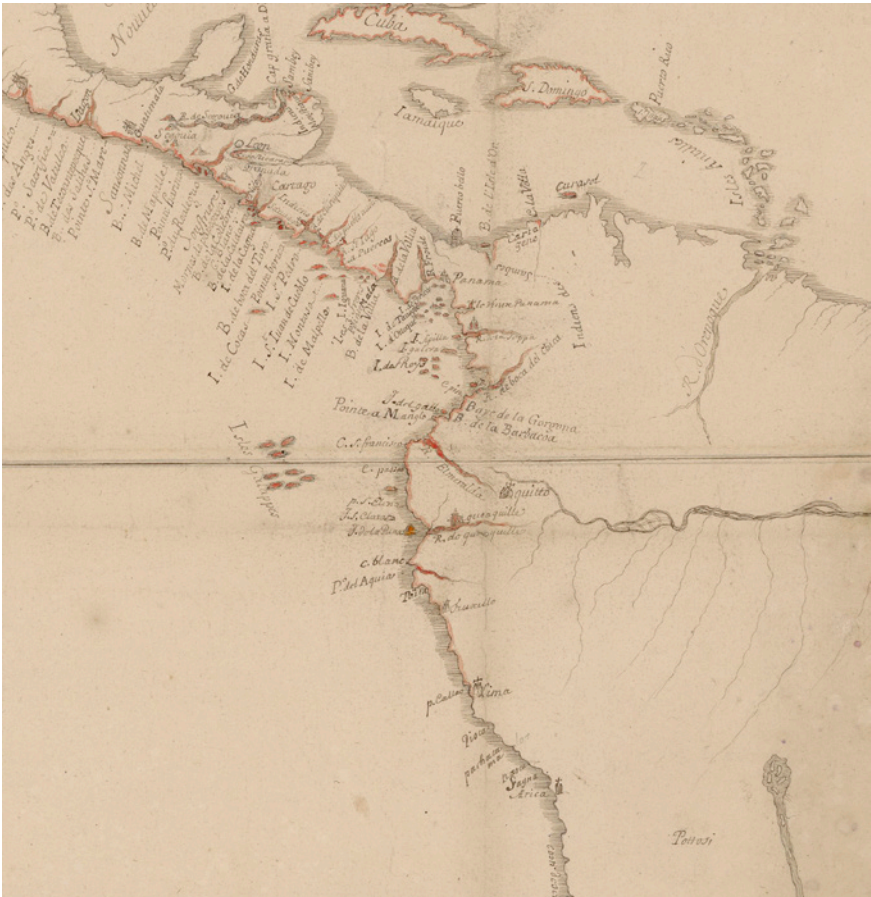
11 Kris Lane, *Pillaging the Empire: Piracy in the Americas, 1500–1750* (Armonk: Oxford University Press, 1998), pp. 33–40. See also Patrick Villiers, 'Raveneau de Lussan', in *Dictionnaire des corsaires et des pirates*, ed. by P. Hrodej and G. Butti (Paris: CNRS Editions, 2013), p. 672.

12 Peter T. Bradley, *The Lure of Peru. Maritime Intrusion into the South Sea, 1598–1701* (London: Macmillan, 1989), pp. 103–66.

13 For instance, Raveneau de Lussan, *Journal du Voyage fait a la Mer du Sud avec Les Flibustiers de l'Amerique en 1684 et années suivantes* (Paris: chez Jacques le Febvre, 1699). An example of an unpublished buccaneer manuscript is the 'Basil Ringrose Journal into the South Sea', British Library (London), Sloane Ms. 3820.

14 Lane, *Pillaging the Empire*, pp. 56–57; Diana Preston and Michael Preston, *A Pirate of Exquisite Mind: The Life of William Dampier* (London: Corgi Books, 2004); Glyn

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**Figure 1.**

Extract of de Lussan's map based on buccaneer accounts (Raveneau de Lussan, 'Itinéraires: de Lussan').

Source: Bibliothèque nationale de France, département Cartes et plans, GE C-6100.

of sixteenth-century English pirates was based on Spanish written records, as well as oral instructions by captured Spanish or Portuguese navigators. This enabled them to orient themselves in the winds, islands, and coastlines

Williams, *Naturalists at Sea: Scientific Travellers from Dampier to Darwin* (New Haven: Yale University Press, 2013).

of the Pacific.<sup>15</sup> Later buccaneers would build on this knowledge by adding their own experience. French buccaneer Raveneau de Lussan's travelogue, published in 1689, describes how the powerful winds, rains and currents in the Pacific still surprised experienced European sailors, compared to the more familiar waters of the North Sea or the Atlantic.<sup>16</sup> Unpublished buccaneer accounts, such as the compiled navigational material in Captain William Sharp's *South Sea Waggoner*,<sup>17</sup> made similar observations. Islands play an important role in these buccaneer sources: they all mention that islands were used in multiple ways, as buccaneers converged on the Galápagos and Juan Fernández island groups.

The above map based on de Lussan's notes depicts the Latin American coastline in detail, including the positions of coastal islands. Locations marked in red indicate those he had personally visited and drawn 'from view'. De Lussan's travelogue mentions that these islands were repeatedly used as temporary bases where buccaneers searched for fresh water, fruit and meat. It also mentions that the 'Darién Indians' from Panama taught the buccaneers how to build canoes with which they ventured into the Pacific. The buccaneers repeatedly sought the alliance and advice of such native inhabitants of the coast, especially if these wished to rebel against Spanish dominance.<sup>18</sup> Beyond a mere exchange of resources, contact with locals was an opportunity to learn their skills and allowed the buccaneers to incorporate both these skills and the locals into their expeditions. This native influence should not be underestimated: de Lussan even claimed that his group's piracy would have been impossible without input from the local population.<sup>19</sup> Local knowledge therefore shaped the learning of skills with which the buccaneers navigated and engaged with island environments. These acquired skills and their accompanying traditions may have taught them how to hunt and use the natural resources of the islands. Coupled with the skills in fishing and navigation which the buccaneers already possessed, this allowed them to use island ecologies to procure their livelihood. Buccaneers would profit from

15 As is already evident in *Journalen van Drie Voyagien*, ed. by Iacob Pietersz (Amsterdam: Wachter, 1643), p. i.

16 de Lussan, *Journal du Voyage*, p. 110.

17 Derek Howse, Arnold Bauer and Norman J.W. Thrower (eds), *A Buccaneer's Atlas: Basil Ringrose's South Sea Waggoner* (Berkeley: Duke University Press, 1992).

18 de Lussan, *Journal du Voyage*, pp. 43–44.

19 de Lussan, *Journal du Voyage*, p. 45.



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the locals' hunting skills, as evidenced by the British buccaneer William Dampier's account of his encounters with the 'Miskito Indians' off the coast of present-day Nicaragua:

and that at which they excelled so much that the privateers valued them highly as part of their crew, for one or two of them in a Ship will maintain 100 men. So that when we careen our Ships, we choose commonly such places, where there is plenty of Turtle or Manatee for these Moskito men to strike.<sup>20</sup>

This complements historian Marcus Rediker's findings about Caribbean buccaneers or *maroons* constantly requiring new kinds of knowledge and cooperation while 'wresting sustenance from an island commons with an unfamiliar ecology'. Local ecological knowledge of the 'Miskito Indians' was crucial for the practice of 'turning turtle' that the buccaneers used on the Galápagos: the nightly search for turtles to flip over on their backs, with hunters returning the next day to kill and prepare them on wooden barbecues.<sup>21</sup> Dampier's travelogue also mentions that 'the Moskito men' and 'other wild Indians' made hatchets out of stone or iron, with which they cut down trees in order to 'make Canoa'.<sup>22</sup> Canoes played an important role for the buccaneers' way of life: the pirates used them as their principal raiding vessels until larger enemy ships could be hijacked as prizes. Both the canoes and captured prizes were then brought to islands or hidden bays as the pirates regrouped and set out on subsequent plundering expeditions.<sup>23</sup>

### **Buccaneers at the Galápagos Islands: Hell or hiding place?**

An unpublished declaration by four French buccaneers to the governor of the islands Santo Domingo and Tortuga shows that they had been aware from the outset that the Galápagos and Juan Fernández islands could serve as places of tactical refuge.<sup>24</sup> On their raids, buccaneers used islands as crucial vantage points from which they took Spanish supply ships carrying provi-

20 Captain William Dampier, *A New Voyage round the World*, vol. I (London: printed for James Knapton at the Crown in St Pauls Church-yard, 1699), pp. 7–8.

21 Marcus Rediker, *Outlaws of the Atlantic* (Boston: Beacon Press, 2004).

22 Dampier, *A New Voyage*, pp. 85.

23 de Lussan, *Journal du Voyage*, pp. 43.

24 AN MAR B/4/9 'Declaration of some French buccaneers', p. 457.



sions such as liquor and flour, or hostages from villages near river mouths.<sup>25</sup> The Galápagos Islands were the main archipelago serving as a pirate refuge in September 1688, providing shelter to what Peter T. Bradley describes as the second wave of buccaneer incursions into the South Sea or Pacific.<sup>26</sup> This second wave of buccaneers retreated there for a longer period of time, as they intermittently cruised along the Peruvian coast. When ships destined for Lima were captured, pirates took them to the Galápagos where they burned their original vessel, re-fitted the prize and continued their cruise.<sup>27</sup> When pursued by Spanish armed forces, who had become aware of their presence, they temporarily hid on or between the islands while avoiding main coastal ports. The importance of islands to buccaneer operations did not remain unnoticed by the Spaniards. An undated buccaneer testimony mentioned that the Spanish attempted to keep the islands' existence and location a secret: 'the Spanish take great care to keep the islands hidden and to prevent not only strangers, but also their own people from knowing them'. Although the Spanish habitually destroyed maps marking islands, the buccaneers managed to recover one from the hands of a Spanish pilot.<sup>28</sup> Just like the French buccaneers, navigator Basil Ringrose's journal shows that British buccaneers also considered the Galápagos as a potential place for hiding and careening ships, ever since their initial Pacific incursions in June 1680.<sup>29</sup> Likewise, buccaneer navigator William Ambrose Cowley mentioned in 1684 that the Galápagos Islands were 'very well replenished with fish turtell & fowles in a bundans that one Mane may take as many or as much provisions in one Day as will Sarve a thousand Menn a Day'.<sup>30</sup> He also described how the buccaneers interacted with island wildlife, even allowing fearless birds to land on their arms or head before taking them.

25 Ibid., p. 458.

26 Bradley, *The Lure of Peru*, pp. 128–43.

27 Erik Wilhelm Dahlgren, *Les relations commerciales et maritimes entre la France et les côtes de l'Océan Pacifique*, vol. I (Paris: Champion, 1909), p. 93.

28 Own translation from 'Mémoire des établissemens espagnols dans la mer du Sud. Arch du Ser hydrogr de la Marine', vol. 802, pièce 5, p. 68

29 British Library (London), Sloane Ms. 3820 'Basil Ringrose Journal into the South Sea', p. 69

30 William Ambrose Cowley, 'Account of my Voyage round this terestiall Globe of the World, from Virginia to England, and through the Great South Sea', in *Miscellanea curiosa: collected by Dawson Turner* (Richmond: Virginia Historical Society, 1686), Mss1 T8525a3, vol. IV, p. 4.

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**Figure 2.**

'A General draught of the Islands of Gallappagos then followeth the said Island; originally described by William Ambros Cowley' (Sloane Ms 45 Charts of the South Seas etc.: Guilielmus Hack, 1687).

Source: British Library, Sloane MS 45.

However, besides fowl or other provisions, the buccaneers were unable to find any water at the Galápagos except a fresh-water river at 'King James the seconds Iland formerly called the Duke of Yorks Iland'.<sup>31</sup> Cowley's account is a testimony to the buccaneers' practice of naming every island they encountered. London-based mapmaker William Hack drew a map based on Cowley's notes and sketches, which indicates how the buccaneers approached island coastlines, and named islands according to British references.

The pirates and buccaneers had to deal with an environment that was practically unknown to them. As they navigated, they made this environment known by naming it, and by pointing out recognisable landmarks which allowed for fu-

31 Based on the map, we may presume this to have been another part of present-day Isabela island.

ture reference. This practice of wayfinding or orienting also explains the importance of islands' visual representations in pirate logbooks. Different pirate groups navigated the Pacific during the same period, and engaged in parallel practices of naming and wayfinding. French buccaneer captain Massertie's journal thus names the Galápagos islands differently than Cowley, as Mascarin, Carénage du Flessinguais (Floreana) and the volcanic 'Burned Island' or 'Ile Brûlée' (Isabela).<sup>32</sup> These islands were named according to their appearance and their use, their ability to provide necessities created a sense of temporary 'ownership'. Isabela presented Massertie's French buccaneer group with an unfamiliar view: a volcanic island. To the buccaneers who were approaching Isabela while lacking food supplies and drinking water, the island was a dreadful sight: 'as we had no water nor victuals, and the island was but burned rocks, which had no water, nor wood, nor other things with which to console us'.<sup>33</sup> Despite this first impression, the island proved quite big and the ship could moor at a location where 'we found half-salted water and a great quantity of sea turtles which served us well'. The sight and experience of this island, which they named 'Burned Island', thoroughly shocked the captain, who described it in his journal:

To see this island is the most surprising thing in the world, as for me I believe that it is hell itself. The whole island is rock, as if it was tar which one would have melted and let flow everywhere. There are vaults or crevices which are simply but a crust with a thickness of three fingers, and if a man would put his foot on it, it shatters like glass, and out of 1000 lives not one would be saved.<sup>34</sup>

The captain's journal shows his continued attempts to make sense of the island's volcanic nature. His first explanation was that some form of lightning had caused the island to burn: 'I believe that the fire from the sky has burned this island in some way, as in some places there is a great quantity of ashes.' As a second explanation, he speculated that the island had somehow turned upside-down:

the island has been turned around or upside-down, that the earth is all burned, and only the rocks remained after having melted. And I myself had the curiosity to pull out the wood which was all covered in rocks, and was even buried up to its peak in said rocks, and for the rest buried, there was a

32 Edward Ducéré, 'Journal de Bord d'un Flibustier (1686–1693)', in *Bulletin du Société des Sciences et Arts de Bayonne* (Bayonne: Lamaignère, 1894), p. 11.

33 *Ibid.*, p. 11

34 Translated from *Ibid.*, p. 12.

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great charcoal, which was more than half a foot long as if the said wood had burned. The said wood was the width of a man, which made me believe that the island has been turned upside-down.<sup>35</sup>

After this reflection on the island's volcanic nature, the buccaneers nevertheless turned to its practical use in foraging, as they attempted to careen their ship. They moored their vessel in a naturally formed inlet which they designated as a 'port of really good mooring'. Exploring the island environment seemed difficult, as the volcanic rocks and crust made it nearly impossible to walk on most of the island. This was also deemed an advantage, as it offered the buccaneers a controlled environment in which to repair their ship, with no escape routes for potential hostages, or spots from which to be ambushed by wildlife or potential enemies. Hence, the island's rock formations provided a place of refuge where they could remain for days or weeks. The buccaneers also discovered another advantage that volcanic rock could provide: the apparent purification of water. The journal mentions that 'the water which passes between the rocks when the sea rises, is purified, which renders it a bit softer or sweeter'.<sup>36</sup> Geology and naval medicine indeed confirm that some forms of volcanic rock, such as perlite, may have a filtering effect on seawater.<sup>37</sup> Some crew members were sent around the islands' shores to look for water, as others hunted fowl or seals and salted sea turtles, so the ship would have enough provisions to make the crossing towards the Peruvian coast. On 25 April 1690, they left the Burned Island to sail towards Peru. When attempting to cross towards the Peruvian coast, the buccaneers learned a crucial lesson about sailing the Pacific waters: the importance of navigating the particular winds and currents around the Galápagos. They had already understood that in the Pacific 'navigation is done rather by practice than by science',<sup>38</sup> as the currents of the open sea often made journeys impossible. The buccaneers would find out why the Spanish nickname for the Galápagos was 'las islas encantadas' or the enchanted islands: sixteenth-century Spanish navigators had great difficulty finding them or

35 Ibid.

36 Ibid.

37 United States Navy Department, *Manual of Naval Preventive Medicine: Water Supply Ashore* (Michigan: Department of the Navy Bureau of Medicine and Surgery, 1963), pp. 5–7; Gary S. Logsdon, *Water Filtration Practices* (Denver: American Water Works Association, 2011), p. 241.

38 Ducéré, 'Journal de Bord', p. 13.

estimating their correct distance to the mainland, due to the treacherous currents which made ships take a much longer time to reach or leave the islands than visually estimated.<sup>39</sup> This phenomenon had also been the cause of the islands' initial discovery in 1535. In his description, friar Tomás de Berlanga mentioned being blown off-course from the Peruvian coasts by contrary winds and coming across several islands where he encountered 'sea wolves', great Galápagos tortoises 'which could carry a man', and 'serpent-like' iguanas. As in the French vision of 'hell itself', these islands presented themselves to de Berlanga in all their 'greatness and monstrosity'.<sup>40</sup> In their April 1690 attempt to reach the Peruvian coasts, the French buccaneers mentioned how the ship fought against the currents for nine days without gaining any ground, obliging them to return to the island to salt turtles and replenish their water supply yet again. The crew noticed that

in this sea, the currents are so strong in the open sea, that it is impossible to navigate there. That is why, whichever wind is blowing, one always has to reach land and maneuver along the coast, as along the coast the current relieves you and carries you Southward. One should never pass beyond 8 to 10 leagues into the open sea, and the closer to land is the better.<sup>41</sup>

Meanwhile, Spanish naval forces actively looked for pirates in the archipelago, as they had now learned that these would periodically return with their prizes and take in fresh water. A 1692 letter from Spanish captain Gregorio de Igarza to the Peruvian viceroy mentions that the captain had been tracking pirates for about two years. At the Galápagos, he found a stick on the beach with a yellow *banderilla* (flag), and at its feet a Galápagos turtle shell with a piece of paper addressed to buccaneer captain Franco, stating that

I passed here with the prize, I stayed four days, and if you pass by here, I made route for the Iles Maries, where I hope to see you ten or twelve days, and if you don't come by that time, I will set sail to California to the port you know. It's your servant capitaine michel.<sup>42</sup>

39 Marcos Jiménez de la Espada, *Las Islas de los Galápagos y otros más a Poniente* (Madrid: Imprenta de Fortanet, 1892), pp. 1–3.

40 AGI (Archivo General de Indias - Sevilla) ES.41091.AGI (Archivo General de Indias) //PATRONATO, 1947, R.27 'Fray Tomás de Berlanga, obispo Panamá: descripción, etc.'

41 Ducéré, 'Journal de Bord', pp. 12–13.

42 Translated from AGI LIMA, 89, correspondencia, 'Letter of Gregorio de Igarza to viceroy of Peru, in Paita, 16 august 1692'.

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The island not only served as a seamark, named and used as a reference point for navigation, but also as a platform for communication between buccaneer groups. After noticing this message, Igarza continued scouting the Galápagos for the pirates, also landing at Isabela. There he saw traces of the piratical presence: remains of temporary encampments, abandoned quantities of moldy Quito cloth and traces of the buccaneer ship which had been careened and burned two years earlier. Igarza did not succeed in finding the pirates, and returned to Paita to file his report.<sup>43</sup> The multitude of islands, the currents around them and their resources had enabled the pirates to elude Igarza's grasp. The islands proved excellent temporary places of refuge that enabled the buccaneers to continue their plundering expeditions, and to resupply in order to leave the Pacific whenever they chose.

### **Juan Fernández Islands: Heap of rocks or verdant paradise?**

Both the French and British buccaneer groups passed by the Juan Fernández islands on their way out of the Pacific, headed towards the Magellan Straits. They often referred to the main island Más a Tierra as 'the' Juan Fernández island – in a similar way to how Isabela Island had been referred to as 'the' Galápagos island, with one island's name representing an archipelago. Just like Isabela, the buccaneers used Más a Tierra or 'Juan Fernández' as a temporary place of refuge, where they could bring sick crew members on land, carry out repairs and forage for provisions.<sup>44</sup> Glyn Williams mentions that buccaneer captain Bartholomew Sharp retired to the Juan Fernández island group with his crew after pillaging ports and ships along the Peruvian and Chilean coast towards the end of 1680, finding it 'with its water and goats a very refreshing place to be'.<sup>45</sup> This was not how the island first appeared to his navigator, Basil Ringrose. When he approached the island around Christmas 1680, Ringrose noted: 'I saw not a fowle near it nor fish usuall at other Islands the pilot hath made many Voyage by it and never saw any.'<sup>46</sup> Seeing the archipelago, Ringrose sent a canoe to find the best landing and

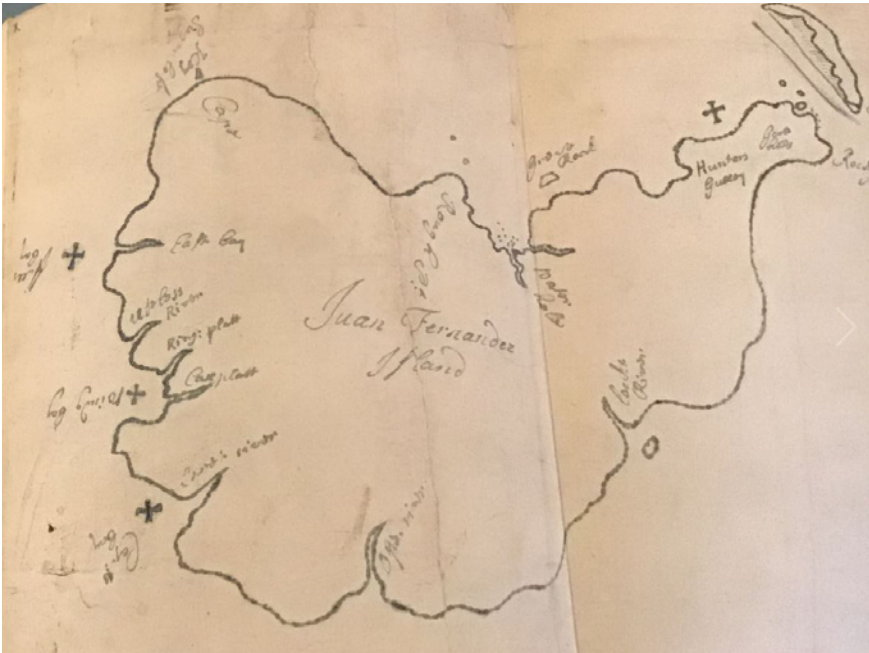
43 Ibid.

44 Ducéré, 'Journal de Bord'.

45 Williams, *The Great South Sea*, p. 86.

46 Sloane Ms. 3820 'Basil Ringrose Journal into the South Sea', p. 141.





**Figure 3.**

Sketch of Juan Fernández Island (Basil Ringrose, *A Journall into the South Sea*, (1690), pp. 152–153).

Source: British Library, Sloane MS 3820.

anchoring spots, as the islands ‘seem to us but a heape of rocks. The North is the highest through wee see not yet its tops for the clouds.’<sup>47</sup> His diary includes sketches of the island and its appearance on the buccaneers’ arrival.

Approaching the island, the crew encountered marine wildlife. The number of seals near the bays was so considerable that the pirates were forced to kill many of them just to be able to set foot on shore.<sup>48</sup> Once on land, the buccaneers discovered the island to be abundant in fauna: in one night, they caught nearly sixty goats. They also spotted a bay on the north side of the island with sufficient wood to allow for repairs and improvements to the ship.<sup>49</sup> Yet climatic

47 Ibid., p. 142.

48 Ibid., p. 143.

49 Ibid.



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conditions at Juan Fernández also proved difficult. On 27 December, the ship faced 'violent winds and fierce rains'. The next day, two of the buccaneer canoes got stuck, as 'from water wee could not get back to the ship for a South wind'.<sup>50</sup> Among his tribulations of wayfinding on Juan Fernández, Ringrose made several observations regarding island wildlife. He spotted sea-lions and observed how difficult they were to hunt compared to seals: 'a seale is very easily kild but two of us with greate Stones could not kill one of these'.<sup>51</sup> Apart from seals and seabirds, the island was populated by goats that also served pirates and buccaneers as a food source. These goats were probably not endemic to the island, as William Dampier notes that 'goats were first put on the Island by John Fernando, who first discovered it in his Voyage from Lima to Baldivia'.<sup>52</sup> The most remarkable and detailed description of survival and foraging on Más a Tierra may be found in Dampier's account. Dampier mentions how 'a Mosquito Indian named Will', formerly a crew member on a British buccaneer ship, was left stranded on the island. He made his own instruments in order to get 'Provision as the Island afforded', consisting of goats and fish. Initially, 'Will' 'was forced to eat Seal, which is very ordinary meat, before he had made Hooks'.<sup>53</sup> He built a little hut, and used a sealskin for clothing. Seeing Dampier's crew approach, and correctly believing them to be English, he killed three goats in the morning and 'drest them with Cabbage, to treat us when we came ashore'.<sup>54</sup> For this Miskito tribe member, the foraging possibilities on Más a Tierra provided an opportunity for extended survival. Dampier's description also provides further testimony to the foraging skills and environmental knowledge of the native inhabitants of the Pacific coast, with whom the buccaneers shared parts of their journey, and from whom they would have learned a lot.

During their stopovers on Juan Fernández, English buccaneers had native or black servant boys help them hunt sea-lions and goats. The buccaneers further modified this island environment by digging passages through the hills and by hanging ropes. Williams quotes privateer-purser Richard Simon's 1690 travelogue, mentioning that these pirates

50 Ibid., pp. 143–44.

51 Ibid., p. 146.

52 Dampier, *A New Voyage*, vol. I, p. 88.

53 Ibid., p. 86.

54 Ibid.

pretended that they lived as Kings in the island, having no law, or superior to Controule them, that they wanted for nothing ... their food being venison, their drink Goates milk and Excellent water, for several days they made a showe as if they had been of all the Men in the world, the most Content with their conditions.<sup>55</sup>

Apart from hunting and resting, buccaneer navigator Charles de Dieppe's account as written by Jesuit Jean de la Mousse also mentions that buccaneer groups used the Juan Fernández islands to hide treasure in the moonlit caves and natural crevices the island provided. In 1692, pirates hid on the island for eight months, in order to make the Spanish authorities believe they had fled the Pacific. Meanwhile, they stashed their loot in holes or deep caves in the high cliffs of the island. They descended into these holes with ropes, bringing down their coffers and belongings. They also used the caverns to trap and kill the mountain goats or *cabrites* without using gunpowder, which the pirates kept for eventual encounters with the Spanish.<sup>56</sup> These temporary hiding places served them as they went plundering, intending to pick up the booty before finally leaving the Pacific. These practices testify to the temporality in the pirates' use of Pacific island spaces: as there was an immediacy in their plundering exploits and survival, their awareness of eventually leaving the island spaces behind made them use their environmental features in specific ways. This differed from future maritime ventures of privateering or smuggling, which envisioned more long-running interactions with the island environment.

## Post-buccaneer island lives: Privateers and smugglers at the Galápagos and Juan Fernández islands

In direct continuation of the buccaneers' earlier practice, subsequent French contraband traders also used the Juan Fernández and Galápagos islands as possible stops. French captain de Beauchesne stayed at the Galápagos from 7 June to 7 July 1700 and visited four different islands following the indications of the former buccaneers among his crew. Contrary to the resourceful buccaneers, de Beauchesne mentioned that they could not find how to resup-

55 Williams, *The Great South Sea*, p. 104.

56 Huntington Library (California), mssHM 58286 'Extrait du Journal de M. Charles (du Val) Dieppois sur son voyage de la mer de sud', fol. 1–29.

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ply the squadron: foraged wood was hard to fit in repairing the vessel, and almost no water was to be found at all. He declared the Galápagos Islands to be the most horrible place in the world, where he only carried out some urgent ship repairs.<sup>57</sup> Clearly his squadron's level of skill in interacting with the islands' environment differed from that of earlier sailors driven by the necessity of imminent survival, using foraging skills acquired by exposure to the coastal environment and its native inhabitants.

According to Williams, the Juan Fernández islands also remained a base: by 1709 recuperation and provisioning at Juan Fernández island became routine for English expeditions entering the Pacific.<sup>58</sup> On his 1740–1744 privateering voyage around the world, British commodore George Anson found refuge at the island, when his crew was in a bad shape due to scurvy following their passage through the Magellan Strait. Anson's chronicle mentions that 'instead of attempting to attack the places of the enemy, our utmost hopes could only suggest to us the possibility of saving the ship, and some part of the remaining enfeebled crew, by our speedy arrival at Juan Fernandes'.<sup>59</sup> In contrast to the buccaneers, who developed their navigational approach towards the island by their own experience, Anson's squadron was aware of difficult currents and 'resolved, if possible, to hit the island upon a meridian'.<sup>60</sup> Being able to do so implied the use of exact maps, which were partly based on former pirate accounts. However, the information did not prove exact as Anson did not find the island 'in the position in which the charts had taught us to expect it'.<sup>61</sup>

Anson ordered his navigators to survey the islands for future British vessels coming into the Pacific. This also included locating suitable bays for landing, and again naming and thereby claiming them.<sup>62</sup> He also went one step further in his interaction with the island ecosystem by modifying it: beyond earlier buccaneers' hunting habits, he deliberately planted seeds to grow crops and thereby improve the island's potential as a future base. Anson had brought with him 'garden-seeds of all kinds, and stones of dif-

57 Dahlgren, *Les relations commerciales*, p. 140.

58 Williams, *The Great South Sea*, p. 148.

59 Lord Anson, *A Voyage round the World in the Years 1740–1744 by George Anson, Esq. ... compiled by Richard Walter* (London: J.M. Dent & Sons, 1930), p. 104.

60 *Ibid.*, p. 105.

61 *Ibid.*

62 *Ibid.*, pp. 111–16.

ferent sorts of fruits, for the better accommodation of his countrymen who should hereafter touch there'.<sup>63</sup> This shows a markedly different approach from the buccaneers' temporary use of the Pacific islands, as Anson deliberately aimed to improve the environment for future voyages. It also had a lasting impact on the island's ecosystem, as later Spanish navigators from Lima discovered peach and apricot trees on the island, resulting from these plantings.<sup>64</sup> Anson also noted that the great number of goats described by former writers had diminished, as the Spaniards had consciously attempted to remove this potential buccaneer and privateer food source by putting on shore 'great numbers of large dogs, who ... have destroyed all the goats in the accessible part of the country'.<sup>65</sup> In turn, Anson's crew sought to hunt the dogs for nourishment, but they proved extremely difficult to kill.<sup>66</sup> Where earlier buccaneers or pirates used the island ecosystem with necessary immediacy, as a temporary zone for replenishing or refuge, state-bound agents like Anson also approached it with a sense of future continuity.

From buccaneers preying on goats and marine wildlife to Anson's purposeful planting of vegetables, and the Spanish attempts to reduce the availability of goats, the island ecosystem was purposefully altered by human intervention, as the conflict surrounding the island as a possible pirate base increased. In 1799, Spanish colonial documents still referred to 'English hostilities in the South Sea' and identified both the Galápagos and Pacific islands in general as places of temporary pirate settlement.<sup>67</sup>

## Conclusion

Exploring the Pacific buccaneer presence on both Isabela and Más a Tierra island, and in a broader sense the Galápagos and Juan Fernández archipelagos, offers important insights about the buccaneers' interactions with the island environment. We have noticed practices of naming each island, even if they only formed places of intermittent dwelling. Naming served a

63 Ibid., p. 114.

64 Ibid., p. 115.

65 Ibid., p. 117.

66 Ibid.

67 AGI ES.41091.AGI/23//ESTADO, 52, N.75 '1799-05-19, Sobre hostilidades de los Ingleses en la mar del Sur'. See also AGI ES.41091.AGI/23//ESTADO,52,N.87 (AGI) 'Virrey Santa Fe sobre establecimiento de ingleses Galápagos'.

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purpose of orienting at sea, but also passing on knowledge of the island in writing. At the same time, naming could also imply temporarily 'owning' the space. The sailors' perceptions of the island also carried cultural references or meaning, and reflected their state of health and nourishment: where Isabela appeared as a volcanic hell, Más a Tierra appeared as a verdant paradise of enchanting landscape. Nevertheless, both islands offered the refuge and replenishment pirates needed: they allowed for finding and hunting wildlife, and good mooring.

Pirates or buccaneers' interactions with the environment mostly concerned subsistence: they usually hunted animals, foraged for fruit or water and chopped wood in order to supply their needs. Their interactions with the islands also required wayfinding, during which they interacted with the environment in various ways. A difference in use between the seventeenth- and later eighteenth-century period indicates that, where buccaneers used the islands as temporary bases, later agents such as Anson or the Spanish colonial government reacted by purposefully modifying the island ecosystem to suit their needs. This varying engagement was coupled to a different temporality: buccaneer or pirate engagement was more immediately aimed at temporary settlement and survival, whereas later engagements involved long-term projections of potential settlement. Immediate engagements primarily made use of the ecosystem as a direct resource, whereas long-term projections aimed at making islands places for sustainable future resourcing or its prevention.

Both islands' ecosystems offered specific useful features to pirates. The caves at Juan Fernández enabled hiding people and loot, while its forests provided wood which could be used to repair ships. The volcanic rock at Isabela presented at once a form of shelter and a dreaded inaccessibility. Additionally, the volcanic rock also presented a possible means of sea-water purification. The Galápagos geography offered a means of circulation or evasion by movement between islands, and a point for communication among pirate groups. At the same time, both island environments presented inherently fragile and ephemeral places of refuge, as winds and currents made them challenging environments to navigate.

Concerning the learning process in their environmental interactions, both French and English buccaneer accounts emphasised learning by practice and experience, by immersion in the environment: they hunted and explored the environment in the same way as they navigated the waters. The sources also testified to the role of ecological knowledge of 'native informants' for the buccaneers' environmental interactions. This concerned both navigation

and, primarily, the hunting of marine wildlife. Both de Lussan and Dampier mentioned the hunting skills of Miskito and Darién Indians, and their great value as part of buccaneer crews. Pirates' skills at hunting and foraging were significantly influenced by these intercultural contacts.

We may therefore conclude that the presence of these islands and their ecological features enabled an extended and recurrent pirate presence in the Pacific. This presence influenced the islands' ecological environment as well as their human history.

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Extract of De Lussan's map based on Buccaneer Accounts. [Itinéraires: de Lussan, Raveneau de Lussan]. Source: Bibliothèque nationale de France, département Cartes et plans, GE C-6100.

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## 7. *Amami* and Amami:

### Confecting Sugar Islands in the East China Sea

Thomas Monaghan

*To paraphrase the writer Donald Ritchie writing about Japan's Inland Sea, life on an island may lack width, but it does attain depth. Having once spent two years living on a small Japanese island and taking boats to visit even quieter, emptier islands, I came to sense that there is something special about small societies bounded closely by water; even if the sea is overcome with highways and high-speed ferries, the mainland is always over there. Hopping across the Amami islands, each one so different from the last, I have been struck by how much human history is embedded in the terraced fields, cycad forests, thatched storehouses and villages. Although belonging administratively to a region that celebrates its local heroes and the visionary samurai men who brought modernity to Japan, Amami and its 'islandness' presents a fresh perspective: a history of sometimes gruelling hardship on the sugar plantations, but also pride and independence from the power centres of both Okinawa and Kagoshima. Historically, the Amami islands and their peoples were on the periphery of a periphery. But, whether through making tens of thousands of tons of sugar or through constituting Japan's southern frontier, they were also able to tap into global historical trends and exert their own influence on far-off events. Isolation may have given the impression of a backwater, but in the early modern period Amami experienced technological and economic development that overturned its society and environment. These and other contradictions exemplified by Amami's history are what draw me to an 'island perspective'.*

## Introduction

From the tall mountains of Amami Ōshima, several rivers and streams begin their journey down towards the sea. Making a course through the thick forest, they flow past clusters of tall ferns and bare Ryukyuan pine trees. The fragrance of grasses and moss fills the air. The taps of a woodpecker and the cries of kingfishers echo among the trees as they flit through gaps in the foliage. The hum of cicadas vibrates through the breeze. The rivers and streams snake back and forth as they continue their descent. Mountains cede to gentle slopes, the earth becomes sandy, and bunches of squat cycads begin to mushroom here and there. Finally, the rivers end in the brackish water of a mangrove, where sea snakes hide in the reeds, or the translucent blue of a coral reef. The waters have reached the western Pacific.

Almost 400 kilometres to the south of the southern Japanese city of Kagoshima, this is the landscape of Japan's first sugar islands. Unrelated to the Japanese noun for sweetness, *amami*, the Amami islands are named after the Ryukyuan creator goddess, *Amamichuu*. The largest island is Ōshima ('Big Island') at 712 square kilometres, followed by Tokunoshima at around 250 square kilometres. The other main islands are the smaller islands of Kikai, Okinoerabu, and Yoronō. Despite sharing the caves, beaches, forests and natural beauty of the Okinawan islands further south, Amami has mostly avoided the mass tourism, as well as the US military bases, that have had such environmental impacts there as coral reef bleaching, overdevelopment of hotels and pollution of drinking water. While Amami received just 891,352 tourists in 2019, for instance, Okinawa prefecture received 10,163,900.<sup>1</sup> In 2021, Ōshima and Tokunoshima, along with the Yanbaru region of Okinawa Island and Iriomote island further south, were designated UNESCO Natural World Heritage Sites in recognition of the islands' biodiversity and rare species such as the Amami rabbit (*Pentalagus furnessi*).<sup>2</sup>

While the UNESCO designation brings deserved attention and resources to Amami's endemic species, the natural environment of the islands has undergone several transformations in recent centuries due to human activity. During Japan's early modern period (1603–1868), the islands became a

1 <http://www.pref.kagoshima.jp/qa01/chiiki/oshima/chiiki/zeniki/oshirase/kankout-oukei.html> (accessed 8 April 2022); <https://www.pref.okinawa.jp/site/bunka-sports/kankoseisaku/14734.html> (accessed 15 Feb. 2024).

2 <https://whc.unesco.org/en/list/1574/> (accessed 15 Feb. 2024).

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**Map 1.** A Map of Southern Kyushu, the Amami Archipelago and Okinawa Island. Created by the author, Thomas Monaghan.

sugar factory, producing brown sugar for export to Japan's growing cities of Osaka, Kyoto, Edo and beyond. This sugar industry reached its peak in the mid-nineteenth century, producing over 15,000 metric tons a year. It stripped the islands of trees, terraced hillsides and replaced rice paddies with cane fields. Devoting their labour to the arduous agro-industrial process of cane cultivation, harvesting and refining, the population became dependent on food imports and vulnerable to natural disasters, leading to food scarcity and periodic famines that cost thousands of lives, with the most severe claiming 3,000 victims in Tokunoshima in 1755. In a pattern familiar to histories of the Caribbean and Atlantic world, a larger imperial polity transformed an island society into a dependent pool of labour manufacturing a single commodity for distant markets. Sidney Mintz's mid-century ethnography of a cane worker in Puerto Rico, for instance, powerfully described the proletarianisation to which island populations are vulnerable. Fully dependent on imports to reproduce their labour, which is in service of a global export industry, Mintz posits these 'rural proletarians' as the opposite of peasants.<sup>3</sup> A similar historical change to Amami's society and environment was also enabled by geography: from these small islands at some distance from the mainland the population could not emigrate or petition. Ethnic difference was also used against the islanders, preventing them from accessing positions of political power and exercising self-governance. Remoteness resulted in biodiversity in the natural environment and a cultural counterpoint within Japan that are now celebrated internationally through tourism and the recent UNESCO designation, but recounting the human history of the islands shows how these features also made them attractive commodity frontiers for powerful states and merchant capital throughout Japan's early modern to modern transition.

### **Isolating Amami: Ethnic differences in the creation of a sugar colony**

The Amami islanders' Ryukyuan identity was essential to its later exploitation as a sugar colony by a Japanese domain. At the beginning of the early modern period, the islands formed the northern edge of the Ryukyu kingdom,

3 Sidney W. Mintz, *Worker in the Cane: A Puerto Rican Life History* (New York: W.W. Norton & Company, 1974).

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a maritime empire governed from Shuri castle near the city of Naha on the main island of what is now Okinawa Prefecture. This Ryukyuan identity was most obvious in matters of dress, language and political and religious power. Amami islanders had been part of the Ryukyuan world since the reputed unification of the Ryukyu islands in 1429. In 1609, however, they were invaded by several thousand samurai from Satsuma, a powerful domain on Japan's southwestern-most tip ruled by the Shimazu warlords. Japan had only recently been unified after decades of warfare and two catastrophic invasions of the Korean peninsula. The samurai took the Amami islands with barely a fight before moving on to the rest of the Ryukyu islands. Unlike the other Ryukyu islands, however, they annexed the Amami islands and integrated them directly into the domain, separating them decisively from the Ryukyuan world.<sup>4</sup>

From 1609 until the end of the early modern period, the Amami islanders experienced rule by Japanese samurai from Satsuma. There was an ethno-linguistic gap between rulers and ruled that did not exist on the Japanese mainland, with the possible exception of relations with the Ainu on Japan's northern frontier. In the first decade of ruling Amami, Satsuma focused on severing Amami's ties with Ryukyu, banning the regular voyages that carried officials between Naha and Amami, appointing their own officials to replace those appointed by Ryukyu and prohibiting the wearing of ceremonial headbands that indicated status.<sup>5</sup> Once Amami was firmly under Satsuma's control, these measures were relaxed, but the issue of ethnic difference remained central to Satsuma's mechanism of governance throughout the period.

### Technology and the growth of a sugar economy

Located strategically between China, Ryukyu and Japan, the Amami islands were able to receive transfers of technology and knowledge about sugar production, while at the same time being the centre of indigenous innovations. Until the end of the seventeenth century, sugar in Japan was an expensive commodity, often used to make bitter Chinese medicine easier to consume,

4 Naze Shishi Hensan Iinkai (Naze City History Editorial Committee), *Naze shishi* (Naze-shi: Naze Shiyakusho, 1983), p. 275.

5 Report from the 2<sup>nd</sup> month of 1616, 'Tokunoshima zenrokuchō', in Matsushita Shirō (ed.), *Amami shiryō shūsei* (Kagoshima-shi: Nanpō Shinsha, 2006), p. 227. 'Ōshima daikanki', in *Ibid.*, p. 21. All translations by the author unless specified otherwise.

and imported from Chinese and Dutch traders in Nagasaki. Sugar was produced on the central and southern Ryukyu islands, but the technology there remained basic until the introduction of Chinese two-roller mills in 1623 and the indigenous invention of the three-roller mill in 1673.<sup>6</sup> In Amami, there exists a well-known oral tradition recounting the arrival of sugar. In 1610, a farmer called Sunao Kawachi from Yamato village on Ōshima was invited to travel to Ryukyu but his ship was blown off course and shipwrecked in Fujian, China. Kawachi spent a year there learning southern Chinese techniques for making sugar. He brought this knowledge back with him to Amami, along with two cane seedlings, in their soil, smuggled in a modified travel bag. He immediately set about planting the cane and producing sugar, yielding one hundred caddies, the first sugar produced in the Japanese islands.<sup>7</sup> In 1880, Japan's new government honoured Kawachi at the Osaka Agricultural Fair. In the following year, Hirotomi shrine was built in Yamato village to deify him. Some historians have questioned the veracity of this account; there is no other evidence of sugar production on Amami before the 1690s.<sup>8</sup> However, beyond the specificity of Sunao Kawachi's story, it suggests that shipwrecks and accidents played an important role in connecting the islands to other lands and transmitting knowledge, technology and seedlings.

Written evidence of sugar production starts to appear in the 1690s, when chieftains from Kikai requested several large pots for sugar boiling and processing. Once sugar production took off, the administration of the islands also changed. Satsuma sent 'cane inspectors' to Ōshima and Kikai in 1695, and another wave of officials to Ōshima in 1698. Among the inspectors were also officials appointed to oversee specific regions of each island, and administrators in charge of overseeing specific economic activities and

6 A Korean source from 1429, the *Ri Jo Sil Rok* (The Veritable Records of the Ri Dynasty), noted that 'sweet and delicious' sugar was imported to Ryukyu from Chiang-nan and grown in large amounts. Chinese sources in the sixteenth century mention sugarcane wine as a Ryukyuan delicacy. The 1673 Ryukyuan invention of the three-roller mill, a transformative technology, was the only recorded independent invention of the three-roller mill beyond its first appearance in Brazil in 1613. Mills in China continued to have two rollers. C. Daniels, N. Menzies and J. Needham, *Science and Civilisation in China*, Vol. 6 Pt. 3 (Cambridge: Cambridge University Press, 2001), p. 446.

7 The measure *kin* (斤), here translated as 'caddy', changed over time but was roughly equivalent to 600 grams.

8 Daniels et al., *Science and Civilisation*, p. 453.



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resource use such as bamboo and trees, ports and rice paddies.<sup>9</sup> Once sugar began to be cultivated, Satsuma domain suddenly took a greater interest in various aspects of the islands' economic and political life.

Nonetheless, it is important to note that, by the early seventeenth century, it was still not clear that the Amami islands would become devoted to sugarcane growing over other crops; the local wax industry was just as important. Alongside its attempts to oversee and encourage sugar production, the domain also ordered villagers to plant wax trees (*Toxicodendron succedaneum*). By 1704, 100,000 had been planted. There was even a wax-tree plantation in Hakina, a village in the northern part of Ōshima, and an inspector was appointed and stationed there. In 1707, Satsuma explicitly prohibited chiefs and other islanders from laying waste to wax trees in order to plant sugarcane, suggesting that islanders could already see the profits to be made from sugar. In the following year, the governor of Ōshima noted the popularity of sugarcane growing and was worried about it creating a labour shortage that would hinder the harvesting of fruits from the wax trees. No doubt one reason for sugarcane's appeal at this time was that sugarcane fields were recorded and taxed as equivalent to open land, therefore were taxed less; planting cane was a way for islanders to make some extra income without significantly increasing their tax burden.<sup>10</sup> At first, villagers were not ordered to grow cane against their will, but responded to a mixture of incentives in choosing which crops to grow.

By 1713 the Amami islands were already producing 1,130,000 caddies of sugar annually. This amounted to roughly two thirds of Amami's annual tax burden, paid to Satsuma domain. There were still signs, however, that the domain wanted the islands to remain self-sufficient in foods. A survey carried out in 1726–1728 encouraged islanders to turn more fields into rice paddies, while also making officials inspect the quality of rice, oversee rice planting and ensure that islanders could not grow sugarcane without permission.<sup>11</sup> Rice was not an export good; Satsuma was still keen at this point to ensure that the islanders had food security.

9 Minowa Yū, *Ōshima gokimochō kara miru amami kinseishi* (Tokyo: Bookcom, 2021), p. 39.

10 Hagihara Shigeru, 'Studies on Sugar Industry at Amami region [Japan], 4: Unfolding Sugar Industry of the Satsuma-clan-Era (3)', *Bulletin of the Faculty of Agriculture - Kagoshima University* no. 39 (1989): 247.

11 Minowa, *Ōshima gokimochō kara miru amami kinseishi*, pp. 26–27.

As a laboratory for sugar production, technology continued to evolve on the islands independently of outside influence. In 1717, Satsuma official Tabata Sabuni turned the rollers that squeezed cane horizontal so that they could be harnessed to a water wheel. This at least doubled the rate at which the rollers could crush cane and collect the juice that would then be boiled. This technological innovation was later copied by the shogunal government in Edo during their own attempts to make sugar, as seen in a 1797 sugar manual written by shogunate official Kimura Matasuke and distributed around Japan.<sup>12</sup> A further Amami innovation occurred when another official, Kashiwa Yūto, replaced the wooden rollers with longer-lasting and more precise iron-capped machines in 1808.<sup>13</sup> The islands alone offered enough incentives for officials to experiment with new technologies and methods.

## Escape and exile

As the sugar economy grew, however, living conditions became more arduous for the islanders. Satsuma started to use more coercive measures to maintain the economy, such as denominating tax in sugar. A condition of island societies is that being surrounded by dangerous seas can limit means of escape and migration. If islanders are unable to migrate, they have less leverage against those who exploit their labour, turning their islands into a natural prison. On Amami, it was difficult for islanders to escape and they were usually pursued and caught. One summer night in 1736, three young men on Tokunoshima, Eibuji, Kishimasa and Nōetsu, launched a boat from Omonawa port and set sail for Shuri, intending to appeal to Ryukyu to make Satsuma stop forcing them to grow sugarcane. The next day, the local chief, who was himself an Amami islander, heard about it and informed the governor. A search party was formed of young men armed with hatchets. Meanwhile, the escapees' boat ran into strong winds and landed on the nearby island of Okinoerabu for safety. They were followed by the search party, who landed on Okinoerabu, gathered more men, and resumed the hunt. The escapees were found hiding in a small hut, and they were persuaded to come home. Such a serious crime would have courted the death penalty, but their punish-

12 <https://dl.ndl.go.jp/info:ndljp/pid/2535653> (accessed 15 Feb. 2024).

13 Hiroshi Higuchi, *Nihon Tōgyōshi* (Tokyo: Mitō shōku, 1956), p. 21. Kashiwa also experimented with five and seven roller mills, 32 years before the first such patent in Europe.

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ment was not officially recorded.<sup>14</sup> A local folk song, ‘The Tune of Nōetsu’, however, records that they were exiled to the Tokara islands:

Master Eibuji and Nōetsu and Kishimasa  
These three men,  
Tried to leave the island  
And were brought to Tokara<sup>15</sup>

As conditions on the islands worsened, stories of escapees became more frequent, particularly in times of food insecurity. Many on Tokunoshima tried to flee to Ōshima, only 28 kilometres away, visible on a clear day and seemingly within reach of a simple wooden rowing boat. In 1755–1756, a large famine in Tokunoshima caused many to try and flee, often in groups and leaving behind abandoned plots of land. The 1753 census records 22,400 people, but the 1759 one records only 19,000, a precipitous drop caused not just by starvation but also escapes. Officials requested emergency rice from Kagoshima but it would arrive too late, so they received some from Ryukyu instead, leading to rare criticism of Kagoshima in their reports.<sup>16</sup> In 1757, a samurai inspector from Tokunoshima visited Ōshima and reported that Tokunoshima was suffering from bad harvests, a typhoon the previous year had wiped out all crops and the islanders had experienced a horrendous famine during the winter. Islanders were living an ‘ephemeral existence’ eating mountain grasses and algae from the sea, before secretly making an attempt to reach Ōshima under cover of night. 1,700 had already escaped, and the governors were struggling to reallocate abandoned land. As a result, the island had fallen behind on its tax payments. The visiting official wanted to bring the escapees back to Tokunoshima, but found that they had already entered into onerous indentured contracts with islanders on Ōshima who had lent them rice and needed their labour for the forthcoming rice planting.<sup>17</sup> While islanders could feasibly escape to other Amami islands, they would find themselves at the whim of new masters; the arduous labour of the sugar economy had become inescapable.

14 Report from 1736, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, p.241.

15 Nagoshi Mamoru, *Amami no saimu dorei yanchu* (Kagoshima-shi: Nanpō Shinsha, 2006), p. 155.

16 Report from 1755, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, p. 247.

17 Nagoshi, *Amami no saimu dorei yanchu*, p. 157.



**Figure 1.**

Depiction of a Sugar Labourer Descending a Mountain, Nagoya Sagenta.

Source: *Nantō zatsuwa* (1855). Collection of Amami Museum, Amami City, Japan.

Satsuma sent extra officials to deal with this crisis of famine and refugees, but to little avail. A further famine in 1762–1763 prompted Ryukyu to send 180 *koku* of relief rice.<sup>18</sup> From 1766 to 1772, typhoons, epidemics and other disasters continued, as did the flow of refugees. Finally, in 1773, the domain ordered that escapees to Ōshima be brought back to develop the abandoned land in Tokunoshima’s western district. Roughly 300 were rounded up and brought back to Tokunoshima to farm land. In 1779, another 200 were returned. This likely remained a fraction of those who had escaped, who were now indebted to wealthy households on Ōshima.<sup>19</sup>

18 One *koku* equals roughly 180 litres of rice, supposedly enough to feed one person for one year. 180 *koku* of rice is therefore roughly 32,400 litres, a significant amount.

19 Reports from 1772, 1773 and 1779, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, pp. 253, 255.

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Throughout these difficulties, sugar production continued. Since 1745, Satsuma had set 3.5 million caddies from Ōshima annually as tax, to be sold for the domain's profit in Osaka. Despite the unrelenting catastrophes to have befallen Tokunoshima, in 1756 Satsuma ordered two officials to accelerate sugar production to over a million caddies by 1759. The disasters of the 1750s on Tokunoshima marked a turning point for the metabolism of the island: instead of crop diversity and ecological resilience, Satsuma chose to further reinforce the island's dependence on a sugar-for-food system. While sugarcane is relatively resistant against frequent floods and typhoons, and sugar would sell for high profits in urban markets, this was not enough to guarantee economic security for the islanders. Famines continued into the 1760s and 1770s, after a locust infestation in 1773 destroyed the rice paddies, with Ryukyu often stepping in to send emergency rice and millet.<sup>20</sup>

### Monopoly and micro-management from the 1830s

Despite these difficulties, the Amami islands grew increasingly important for Satsuma into the nineteenth century, as the domain faced financial crisis. In the 1830s, top-ranking Satsuma elder Zusho Hirosato implemented a series of reforms to reduce the domain's debts. One of the main reforms was the introduction of a monopoly system on Amami, in which the domain was the only purchaser of sugar from the islands and private trade with merchants, including the circulation of currency, was banned. This level of control was only possible on islands where the population were captive and could not escape. It was at this time that strictly maintained boundaries of ethnic difference also played an important role, clarifying the hierarchy between Satsuma samurai and the indigenous population. Micro-management extended to the details of people's lives: a 42-point memo issued in Kikai called for general austerity in ceremonies, festivals, seasonal gifts, entertainment and even in the use of ink and tatami mats in the governor's office. The islanders were also encouraged to reduce the amount of eggs, chickens and vegetables that they bred and produced. The domain took an inordinate interest in limiting the pastimes and leisure activities of the islanders, encouraging frugality and total dependence on the sugar industry for their survival and wellbeing. Along with micro-managed austerity measures, islanders were also given

20 Report from 1773, 'Tokunoshima zenrokuchō', in Matsushita (ed.) 2006, *Amami shiryō shūsei*, p. 254.

direct instructions about how to prepare the fields for cane, how to weed them carefully, how to boil the sugar extract, pack the sugar into barrels and prepare the sugar tax.<sup>21</sup>

Such measures were also implemented on Ōshima in 1834. A memo circulated in that year shows a new level of assiduous micro-management and rationalisation. Cane fields should be weeded three times, old cane should be replaced by new seedlings, the area of cane planting should be reported accurately, sugar should be produced in the third month, it should be carefully stored in barrels, labelled and sealed in a specific way, and prepared for export. There were even regulations for how to procure wood and bamboo for barrels, and how many barrels should be reported. The exchange rate of rice to sugar was set, and the document also stipulated how imported items such as farm tools should be divided out according to area of cultivated land. If any islander failed to come up with the sugar tax, their name would be reported along with the head of their household. All the sugar produced on the Amami islands was by now declared official domain property, and there were repeated, strict prohibitions against smuggling sugar for private trade or consumption.<sup>22</sup> Ōshima as a whole was set a yearly quota of 4,600,000 caddies of sugar to pay as tax, in addition to a set amount of 3,000,000 caddies of 'extra' sugar with which islanders could order and purchase commodities including food. Sugar had become the main currency of the island.

Once again taking advantage of island geography, by removing private currency and money from circulation the domain could exert total control over the island's economic activities. For example, while the quotas for total sugar produced barely changed, the domain frequently lowered the exchange rate between sugar and rice. By making rice more expensive for the islanders, Satsuma could save money and maximise profits. This was the same for many daily commodities such as paper, sake, oil, steel, knives, cottons and axes. By acting as the middle man, Satsuma could maximise profits from sugar by arbitraging between the purchase of goods in Osaka and selling those goods to Amami islanders. An extreme example can be seen in 1861, when a ship captain from Akune in mainland Satsuma sold a cargo of 434,000 caddies of sugar in Osaka on behalf of the domain, getting a price denominated in rice of 1,260,000 litres of rice, a rate of 1:2.9. On Amami, the same amount of sugar would be purchased for only a fifth of that amount;

21 Matsushita Shirō, *Kinsei amami no shibai to shakai* (Tōkyō: Daiichi Shobō, 1983), p. 176.

22 'Shimajū mōshiwatasu issatsu', referenced in *Ibid.* p. 186.



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the domain enjoyed a mark-up of 500 per cent on every caddy of sugar. In general, commodities cost at least four times as much on Amami, and in some cases over seventy times more. For example, in 1831 ten *kan* (roughly 3.75 kilograms) of dried bonito cost the domain less than fourteen caddies of sugar in Osaka, but in 1835 there is evidence of the same amount being sold to Amami islanders for 1,000 caddies of sugar.<sup>23</sup> The islands were both a captive labour force and a captive market, unable to migrate or petition. The domain fully understood how to take advantage of the remoteness and geography of the islands for economic gain.

If the 1830s heralded the beginning of a more intensive sugar industry on the islands, a series of directives issued after 1845 show how environmental difficulties multiplied and continued. Sugarcane quickly depletes soil nutrients. Directives ordering the fermentation of nightsoil, horse manure and seaweed, as well as weeding, show that soil exhaustion was becoming a problem. The domain also became concerned with disciplining the islanders and increasing their productivity, ordering an alarm to sound from a conch shell at 5.00 a.m. and another at 6.00 a.m. to call everyone to the fields. Officials noted islanders' modest attempts to diversify their diet through growing other crops along riverbanks, and ordered them to be torn up. Officials also lamented how many cane fields became abandoned, indicating an exhaustion of labour and an unsustainable economy.<sup>24</sup> Meanwhile, they had to contend with a new threat from abroad, as increasing numbers of foreign ships appeared off Amami's shores, sometimes landing on beaches and stealing cattle. Although few of the ships were Dutch, the domain trained and appointed a Dutch translator and doctor to help deal with them. In 1849, four western ships arrived at Tokunoshima, stole radishes and sweet potatoes, and paid in silver for a cow. A young western boy even took a horse and gestured with his hands that the horses in his country were 'two to three times in size'.<sup>25</sup> Amami's geography as islands not only made their societies vulnerable to internal exploitation but also to imperialism from afar, as they were close to the frontlines of North American, Russian and European attempts to trade with Japan.

Amidst this unstable geopolitical and environmental context, Satsuma's

23 Matsushita, *Kinsei amami no shibai to shakai*, p. 180.

24 Ibid., p. 190.

25 Report from 1849, 'Tokunoshima zenrokuchō', in Matsushita (ed.), *Amami shiryō shūsei*, p. 300.



officials began to carry out ambitious construction projects that demanded more time and resources from the islanders. On Tokunoshima in 1849, they ordered an inspector and ten others to rebuild the banks of the Ōse river in Kametsu, which had recently overflowed. They also ordered the building of new bridges and roads, and several new reservoirs for irrigation as well as to provide water for horses and cattle. Irrigation was a particular concern on Amami. The problem was not the amount of rain, since the islands are some of the wettest areas in Japan, Ōshima in particular, as a high island made of igneous rock. Rather, it was a problem of timing. Sugarcane needs rain when being planted in the dry, winter months, but can be ruined by rain in the wet summer months. The fertile soils suitable for growing cane in Amami are limited to fields bordering the sea; inland, the soils become a heavy clay unsuitable for much crop cultivation. At the same time, fields bordering the sea were most likely to be destroyed by typhoons. Therefore, apart from the warm temperatures and absence of frost, Amami is not necessarily an ideal place for growing sugarcane. Its vulnerabilities as a remote island with a quiescent, captive and exploitable population that could be manipulated into doing the hard labour intrinsic to sugar production were more important reasons than climate or environmental suitability for why Satsuma turned them into intensive sugar factories.

By the 1850s, the domain's attempts to tame the islands' environment through construction projects and proactive officialdom were paying off. Officials on Tokunoshima, which was again hit by successive natural disasters in the 1830s and 1840s including drought, typhoons, and a tsunami, ordered the building of fifteen reservoirs in 1851–1853; a more reliable water supply resulted in a bumper harvest on the island in 1855, producing over three million caddies. Ninety-one per cent of this was taken by the domain as tax, leaving roughly 270,000 caddies for the islanders to use as currency. As a reward for their efforts, 55 island officials were paid a bonus in rice. These same officials also banned sailors from staying on the island, abolished the female shamans and places of worship that were central to the indigenous religious landscape, decreed strict dress codes for islanders and ensured that they fulfilled their *corvée* labour duties. As if to justify the power they wielded, the officials themselves set an example by being frugal with their rice consumption, stationery (pens, paper and ink) and oil.<sup>26</sup> By 1857, Tokunoshima was achieving record sugar harvests as well

26 Matsushita, *Kinsei amami no shibai to shakai*, p. 208.

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**Figure 2.**

A Depiction of Sugar Making, Nagoya Sagenta.

Source: *Nantō zatsuwa* (1855). Collection of Amami Museum, Amami City, Japan.

as full harvests of rice and sweet potato. The officials taught islanders how to use sugar technology, checked their sugar mills and toured the island to encourage the sugar industry.<sup>27</sup>

### Indigenous beliefs and the ‘yuta’ problem

Hand in hand with intensification of the sugar industry came crackdowns on indigenous religious beliefs, which can also be considered an extension of pre-invasion Ryukyuan political authority. Religious life on the island was

27 Report from 1857, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, p. 327.

dominated by female priestesses and shamans called *noro* and *yuta*. Although it is not clear how Satsuma dealt with *yuta* in the earlier period, by the mid-nineteenth century they appear to have become a considerable problem for the domain. In 1849, the governor of Tokunoshima island complained in his official correspondence about the influence of these women over islanders and tried to outlaw their practices in the strongest terms:

Throughout the island, there are people called *yuta*. They give prayers to sick people and deceive others with fantastic stories. They also turn into deceased people and falsely tell their living acquaintances that [the deceased people] are causing problems [for them]. What is more, they have insisted that living spirits, dead spirits and [sacred] tree spirits are putting curses on people, they deceive women and the unwell, and they make people sacrifice cows, horses and pigs or snatch rice. They are still doing these things. [This is despite the fact that] there have been official prohibitions on this activity for a long time, which makes such people particularly reprehensible. From now on, we should give orders that *yuta* practices be stopped once and for all. Furthermore, if people disobey these orders, we should make sure that they are exiled to Yoroshima in Ōshima.<sup>28</sup>

On an island that by this time frequently experienced famine and was dependent on food imports from the mainland, the killing of cows, horses and pigs – the first two of which were also essential animal labour for driving the sugarcane rollers – was an egregious act of sabotage.<sup>29</sup> That the governor was also worried about the ‘fantastic stories’ and acts of shamanism, which were not unheard of in many other parts of Japan, suggests that *yuta* were also seen as a specific political threat, one deserving of exile to the closest large island.<sup>30</sup> Further on in the same source, the officials boast unconvincingly that they have eliminated all *yuta* practices on the island after making villagers submit pledges. This comes just after they complain about ‘outrageous’ *yuta* activities among those who had just been exiled to Yoroshima for that very crime. In this particular case, the otherness of Amami society

28 Report from 1849, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, p. 301. Translated by author.

29 This was also one reason why the arrival of western ships on Amami’s beaches in the nineteenth century alarmed the island officials; the westerners usually demanded a cow or other animal, despite the officials’ attempts to dissuade them or even pretend they had none.

30 Report from 1850, ‘Tokunoshima zenrokuchō’, in Matsushita (ed.), *Amami shiryō shūsei*, p. 301.

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and the rival epistemologies it contained had become a political threat at a time when the domain was attempting to maximise the productivity of the sugar industry and micro-manage islanders' lives.

This double-sidedness of economic exploitation and ethnic difference was intrinsic to the dynamics of Satsuma's sugar colony on Amami. Nonetheless, while politically powerful expressions of difference such as historic loyalties to Ryukyu or alternative religious authorities were targets for repression, other aspects of ethnic difference, and a strict boundary between indigenous islanders and Japanese samurai, were useful for the domain to maintain. Officials were replaced every one to three years to prevent corruption and intermixing, and while loyal islanders could be promoted to certain positions, even gain surnames and become honorary (but never hereditary) samurai, they mostly filled positions on a parallel, lower bureaucratic hierarchy that retained older Ryukyuan names such as *yobito* ('chief'). Ethnic difference also became useful for the domain when it wanted to display its symbolic power: the Shimazu lord periodically requested envoys from Amami to visit his castle in Kagoshima. On these occasions, the envoys were islanders who dressed in costume and presented local gifts such as *mushiro* straw mats, banana fibres and salted pork.<sup>31</sup> Little direct evidence exists, but these envoys may have been based on the Ryukyuan embassies to Edo, where Ryukyuan ethnicity and otherness were celebrated as proof of the shogun's universal authority over foreign kingdoms. The Amami version would have been far smaller, but the effect of having colonial subjects ostentatiously pay tribute would have been the same for the Shimazu lord as with the shogun. For the Shimazu, the performance of Amami's ethnic difference reflected the expansiveness of Satsuma's realm.

### Resistance and rebellion: The Intabu uprising of 1864

In the matters of ethnic difference and economic exploitation, the Amami islands were an early modern colony of Satsuma domain. If migration, escape and petition were unappealing or impossible, a final option for islanders was open rebellion. Satsuma domain, despite its harsh rule over peasants in its hinterlands, was notable for never having experienced a serious peasant uprising throughout the early modern period. The exception, however, was

31 Minowa, *Ōshima gokimochō kara miru amami kinseishi*, p. 43.

Tokunoshima, which experienced two serious uprisings against the exploitative sugar industry in 1805 and 1864. In the case of the latter, frustrations and resentment against the domain had become explosive. According to Nagoshi Mamoru, who has collected information related to this event, a seventy-year-old islander by the name of Fukujū had to cultivate 2,400 caddies of sugar on a small plot of land, but because his land was close to the sea it was frequently damaged by a salty breeze. He then endured a typhoon, followed by a drought. The officials relayed this information to the inspector, an apparently officious man by the name of Terashi, who made his inspection. Fukujū could only manage to produce around 1,200 caddies of sugar, roughly half of what he was meant to produce, but Terashi accused Fukujū of hiding sugar for himself or selling it privately. Both these severe offences could have warranted the death penalty. Fukujū's 38-year-old niece called Imori offered to sell herself into bondage in place of her uncle but to no avail. Terashi made Fukujū sit on firewood and placed stone mortars on his knees. He continued to place stones on Fukujū then imprisoned Imori and beat her with a large wooden pole. The villagers who witnessed this decided to arm themselves with thin sticks (used for making thatched roofs) and about 150 of them rushed the office, freeing Imori. The officials in the office escaped to Isen, before riding on horses to Kametsu. Meanwhile, the Intabu villagers armed themselves with hunting poles, knives and bamboo spears, led by a harbour inspector, Gisen.<sup>32</sup> The samurai officials decided not to confront the protestors directly. Instead, they stayed in the neighbouring village of Agon and gathered information about the seven ringleaders. These included sugar assistants – indigenous Amami islanders who were supposed to be on the side of the officials. The investigating samurai compiled this wanted list and spread it throughout the island.

The ringleaders escaped by boat, probably intending to deliver their petition directly to the domain in Kagoshima. Among the 150 rebels were probably *yanchu*, the name given to indebted sugarcane labourers who were directly employed by wealthier households (in Tokunoshima they were called *chikube*). The rebellion eventually died down, and some of the leaders who had fled by boat were blown back by winds onto the shores of Yonama in Tokunoshima's northwest and apprehended by an islander. Samurai officials released most of the Intabu rebels on condition that they laboured hard in the

32 Nagoshi Mamoru, *Amami no saimu dorei yanchu* (Kagoshima-shi: Nanpō Shinsha, 2006), pp. 166–67.

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fields and worked for three years repairing the roads between Agon, Shikaura and Asan on the island's southern coast. In total, the rebellion lasted eight days. Three of the leaders were exiled to Ōshima, two to Okinoerabu, and one to Yorontō. Terashi, the high-handed official whose actions had provoked the rebellion, was recalled by the domain. The young niece who was beaten, Imori, was apparently sent to the volcanic, Iōtorishima, 65 kilometres west of Tokunoshima. This story seems unlikely, but Imori herself lived until she was 83 and died in 1908.<sup>33</sup> Despite the violence involved, the Intabu uprising was said to have led to a loosening of Satsuma's sugar policies. In 1964, the 100th anniversary of the Intabu uprising, a monument was established to commemorate it; next to the monument is the grave of Imori. According to the monument, in 1876 some of the perpetrators were given amnesty. It is worth remembering that the trigger for this violent series of events was heavy-handed officialdom in response to a series of natural disasters affecting the sugar harvest.

## Conclusion

A short summary of these different aspects of the sugar complex on Amami shows how much it rested on a geography that rendered islanders vulnerable to economic coercion. Ethnic difference was also a factor, being sometimes an opportunity and sometimes a threat to the domain and creating a colonial hierarchy between rulers and ruled. While contemporary UNESCO designations may try to ossify landscapes and biomes in the name of conservation, a historical perspective shows the natural environment of the Amami islands to have been unstable, subject to disaster and catastrophe, and responsive to the political and economic decisions of human actors. The early modern sugar industry on the Amami islands was a human invention that unfolded within the islands' natural limits, but ultimately at great cost to the wellbeing and living conditions of the islands' inhabitants. The fields of cane and refining huts did not just make sugar; they also made life patterns and a particular social universe that was vulnerable to environmental shocks and the whims of officious administrators. Other examples of sugar industries in mainland Japan and beyond show that political coercion and economic precarity were not intrinsic to the making of sugar; any explanation of how

33 Ibid., p. 169.

the Amami sugar complex came about and sustained itself must include these peculiarities of geography, environment and political circumstances.

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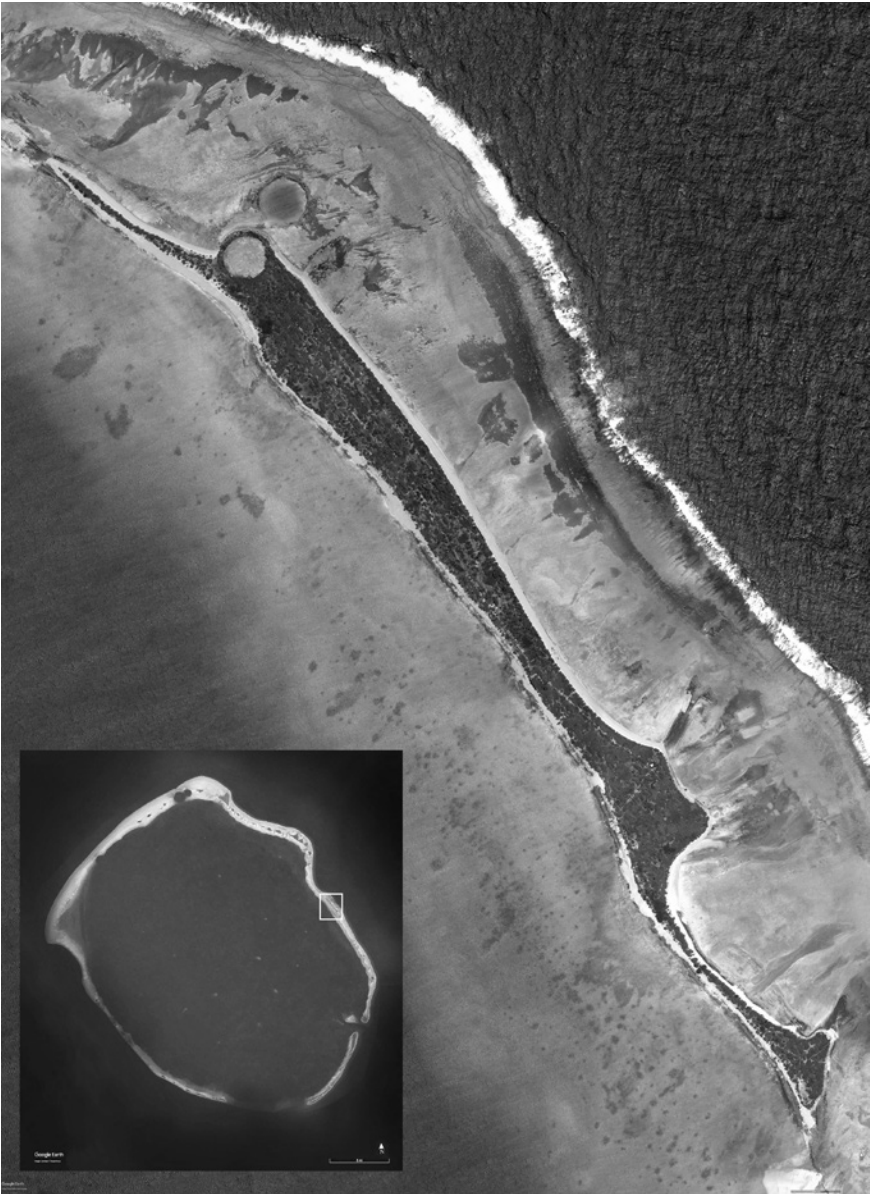


## 8. Expendable Enewetak:

### An Environmental History of a Cold War Islandscape

Todd A. Hanson

*Few places on our planet have been as rapidly and violently reshaped by human activity as Enewetak Atoll in the Republic of the Marshall Islands. Bulldozed clear of its indigenous flora, pounded by unearthly atomic explosions and polluted with lethal radioactive fallout – all within a decade – Enewetak exists as the epitome of wilful human devastation. As a landscape archaeologist, I study how and why past generations of humans have modified and used their environments. I was drawn to study Enewetak Atoll by the unprecedented speed and magnitude of the environmental change caused it by twentieth-century American scientific experimentation. My chapter attempts to reimagine the once idyllic atoll in its former and potential future beauty, revealing what it once was in the undisguised hope against hope that those whose ancestors were responsible for its disgraceful destruction might help make it a paradise once again.*



**Figure 1.**  
Runit Island as seen from 768 kilometres above. Inset image shows location of Runit on Enewetak Atoll.  
Source: Google Earth.

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Viewed from high above, Runit Island resembles a giant primordial billfish. Beached on its side, its long sand bill juts out to the northwest as its tail droops to the southeast. A thin strand of white sand delineates its ghostly contours and its one dead grey eye, pupilless and unblinking, stares upward into space. As one of 40 islets comprising Enewetak Atoll in the Republic of the Marshall Islands, Runit (pronounced roon-it) arcs across Enewetak's coral reef flats for three kilometres. On an atoll where island lengths average 800 metres, Runit is Enewetak's second longest island. On the ground, Runit's grey eye becomes the Cactus Dome, a 114-metre-wide repository containing 75,000 cubic metres of Cold War nuclear weapons testing waste. Collected from across the atoll, the radioactive detritus was dumped into the crater created by the 1958 Cactus nuclear detonation of Operation Hardtack and capped with concrete in 1980 to create the dome.

As strange a place as it may seem to be for a nuclear waste dump, Runit is not unique in the global history of Cold War nuclear weapons testing. From the Marshall Islands atolls used by the United States to the former Soviet Union's use of Novaya Zemlya Island and the United Kingdom's use of the Monte Bello Islands, testing nuclear weapons on islands was a common Cold War strategy. In fact, nearly half of the 26 nuclear weapons testing sites established during the era were on islands. Serving as outdoor laboratories for large-scale scientific experimentation, islands were often selected, as I posit here, because they shared four common attributes favourable to nuclear weapons testing: isolation, seclusion, accessibility and tractability. The natural isolation that islands offered was useful in keeping away anyone not involved in the secret work. Seclusion also helped protect nuclear secrecy by keeping the workers apart from other people. The accessibility of island sites aided both the delivery of the large quantities of materials needed for testing and the security and defence of scientific workers and work. The tractability of the island's native inhabitants was often critical to occupying these territories for nuclear testing. Smaller island nations were generally unable to actively oppose the formidable political and economic will of larger nations.

Although no island (or atoll) used for nuclear weapons testing escaped that use without damage, nowhere was Cold War nuclear devastation better exemplified than at Enewetak Atoll. Preceded by atomic tests at the Trinity Site in New Mexico and Bikini Atoll in the Marshall Islands, Enewetak (or Ānewetak to the Marshallese) became the world's first and most extensively used nuclear weapons testing site. In its day, the destruction of the atoll's ecosystem was an unparalleled act of Cold War hubris. Leaving

the atoll poisoned with radioactive contamination added insult to injury.

Environmental histories of the Cold War are rare but not without precedent. McNeill and Unger offer a collection of essays examining links between the Cold War and the global environment as clashes between the ideological and the material.<sup>1</sup> Pitting the cultural, material and psychological resources of the United States and its allies against the Soviet Union created a conflict that played out against the global politics of decolonisation and nationalism with potential environmental repercussions lasting a hundred thousand years. A central lesson from the volume is that many of the Cold War's political and military legacies have yet to be fully resolved in history and their accompanying environmental consequences understood. A chapter by Merlin and Gonzalez illustrates broadly some of the atmospheric, geological and ecological effects of American, British and French nuclear testing in Oceania, including the Marshall Islands.<sup>2</sup>

In this chapter, I look specifically at the environmental history of Enewetak Atoll as an islandscape. Delineating the Atoll's pre-colonial environment and transformative early twentieth-century colonial history as background, my focus is on the history of American Cold War nuclear weapons testing and the enduring materialities and physical consequences of that testing on Enewetak. Along the way, I show how Enewetak came to be emblematic of the United States' formidable weapons of mass destruction while simultaneously seeming to be expendable to that nation.

## Islandscapes defined

Cold War nuclear weapons testing in the Pacific created materialities and consequences that extended far beyond Enewetak's islands to include its reefs and lagoons, and the surrounding ocean. The breadth of these environments challenges us to consider the integrative nature of land and sea, which have been historically described as either landscapes or seasapes. A fusion of these entwined terrestrial and marine environments might be better described as an islandscape. Framed in a broad sense as nonspecific

- 1 J.R. McNeill and Corinna Unger, *Environmental Histories of the Cold War* (Washington, DC: Cambridge University Press, 2010).
- 2 Mark D. Merlin and Ricardo M. Gonzalez, 'Environmental Impacts of Nuclear Testing in Remote Oceania, 1946–1996', in *Environmental Histories of the Cold War*, pp. 167–202.

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anthropogenic biomes of undefined dimensions, islandscapes incorporate the terrestrial components of an island with its surrounding maritime environs. By including biological, ecological, geographical, geological, socio-economic and cultural attributes, the term creates an identity that subsumes any single island, island chain or atoll.

The term was coined as a portmanteau of 'island' and 'landscape' by Classical archaeologist Cyprian Broodbank during his work in the southern Aegean islands where he observed that Cycladic island cultures often extended beyond the terrestrial limits of their islands. To Broodbank, an islandscape consisted of an island and other nearby islands or mainland, as well as the intervening or surrounding sea. Using 'the island' as a primary or exclusive geographic unit of inquiry, Broodbank argued, was a visually imposed view; a single point on a potentially wider spectrum of relevant spatial, temporal, cultural, economic, social and political contexts.<sup>3</sup> The islandscape concept extends one or more of these contexts beyond the physicality of an island, or in Enewetak's case, of an atoll. Describing and conceptualising Enewetak Atoll as an islandscape also comes rather naturally considering the multiple islands that make up its whole. Underlying Enewetak's environmental history as an islandscape are ecological, geographical, geological, socio-economic and cultural attributes that help describe the atoll prior to Western contact.

### Enewetak Atoll described

Prior to Western contact, it was difficult not to describe Enewetak Atoll as a paradise. Its azure lagoon, flourishing coral reefs and almost 200 kilometres of white sand beaches encircling forty verdant tropical islands created an idyllic islandscape that was more than 100 million years in the making. By looking at the atoll's ecological history through the lens of natural history studies and early twentieth century colonial records, it is possible to see the extent of biological and cultural diversity lost to nuclear weapons testing.

Enewetak Atoll lies in the western Pacific Ocean at the north-western end of the Republic of the Marshall Islands (RMI) Ralik chain. The RMI encompasses more than 1.9 million square kilometres with a total land area of just 181 square kilometres. Its 29 atolls and five lone islands have a mean

3 Cyprian Broodbank, *An Island Archaeology of the Early Cyclades* (Cambridge: Cambridge University Press, 2000), p. 22.

elevation of just two metres. Enewetak Atoll comprises 869 square kilometres, in which its roughly six square kilometres of lands encircle a lagoon 37 kilometres in diameter. The atoll's highest elevation is just five metres above current ocean levels.

Enewetak Atoll originated on a flat-topped basaltic seamount (called a guyot) created by mid-Cretaceous period volcanism approximately 125 million years ago. Continuous carbonate sedimentation began on the roughly 2,000 square kilometre guyot in the late Eocene (40 million years BP) with a coral reef 'crown' emerging from the ocean in the early Miocene (23 million years BP) period as the Atoll's first islands.<sup>4</sup> Lying at a depth of 1,400 metres below the ocean's surface, the top of the Enewetak guyot itself is more than 3,600 metres above the surrounding ocean floor.<sup>5</sup> *Halimeda* coral, a thick carbonate rock, caps the guyot at a depth of fifty metres below the ocean surface. Overlying this *Halimeda*, other *Scleractinian* (stony) corals have created the reefs that millions of years of wave and wind erosion have pulverised into the white sand islands of Enewetak.

When mapped by the USS *Bowditch* in 1944, the last significant bathymetric survey of the atoll, Enewetak Atoll lagoon was described as a gigantic shallow bowl consisting of four general geomorphic features: barrier reef flats, reef channels, pinnacle reefs and lagoon basin. Except for the northwest side of the atoll, where the steep vertical drop from the reef flat to the lagoon bottom was 36 metres, the lagoon basin gradually sloped down from the barrier reef flats to an average lagoon depth of 55 metres and a maximum depth of 62 metres. While nearly flat, the gently undulating lagoon basin featured a dozen large and hundreds of smaller pinnacle reefs and coral knolls from one-half to seven metres in height.<sup>6</sup> Deeper in its northern half, Enewetak lagoon is relatively deep compared to other similar Pacific atoll lagoons. Submerged at depths from one to eighteen metres,

4 Roger L. Larson, 'The Mid-Cretaceous Superplume Episode', *Scientific American Special Editions* 15 (2005): 22–27; Arthur H. Saller and Richard B. Koepnick, 'Eocene to Early Miocene growth of Enewetak Atoll: Insight from Strontium-isotope Data', *Geological Society of America Bulletin* 102 (1990): 381–90.

5 James R. Hein, Florence L. Wong and Dan L. Mosier, *Bathymetry of the Republic of the Marshall Islands and Vicinity. U.S. Geological Survey Miscellaneous Field Studies Map MF 2324*, Version 1.3 (2007).

6 Kenneth O. Emery, 'Submarine Geology of Bikini Atoll', *Bulletin of the Geological Society of America* 59 (1948): 855–60; Llewellyn Hillis-Colinvaux, 'Halimeda Growth and Diversity on the Deep Fore-reef of Enewetak Atoll', *Coral Reefs* 5 (1986): 19–21.



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Enewetak's reef flats varied in width from several hundred metres to more than three kilometres across. Three deep water channels of various depths and widths cut passages through the barrier reef from the ocean into the lagoon.<sup>7</sup> Water currents in the lagoon were, and continue to be, influenced primarily by ocean water flowing over the low north-eastern reefs and in through the East Channel and Southwest Passage and out through the South Passage.<sup>8</sup> These cross-reef currents would have significant consequences for the diffusion of radioactivity during nuclear weapons testing.

Prior to twentieth-century Western contact, the flora and fauna of Enewetak Atoll lagoon thrived. Although there were no seagrasses or mangroves, more than 200 species of algae lived alongside at least fifty species of invertebrates and 800 known species of fish in the lagoon's ecological community. Sharks were the apex predator, with blacktip reef sharks found on the reef flats and whitetip reef sharks occupying the main reefs and sandy near-shore areas. Lemon sharks populated shallower lagoon waters, while silvertip sharks inhabited the atoll's seaward slopes along with grey sharks, which frequented the lagoon but were more abundant on the seaward reef.<sup>9</sup>

Although the islands of Enewetak Atoll provide less than six square kilometres of terrestrial living space, in the pre-Western contact context these spaces literally flourished with flora and fauna. *Scaevola* and *Messerschmidia*, growing three to five metres tall, thrived alongside dozens of other plant species, including pandanus, breadfruit and coconut palm trees. American botanist Harold St. John would eventually record more than 95 plant species on Enewetak Atoll, including trees, weeds, grasses, legumes and cultivated crops like taro.<sup>10</sup>

The fauna of Enewetak Atoll prior to Western contact included crustaceans,

7 Kenneth O. Emery, Joshua I. Tracey and Harry S. Ladd, 'Geology of Bikini and Nearby Atolls. Part 1: Geology', *U.S. Geological Survey Professional Paper 260-A* (Washington D.C.: United States Geological Survey, 1954).

8 Bruce R. Wardlaw, Thomas W. Henry and Wayne E. Martin, 'Sediment Facies of Enewetak Atoll Lagoon. Geologic and Geophysical Investigations of Enewetak Atoll, Republic of the Marshall Islands', *U.S. Geological Survey Professional Paper 1513-B* (1991); Robert W. Buddemeier, Stephen V. Smith and Robert A. Kinzie, 'Holocene Windward Reef-flat History, Enewetak Atoll', *GSA Bulletin* **86** (11) (1975): 1581–84.

9 Patrick Colin, 'Subtidal Environments and Ecology of Enewetak Atoll', in *The Natural History of Enewetak Atoll. Volume I. The Ecosystem: Environments, Biotas, and Processes*, ed. by Dennis N. Devaney, Ernst S. Reese, Beatrice L. Burch, and Philip Helfrich (Oak Ridge, TN.: U.S. Department of Energy OSTI, 1987), pp. 91–138.

10 Harold St. John, 'Flora of Enewetak Atoll', *Pacific Science* **14** (4) (1960): 313–36.



reptiles, birds and mammals. Indigenous to the atoll's beaches were several species of crustaceans, including coconut crabs (*Birgus latro*), the largest terrestrial arthropod in the world, which served as an important pre-contact food source. Seven species of non-indigenous reptiles arrived sometime in the previous millennia.<sup>11</sup> The birds visiting or nesting on Enewetak Atoll included species from a dozen different families.<sup>12</sup> Mammals were late comers to the atoll, including *Homo sapiens*, who brought with them the domestic pig (*Sus scrofa domesticus*) and the Polynesian rat (*Rattus exulans*). Domestic dogs (*Canis familiaris*) and cats (*Felis catus*) most likely arrived with Europeans in the nineteenth century. *Mus musculus*, the house mouse, and the black rat (*Rattus rattus*) did not arrive until the early twentieth century.<sup>13</sup>

Although the cultural history of the Enewetak people is better told elsewhere, certain cultural facts are germane to the atoll's environmental history.<sup>14</sup> For at least 1,000 years before Western contact, Enewetak was home to a functional preliterate society with established foodways, sophisticated property ownership practices, exceptional nautical navigation capabilities and deep spiritual and ancestral connections to the atoll. Relying upon both marine and agricultural resources for subsistence, the people of Enewetak gathered breadfruit, pandanus, coconuts, swamp taro and other vegetable foods, while fishing on the reef flats, in the lagoon and on the ocean beyond. Supplementing their diets with turtle and seabird eggs, they also used various

- 11 H.I. Fisher, 'Locality Records of Pacific Island Reptiles and Amphibians', *Copeia* (1) (1948): 69; Janet O. Lamberson, 'Reptiles of Enewetak Atoll', in *The Natural History of Enewetak Atoll. Volume II. Biogeography and Systematics*, ed. by Dennis N. Devaney, Ernst S. Reese, Beatrice L. Burch and Philip Helfrich (Oak Ridge, TN.: U.S. Department of Energy, OSTI, 1987), pp. 325–30.
- 12 Andrew J. Berger, 'Birds of Enewetak Atoll', in *The Natural History of Enewetak Atoll. Volume II. Biogeography and Systematics*, pp. 331–32.
- 13 Ernst S. Reese, 'Mammals of Enewetak Atoll', in *The Natural History of Enewetak Atoll. Volume II. Biogeography and Systematics*, pp. 333–35
- 14 See Jack Adair Tobin, 'The Resettlement of the Enewetak People A Study of a Displaced Community in the Marshall Islands', Unpublished Ph.D. diss. University of California, Berkeley, 1967. Dissertation Abstracts International, 28(10-B), 3982; Robert C. Kiste, 'History of the People of Enewetak Atoll', in *The Natural History of Enewetak Atoll. Volume I: The Ecosystem: Environments, Biotas, and Processes*, ed. by Dennis N. Devaney, Ernst S. Reese, Beatrice L. Burch and Philip Helfrich (Oak Ridge, TN.: U.S. Department of Energy OSTI, 1987), pp. 17–26; Laurence M. Carucci, 'The Transformation of Person and Place on Enewetak and Ujelang Atoll', in Victoria Lockwood, *Globalization and Culture Change in the Pacific Islands* (Upper Saddle River, NJ: Prentice Hall, 2004), pp. 414–38.

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indigenous plants in the preparation of medicines.

### Five centuries of colonial subjugation and pollution

The history of Enewetak Atoll's subjugation by foreign powers began with Spanish explorer Alvaro de Saavedra's visit in October 1529, where he named the atoll *Los Jardines* (the gardens) on account of its beauty and the affability of its inhabitants. Visits by no less than four more Spanish explorers over the next forty years helped establish the atoll as a Protectorate of the Spanish Empire.<sup>15</sup> Over the next 225 years, no other European contacts with the atoll were recorded until December 1794, when Captain Thomas Butler of the British East India Company sloop *Walpole* encountered the atoll while searching for a faster way to China.<sup>16</sup> In 1885 Spain sold the Marshall Islands to the German Empire, who entrusted their governance to The Jaluit Company, a German corporation. The environmental impacts of German rule were minimal compared to later occupations, with the most significant impact being a Jaluit Company contract with Enewetak residents to increase plantings of coconut palms for the copra trade.<sup>17</sup> The nineteenth-century Pacific copra trade itself was relatively sustainable since it involved preindustrial processes for harvesting dried sections of coconut, specifically the kernel of the coconut palm (*Cocos nucifera*) fruit, which were used by Pacific island cultures long before becoming a popular commercial product of European merchants.

German rule of Enewetak Atoll was brief: the empire lost its Pacific possessions to the Empire of Japan after World War One. Entrusted in 1920 by a League of Nations mandate to the Empire of Japan, Enewetak was all but closed off to the outside world as the Japanese military began to

15 These visitors included Ruy López de Villalobos in 1543, Alonso Arellano in 1565, Miguel Legazpi in 1565, and Alvaro Mendaña in 1568. See Max Quanchi and John Robson, *Historical Dictionary of the Discovery and Exploration of the Pacific Islands* (Lanham, MD: The Scarecrow Press, 2005), p. 107; and Ione Stuessy Wright, *Voyages of Álvaro de Saavedra Cerón 1527–1529* (Coral Gables, Florida: University of Miami Press, 1951).

16 Samuel Eliot Morison, 'Historical Notes on the Gilbert and Marshall Islands', *The American Neptune* IV (1944): 87–118.

17 Kiste, 'History'; Francis X. Hezel, *Strangers in Their Own Land A Century of Colonial Rule in the Caroline and Marshall Islands* (Honolulu: University of Hawai'i Press, 1995).

fortify many of the atolls.<sup>18</sup> The occupation brought with it an industrialised militarisation that increased the potential for environmental damage to the atoll's fragile ecosystems: petrochemical fuels, metal building materials, electronics and munitions became sources of pollution. While fortifying Enewetak Atoll, Japanese soldiers removed the ends from empty steel fuel drums and buried the drums horizontally underground one after another to create an improvised network of tunnels. Zigzag trenches were dug across the soon-to-be battlefields and an airfield was built on Enjebi Island. Japanese Type 95 *Ha-Go* tanks were buried on beaches up to their turret to create stationary 37 mm gun emplacements. In preparing for a war that eventually came, the atoll's environment became expendable.

During World War Two, the use of small arms, explosives, flamethrowers, planes, tanks and other weapons on the atoll contaminated the soil and water with heavy metals, petrochemicals, nitrates and other hazardous materials, including asbestos. The *Ha-Go* tank interior had thick asbestos padding on its floor and walls to help insulate the crew from the tank's armour plating, which could be scorching when the tank operated in tropical climates. While exposing tank crews to the risk of asbestosis, asbestos would also scatter onto the island environment if the tanks were damaged or destroyed in battle.<sup>19</sup> Diesel oil leaking from plane crashes and sunken ships contaminated the lagoon.

The American occupation of Enewetak Atoll began with the capture of the atoll in World War Two.<sup>20</sup> The United States' post-war presence on Enewetak was legitimatised on 18 July 1947, when the US assumed dominion over the RMI under a United Nations trusteeship as the Trust Territory of the Pacific Islands. On 21 December 1947, the United States Navy relocated the atoll's entire indigenous population of 142 residents (the *dri-Enewetak* and *dri-Enjebi*) to Ujelang Atoll. The occupation of Enewetak epitomised the four attributes of isolation, seclusion, accessibility and tractability deemed common to nuclear testing sites and favourable to nuclear weapons testing work. Lying 500 kilometres from the nearest atoll (Bikini) and 3,500 kilometres from the nearest continent (Australia), Enewetak of-

18 Hezel, *Strangers*, p. 187.

19 US War Department, 'Japanese Light Tank', *Tactical and Technical Trends*, No. 31, 12 August 1943, pp. 11–14.

20 Gordon Rottman and Howard Gerrard, *The Marshall Islands 1944: Operation Flintlock, the Capture of Kwajalein and Eniwetok* (Oxford: Osprey Publishing, 2004).

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ferred the isolation and seclusion that kept outsiders away from the highly secretive work and natural water barriers that kept camps of workers apart from each other. With deep ocean surrounding the atoll in all directions and channels that allowed cargo ships access to the lagoon, the delivery of the large quantities of personnel, heavy equipment and materials needed for testing was straightforward. And although the deaths of 5,000 World War Two soldiers in the Marshall Islands, including 313 who died fighting on Enewetak Atoll, might have been sufficient rationale for the occupation as spoils of war, America's dominion over the Marshall Islands under the United Nations trusteeship depended heavily upon the tractability of the native population. Having had a ringside seat to the conflict, the Marshallese people likely felt unable to actively oppose the overwhelming military, political and economic will of the United States. So, during what would become a 33-year-long exile for the native people of Enewetak, the United States would reshape the atoll without consent: stripping away its indigenous flora, transforming its topography and polluting the entire island landscape with radioactive fallout and waste.

### Nuclear weapons testing

When nuclear weapons testing began at Enewetak Atoll, lifeways that had existed for centuries, surviving even under colonial rule, were permanently disrupted. As it would be impractical to try to enumerate all the physical changes made to the atoll during nuclear testing, this section describes five American nuclear weapons testing operations that define the environmental history of the atoll and its seemingly expendable nature.

From 1947 to 1958, what would become known as the United States Pacific Proving Grounds (PPG) bustled with the scientific and technical efforts of more than 45,000 men drawn from the Atomic Energy Commission, all branches of the Department of Defence, 21 American research laboratories, ten universities and eight corporations.<sup>21</sup> Organised under a confederation known as Task Force 7, they required an infrastructure capable of feeding and housing tens of thousands of personnel dependably,

21 Todd A. Hanson, *The Archaeology of the Cold War* (Gainesville: University Press of Florida, 2016); Hanson, 'Islands of The Bomb – (Re)Imagining Bikini Atoll through Archaeologies of Cold War Occupation and Destruction', *RSA Journal: Rivista di Studi Americani* 31 (1) (2020): 15–32.

economically and synchronously. Meals were served in mess halls built in work camps constructed on islands close to work sites. Some workers lived in single storey aluminium dormitories, while most occupied canvas tents. The nuclear testing work of Task Force 7 required the construction of laboratories and scientific stations ranging from reinforced concrete instrument bunkers to steel lattice shot or 'zero' towers. The PPG work also required a robust transportation infrastructure that included building roads, airfields, helicopter pads, piers and causeways between islands. It was a diversity of architecture that evolved and increased exponentially with each new nuclear weapon test series.<sup>22</sup>

The first substantive use of Enewetak Atoll for nuclear weapons testing came with the 1948 Operation Sandstone tests, which would lay the foundation for a decade-long occupation of the atoll. Construction began in the autumn of 1947 with the bulldozing of Aomon, Enjebi and Runit islands clear of vegetation for the erection of three 61-metre-high shot towers, each topped with a 'cab', a large steel compartment housing the nuclear device and instrumentation. On Enjebi Island, four reinforced concrete scientific stations were built. Gamma radiation-reading film badges and neutron detectors were placed in these structures, making them the world's first stations built at the PPG specifically to study the radiation effects of nuclear weapons. On Enewetak Island, living quarters and mess facilities left over from WWII were rehabilitated or razed to create space for constructing new buildings.<sup>23</sup>

The Operation Greenhouse tests in April and May of 1951 included the construction of four large shot towers and more than 700 scientific stations on Runit, Eberiru and Enjebi to support the nuclear tests code-named Dog, Easy, George and Item. Some stations were as simple as a steel pipe buried upright in the sand, while others were the size of small houses. Greenhouse also witnessed the permanent establishment of Medren (Parry Island) on Enewetak Atoll as the administrative centre of the PPG with the construction of more than 500 administrative and support buildings. With the Greenhouse tests focused on exploring scientific principles

22 Todd A. Hanson, 'The Ephemeral and the Enduring: Trajectories of Disappearance for the Scientific Objects of American Cold War Nuclear Weapons Testing', *Teorie Vědy* 38 (2016): 279–99.

23 L.H. Berkhouse, S.E. Davis, F.R. Gladeck, J.H. Hallowell, C.B. Jones, E.J. Martin, F.W. McMullan, M.J. Osborne and W.E. Rogers, *Operation Sandstone: 1948, DNA 6033F* (Santa Barbara, CA: Kaman Tempo, 1983)

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leading to hydrogen bomb development, the US presence on Enewetak was firmly established.

The Mike and King nuclear weapons tests of Operation Ivy in 1952 produced, respectively, the world's first detonation of a thermonuclear device and the highest yield nuclear fission explosion up to that point. As the first nuclear weapons test to raze an entire island, the Mike detonation on 31 October created a crater almost two kilometres wide and 56 metres deep where the northern island of Elugelab had once been. Dropped as a bomb, the King nuclear device detonated over Runit at an elevation of 450 metres, obliterating what was left, if anything, of the island's native vegetation. During Ivy, instruments for measuring and recording nuclear and thermal radiation, blast pressures, wind speeds and electromagnetic fields were installed across what was already an islandscape of more than a thousand scientific stations. New scientific stations supporting animal studies were built, as were fallout stations for collecting data on the diffusion of the radioactive particles produced by nuclear explosions. A 2.7-kilometre-long, twelve-metre-wide causeway was built between the four far northern islands of Elugelab, Dridrilbwij, Bokaidrikdrik and Boken using one million cubic metres of coral mined from the reef and sand dredged from the lagoon.<sup>24</sup> Just weeks after it was completed, most of the causeway was obliterated by the Ivy Mike nuclear test.<sup>25</sup>

Eleven nuclear weapons tests were conducted in 1956 as Operation Redwing. Each Redwing test caused increasingly more physical and radiological damage to the islandscape. Runit Island was used four more times during Redwing: for the Lacrosse nuclear test (shown in Figure 2) detonated on a platform built on the reef flat; for the Blackfoot and Erie tests on shot towers; and for the Osage air drop, which detonated just 210 metres above the island. By 1956, Runit was home to more than 190 scientific stations. Redwing's Yuma, Kickapoo, Inca and Mohawk tests were conducted on the atoll's northern islands of Aomon, Rujoru and Ebiriru, respectively. The Apache and Huron detonations were detonated on barges anchored over the Ivy Mike Elugelab crater. Meanwhile, the extensive and expensive improvements being made to structures and infrastructure on Enewetak's

24 Holmes & Narver, *Completion Report for Enewetak Proving Ground Facilities—Operation Ivy. Vol. 1* (Los Angeles: Holmes & Narver Inc., 1953).

25 In the vernacular of nuclear weapons testing, the name of a test series is often combined with the name of the test to produce a specific designation: i.e., the Mike test of Operation Ivy is often referred to simply as Ivy Mike.





**Figure 2.** Looking north on Runit Island in April 1956 at preparations for the May 5 Operation Redwing Lacrosse nuclear test. The concrete structure in the middle left is Scientific Station 1310, an Alpha Recording Station. In the upper right is Station 24 at ground zero. A steel pipe array leads from Station 24 back to the Station 1310, providing a vacuum environment for neutron measurements.

Source: US National Archives (ID 146763578).

southern islands signalled plans for an even more extensive and sustained future use of the PPG.<sup>26</sup>

Running throughout the summer of 1958, Operation Hardtack was

26 Holmes & Narver, *Completion Report for Eniwetok*.



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America's longest, largest, and last Cold War nuclear weapons test series at the PPG. Twenty-two tests code-named, quite ironically, for some of the world's most beautiful plants, including the magnolia, pisonia and rose, would contribute only minimally to the atoll's structure count, but added substantially to the accumulative radioactive contamination of the Enewetak islandscape. Runit Island bore the brunt of the tests with three detonations conducted on the island (Cactus, Quince and Fig), and seven on barges (Butternut, Holly, Magnolia, Rose, Linden, Sequoia, Scaevola and Pisonia) anchored in the lagoon within a few thousand metres of the island.<sup>27</sup> When the nuclear explosions finally stopped in 1958, only their consequences remained.

### Materialities and consequences

The materialities and consequences of Cold War nuclear weapons testing exist in the physical remains of that testing. Ranging from massive indestructible concrete structures down to invisible radioactive atoms, they are persistent, hazardous and complex. Likewise, the loss of *dri-Enewetak* and *dri-Enjebi* traditional lifeways, the destruction of their culture and cultural artefacts and the psychological and sociological harm they suffered from the ruination of their homeland is irreparable, deplorable and simply tragic. None of these nuclear testing effects are easily or quickly remediated.

The materialities of nuclear weapons testing that uglified Enewetak Atoll include what remains of the more than 1,500 structures the US built in addition to creating airfields, causeways, coral mine pits, piers, roads and, of course, blast craters. Dozens of these structures were steel reinforced concrete scientific stations like Station 1310 (pictured in Figure 2), which was one of the atoll's largest at 1,776 cubic metres. During Redwing, more than 200,000 sacks of Portland cement and 2,757 tonnes of reinforcing steel was used to create structures capable of withstanding humankind's most powerful explosions.<sup>28</sup> Interminably slow to decay, most of these structures are now overgrown with native vegetation, which not only hides them from casual view but also helps protect them from weathering and disintegration.

In the soil surrounding these structures, spread across beaches and reef

27 US Department of Energy, *United States Nuclear Tests July 1945 through 1992*. DOE/NV-209, Rev. 16 (2015), pp. 10–12.

28 Holmes & Narver, *Completion Report Operation Redwing 1954–1956* (Los Angeles: Holmes & Narver Inc., 1956), pp. 1–15.

flats, and nestled in the sediments of the lagoon basin lies an invisible materiality of Cold War nuclear weapons testing: radioactive contamination. The radiological pollution of the atoll was as extreme as one would expect for the number of nuclear tests conducted. The close-in fallout resulting from those nuclear tests, or from the decay of original radionuclides, includes isotopes of americium, bismuth, caesium, plutonium, strontium, uranium and radium in varying concentrations and in various locations.<sup>29</sup> Despite seven decades of continuous radioactive decay, and a clean-up completed in 1980, the radiological contamination of the atoll remains an existential threat to Enewetak's residents.

The immediate consequences of detonating a nuclear device on Enewetak Atoll were the detonation's momentary and transient physics effects. As a fireball of superheated air grew in seconds from a single fission reaction to a white-hot sphere more than a thousand metres in diameter, the materials that made up the nuclear device, its cab and tower were vaporised. A shock wave followed the birth of the fireball, rushing out from ground zero at speeds approaching 1,000 km/h. In a few seconds more, any birds, fish, insects or other organisms within a kilometre radius of ground zero perished as the tens-of-million-degree Celsius heat boiled lagoon waters, incinerated flora and fused the coral sand into glass. Gamma and neutron radiation rose to lethal levels. As the fireball reached its maximum size and started to cool, its water and chemical vapours began to condense, forming a reddish-brown mushroom cloud coloured by the solid particles of weapon debris, rock, dirt and other debris that were drawn up into the cloud from the ground. The fireball would disappear in seconds, but the mushroom cloud would dissipate over the hours following the detonation.<sup>30</sup>

Other nuclear testing effects were much more enduring. A single explosion destroyed Elugelab Island and damaged three other islands. Other detonations left craters on islands and reefs, and in the lagoon floor. Hours after the explosions the rock, dirt and radioactive weapon debris in the mushroom cloud rained back to earth as radioactive fallout, making many of Enewetak's islands too contaminated to be habitable. Assessments show that, of the roughly six square kilometres of land constituting the atoll prior to nuclear

29 Ken O. Buesseler, Matthew A. Charette, Steven M. Pike, Paul B. Henderson and Lauren E. Kipp, 'Lingering Radioactivity at the Bikini and Enewetak Atolls', *Science of the Total Environment* 621 (2018): 1185–98.

30 S. Glasstone and Philip J. Dolan, *The Effects of Nuclear Weapons* (Washington D.C.: United States Department of Energy, 1977).

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testing, less than half was available for safe use when the Enewetak people returned in 1980. After 43 nuclear devices were detonated at Enewetak, approximately 384 of the atoll's original 776 hectares were contaminated by radionuclides or otherwise made unsafe for occupancy, leaving roughly 330 hectares (42 per cent) available for habitation. The other 62 hectares had been destroyed or inundated.<sup>31</sup>

In the years following the end of nuclear testing, biologists discovered that the most significant long-term effects of the nuclear testing programme on Enewetak's flora were those resulting from the removal of the island's topsoil and vegetation by bulldozers, nuclear detonations and ocean wave inundations. While nuclear detonations and the resulting wave inundations were rapid destructive events, preparations for nuclear testing had slowly reshaped the atoll through deliberate destructive actions. Both activities led to the loss of organic matter, inorganic nutrients and water retention capabilities of the soil, with more profound negative effects on the vegetation than even the presence of radioactivity. Research revealed that some plants more marginally exposed to nuclear tests could recover quickly. *Scaevola taccada* and *Messerschmidia argentea* showed new leaves in weeks and produced flowers and fruits in a month's time, although abnormalities, including colour aberrations, growth irregularities, abnormal fruits and flowers, tumours and seed sterility were also discovered.<sup>32</sup>

The long-term after-effects of nuclear weapons testing on the Enewetak fauna were less obvious. Although many fish, birds, insects and land animals were likely killed directly by the detonations, those losses have never been quantified. One unexpected consequence of nuclear testing on the fauna was the disruption in the food web caused not only by the nuclear detonations, but by the absence of humans from the atoll's biota during testing. Merlin and Gonzalez explain:

31 Salvatore Lazzari, *Loss-of-Use Damages from U.S. Nuclear Testing in the Marshall Islands: Technical Analysis of the Nuclear Claims Tribunal's Methodology and Alternative Estimates* (Congressional Research Service Report for Congress. Washington, D.C., 2005).

32 Harold St. John, *Flora of Engebi, Aomon-Bijire, and Runit Islands*, Report UWFL-23, Sect. V (Appl. Fish. Laboratory, University of Washington, 1950); Orlin Biddulph and Robert Cory, 'The Relationship Between Ca45 Total Calcium and Fission Product Radioactivity in Plants of *Portulaca oleracea* Growing in the Vicinity of the Atom Bomb Test Sites on Eniwetok Atoll'. UWFL-31 (Appl. Fish. Lab. University of Washington, 1952); Ralph Palumbo, 'Recovery of the Land Plants at Eniwetok Atoll Following a Nuclear Detonation', *Radiation Botany* 1 (1962): 182-89.



**Figure 3.**

'The Tomb' Cactus Dome in 2018.

Source: Lawrence Livermore National Laboratory, in LLNL-TR-1843558 (<https://www.osti.gov/servlets/purl/1843558>) p. 4.

With the removal of the residents, who catch and consume seabirds, the atoll's bird population grew rapidly. As the seabirds' numbers increased, the reef and lagoon fish populations declined as a result of greatly increased predation by the birds. In response to the decreases in the herbivorous and carnivorous fish, the algae population of the reefs and other marine substrates increased substantially. On land, the large coconut crabs (*Birgus latro*) also increased in numbers as a result of reduced human predation.<sup>33</sup>

Once the people of Enewetak began returning to the atoll some of the ecological imbalance resulting from their absence began to subside. But even as they consumed the birds and coconut crabs, they risked ingesting the radioactive poisons that were slowly migrating from soils to plants to animals to humans.<sup>34</sup> This was the problematic perpetuity to nuclear weapons testing pollution.

33 Merlin and Gonzalez, 'Environmental Impacts of Nuclear Testing', p. 184.

34 D.K. Gupta, S. Chatterjee, S. Datta, A.V. Voronina and C. Walther, 'Radionuclides: Accumulation and Transport in Plants', *Reviews of Environmental Contamination and Toxicology* 241 (2017): 139–60; International Atomic Energy Agency (IAEA), *Soil–Plant Transfer of Radionuclides in Non-temperate Environments. Report of Working*

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### The perpetuity of nuclear pollution

Cactus Dome's placement on Enewetak Atoll is unnatural and unwelcome. In a darkly revealing epithet, the Marshallese call it 'The Tomb'. The Tomb is the result of a three-year effort begun in 1977 to clean up and dispose of nuclear weapons testing remains at Enewetak. Designated the Enewetak Radiological Support Project (ERSP), soldiers from the U.S. Army 84th Engineer Battalion assigned to the project worked six days a week, often without wearing suitable protective equipment, to clear the islets of ordinary and radiologically contaminated debris. Ordinary debris included concrete, scrap metal, machinery, vehicles and building materials. Under the ERSP, scientific stations that were too well built to be easily demolished had their openings sealed with concrete to prevent unauthorised access.<sup>35</sup>

More than 76,500 cubic metres of radioactive debris were collected and hauled via the causeways created during the nuclear weapons testing period in massive dump trucks to the Cactus crater on Runit. Ordinary, non-radioactive debris, of which there was more than 164,300 cubic metres, was swept under the metaphorical rug when it was dumped into the lagoon at three sites: Alpha off Enewetak Island, Site Bravo off Runit Island and Site Charlie off Enjebi Island.<sup>36</sup> Once again signalling the expendable nature of Enewetak, the disposal of ordinary waste in the lagoon and radiologically contaminated debris in 'The Tomb' were potent acts of environmental racism.

Cactus Dome is only one part of the radiological contamination of Enewetak Atoll. Buried in lagoon sediments is radioactive debris and fall-out from dozens of nuclear detonations on land or reef and sixteen tests conducted on barges floating in the lagoon. The principal ERSP document for the clean-up effort, *The Radiological Cleanup of Enewetak Atoll*, describes the contamination situation prior to the operation with a representative of the US Environmental Protection Agency admitting:

*Group 4 Transfer Processes and Data for Radiological Impact Assessment Subgroup 3 on Non-temperate Data.* IAEA-TECDOC-1979 (Vienna: IAEA, 2021).

35 Defense Nuclear Agency, *The Radiological Cleanup of Enewetak Atoll* (Washington, D.C.: Defense Nuclear Agency, 1981).

36 Ibid.

In fact, there was a far greater amount of fallout in the lagoon than there was left on the islands to be cleaned up. The lagoon had a far greater area than the islands, and material from the islands tended to be washed into the lagoon.<sup>37</sup>

The ERSP clean-up activities did not remove any radioactive contamination from Enewetak Lagoon.

There is a distressing perpetuity to the nuclear pollution of Enewetak Atoll. The americium (Am), caesium (Cs), plutonium (Pu), strontium (Sr) and uranium (U) isotopes produced by nuclear detonations are some of the deadliest and longest-lasting radionuclides. Using radioactive half-life as a measure, the potential radiation hazards produced by these isotopes vary. Although some, like Sr-90 and Cs-137 are now already well past their respective 29- and 30-year half-lives, Am-241 has a half-life of 400 years. Pu-239 has a half-life of more than 24,000 years and U-235 more than 700 million years. Without remediation, the radioactive contamination of Enewetak Atoll will last for hundreds, and in some cases thousands, of years.

Under current US policy and politics, it seems unlikely but not impossible that there will ever be any attempt to decontaminate Enewetak lagoon or remove or remediate the Cactus Dome, given the cost and complexity of such undertakings. Recognising nuclear weapons testing as acts of environmental racism may serve to increase global awareness of the problem, but it will not bring justice. Until the United States understands and accepts the damage its Cold War nuclear testing activities caused and, more importantly, makes a commitment to restore the islandscape, Enewetak Atoll will continue to be seen by those who do not live there as expendable.

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37 Ibid., pp. 2–54.

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## 9. The Urban Island:

### Connection and Remoteness in the History of Gallops Island in Boston Harbor

Pavla Šimková

*When I first saw the Boston Harbor Islands, it was on a map. They were nothing but two-dimensional contours filled with green, surrounded by blue. They also seemed very close to the line denoting the shore. Of course these islands would be part of Boston, I thought; after all, the city was only a few centimetres away. Several years later, I came to Boston for the first time: the impression was the same, only in 3-D. The islands dotted the harbour as ever, the blue surrounding them was now sparkling, and they seemed only seconds away from the mainland, as the plane slowly flew over them on its final approach to Logan Airport. It was only when I eventually stood at Boston's waterfront and looked towards the harbour that the perspective changed: the dots I saw from above now transformed into peaceful green hills rising out of the water in the distance. It was hard to tell how many there were or how large; they seemed altogether a different world. As I spent the next several years studying the islands' history, I realised that both perspectives were correct, in a way: both the bird's-eye view that immediately connected the islands to Boston, and the view from the ground that emphasised difference and separation. For the Boston Harbor Islands' historical relationship to Boston has been just that: separate yet connected, on the edge and in the middle of things. From above and on the level, they remain an ambivalent and somewhat reluctant part of the city.*

## Introduction

From above, the island looks pleasant. The Google Earth image shows its light green interior with darker green patches of trees, the whole piece of land framed by the gray-brown of its gravel shore and by the greenish blue of the harbour waters. Its shape resembles a frying pan, or, as one nineteenth-century author noted, 'a leg of mutton'.<sup>1</sup> The image on my computer screen is surprisingly detailed, 1.5 centimetres representing five metres in reality. I can make out the wooden boards of the island's pier, the granite blocks of its seawalls, even the lush treetops. Photographs taken from boats and from nearby islands add another dimension: they show the island rising from the waves as a tangle of dense foliage, kept in by a seawall running along its perimeter. The pier has a wooden gazebo. It also has large orange signs saying 'No Trespassing; Police Take Notice'. I have never been to Gallops Island. Since 2000, hardly anyone has: for the past 22 years, the island has been off-limits for most people. The maximum zoom-in on Google Earth and a glimpse from a passing boat is as close as one gets.

Gallops Island is not, as these circumstances might suggest, a secret government facility or a billionaire's private playground. The eleven-hectare island, sitting eleven kilometres as the boat sails from the waterfront of Boston, Massachusetts, is part of the Boston Harbor Islands National and State Park, Boston's popular urban recreational area. The fact that it is closed to visitors has to do with its historical uses: in 2000, asbestos-containing debris from World War II military structures was discovered on the island. The remediation efforts so far have been halting, mainly due to lack of funds and disagreements about who was supposed to pick up the tab.<sup>2</sup> Thus, for the time being, Gallops Island remains the only island within the national park that visitors cannot set foot on.

This inaccessibility seems to make Gallops a contradiction in itself: here is a part of a national recreational area where no one from said nation can go and recreate; a public space closed to the public. The island invites narratives centred around this inaccessibility. In contemporary popular books and media coverage of the Boston Harbor Islands, Gallops Island is either presented as something beautiful and valuable that the public is being un-

1 Nathaniel B. Shurtleff, *A Topographical and Historical Description of Boston* (Boston: City Council, 1871), p. 545.

2 Lawrence Harmon, 'Gallops Island: Paradise Lost', *Boston Globe*, 15 Aug. 2010, C10.

## 9. The Urban Island



**Figure 1.**

For two decades now, satellite imaging has been one of the few ways of having a look at Gallops Island in Boston Harbor.

Source: Google Earth.

justly deprived of – a ‘green gem’ that is now a ‘lost island,’ or even a ‘paradise lost’<sup>3</sup> – or, alternatively, it is identified with its absence from the public eye: it becomes the ‘forgotten island’ that ‘has begun to fade from Bostonians’ collective consciousness’.<sup>4</sup> The inaccessibility fits and even reinforces Gallops’ identity as an island: there is a strong cultural imaginary of islands as remote, isolated, mysterious places to which the ‘lost island’ where no one is allowed to visit conforms. The idea of a forbidden island is not foreign to island imagination either: think penal colonies, sacred isles – or, indeed, popular culture artefacts such as King Kong’s Skull Island or the 2010 board game ‘Forbidden Island’.<sup>5</sup> Gallops Island’s inaccessibility thus singles it out in the

3 Stephanie Schorow, *East of Boston: Notes from the Boston Harbor Islands* (Charleston, SC: History Press, 2008), p. 101; Harmon, ‘Gallops Island’.

4 Brian MacQuarrie, ‘Winter Weather Helped Uncover a Dark Past on Gallops Island’, *Boston Globe*, 3 May 2018; Christopher Klein, *The Boston Harbor Islands: Discovering the City’s Hidden Shores* (Lanham, MD: Rowman & Littlefield, 2020), p. 40.

5 See Michael R. Ebner, *Ordinary Violence in Mussolini’s Italy* (Cambridge: Cambridge University Press, 2011), pp. 1–22; Lindsey E. DeWitt, ‘Island of Many Names, Island of No Name: Taboo and the Mysteries of Okinoshima’, in *The Sea and the Sacred in Japan: Aspects of Maritime Religion*, ed. by Fabio Rambelli (London: Bloomsbury Academic,

context of the national park and at the same time confirms its ‘islandness’.

There is, however, another way to read the orange signs on Gallops Island’s pier: as an extreme but not entirely untypical physical manifestation of the island’s ambiguous historical relationship to the mainland. Island scholars have compellingly shown both the strong historical connections between islands and mainlands and islands’ centrality to history, and the imaginary of isolation and remoteness often associated with island places.<sup>6</sup> The history of Gallops Island is a prime example of the complex interplay of these contradicting forces that have alternately drawn it nearer to the mainland and pushed it farther away. During various periods in its history, Gallops alternated between not being accessible enough and not remote enough, while the uses that the island has been put to were based on this very ambiguity.

Questions of accessibility and remoteness are, ultimately, relational questions: accessible from where and to whom, remote from what? This chapter argues that in the case of Gallops, and the other 33 Boston Harbor Islands, the decisive factor in their history over the past 400 years has been the city of Boston. Although used seasonally by the indigenous people in the precontact era, the founding of Boston in 1630 meant the turning point in the archipelago’s environmental history. Over the centuries, the growing city subjected the islands to its current needs and shaped them according to its changing demands. Generations of Bostonians scoured the islands for resources, changed their flora and fauna and their very shape, making them shrink and grow according to their current preferences. Boston made Gallops and the Boston Harbor Islands into urban islands: coastal islands close to a large population centre that have over time become an integral part of ‘their’ city.<sup>7</sup> The ambiguous logic of

2018), pp. 39–50; Philip Hayward, ‘“A Place of Inexhaustible Mysteries”: The Modern Legendry of Skull Island in the King Kong Films and Related Media Texts’, *Coolabah* 31 (2021): 7–28.

6 John R. Gillis, ‘Islands in the Making of an Atlantic Oceania, 1500–1800’, in *Seascapes: Maritime Histories, Littoral Cultures, and Transoceanic Exchanges*, ed. by Jerry H. Bentley, Kären Wigen and Renate Bridenthal (Honolulu: University of Hawai’i Press, 2007), pp. 21–37; Adam Grydehøj and Marco Casagrande, ‘Islands of Connectivity: Archipelago Relationality and Transport Infrastructure in Venice Lagoon’, *Area* 52 (2020): 56–64; Diana Loxley, *Problematic Shores: The Literature of Islands* (Basingstoke: Macmillan, 1990); Rebecca Hofmann and Uwe Lübken, ‘Shrinking, Sinking, Resurfacing: Small Islands and Natural Hazards in Historical and Current Perspective’, *Global Environment* 8 (2015): 4–15.

7 Pavla Šimková, *Urban Archipelago: An Environmental History of the Boston Harbor Islands* (Amherst: University of Massachusetts Press, 2021); on the topic of urban



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island existence has held sway here as well. The uses Gallops Island has been put to have been governed by the island's ambiguous position vis-à-vis the city: separate yet close, isolated yet controllable, attached and detached at the same time. Although most of its historical uses make it seem like an urban fringe, like a periphery to Boston's centre, the island has at almost any given time been tightly woven into Boston's urban fabric. This chapter traces the ways in which Gallops Island's environment has been shaped by its peculiar relationship with the city, and the ways in which its geographical situation has been interpreted and used by the people of Boston over time.

### Island of extraction

In geological terms, Gallops Island is a very young landscape. Its bluff, or drumlin, was formed by the movement of glaciers during the last ice age, between thirteen and eleven thousand years before the present. It only emerged as an island around 5,000 years ago when the landscape that now forms the bottom of Boston Harbor was submerged by the rising sea.<sup>8</sup> Only then did the island attain the form known from early modern maps and naval charts: its western part an almost circular high bluff surrounded by tidal flats, the eastern portion a long gravel spit extending towards the ocean. The island was likely wooded, overgrown with East Coast tree species such as birch, oak, ash, maple, walnut or hickory; due to the island's small size, the stands of trees likely weren't very large.<sup>9</sup> Two other islands, the slightly larger Georges to the southeast, and the elongated Lovells to the northeast, were so close that the three of them would later often be thought of as one group.

islands, see also Adam Grydehøj, 'Understanding Island Cities', *Island Studies Journal* **9** (2) (2014): 183–90; Adam Grydehøj et al., 'Returning from the Horizon: Introducing Urban Island Studies', *Urban Island Studies* **1** (1) (2015): 1–19.

- 8 Peter S. Rosen and Duncan M. FitzGerald, 'The Drowning of Boston Harbor and the Development of the Shoreline', in *Remaking Boston: An Environmental History of the City and Its Surroundings*, ed. by Anthony N. Penna and Conrad Edick Wright (Pittsburgh: University of Pittsburgh Press, 2009), pp. 19–32; Barbara E. Luedtke and Peter S. Rosen, 'Archaeological Geology on Long Island, Boston Harbor', in *Field Trip Guidebook for the Northeastern United States*, vol. 2 (Boston: Geological Society of America, 1993), T-1–T-15.
- 9 Julie A. Richburg and William A. Patterson III, 'Historical Description of the Vegetation of the Boston Harbor Islands: 1600–2000', *Northeastern Naturalist* **12** (special issue 3) (2005): 16–17.

Between Gallops and Lovells, a deepwater channel ran, called the Narrows.

The first humans who came to Gallops Island likely came for its resources. Archaeological evidence suggests that indigenous peoples had been using the Boston Harbor Islands, including Gallops, for thousands of years as fishing and hunting camps. As in later periods, the uses the island was presumably put to were governed by its size and by its position in relation to the mainland. Too small to support year-round habitation and too cold and unpleasant in winter, Gallops was likely visited seasonally by the Natives to harvest fish and shellfish. When Barbara Luedtke, a noted archaeologist of the Boston Harbor Islands, ventured to speculate ‘what the Boston Harbor Islands might have meant to people’ who lived on them in the precontact era, she listed them not only as a dependable and occasionally abundant food source, but also as places that were likely favoured for their climate and nearly constant breezes. She suggested that around 1200 or 1300 CE, some of the larger islands were being used for farming, while the smaller ones might have functioned as a kind of commons. A symbolic significance of the islands as places on the edge between land and sea is also thinkable.<sup>10</sup> Thus, even in this early period, Gallops and the rest of the Boston Harbor Islands were likely seen and used as places on the periphery of the known world that were nevertheless useful for specific purposes.

In a sense, the arrival of English colonists in the 1630s meant a continuation of these ways of engaging with the islands. The early European settlers viewed the islands of the bay primarily as resources. The islands supplied their towns with essential materials such as timber, firewood and building stone. The settlers also used them as farmland and convenient pastures, ‘natural corrals’ where cattle were safe from predators and at the same time could not wander off.<sup>11</sup> Despite being used for resource extraction and food production, the islands could hardly be conceived of as the settlement’s periphery at this point. In the seventeenth-century Puritan colonies, water functioned as a connecting medium rather than as a separation between places. In the absence of roads on the mainland, the settlers developed what historians have called an amphibious culture: they built their settlements on water’s

10 Barbara E. Luedtke, ‘Archaeology on the Boston Harbor Islands after 25 Years’, *Bulletin of the Massachusetts Archaeological Society* 61 (1) (2000): 4–8; Barbara E. Luedtke, ‘Where Are the Late Woodland Villages in Eastern Massachusetts?’ *Bulletin of the Massachusetts Archaeological Society* 49 (2) (1988): 60.

11 Christopher L. Pastore, *Between Land and Sea: The Atlantic Coast and the Transformation of New England* (Cambridge, MA: Harvard University Press, 2014), p. 59.

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edge and used waterways as a primary means of transportation.<sup>12</sup> At a time when accessibility meant having access to a waterway, the harbour islands were among those parts of the town's space that could be reached the most easily.<sup>13</sup> In fact, several of them were among the first places in the Boston area to be settled by the European newcomers. The notion of islands as separate and hard to access, so familiar from later times, did not apply to early Boston: its inhabitants saw the harbour islands as a natural part of town.

The islands' role as places of resource extraction did not change even after the foundation of Boston's economy shifted from agriculture to maritime commerce. From the latter half of the seventeenth until the mid-nineteenth century the Boston Harbor Islands served as sources of materials used by Boston's shipping: they provided wood for building wharves and repairing ships, and gravel for ship ballast. Simultaneously, the older farming and pasturage uses continued, making the islands Boston's extractive and agricultural hinterlands.

Gallops Island was used in a way typical of Bostonians' dealings with their harbour islands. Noted for its fertile soil and a 'never-failing' freshwater spring, in 1633 it became the property of John Gallop, Boston Harbor's first pilot, who gave the island his name and established a farm on it.<sup>14</sup> Gallop apparently divided his time between his house in Boston and his island home, establishing a further link between the island and the town. After Gallop's death in 1649, the island remained in private hands, but changed owners regularly. These owners were mostly residents of the nearby mainland town of Hull who maintained the island as farmland and continued to harvest its resources, mainly sand and gravel.

The decades and centuries of resource extraction and cultivation left deep traces in the island's environment. By the end of the seventeenth century, Gallops was likely completely stripped of its original vegetation that was

12 John T. Cumbler, *Cape Cod: An Environmental History of a Fragile Ecosystem* (Amherst: University of Massachusetts Press, 2014), p. 41. The term *amphibious culture* has also been used by historian Petra van Dam; see Petra J. E. M. van Dam, 'De amfibische cultuur: Een visie op watersnoodrampen', talk given at the Vrije Universiteit Amsterdam, 29 Oct. 2010: <https://research.vu.nl/ws/portalfiles/portal/2747480/De+amfibische+cultuur+versie+DARE.pdf>

13 Šimková, *Urban Archipelago*, pp. 21–34.

14 Shurtleff, *A Topographical and Historical Description of Boston*, p. 546; 'Gallops Island Chronology: A Brief History of Gallop's Island, Boston Harbor', 24 Sept. 2014: <http://gallopsisland.blogspot.com/>

replaced by domesticated plants and accidentally introduced European weeds.<sup>15</sup> The island's very shape and size were formed by the colliding forces of exploitation and preservation. Like many of the other harbour islands, Gallops was intensively used for gravel harvesting: in the eighteenth and early nineteenth centuries, the island was being literally carried away and sold for building material and ship ballast.<sup>16</sup> This, together with deforestation, accelerated the island's erosion: through direct and indirect effects of resource extraction, Gallops was becoming smaller. It was also becoming flatter: in the 1820s, the United States military began planning a large fort on the neighbouring Georges Island. The high bluff on Gallops Island not only obscured the proposed fort's view of the harbor's main shipping channel, but also potentially offered high ground to enemy fire. The federal government cut down a large portion of the bluff in 1827, levelling one of Gallops' most outstanding features.<sup>17</sup> Other changes in Gallops Island's shape were more spontaneous, though less welcome for the federal government's and Boston's purposes: the eroding island was not only losing upland, but was shedding it into the Narrows, an important shipping channel, impeding navigation. The city and the federal government felt obliged to step in to protect their economic interests: the city of Boston acquired Gallops in 1860, while the federal government purchased Georges and Lovells Islands, bringing all three islands flanking the Narrows under public control. The Army Corps of Engineers then proceeded to build a seawall around Gallops' north and west side between 1868 and 1870, preventing erosion and effectively fixating the island in one place.<sup>18</sup>

15 Richburg and Patterson, 'Historical Description of the Vegetation of the Boston Harbor Islands', 20–21; Dale F. Levering, 'The Changing Flora of the Boston Harbor Islands', *Arnoldia* 43 (3) (1988): 19.

16 Michael Rawson, 'What Lies Beneath: Science, Nature, and the Making of Boston Harbor', *Journal of Urban History* 35 (5) (2009): 679.

17 'Gallops Island Chronology'.

18 Michael Rawson, *Eden on the Charles: The Making of Boston* (Cambridge, MA: Harvard University Press, 2010), p. 204; Aubrey Parkman, *Army Engineers in New England: The Military and Civil Work of the Corps of Engineers in New England, 1775–1975* (Waltham, MA: U.S. Army Corps of Engineers, New England Division, 1978), p. 61; Shurtleff, *A Topographical and Historical Description of Boston*, p. 548.

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### The quarantine island

From the mid-nineteenth century on, Gallops and most of the other Boston Harbor Islands would be put to uses based on their ambiguous position vis-à-vis Boston. The islands were close enough to be quite easily reached and regarded as part of the urban space. At the same time, they made up Boston's urban fringe, its 'dumping ground', receiving undesirable materials and institutions: landfills and sewage treatment plants, but also prisons, poorhouses and – in the case of Gallops Island – a quarantine station.<sup>19</sup> When the municipal administration bought Gallops in 1860, it saw the island as on the one hand separate from the city, as remote enough to receive 'marginalized and stigmatized occupants' unwanted in the city proper.<sup>20</sup> On the other hand, the island was close enough for the city to control the goings-on there and to integrate it into its infrastructure. During this era, Gallops Island would be imagined by most as a remote place not belonging to Boston – while at the same time it would become an essential part of the city's functioning.

In the course of the nineteenth century, Boston became a major immigration gateway as well as home to large immigrant communities. It was largely immigration that caused the relatively small community of 34,000 people that Boston was in 1810 to swell to 670,000 inhabitants one hundred years later. The largest immigrant community was the Irish, followed by immigrants from Italy and Russia.<sup>21</sup> Authorities and the media of the era would commonly associate immigration with the spread of disease, especially since a typhus outbreak that accompanied the Irish migration was still in recent memory.<sup>22</sup> The era's preferred way of dealing with infectious disease

19 William B. Meyer, 'A City (Only Partly) on a Hill: Terrain and Land Use in Pre-Twentieth-Century Boston', in Penna and Wright (eds), *Remaking Boston*, p. 146; Šimková, *Urban Archipelago*, pp. 51–97.

20 Meyer, 'A City (Only Partly) on a Hill', 146.

21 Lawrence W. Kennedy, *Planning the City upon a Hill: Boston since 1630* (Amherst: University of Massachusetts Press, 1992), p. 256; 'Global Boston: A Portal to the Region's Immigrant Past and Present', Boston College, Department of History: <https://globalboston.bc.edu/>

22 Dan Horner, 'A Population Takes Flight: The Irish Famine Migration in Boston, Montreal, and Liverpool, and the Politics of Marginalization and Criminalization', in *The Criminalization of Migration: Context and Consequences*, ed. by Idil Atak and James C. Simeon (Montreal: McGill-Queen's University Press, 2018), pp. 261–62, 265–69; Tara Zahra, *The Great Departure: Mass Migration from Eastern Europe and the Making of the Free World* (New York: W.W. Norton & Company, 2016), pp. 35–36.

was isolation, and islands were regarded as ideal places to accomplish this goal. Many of America's largest immigration ports, such as San Francisco or New York, established quarantines on their harbour islands; New York even constructed the artificial Swinburne Island for this purpose in 1858, a physical embodiment of identifying islandness with isolation.<sup>23</sup> Throughout its history, Boston had used a succession of its harbour islands for quarantine purposes. Starting in the eighteenth century, the quarantine hospital moved from Spectacle to Rainsford Island, from Rainsford to Deer, and finally, in 1866, to Gallops Island which offered the double advantage of bordering on the main ship channel and being a safe distance from the city.

Its new purpose changed the face of Gallops Island considerably. The farming of yesteryear gave way to extensive construction. The quarantine hospital existed on the island from 1866 to 1937 and, during that time, its complex sprawled along much of the island's shore. By 1905, it was made up of no fewer than 21 buildings, and it kept growing in the coming years.<sup>24</sup> It included several hospital buildings, capable of handling hundreds of patients at a time, storehouses, bathhouses, laboratories and staff residences.<sup>25</sup> There were stalls housing the island's resident cattle herd which provided the facility with dairy products, and barns for its own hay and vegetable produce. Cesspools, wharves and seawalls completed the transformation of the island into a municipal facility.<sup>26</sup> With the establishing of the quarantine station, if anything, Gallops Island's ties to Boston became closer: the island was regularly visited by the quarantine boat, tellingly dubbed the *Vigilant*, and in 1892 it was connected to the municipal water supply.<sup>27</sup> Rather than isolating it, the quarantine station turned Gallops Island into a cog in the wheel of Boston's city infrastructure.

23 Sharon Seitz and Stuart Miller, *The Other Islands of New York City: A History and Guide*, 3<sup>rd</sup> ed. (Woodstock, VT: Countryman Press, 2011), pp. 87–88.

24 Health Department of the City of Boston, *Annual Report for the Year 1904–1905: City Document No. 17. Documents of the City of Boston for the Year 1905*. Vol. 1 (Boston: Municipal Printing Office, 1906), p. 45.

25 Charles Vidich, *Germes at Bay: Politics, Public Health, and American Quarantine* (Santa Barbara, CA: Praeger, 2021), pp. 276–81.

26 'Gallops Island Chronology'; Moses Foster Sweetser, *King's Handbook of Boston Harbor* (Boston: Moses King, 1883), p. 173.

27 'A Day at Quarantine: Brig from Guantanamo Towed to Gallop's Island for Fumigation', *Boston Daily Globe*, 8 Oct. 1888, 4; 'Gallops Island Chronology'.



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**Figure 2.**

The buildings of the quarantine hospital at Gallops Island, at the beginning of the twentieth century. The quarantine hospital made the island into an urban facility.

Source: Public Health Service Historical Photograph File, National Archives (<https://catalog.archives.gov/id/276538465>).

The presence of the quarantine transformed Gallops into a gatekeeper island, seen as protecting Boston from threats coming from the outside. Dreaded diseases such as smallpox, yellow fever, typhus or cholera were supposed to be stopped at the island before reaching the city, along with their purported carriers. The casual association of immigrants with dirt and disease created a place where the incoming would be ‘cleansed’: quarantined, fumigated, vaccinated, ‘deloused’ and judged as to their worthiness to enter the land of the free.<sup>28</sup> At times, Gallops also received Boston’s own residents

28 ‘First Typhus Case Is Found in Boston: Syrian Girl on Mongolia Victim’, *Boston Daily Globe*, 7 March 1921, 1; Horner, ‘A Population Takes Flight’, 267–69.



suspected of carrying an infectious disease. In 1911, a woman from Boston came down with a disease presumed to be cholera, and was immediately removed to Gallops Island. Similarly, Gallops was used to separate leprosy patients from the rest of the city's society.<sup>29</sup> The island was made easily accessible for the quarantine boat that would ferry patients from incoming steamers by a new dock in 1883; at the same time its main purpose became to limit access to the city from the outside world. The latter half of the nineteenth century was a time when Boston's municipal administration embarked on a quest to improve sanitation and public health in the rapidly growing city.<sup>30</sup> Gallops Island's task within this scheme was to screen the city proper from anything – and especially anyone – that could compromise its cleanliness.<sup>31</sup> Its function as Boston's gatekeeper reinforced the interpretation of Gallops' islandness as isolation and, indeed, insularity.

The isolation of Gallops Island had also a strong social component. Gallops was a place experienced predominantly by people of non-American origin and of lower social class. From the incoming ships, it were usually steerage passengers who ended up in the island quarantine and who were subjected to the often demeaning and sometimes downright frightening procedures there.<sup>32</sup> The White Star liner *Canopic*, for instance, which operated between Boston and the Mediterranean, would be regularly held up in quarantine and its hundreds of third-class passengers, mostly immigrants from Italy, Greece and Portugal, detained at Gallops for two weeks.<sup>33</sup> Also the people transferred to Gallops from Boston would be usually tenement residents and first-generation immigrants: the woman confined to Gallops with a

29 'Escaped Leper Back Again at Gallops Island', *Boston Daily Globe*, 8 Aug. 1901, 10; 'Taken to Gallups Island', *Boston Daily Globe*, 9 Oct. 1904, 10.

30 For a history of the sanitary city concept, see Martin V. Melosi, *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present* (Pittsburgh, PA: University of Pittsburgh Press, 2008).

31 'Gallops Island Chronology'; 'Harbor Improvements', *Boston Daily Globe*, 19 May 1888, 3.

32 'Has Passenger List of 1733', *Boston Daily Globe*, 8 April 1907, 10; 'Cymric Held Up in Watch for Cholera: Liner Detained Four Hours for Health Examination and 132 Steerage Passengers Put Ashore on Gallups Island', *Boston Daily Globe*, 28 July 1911, 5; Vidich, *Germs at Bay*, pp. 254–55.

33 'Has Passenger List of 1733'; 'No Signs of Plague: Passengers of Steamer Canopic Landed at Gallops Island, May Be Freed Tomorrow', *Boston Daily Globe*, 30 Sept. 1908, 8; 'Smallpox in the Steerage: Canopic Was Held Up at Quarantine', *Boston Daily Globe*, 9 Nov. 1909, 8.

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suspected case of cholera was an Italian immigrant living in the then largely immigrant neighbourhood of North End. A year earlier, a smallpox suspicion led to the removal of several people from the immigrant community of East Boston to Gallops Island.<sup>34</sup>

The function of Gallops Island as a place fit to isolate yet control would be most fully demonstrated in cases of people whom there was no discernible reason to detain other than their origin. Chinese and Indian sailors would be routinely held at Gallops and subjected to bathing and fumigation, although there was no indication of them being sick.<sup>35</sup> During World War I, 278 German merchant sailors were interned on the island, solely on the grounds of their nationality.<sup>36</sup> Gallops Island emerged as a place where ethnic prejudices and social hierarchies became articulated in spatial terms. The island itself, mockingly described by the press as 'not the pleasantest spot in America', would come to be associated during this period with bleakness, disease and generally threatening otherness.<sup>37</sup>

After the quarantine hospital had closed in 1937, Gallops Island was taken over by a government-run maritime radio training station and, with it, by another interpretation of its ambivalent geographical position. In contrast to the quarantine station whose administrators understood the interval between Boston and Gallops Island as separation between health and disease, the island's new occupants took a more genial view of the island's situation. A wartime article celebrating the radio school and its graduates characterised the site as 'not unlike an isolated, yet pleasant, mountain lake resort'. The island's separation from the mainland was seen not only as a logistical nuisance, but chiefly as a situation offering 'freedom from the distractions of a large city'. The island's relative remoteness was supposed to work to the advantage of the school's pupils: by allowing them to concentrate solely on their education, it was thought to contribute to the 'poise of quiet efficiency', the skill, and

34 'Boston Has First Victim of Cholera: North-Sq Woman Dies at Gallups Island', *Boston Daily Globe*, 24 July 1911, 1; 'Smallpox in East Boston: Five Persons Living on London St Taken to Gallups Island', *Boston Daily Globe*, 7 May 1910, 6.

35 'Kennebec Had Terrible Trouble', *Boston Daily Globe*, 17 Jan. 1907, 6; 'Water Front News: Steamer from India with Crew of Lascars', *Boston Daily Globe*, 2 April 1907, 7.

36 'Port of Boston: General News of the Water Front', *Boston Daily Globe*, 20 July 1917, 7; 'Interned Germans to Be Moved South Tomorrow', *Boston Daily Globe*, 3 Oct. 1917, 8.

37 'Adolf's Lucky Find', *Boston Daily Globe*, 21 June 1907, 6.

‘savvy’ that allegedly distinguished the recruits as ‘Gallops Island men’.<sup>38</sup> The place was thus attributed an active role in shaping the people experiencing it.

Albeit from two different perspectives, both the radio school and the quarantine station depended on their site being an urban island: to the one it allowed a cloister-like atmosphere in close proximity to supplies; for the other it provided a sense of physical separation from the city while at the same time functioning as its outpost. Both also claimed the majority of the island’s space for their purposes. The radio school, like the hospital complex before it, covered large portions of Gallops’ upland with barracks, mess halls, gyms and a drill field, all connected by roads and driveways; it had also a new, larger dock built to accommodate the boats that connected it to Boston several times a day. In addition to the existing water pipe, there were telephone and electricity lines extended from the mainland, tying the island infrastructurally ever closer to the city while simultaneously proclaiming its ‘pleasant isolation’.<sup>39</sup> Both institutions made the island environment into a facility serving the city’s and the government’s purposes. Once no longer needed, the structures of both were dismantled with an even more astonishing speed than they had been put up. After the quarantine hospital had closed, apart from several dilapidated buildings, all that remained were the graves of more than 200 former patients who had died on the island.<sup>40</sup> The radio school closed after the war and its buildings were for the most part removed. Left behind was buried debris that would develop an unexpected life of its own fifty years later.

## Island of recreation

In the 1960s, Boston city administration and Massachusetts state officials started viewing the city’s surroundings differently. No longer seen primarily

38 ‘United States Maritime Service Radio Training School in Boston Harbor: Gallups Island School Produces “Well Grounded” Men for Vital Radio Jobs in Our Victory Fleet’, *Mast Magazine*, July 1944.

39 ‘United States Maritime Service Radio Training School in Boston Harbor’; Olmsted Center for Landscape Preservation, *Cultural Landscape Report: Boston Harbor Islands National and State Park*. Vol. 1 (Boston: Olmsted Center for Landscape Preservation and National Park Service, 2017), p. 99.

40 MacQuarrie, ‘Winter Weather Helped Uncover a Dark Past on Gallops Island’; Edward Rowe Snow, *The Islands of Boston Harbor 1630–1971* (New York: Dodd, Mead and Company, 1971), p. 161.

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as material resources or places to house undesirable businesses and institutions, the city began examining its environs for recreational opportunities. A number of regional and nation-wide studies of the era suggested that the demand for leisure had never been greater and that recreation was an untapped source of revenue.<sup>41</sup> Boston Harbor, and especially the Boston Harbor Islands, gradually came to view as a potential recreational area for the city's and metropolitan region's residents. At this point, most of the harbour islands, including Gallops, would be seen by the city agencies and most Bostonians as available, or even 'deserted'.<sup>42</sup> Most of the older uses, such as the quarantine station at Gallops or the military defences on the outer islands, had been abandoned, leaving behind a landscape that the city and the state now construed as *tabula rasa* – ready to receive any new uses they thought up for it. A commission established by the state legislature and tasked with determining the best future use of the harbour islands issued its final report in 1970. In it, the commission took the view that the harbour and its islands were best used as a public open space for Boston and advocated conserving the islands' nature and using them for recreation.<sup>43</sup>

The fact that the Boston Harbor Islands *were* islands played an important role in this new way of seeing and using them. The water expanse between the islands and Boston offered a welcome sense of otherness, a feeling of leaving the mundane world of the city behind and entering a realm where natural-looking landscapes (most of the islands had by then again overgrown with vegetation) combined with a sense of the extraordinary, immanent to modern island imaginary.<sup>44</sup> Edward Rowe Snow, the author of a number of popular books about Boston Harbor and its islands, defined an island as 'a

41 Metropolitan Area Planning Council, Metropolitan District Commission and Department of Natural Resources, *Open Space and Recreation Plan an Program for Metropolitan Boston* (Boston: Commonwealth of Massachusetts, 1969); Boston Redevelopment Authority, *1965/1975 General Plan for the City of Boston and the Regional Core* (Boston, 1965); *Preliminary Report of the Department of Natural Resources Relative to the Further Development of the Public Forests, Parks and Other Lands of the Commonwealth under Chapter 471, Acts of 1955: Massachusetts State Resolution No. 740* (Boston: Wright and Potter, 1957).

42 Snow, *The Islands of Boston Harbor*, p. 161.

43 *Third and Final Report of the Special Commission on the Boston Harbor Islands: Massachusetts House of Representatives Resolve No. 5051* (Boston: Wright and Potter, 1970), pp. 10–11.

44 Arndt Kremer, 'Eine Welt für sich. Die Insel als literarischer und sprachlicher Grenz- und Denkraum', *Aus Politik und Zeitgeschichte* 68 (32–33) (2018): 47–52.

body of land surrounded by adventure, romance, mystery and excitement'.<sup>45</sup> An influential voice who shaped several generations of Massachusetts residents' ideas about their state's coast, his words captured the way Bostonians were beginning to feel about their city's islands.

At the same time, the islands' uses were dictated by their proximity to the city. The decision to conserve them as public open space stemmed from their potential as a recreational area for the three million people in Boston's metropolitan region. Despite the rhetoric of nature conservation, the Boston Harbor Islands remained urban islands. When several of them were declared a state park in 1970, the decision was driven by the demands of the central city no less than the placing of the quarantine stations, landfills and poorhouses of old.

Gallops Island became part of the state park in 1973, and in the following decades its managers set about outfitting the island for its new role. Gallops was now being appreciated for different qualities: where John Gallop saw fertile soil and the quarantine administrators an advantageous position on the sea approach to the city, the park's managers perceived 'valuable natural environment', a 'very good sandy beach' and generally an island 'with a capacity to hold relatively large groups of people for purposes of active recreation'.<sup>46</sup> Like those who made use of the island earlier, the state environmental managers moulded the island to their purpose. The 1970s and 1980s saw a gazebo built on the island's pier, walking paths laid out and a picnic ground cleared for visitors to enjoy the 'excellent views of the entire Harbor'.<sup>47</sup> Some remnants of previous uses were left in place and even integrated into the 'visitor experience': a 1990s leaflet for a self-guided tour of Gallops lists among the island's attractions the foundations of the quarantine hospital and radio school structures as well as stands of exotic plants surviving from the hospital's ornamental garden.<sup>48</sup>

The way people experienced the island also underwent a dramatic change.

45 Edward Rowe Snow, *Secrets of the North Atlantic Islands* (New York: Dodd, Mead and Company, 1950), p. v.

46 Metropolitan Area Planning Council, *Boston Harbor Islands Comprehensive Plan* (Boston: Massachusetts Department of Natural Resources, 1972), pp. 79–81.

47 *Boston Harbor Islands Comprehensive Plan*, p. 79; Massachusetts Department of Environmental Management, *Boston Harbor Islands State Park 1986 Master Plan* (Boston: Massachusetts Department of Environmental Management, 1986), p. 32.

48 National Park Service, *Exploring Gallop's Island: A Self-Guided Tour* (Boston: Boston Harbor Islands National Recreational Area, undated).

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**Figure 3.**

Volunteers and Department of Environmental Management staff on Gallops Island, 1979. The 1970s saw Gallops Island slip into a new role as a recreational spot for the residents of the Boston metropolitan area.

Source: Courtesy of the University Archives and Special Collections Department, Joseph P. Healey Library, University of Massachusetts Boston: Boston Harbor Islands Mass. Memories Road Show Collection.

In the 1970s, Gallops became a popular destination for day trippers from the Boston metropolitan area who would come to spend a day picnicking, walking, swimming and sunbathing on the island. The island would also have an ‘island manager’, typically a young volunteer employed by the state Department of Environmental Management, who would introduce visitors to the nature and history of the island. Suzanne Gall, who spent the summer of 1979 as island manager on Gallops, described in detail the wondrous experience of nature that her stay at Gallops gave her: the constant sound of the ocean and the breeze, the singing of birds, the ‘twinkling stars and glowing, golden moons’ that left her never wanting to leave ‘her’ island.<sup>49</sup> This was a far cry from ‘not the pleasantest spot in America’ seventy years

49 ‘Disco on Gallops’, *New England Sierran* (Fall 1979).



prior. The seasonality of the island changed, too: whereas the institutions would use the island independent of the seasons, and would have staff living there year-round, now it became a place only visited and experienced in the summer. This seasonality reinforced the image of the island as a pleasant recreational spot, as it excluded its bleak, cold and uninviting winter face.

Gallops Island's recreational uses, however, although very different from the ones a century ago, were built around the same factor: the island's simultaneous separation from and proximity to the city. One issue that made this apparent was access to the islands. Gallops Island, in its new role as open space, was subject to a dilemma well known to many conservation projects: making the island accessible to the urban population without destroying its appeal of a respite from the city in the process. The island's twin qualities of proximity and remoteness seemed yet again to make up much of its attraction. The *New York Times* reporter Carey Goldberg remarked in 2000 how a trip to the harbour islands 'did feel like a full-fledged outdoor adventure, one undertaken without ever leaving metropolitan Boston'.<sup>50</sup> On the one hand, Gallops' islandness allowed it to be imagined as a place apart, different from the everyday world of the mainland and the city. Some of the management proposals went in this direction: while earlier times saw frequent suggestions to connect the islands to the mainland permanently by bridges, causeways or fill, the state and national park prioritised water transportation, not least to convey a sense of the islands as remote places, only reachable by boat.<sup>51</sup> On the other hand, a substantial portion of the park plans, and much of the public debate, focused on lack of access to the islands. Park planners saw it as their mission to enable as many people as possible to access the islands and enjoy them as public open space. The public and the press, for their part, frequently pointed out inadequate access of various kinds: lack of information about boat schedules, infrequent ferry boat service and lack of facilities on the islands.<sup>52</sup> Thus, even in its incarnation as a natural space, Gallops Island remained closely tied to the city and its demands.

50 Carey Goldberg, 'Emerald Islands, Boston's Own', *New York Times*, 14 July 2000.

51 *Boston Harbor Islands Comprehensive Plan*, p. 39.

52 National Park Service, Boston Support Office of the Northeast Region, *Boston Harbor Islands, A National Park Area: General Management Plan* (Boston: Boston Harbor Islands Partnership, 2002), pp. 129–30; David Arnold, 'Islands of History: Park Would Feature City's Archaeological, Cultural Heritage', *Boston Globe*, 19 Sept. 1994, 1; Massachusetts Department of Environmental Management, *Boston Harbor Islands State Park 1986 Master Plan* (Boston: Massachusetts Department of Environmental Management, 1986), p. 4.



## 9. The Urban Island

### The forbidden island and beyond

The national park's General Management Plan, put together in the late 1990s, envisioned Gallops Island as a 'managed landscape': a harmonious combination of natural and cultural features intended primarily for passive recreation and offering, in the words of the plan, 'many opportunities for tranquility'.<sup>53</sup> By the time the management plan was published in 2002, however, Gallops Island's 'imprints of human use' prevented the public from enjoying the island in any way.

Two years prior, in 2000, state environmental officials found asbestos-containing debris on parts of Gallops Island where the wartime radio training facility had stood. After the war, some of the debris from the school's dismantled buildings had been buried in the ground, but the intervening fifty years were enough for it to resurface again.<sup>54</sup> Now it made Gallops Island into a place fraught with ironies: the material that had been used to prevent fires has now itself been identified as a hazard; and its presence, a human-made problem, was keeping humans away from the island.

In August 2020, twenty years after the island had been first closed to the public, several Massachusetts state departments debated the planned Gallops Island Remediation and Restoration Project. As their report stated, the contaminated soils and asbestos debris on the island were to be collected, confined to two 'containment areas', capped, revegetated and monitored. The 'native landscape' of the island was to be restored and the island reopened for public use.<sup>55</sup>

As much attention as the report paid to the project's possible impact on Gallops Island's beaches, marine habitats and historic and archaeological resources, its main concern was making the island again a useful part of Boston's popular recreational area. Today, as in the past 400 years, what happens on Gallops Island is to a large part determined by the needs of the city of Boston. The current preference for recreation has replaced the need for a harbour quarantine station; just as the quarantine station in its time

53 National Park Service, *General Management Plan*, p. 51.

54 Harmon, 'Gallops Island'.

55 Executive Office of Energy and Environmental Affairs, 'Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form: Gallops Island Remediation and Restoration Project', 21 Aug. 2020: <https://eeaonline.eea.state.ma.us/EEA/emepa/mepacerts/2020/sc/enf/16245%20ENF%20Gallops%20Island%20Remediation%20and%20Restoration%20Project%20FINAL.pdf>

substituted the hunger for resources. Boston was and remains the decisive factor in the history of the island and its environment. Gallops Island is therefore best understood as a place defined by its attachment to the nearby city; its current detachment from it is not a break with its history, but merely another incarnation of its protean relationship with Boston: a king tide of the centuries-old ebb and flow of remoteness and belonging.

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# 10. Island Palimpsest:

## Understanding Neil Island's Transition Through Settlers' Oral Recollections

Raka Banerjee

*It is perhaps ironic that someone so gravely afraid of water – after having nearly drowned at least twice – should be writing about islands. In the week before my departure for Port Blair, my partner and I were trying to look up a route to Neil Island, first from Kolkata and then Port Blair. Google failed to show us a route map. Its only options – driving, walking, taking a train – were not means by which one can reach Neil Island. The sense of distance and isolation became real in that moment. But distant from where, and isolated from what? – are questions that drive my research, but more importantly, my own affective experience of the space and attempts to articulate the same. My encounter with Andaman Islands began in 2017 while working on a research project, supervised by the late Prof. Ilina Sen, on India's eastern Partition of 1947 and the large network of displaced refugee and migrant population spread across India, including the Andaman Islands. Being introduced to the Islands through primarily academic work and a larger body of 'popular' writing on tourism, history of the penal colony and India's nationalist struggle for independence from British colonial rule, I was eager to explore the islands on my own. Even before I planned my visit, I imagined walking around the famous clock tower at Aberdeen Bazar, taking in its seamless existence with the present-day markets that have evolved out of decades of displacement and settlement. The British-commissioned clock tower, with its four faces showing four different time zones, is a World War I relic which has stood witness to the changing epochs in the island, while simultaneously tying these 'peripheral' islands to a global network. The post-colonial transformation of the islands again results in the making of a particular type of islandscape which is oriented primarily to the Indian mainland. It is in this context that I study the transfer and settlement of Bengali refugees in the Andaman Islands. Finally, as a mainlander, while I certainly cannot claim these islands as 'mine', they have captured my emotive and intellectual imagination with their 'islandic' qualities, and made me theirs.*

The Andaman Islands mark the ‘liquid borderlands’<sup>1</sup> between South and Southeast Asia. Almost 1,000 kilometres of Bay of Bengal waters separate them from the nearest point on Indian mainland, the mouth of the Hugli River in West Bengal. The Bay of Bengal has remained distinct from the larger Indian Ocean world: it has been tied together by a dense network of climate and labour migration which grew especially during the nineteenth and twentieth centuries.<sup>2</sup> Today, one in four of the world’s people lives in a country that borders the Bay of Bengal. The region is central to the history of globalisation, shaped by centuries of migration and imperial ambitions.<sup>3</sup> The Andaman and Nicobar archipelago, while often obscured from maps, both physical and mental, occupies a prominent position in this region. It has been called a ‘sea of islands’<sup>4</sup> and has historical ties to places and people of Southeast Asia as well as to continental South Asia.

Both the British colonial and the post-colonial Indian state’s agendas on the Andaman Islands were motivated by the desire to create an island ‘outpost’ in the Bay of Bengal. Between 1949 and 1980, the post-colonial state transported people from the mainland – repatriates from Burma, retired army personnel and repatriates from Ceylon via Tamil Nadu – to give shape to its vision of promoting security and the agricultural and industrial development of the islands. Bengali ‘Hindu’ refugees and migrants, following the Partition of India in 1947, formed a major part of this transported population. The policies of settlement were informed by what constituted a continuation of the ‘imperial vision’<sup>5</sup> of the islands: the state saw them as ‘*terra nullius*’<sup>6</sup> which it was free to use in any way it chose. This chapter

- 1 Carola Erika Lorea, ‘Contesting Multiple Borders: Bricolage Thinking and Matua Narratives on the Andaman Islands’, *Southeast Asian Studies* 9 (2) (2020): 231–76.
- 2 Sunil S. Amrith, *Crossing the Bay of Bengal: The Furies of Nature and the Fortunes of Migrants* (Cambridge, Massachusetts: Harvard University Press, 2013), p. 28.
- 3 *Ibid.*, p. 9.
- 4 Itty Abraham, ‘The Andamans as a “Sea of Islands”’: Reconnecting Old Geographies Through Poaching’, *Inter-Asia Cultural Studies* 19 (1) (2018): 2–20.
- 5 *Ibid.*, 8.
- 6 *Ibid.*; Udit Sen, ‘Developing Terra Nullius: Colonialism, Nationalism, and Indigeneity in the Andaman Islands’, *Comparative Studies in Society and History* 59(4) (2017): 944–73; Philipp Zehmisch, ‘Between Mini-India and Sonar Bangla: The Memorialisation and Place-Making Practices of East Bengal Hindu Refugees in the Andaman Islands’, in *Partition and the Practice of Memory*, ed. by Churnjeet Mahn and Anne Murphy (Cham: Palgrave Macmillan, 2018), pp. 63–88.

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explores the making and remaking of a previously uninhabited island called Neil, in the Andaman and Nicobar archipelago, through the oral recollections of its first-generation settlers who came to the island between 1967 and 1969. Refugee labour<sup>7</sup> gave shape to the state's agenda: at the same time, it contributed to the process of 'place-making'<sup>8</sup> and inscribed settlers' histories onto Neil's island geography.

While in the context of the larger Andaman Islands settlements were established 'at the expense of tribal dispossession and marginalisation'<sup>9</sup> and overall disruption of indigenous lives and habitats on the islands,<sup>10</sup> Neil Island has no recorded history of habitation prior to the arrival of the settlers. Neil is situated 36 kilometres north-east of the Andaman and Nicobar Islands' capital city Port Blair. The island's total area is about nineteen square kilometres of which 34 per cent is forested. The widest part of the otherwise narrow and long island is about five kilometres wide. Over seventy per cent of the island's land, about 850 hectares, is used for agriculture. Neil Kendra, the entry point to the island, is its commercial centre with one-third of the island's population – 3,040 according to the 2011 census – residing in that particular revenue village, followed by Ramnagar and Bharatpur. Seventy-eight per cent of the island's population is concentrated in these three settlements. While agriculture and fishing have been the main sources of livelihood for the island's population, the significant growth of tourism on the island has led to a gradual shift in the population's occupational pattern. This new island economy is precarious. The tectonic position of the archipelago renders it vulnerable to natural calamities and the reckless

7 Udit Sen, *Citizen Refugee: Forging the Indian Nation after Partition* (Cambridge: Cambridge University Press, 2018); Prem Kumar Rajaram, 'Refugees as Surplus Population: Race, Migration and Capitalist Value Regimes', *New Political Economy* 23 (3) (2018): 627–39.

8 'The roots of the term 'placemaking' can be traced to Martin Heidegger's foregrounding of the constitutive relationship between people and their physical environment in his notion of *Dasein* (being-in-the-world), which implies not only that we cannot exist independently of the world around us but also that the world around us cannot exist independent of the people who inhabit it.' Arijit Sen and Lisa Silverman, 'Introduction: Embodied Placemaking: An Important Category of Critical Analysis'. In *Making Place: Space and Embodiment in the City*, ed. by Arijit Sen and Lisa Silverman (Bloomington and Indianapolis: Indiana University Press, 2014), pp. 1–18, at 3.

9 Sen, *Citizen Refugee*, p. 95.

10 Pankaj Sekhsaria, *The Last Wave* (New Delhi: HarperCollins, 2014); Pankaj Sekhsaria, *Islands in Flux: The Andaman and Nicobar Story* (New Delhi: Harper Collins, 2017).



expansion of tourism and allied industries poses a burgeoning threat to the island ecosystem.<sup>11</sup>

Neil is one of the few regions in the Andaman and Nicobar Islands to witness a rapid development of agriculture, fisheries, forestry and, recently, tourism.<sup>12</sup> This is the basis on which Neil first-generation settlers assert their socio-politico-economic identity of being ‘prosperous’ and differentiate themselves from other islanders.<sup>13</sup> These markers of development and progress go hand-in-hand with the imagery of pioneering, productive and patriotic settlerhood, of people who are willing to toil for the development of the nation.<sup>14</sup> As the Indian state recruited male-headed settler families (consisting of four or five members) including women ‘attached’<sup>15</sup> to the male head, these narratives are predominantly androcentric and efface settler women’s participation in and contribution to the process. In order to challenge the pervasive prototype of the pioneering male settler, the chapter uses semi-structured interviews to record the oral histories of first-generation settlers, with an emphasis on settler women, and navigates Neil’s islandscape through their memories. This inquiry uncovers layered geographies – one that settlers built in order to ‘settle’ on the island, another that is being produced as a result of contemporary changes, and the transitional space between these – that make the island a palimpsest which the first-generation settlers navigate in narrating their histories of ‘making of islands, or “islanding”’<sup>16</sup>. The

- 11 Pankaj Sekhsaria, ‘NITI Aayog Vision for Great Nicobar Ignores Tribal, Ecological Concerns’, *The Hindu*, 20 March 2021.
- 12 Ruhi Deol, ‘Building an Islandscape: Discourse, Livelihoods, and Development in the Andaman Islands, India’. Unpublished Ph.D. thesis (Munich: Ludwig Maximilian University of Munich, 2021), p. 19.
- 13 Raka Banerjee, ‘Adrift in the Bay, at Home in the Island: Post-Partition ‘Settler Women’ in Neil Island, Bay of Bengal’, unpublished Ph.D. thesis (Mumbai: Tata Institute of Social Sciences, 2021).
- 14 Uditi Sen, ‘Dissident Memories: Exploring Bengali Refugee Narratives in the Andaman Islands’, in *Refugees and the End of Empire: Imperial Collapse and Forced Migration during the Twentieth Century*, ed. by Panikos Panayi and Pippa Virdee (New York: Palgrave MacMillan, 2011), pp. 219–44; Uditi Sen, ‘Memories of Partition’s “Forgotten Episode”: Refugee Resettlement in the Andaman Islands’, *Südasiens-Chronik - South Asia Chronicle* 7 (2017): 147–78; Sen, ‘Developing Terra Nullius’, 944–73; Sen, *Citizen Refugee*.
- 15 A bureaucratic term for women who had male kin to claim rehabilitation from the state, versus ‘unattached’ women who were ineligible for rehabilitation due to the absence of male kin to claim such benefits from the state.
- 16 Vilja Larjosto, ‘Islands of the Anthropocene’, *Area* 52 (2020): 38–46.

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chapter is divided into three broad sections – settler geographies; changing geographies; and gendered histories and settler identities – which reflect the settlers' manner of presenting the island's history. The chapter offers an account of the settlers' emplacement in an ecologically foreign land, their contribution to the island's built environment and, finally, negotiations with its transforming nature.

### Settler geographies

The Bengali settlers that formed the majority of Neil's settler population arrived in two batches in 1967 and one in 1969. Of these 98 Bengali settler families<sup>17</sup> a large part came from Khulna, in addition to Faridpur, Barishal and Comilla, in pre-Partition Bengal (now in Bangladesh). While these regions are predominantly riverine and the peoples' lives are closely associated with water (for transport, fishing, cultivation, irrigation and so on), their lands are crisscrossed primarily by freshwater. Upon arrival, one of the settler women recalled: 'We wanted to drink water once we got off the ship, so we left our bundles on the shore and descended into the sea and started putting the seawater in our mouth – we didn't know that the water would be salty!'<sup>18</sup>

Arriving in Neil as a young girl with the last batch of settlers in 1969, Swapna Boral of Ram Nagar, now in her late sixties, stressed the hardships of the early years compared to the ease of contemporary settler life. The ship took seven days to reach Neil from the mainland port in present-day Kolkata. As there was no jetty, the transportees disembarked onto smaller boats to reach the island's shore.<sup>19</sup> The island had a thick forest cover with only a handful of temporary shelters for the incoming settlers and offices for departments concerned with settling or, in the contemporary terminology, 'rehabilitating' them. The island received heavy rainfall for a better part of the year. The sun would not come out for months on end. Swapna Boral remembers these early days of the settlement – the lands were densely forested and mosquitoes, snakes and centipedes occurred in large numbers. Settlers would keep count of the foot-long centipedes they killed every evening.

17 Swapna K. Biswas, *Colonization and Rehabilitation in Andaman and Nicobar Islands* (Delhi: Abhijeet Publications, 2009).

18 Interview with Swapna Boral, Ram Nagar, Neil Island (Shaheed Dweep), 25 Jan. 2019.

19 Interview with Chitra Das, Lakshmanpur, Neil Island (Shaheed Dweep), 26 Jan. 2019.



**Figure 1.** Trees felled to prepare settlers' plots. Photograph from the collection of Dr Swapan Biswas.

The settler men, who were usually experienced in cultivation work, along with Forest Department staff, cleared the lands for their homestead plots, agricultural lands for growing paddy and vegetables, and hilly lands for raising coconut and areca nut plantations. Chitra Das's husband used to work as 'labour' – a menial worker tasked with strenuous physical work – in clearing the forests; as she recalled, 'one of the Forest Department staff died after a tree trunk fell on him, his bones were crushed so badly he had to be bundled up with leaves and taken away'.<sup>20</sup> 'The sturdy trunks couldn't be struck down with axes, besides we wouldn't know which way they would fall! People have even died due to such incidents!'<sup>21</sup> recalled Rathin Nag, who worked as 'labour' himself. Settlers often got lost in the forests and had to be rescued by Forest Department officials.<sup>22</sup> Swapna Boral's childhood friend Anita Pal,

20 Ibid.

21 Interview with Rathin Nag, Ram Nagar, Neil Island (Shaheed Dweep), 25 Jan. 2019.

22 Interview with Chitra Das.

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**Figure 2.**

Settlers in front of a temporary 'camp' accommodation, next to felled tree trunks and rooted stumps. Photograph from the collection of Dr Swapan Biswas.

who was around six years old when she came to the island, used to be scared of the sound of the sea, which she believes has grown fainter over time. The settlers' interaction with the island's unfamiliar ecology went hand in hand with their constant negotiation of scarcity. Their stories of these early years highlight the community's hardships in creating a familiar landscape.

Being one of the last islands to be settled, Neil settlers received far smaller allotments – five acres of paddy land and five acres of hilly land for plantation – in comparison to other settlers on the archipelago. Nevertheless, the settlers toiled hard to make the lands cultivable. The fertile low-lying areas were used for paddy farming by settlers who arrived in 1967, whereas later settlers of 1969 grew vegetables on their lands. Contrary to the official understanding of the farmer as exclusively male, wife and husband Sarala and Anil Biswas dug ponds and worked their fields together, as was the case with most settler families. Agriculture department officials taught the settlers new cultivation methods which helped them sow paddy, vegetables and plantation crops like the areca nut on their lands. Sweet potato, brinjal, chilli,

bitter gourd, flat bean and tomato grew especially well. Settler women were equal participants in this cultivation work even though the administration did not acknowledge their role as cultivators and workers in the settlement.

Settlers arriving in 1967 were put up in makeshift 'camps', in barracks made out of tin sheets (which used to be drums for storing kerosene), divided into small cubicles to accommodate each settler family. Some of these structures were made of cane and thatched walls and had long partitioned rooms with high ceiling. Swapna Boral gave birth to her youngest son in one such cubicle. Both structures were similar in their lack of flooring – the floor was bare and sandy. However, the settlers of 1969 were accommodated in structures made from corrugated tin and pucca flooring. Sukhen Haldar, who was very young at the time of being transported, recalls his parents lamenting how they would rear their children in circumstances of such severe scarcity. The settlers had to use kerosene lamps as there was no electricity, and lived in constant fear of the unknown island ecology of snakes, centipedes and elephants. Interestingly, the elephants were brought from the mainland to move felled tree trunks and were transported back once this task was completed. As Sukhen Haldar recalls, since Rathin Nag was a 'senior' and sort of a 'leader', settlers would form a group and walk with him the two kilometres from camp No. 1 (Lakshmanpur) to the place where the jetty stands today, to collect their weekly ration from the supply godown. Rathin Nag would lead with a stick in one hand and a torch in another, instructing them to hide behind tree trunks if any elephants were spotted.

Settler children would help their cultivator parents carry headloads of vegetables and paddy to and from the market, while also attending school as first-generation learners. The boat service from Port Blair would bring provisions once a month (and later every fifteen days). In the meantime, the settler women boiled saltwater to make salt, prepared meals out of boiled papayas and foraged the jungle to make ends meet. Contrasting Neil's contemporary prosperity and connectedness (via airways and waterways) with the initial days of struggle, Anita Pal commented, 'there wasn't even one bicycle on Neil back then!'<sup>23</sup> Even the clothes on the settlers' backs were provided by the government – 'the government gave us two pairs of blouses, petticoats and sarees upon arrival, but how long can it last! Sometimes, we could only drape the saree around us, without any blouses or petticoats.'<sup>24</sup>

23 Interview with Anita Pal, Lakshmanpur, Neil Island (Shaheed Dweep), 24 Jan. 2019.

24 Interview with Swapna Boral.

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After clearing out their allotted plots, the settlers built humble two-room houses – one room for cooking and one for living in. Some could not even afford that and built one room, in which they would cook in one corner and sleep in the other. ‘We cleared the forests, built our own house and now we are firmly placed here’, asserted Anita Pal, like so many other first-generation settlers. Bimala Saha, who arrived as a very young bride, considers all Neil islanders her family.

We are floating on an island in the sea ... we grew crops, vegetables, made coconut and areca-nut plantations – how else would we have survived! Where will we go if not stay here? We better stay on the land given to us by the government.

Rathin Nag admits to having struggled a lot in his initial days on the island, but claims that Neil has proved to be more lucrative than even Bangladesh: ‘There are many hardships here, but the land is very fertile. Everything grows well here.’ The land’s bountiful yield, which was only made possible by the settlers’ tireless efforts, justifies Neil’s uniqueness to the settlers (‘Neil has the most money’)<sup>25</sup> and mirrors their experiences (‘one has to work hard, or they have nothing’).<sup>26</sup> Further, settlers imbue Neil with unique traits (‘Neil is the most peaceful’)<sup>27</sup> to set the island apart from all others in the archipelago. Anita Pal cites the devastating 2004 tsunami to demonstrate these beliefs:

All other *desb*<sup>28</sup> [meaning homeland, country, or region one belongs to] have been affected by tsunami but not Neil. The crack which opened up from the sea came to my courtyard – to the prayer room – but couldn’t cross the threshold.

## Changing geographies

In the decades following the initial settlement period, the island remained peripheral and, by extension, forgotten, by the Indian mainland. Both domestic and international tourism started to flourish on the Andaman Islands only after the archipelago gained global attention following the devastat-

25 Interview with Arati Sarkar, Bharatpur, Neil Island (Shaheed Dweep), 27 Jan. 2019.

26 Ibid.

27 Interview with Anita Pal.

28 In this context, it means all other parts of Andaman and Nicobar Islands, except Neil.



ing tsunami of 2004.<sup>29</sup> As a result of the tsunami, which marks a distinct phase in the island's historical chronology,<sup>30</sup> increased groundwater salinity adversely affected Neil's soil productivity.<sup>31</sup> Earlier, over 75 per cent of Neil's food used to come from the island itself. Certain vegetables, like tomatoes, drumsticks and papayas grew in abundance. However, this has dwindled over time. This altered nature of the island's once-fertile soil is a recurring theme in interactions with the settlers. The geographer Ruhi Deol notes, 'farmers noticed a decrease in yield due to changes in wind patterns and the presence of "salty air" in the fields'. In addition to untimely rain, overuse of pesticides to counter pest infestations, and a shift to organic cultivation without adequate support mechanisms have significantly decreased Neil's agricultural output.<sup>32</sup> This has resulted in increased reliance on livestock-rearing and poultry farming.<sup>33</sup> While the first-generation settlers note this loss of the 'soil's power', many agree that it is not just the soil that has lost its previous robustness, but also the people of the island.

Some settlers attribute this perceived disruption of the island's social fabric to the influx of tourism, as a result of which islanders have allegedly started working less for better and easier money. Neil and Havelock Islands, located about five kilometres from each other, have attracted a major flow of domestic as well as international tourists.<sup>34</sup> The expansion of the tourism industry has resulted in a shift of the islanders' occupational pattern from the traditional agricultural economy and cultivation work to the tourism sector.<sup>35</sup> There is an acute shortage of wage labourers as most locals choose to find employment in tourism and related industries. Higher daily wages in comparison to the mainland attract a lot of migrants, especially from the Sundarbans region of West Bengal, to the island.

The daily footfall of over a thousand tourists has taken a toll on the island's

29 Amrith, *Crossing the Bay of Bengal*, p. 10.; Abraham, "The Andamans as a "Sea of islands", p. 3.

30 Philipp Zehmisch and Frank Heidemann, 'Introduction: Manifestations of History', in *Manifestations of History: Time, Space, and Community in the Andaman Islands*, ed. by Frank Heidemann and Philipp Zehmisch (Delhi: Primus Books, 2016), p. 5.

31 Deol, *Building an Islandscape*, p. 212.

32 Ibid., p. 215.

33 Ibid., p. 214.

34 Radhanagar beach in Havelock Island was voted Asia's most scenic beach in 2016.

35 Andaman & Nicobar Administration, *Master Plan*.



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supply and distribution system, and locals find it hard to buy fresh fish and island produce at the steep prices driven by the tourism economy. Tourism has not only altered the cultural fabric of the island society, but has also upturned the existing social equations based on the value settlers have attached to their land allotments based on their understandings of soil productivity. Most of the early settlers have sold off their land to real-estate developers and settled in Port Blair. In the context of islands with limited land areas, scholars have observed steady rise in beach and coastal property prices, which goes hand in hand with increased gentrification, as a result of which islanders are unable to afford such coveted properties and increasingly lose out to well-heeled outsiders.<sup>36</sup> In order to communicate these changes, the settlers juxtapose two distinct geographies: first, the 'original' geography of plots, settlements and the settlers' history of place-making on the island; second, the current geography of Neil as a tourism destination, dotted with hotels, beaches and water-sports facilities which can be seen as contradictory to the settlers' geography.

Neil isn't quite a village, like you must have noticed while coming from the jetty to the market, the streets are lined with vehicles, tourists and a constant flow of population. Our camp was in No.1, where the Tango Resort stands today. Our allotment initially was elsewhere, but that land was sandy and rocky, not suitable for agriculture. So, we left those lands for this place and those lands are now selling for crores! All because of tourism. These people had come at least fifteen years after we did, till which time the land was lying vacant, so these people encroached on these lands. They are much richer than us now! They have huge hotels and businesses now – Tango Hotel, Neha Palace etc.<sup>37</sup>

It was due to the settlers' labour that the forested island turned into the Andaman Islands' 'vegetable bowl', unparalleled in its agricultural productivity.<sup>38</sup> The state's vision of transforming the refugees and migrants into 'productive citizens' matched the settlers' determined attempts to convert the islandscape into a familiar terrain. Their narratives of struggle, therefore, are both narratives of adaptation and 'islanding'.<sup>39</sup> In other words, by virtue

36 Godfrey Baldacchino and Wouter Veenendaal, 'Society and Community', in *The Routledge International Handbook of Island Studies: A World of Islands*, ed. by Godfrey Baldacchino (Oxford and New York: Routledge and Taylor & Francis Group, 2018), p. 349.

37 Interview with Sukhen Haldar, Bharatpur, Neil Island, 24 Jan. 2019.

38 Zehmisch, 'Between Mini-India and Sonar Bangla', 72.

39 Larjosto, 'Islands of the Anthropocene', 39.

of 'exploitation of the inside of the island' through agriculture, plantations and deforestation, and by engaging in activities related to water like fishing, inter-island commerce and tourism, the settlers acted as economic agents and affirmed Neil's islandness.<sup>40</sup> By being 'firmly placed' and 'settled' on Neil, islanders imbue the island space with value and perceived permanence of settlement that transforms it into place.<sup>41</sup> As a result of the settlers' place-making<sup>42</sup> and 'place-attachment'<sup>43</sup> to Neil Island, they position themselves squarely on the island and set out to rationalise its superiority over all other islands in the archipelago. This finds expression in the settlers' desire to attach special, often mystical, attributes to Neil.

The uniqueness of Neil as a place of prosperity is also highlighted in the contemporary context of a booming tourism industry on the island. The settlers' memory of the process of settling the *terra nullius* offers a distinct geography from that of present-day Neil Island. In other words, the older settlers use their settlements as the original blueprint on which contemporary developments (like resorts and tourist lodges) have formed another layer of

40 'According to M. Jędrusik (2005) and others, economic history of tropical islands indicates that, apart from the exploitation of the inside of the island (agriculture, at times mining, less frequently exploitation of forests), dominating activities have been those related with water (fishery, interisland commerce, currently – 3S tourism, fishing licence brokerage business, using exclusive economic zones), or with isolation (benefits from existence of a microstate, tax paradises, etc.). A "real" island should therefore be characterised with those set of features – connected with the vicinity of water or the isolation.' Maciej Jędrusik, 'Island Studies. Island Geography. But What Is an Island?' *Miscellanea Geographica* 15 (2011): 201–12, at 203.

41 Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977).

42 Zehmisch, 'Between Mini-India and Sonar Bangla', pp. 75–76.

43 'Giuliani (2002) defines place attachment as both the product of attaching oneself to a place and a product of this process, and this process has been used to refer to the strong bond that exists between people and places (Altman and Low 1992) and how this relationship might develop over time (Giuliani and Feldman 1993), to the extent that when places 'that are central to our identities' are threatened by change 'we are willing to fight' (Stedman 2003, 577).' Ian Convery, Gerard Corsane and Peter Davis, 'Introduction: Making Sense of Place', in *Making Sense of Place: Multidisciplinary Perspectives*, ed. by Ian Convery, Gerard Corsane and Peter Davis (Woodbridge: The Boydell Press), pp. 1–8, at 3; 'Place attachment ... brings attention to the difference between abstract space and meaningful place.' Setha Low, *Spatializing Culture: The Ethnography of Space and Place* (New York: Routledge, 2017), p. 26; 'Place attachment ... refers to the emotional and affective relationship of people to a space or piece of land and the associated symbolic meanings and modes of attachment.' (Low, *Spatializing Culture*, 78)

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place-making. Sukhen Haldar,<sup>44</sup> who was nine or ten years old when he came to the island with his family, narrates the process of settling with respect to the current spatial organisation of the island's streets and landmarks: 'We used to live in No. 1 where Gurudas's Tango and the helipad stands today, our camp was there back then'. In narrating their pasts, the first-generation settlers choose to privilege one spatial map of the island – that is, the original settler geography – over another, emphasising the significance of a particular spatial and temporal 'place'. Their place-making on Neil and attachment to Neil leads to them seeing Neil as the 'middle place'<sup>45</sup> or 'the centre of the world'<sup>46</sup> and acts as an antidote to their trauma of post-Partition displacement(s). 'To this day you will find a tree stump on my land from that time', says Rathin Nag about the time of his arrival on the island in 1967, reminding us of the palimpsest nature of the island's geography.

### Gendered histories and settler identities

Tourism has resulted in a robust cash flow but it has weakened the sense of community. ... There was a strong sense of community which has now been replaced with a constant lust for money and less time for others. ... Earlier one would go to a neighbour's house in the evening for religious gatherings (*satsang, kirtan, hari shabha*) etc.<sup>47</sup>

The geographic boundedness of islands is often understood to produce a strong sense of social cohesion which results in a perception of the island space as 'safe' – that is, free from violence and crime.<sup>48</sup> Settler interactions affirm such beliefs by underlining the island's 'peaceful' social fabric, which is echoed in individual settler families that have retained the 'joint' family set-up composed of multiple generations of kin as well as extended fam-

44 Interview with Sutapa Haldar and Sukhen Haldar, Bharatpur, Neil Island (Shaheed Dweep), 24 Jan. 2019.

45 'The prestige of the center is well established. People everywhere tend to regard their own homeland as the 'middle place,' or the center of the world.' (Tuan, *Space and Place*, p. 38)

46 Ibid.

47 Interview with Sukhen Haldar.

48 Vanessa Burholt, Thomas Scharf and Kieran Walsh, 'Imagery and Imaginary of Islander Identity: Older People and Migration in Irish Small-island Communities', *Journal of Rural Studies* 31 (2013): 4.

ily living together.<sup>49</sup> Both Sukhen Haldar in the above quote and Anita Pal agreed that Neil islanders used to be a close-knit community bound together not only by similar settler experiences, but also by common social and cultural values, belonging as they did to the same so-called lower-caste and social class of Bengali society. The gradually increasing affluence of the settler community coupled with the recent surge of the tourism industry has introduced many ‘luxuries’ to the settlers’ lives. However, this has often been at the cost of social cohesion and, according to early settlers, detrimental to the Bengali cultural identity. The community’s social unity – faced with threats from ‘mainland culture’, flow of tourists, employment of women and arrival of migrants – is in effect hinged on the performance of gendered ‘cultural scripts’<sup>50</sup> that dictate notions of women’s propriety, honour and ‘Bengali-ness’, aided by the ‘insularity’ of the island space from the mainland. The contemporary shifts in the island’s political and social geography are threatening to alter exactly that.

In the present context (at the time of conducting interviews in the field in 2019), oral histories of the first-generation Bengali settlers on Neil Island presented complex negotiations between a ‘modern’ settler sensibility and a desire to uphold ‘traditional’ Bengali cultural values, which the settlers had been able to recreate on the island in the very early years of settlement.<sup>51</sup> During his tenure as the village head (*Pradban*) in the 1990s, Sukhen Haldar took proactive steps to put curbs on tourism:

49 Interview with Anita Pal.

50 ‘Cultural scripts are intended to capture background norms, templates, guidelines or models for ways of thinking, acting, feeling, and speaking, in a particular cultural context’. Cliff Goddard and Anna Wierzbicka, ‘Cultural Scripts: What are They and What Are They Good For?’ *Intercultural Pragmatics* 1 (2) (2004): 153–66, at 157.

51 In his work on the Ranchis of Andaman Islands, Zehmisch has coined the term ‘the island mentality’, which he defines as ‘a subaltern sense of place based on inter-ethnic solidarity and processes of cultural creolization occurring through appropriation of hybrid values, norms, and practices prevalent among the islanders. It exists in the subtext of the nationalist icon of Mini-India – which declares the harmonic cohabitation of islanders as a result of their belonging to the pluralist nation – and in spite of politics that divide the Andaman society into different identity ‘containers’. Due to these two ideological preoccupations, the fragmentary subaltern consciousness of the island mentality occupies a marginal position in official discourse.’ Philipp Zehmisch, *Mini-India: The Politics of Migration and Subalternity in the Andaman Islands* (New Delhi: Oxford University Press), p. 300.

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Earlier the mainland tourists wouldn't come, only the foreign tourists did and since they did not have any place to stay, they stayed in the jungle or on the beach in camps and hammocks. They would buy fruits and would cook on their own. It did not provide the locals with a source of income. They would take drugs, too. Back then I had written an article mentioning these aspects, to which many of my friends reacted negatively as they considered this a hindrance in the development of tourism in the island.

According to him, 'original' settlers were better off when they could hold on to their culture, whereas the recent boom in tourism is completely destroying their values. As he further explained, 'wives and daughters are going to earn an income by putting up stalls at the beach, some to work at the hotels and resorts, and no one can be told otherwise'. The older settlers blame tourism on two counts: first, adversely affecting the island's culture whereby younger settler women, who would earlier work within the confines of the domestic space of the household and settlement land, are entering the informal workforce as servers, cooks and cleaners in tourist accommodations and as knick-knack sellers along the beach. For a prosperous settler community, women's participation in such informal forms of employment that require regular interaction with strangers and long hours in public places, goes against the established gendered notions of honour and respectability. Second, tourism is held responsible for altering the 'hard-working' nature of the settlers and making younger generations 'lazier' and more reliant on 'easy' income. This indicates intergenerational changes in the island's society, which sets apart the first-generation settler women's subjectivity from later generations.

In addition to tourism being a disruptive force for the island's culture, the first-generation settlers' anxiety around the 'tourist' figure is evident in the distinction made between 'guest' and 'tourist' and offers key insights into the settler women's understanding of the islanders' relationship with the mainland. While 'tourist' refers to foreign visitors of non-Indian origin (predominantly white), 'guest' refers to mainland Indian visitors, particularly mainland Bengalis. Moreover, these words are endowed with distinct meanings in the settler women's vocabulary, with each word implying multiple meanings contingent on the context of the narration. For Anita Pal,<sup>52</sup> 'tourist' triggered a particularly difficult memory:

My younger son used to be a very chubby beautiful child. I would doll him up in my elder daughter's clothes. (Laughs) The tourists who came they looked different and their language was incomprehensible ... they had come on a ship that would travel overseas. When they asked for drumsticks from our trees, I plucked them out for them. Then they started coming quite regularly and one day they came to take my younger son! One who could speak Hindi came up to me and tried to convince me that I should give away my son to the navy. And I was like, ah yes, so that you can chop him up into little pieces and throw him in the water! To this he said that, no, we will take your child and bring him up for you and he will be very rich. I said, no, I would rather starve to feed him than give him away. After I said that, they gave twenty rupees to my son and I started crying and nudging him to return the money as I was convinced, they would now take him away.

This particular incident took place long before tourism began in a big way on the island. Yet, for Anita Pal, these 'foreigners', 'others', were the first 'tourists' who wanted to take her son away. Her apprehension regarding 'tourists' is echoed in other settlers' narrations, too. Bimala Saha explained:

My son has come back yesterday from the mainland. He works for 'guests' and 'tourists' ... people from the mainland come here, so he communicates with them, takes them sightseeing, booking 'lodge', arranging their food, advising on their travel plans. 'Tourist' is different and people like yourself who come here for a visit are different. The arrangements for tourists are different; they won't eat, live or dress like Bengalis. They are different from us. They don't live in places like these ... the accommodations they prefer are also being built ... they go to the beach and lay on the sand ... rolling around in the sand, they don't have any sense ... tourists are also guests, but the Bengalis come here and some even sit with me, talk to me, spend time with me ...<sup>53</sup>

Tourists are guests, yet different from guests. Tourists are 'foreigners' travelling from beyond the 'mainland', while 'guests' are 'mainlanders.' Further, 'guests' imply Bengali tourists from the mainland. Settlers' distinctions imply a sense of familiarity with 'guests' and their preference of them over 'tourists' who 'roll around in the sand and don't have any sense'. These 'guests' come from 'my *desh*',<sup>54</sup> implying a number of places on the Indian mainland, as well as present-day Bangladesh. In referring to these places as

53 Interview with Bimala Saha, Bharatpur, Neil Island (Shaheed Dweep), 25 Jan. 2019.

54 Our conversation began with me sharing that my paternal grandfather belonged to Bikrampur, Dhaka, but I was born in Jalpaiguri, in northern Bengal, and I was at that point living in Patna, Bihar. She could identify each of these places and was particularly

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my *desb*, Bimala Saha firmly establishes herself as belonging to the island and identifying the island as her *desb*.

As migrants from the mainland take up employment on the island (as boat operators, drivers and in several capacities in resorts) alongside younger islanders, settlers are of the opinion that the influx of ‘mainlanders’ has caused the settlers to take a back seat in the island’s local economy. While most early settlers stress the negative impact of ‘mainland culture’, via tourism, on the island’s social fabric, in reality many settler families are also prominent participants in the island’s tourism industry. As mentioned earlier, Neil and Havelock islanders have witnessed rapid changes in their livelihoods, and both islands have emerged as main tourism destinations in the Andaman Islands. The implementation of ‘tourism-as-development’<sup>55</sup> model has led to a gap between the early settlers’ cultural perception and their lived economic reality. This combination of cultural and economic concerns is exemplified by settlers like Archana Ghosh and her family,<sup>56</sup> who run a ‘lodge’ offering accommodation to tourists. In her opinion, women no longer cover their head, act like women, or ‘maintain caution’, as they have acquired this ‘bad taste’ from watching television. Archana Ghosh’s tirade is particularly directed against the (female) ‘guests’ coming from Kolkata (stand-in for West Bengal, especially southern West Bengal). She (and her family) exerts a considerable amount of patriarchal control over the family’s young daughters-in-law – imposing restrictions on clothing as well as their reproductive choices – but does not object to the ‘other’ women’s employment in the tourism industry. This double standard for settler women on the one hand and the ‘others’ – migrant women from the mainland and ‘guests’ – on the other hand highlights the nature of patriarchal control of the settler family. The different standard of propriety serves to maintain the achieved prosperity of the island’s settler families: the mainland women’s labour secures the settler families’ economic status. At a time when the island is witnessing such rapid changes, the settler women uphold the island’s distance from the mainland as a positive attribute. As Anita Pal told me, ‘unlike Neil, in other places even the slightest conflict will lead to violence’;<sup>57</sup> another interview

happy to hear about Bikrampur. She shared that her journey from camp to camp by train acquainted her with all these places on the mainland.

55 Deol, *Building an Islandscape*, p. 49.

56 Interview with Archana Ghosh, Sitapur, Neil Island (Shaheed Dweep), 25 Jan. 2019.

57 Interview with Anita Pal.



partner asserted that ‘earlier, if someone were to forget their bag in the bus it would stay put for weeks – crimes have increased with the increase in tourism and migration from the mainland’.<sup>58</sup> Thus, they perpetuate the mental divide between island-mainland cultures in the face of the island’s economic reality.

## Conclusion

The three sections of this chapter – ‘settler geographies’, ‘changing geographies’ and ‘gendered histories and settler identities’ – take the reader through a timeline of Neil’s transition from *terra nullius* to agricultural settlement to coveted tourism destination. These transitions correspond with changes in the larger political economy of how islands can be used by their mainlands, in this case, the Indian state. The transitions, however, do not imply an absolute overhaul of the islandscape: rather it is in the nature of change to retain residual elements of past geographies – like dead stumps of felled trees – that continually remind their witnesses of the multiple spatial and temporal histories of the space. The chapter argues that these changes altered the geography of the island alongside the identity of the actors (that is, the settlers) administering these changes on the ground. The Bengali settlers who were transported to the island by the newly-independent Indian state transformed their identities from disenfranchised ‘refugees’ into ‘settlers’ with considerable socio-political clout. This exchange between the once socially marginalised people and the once geographically peripheral island creates a strong sense of place-attachment for the early settlers. Tourism ushered in a new period in the island’s history.<sup>59</sup> While the flourishing business has led to further ‘colonisation’ of the islandscape and has dominated its ecology and society, the alarming pace of climate change, increased occurrence of extreme climatic events and rising sea levels raise serious concerns about the continued existence of the island.<sup>60</sup> Against the backdrop of these contemporary changes and increasing inter-generational differences, the early settlers’ histories of ‘islanding’, that may soon be lost to us, are a reminder of Neil’s distinct islandness. Reading the islandscape as a multi-layered

58 Interaction with informant in Port Blair.

59 Zehmis and Heidemann, ‘Introduction: Manifestations of History’, p. 5.

60 Meenakshi Kapoor, ‘How Andaman Islands Are Losing Green Protection Against Business & Tourism’, *IndiaSpend*, 9 April 2021.

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text – based on the early settlers’ oral history of the island’s foreign ecology, negotiations with the challenges of ‘settler’ life, triumph over adversities to construct a familiar settler islandscape and, ultimately, the changing settler geographies and identities of today – reveals its palimpsest character, and cautions us against the homogenising impact of tourism-as-development on island spaces.

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**Part III.**  
**Islands of Experimentation**



# 11. Lost Eden:

## An Environmental History of the Plantation System on the Island of La Réunion (1638–1960)

Philippe Holstein, Jehanne-Emmanuelle Monnier and Pablo Corral-Broto

*How is an island different from a continent? This question was asked at a key moment in the development of a project. The answers were very varied and familiar: the distance from the mainland, sometimes the ultra-periphery; being surrounded by the sea; the micro-society that is created... But on the island of La Réunion, we realised a cruel answer related to the past of slavery: you can't run far away. An island is also a closed place for animal and especially plant species. This explains the high rate of endemism found there. Today this island is a tourist destination where many people want to go. The island's paradigm shift is another sign of the success of social and environmental change and the improvement of the quality of life of the inhabitants of La Réunion.*

I do not know whether coffee and sugar are necessary for the happiness of Europe, but I do know that these two plants have been the bane of two parts of the world. America has been depopulated in order to have land to plant them in: Africa is being depopulated in order to have a nation to cultivate them.

On the Isle of Bourbon ... there are more vegetables growing than can be consumed.<sup>1</sup>

## Introduction

East of Madagascar lies the Mascarene archipelago, composed of three islands: Rodrigues, Mauritius and Réunion. Réunion formed two million years ago, making it the youngest landmass created by the Deccan volcanic hotspot. Dominated by the 'Piton des Neiges', its peak reaching 3,069 metres, Réunion presents a mountainous profile. More than forty per cent of its 2,500 square kilometres have an elevation of more than 1,000 metres and much of the island is dominated by steep slopes. Because of its topography, its lack of natural harbours and its remote position in the Southwest Indian Ocean, the island has remained for millennia only loosely connected to the Afro-Asian world that has shaped this basin. Though it appeared on Arabian maps in the tenth century as *Dina Morgabini* (see Figure 1), no permanent human settlement occurred until the seventeenth century. Such isolation allowed for the development of unique and diversified ecosystems, adapted to the varied humidity and temperature gradients. Before human colonisation, 88 per cent of the island was covered with forests, home of many endemic and iconic species such as *solitaire* – the Réunion ibis, parrots, and giant tortoises. Ninety per cent of the flora was considered endemic to the Southwest Indian Ocean.<sup>2</sup>

Taken over by the French *Compagnie de l'Orient* in 1638, Réunion progressively became a plantation economy that relied on the labour of slaves and indentured workers. Its economy specialised in the production of tropical commodities – coffee, spices, sugar and essential oils. Due to the absence

- 1 H. Bernardin de Saint-Pierre, *Voyage à l'Isle de France, à l'Isle de Bourbon, au Cap de Bonne-Espérance, etc. avec des observations nouvelles sur la nature et sur les hommes, par un officier du Roi*, Tome 1 (Paris: 1773), pp. 201 and 308.
- 2 Anthony Cheke and Julian Hume, *Lost Land of the Dodo. An Ecological History of Mauritius, Réunion & Rodrigues* (London: T. & A.D. Poyser, 2008).



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**Figure 1.** Cantino planisphere (1502) with the Arabian name Dina Morgabini (La Réunion).  
Source: Bibliothèque nationale de France (<https://gallica.bnf.fr/ark:/12148/btv1b8440984z>).



**Figure 2.** Historical map of La Réunion Island.  
Source: Bibliothèque nationale de France (<https://gallica.bnf.fr/ark:/12148/btv1b531194760>).

of an indigenous population, Réunion constitutes one of the first societies to be literally shaped by an economic imperative that organised and guided human settlement. In this chapter, we analyse the institutionalisation and expansion of a specific variant of the island plantation system, from diversified coffee and spice cultivation to a sugar monopoly. We then describe how ecological feedbacks and the island's unique characteristics gradually compromised the prosperity and sustainability of the plantations, plunging the island into a period marked by structural land-use pressure, food vulnerability and health crisis.

## The institutionalisation of the plantation system

Initiated by the Portuguese in the sixteenth century, European penetration into the Southwest Indian Ocean triggered the integration of the Mascarenes into the modern world-system. The Dutch East India Company took possession of Mauritius in 1638, while the French *Compagnie de l'Orient* conquered the island of Bourbon – later named Réunion – in 1642. On the new southern routes to India, Malacca and the Moluccas, these islands were first used as stopovers. The testimonials and travel stories compiled by the historian Albert Lounon depict Bourbon as a 'Garden of Eden', whose fresh air and water could heal the sickest sailors.<sup>3</sup> They also reveal a distant, utilitarian relationship to the island's ecosystems that treated them as a reservoir offering bountiful wellsprings of fresh water, lumber and easy prey. Several narratives describe hunting orgies that targeted the giant tortoises as well as various bird species.<sup>4</sup>

The first permanent colonisation of Bourbon occurred in 1654 by French colonists and slaves from Madagascar. In 1665, the island was sold to the French East India Company, which enjoyed a fifty-year monopoly on all commercial activities in the Indian Ocean. Botanists and surgeons employed by the Company were rapidly mobilised to conduct exhaustive surveys of the island ecosystems, identify valuable resources and experiment with the cultivation of potential commodities.<sup>5</sup> Meanwhile, the Company recruited

3 A. Lounon and D. Vaxelaire, *Sous le signe de la tortue: voyages anciens à l'île Bourbon 1611–1725* (La Réunion: Orphie, 2006), pp. 27–28.

4 Ibid.

5 A. Lounon, *L'île Bourbon pendant la Régence. Desforges Boucher. Les débuts du café* (Paris: Editions Larose, 1956), pp. 90–96.

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indentured workers from mainland France to exploit and develop these resources. These workers were granted large land plots called *habitation* through five-year contracts. The Company also organised the 'import' of women from Madagascar and India.<sup>6</sup> The initial population of Bourbon was thus highly mixed.

Surrounded by the island's rich resources, the first inhabitants rapidly failed the expectations of the Company. Instead of following the productive imperative, they developed a subsistence economy based on hunting. To counteract this trend and the settlers' so-called 'idleness', Governor Jacob Blanquet de la Haye enacted an order in 1674 that banned hunting and imposed production objectives.<sup>7</sup> Agriculture gradually became the economic foundation of the colony. In the 1711 census, 97 of the 103 family heads on the island were labelled as cultivators. The most cultivated crops at the time were vegetables, bananas, maize, rice and wheat, grown both for the settlers' own consumption and to supply vessels. Sugarcane also occupied a large number of plots to produce cane wine – *fangourin* – and distilled alcohol – *arack*. These products were notably served in a large number of taverns to pirates chased from the Caribbean. These pirates exerted a critical influence on the island: they accounted for forty of the 121 family heads in 1714 and brought to the island the initial capital that would later serve the development of its economy.<sup>8</sup> With them, they also brought slaves: in 1709, the population was composed of 384 slaves and 116 free settlers.

Though the population remained limited, the first fifty years of colonisation had a severe ecological impact on the island. Due to overhunting, giant land tortoises, considered rare in 1667, were extinct by 1735. The introduction of invasive species such as dogs, goats, pigs and rats also accelerated the decline of native birds which were incapable of competing and adapting to such pressures. Even before sugar plantation, the need for wood for construction, ship repair and commercial activities led to the destruction of the semi-dry forest that had covered the west coast from St Paul to Ste Suzanne. Like on Mauritius, such deforestation rapidly altered the water cycle and many

6 P. Eve, *Variations sur le thème de l'amour à Bourbon à l'époque de l'esclavage* (Saint André: Océan Editions, 1998), p. 245.

7 F. Lautret-Staub, 'Trois moments de protestation populaire à Bourbon (XVII-XIXe siècle). Conte, haut lieu et légende comme conservatoire de mémoire', Thèse de doctorat (Université de La Réunion, 2001), p. 27.

8 J. Barrassin, *La vie quotidienne des colons à l'île Bourbon à la fin du règne de Louis XIV: 1700–1715* (St Denis: Académie de La Réunion, 1989), p. 33.

testimonials pointed out that the reduction in rainfall, and more severe desiccation, caused a marked erosion rate and a loss of soil fertility.<sup>9</sup>

### *The coffee revolution (1715–1820)*

The history of Bourbon changed in 1710 with the discovery of an indigenous coffee plant – *Coffea mauritiana*. At that time, the global production of coffee was concentrated on the Arabian Peninsula and the Dutch enjoyed a quasi-monopoly on the supply to Europe. As a consequence, France suffered a commercial deficit with the Netherlands. The French East India Company seized this opportunity to increase its turnover by importing and then cultivating coffee. In 1718, the Company introduced coffee from Moka in Yemen and made its cultivation mandatory for all inhabitants of the island. In 1724, an ordinance introduced the option to take over the *habitation*<sup>10</sup> of any settler cultivating less than 200 coffee plants per slave, and to sentence to death anyone caught destroying the plants. To stimulate coffee production, the Company offered financial incentives and sold on credit luxury goods imported from China. It also legalised the slave trade in 1718, as coffee production required intensive manpower.<sup>11</sup>

As a consequence, Bourbon entered what Donna Haraway has referred to as the ‘plantationocene’, a period of large-scale agricultural production relying on environmental extraction and exploitation of human labour.<sup>12</sup> Commonly associated with sugar, the socioeconomic institution of the plantation also characterised coffee cultivation. Philip Curtin has defined the plantation system by five criteria:<sup>13</sup> the mobilisation of colonies, politically controlled by a distant country; export-oriented economies producing cash crops; the prevalence of large-scale capitalist plantations; reliance on

9 K. Payet, ‘Les prélèvements de la faune et la flore à la Réunion’, *Mémoire de maîtrise d’ethnologie* (Université de La Réunion, 1997).

10 Initially the term ‘habitation’ referred to the land concession awarded to the Company employees. It was progressively applied to any plot that cumulated housing and productive purpose.

11 P. Eve, *Histoire d’une renommée. L’aventure du caféier à Bourbon. La Réunion des années 1710 à nos jours* (Saint Denis: Océan Editions, 2006).

12 D. Haraway et al., ‘Anthropologists Are Talking – About the Anthropocene’, *Ethnos* 81 (3) (2016): 535–64; M. Ferdinand, *Une écologie décoloniale. Penser l’écologie depuis le monde caribéen* (Paris: Seuil, 2019).

13 P.D. Curtin, *The Rise and Fall of the Plantation Complex. Essays in Atlantic History* (Cambridge: Cambridge University Press, 1990).

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forced labour and imported population; and this population's subjection to discipline and surveillance mechanisms. All these phenomena occurred on Bourbon from 1711.

On Bourbon, the expansion of the plantation system relied on two complementary processes. The first of them was the rapid growth of the slave population needed to produce coffee. Up to 1728, 5,000 slaves were imported to Bourbon from Madagascar, Mozambique and Western Africa. Between 1729 and 1768, this number rose to 40,000 and grew again to more than 80,000 between 1768 and 1793.<sup>14</sup> The population thus grew from 1,171 inhabitants in 1713 to 67,800 in 1810. Seventy-six per cent of these people were slaves.<sup>15</sup>

The second process concerned ecological, economic and social simplification. Though coffee grew in the shade, the extension of plantations led to the destruction of indigenous ecosystems. This deforestation also stemmed from the need of cultivating food crops, such as rice, maize or grains, to support a growing servile population. As a consequence, the wooded areas shrank from 162,462 hectares in 1753 to 125,000 hectares in 1804. The simplification process also took place in economic terms: once diversified activities gradually gave way to coffee production which in 1804 represented 75 per cent of the revenue generated by the island's agriculture.<sup>16</sup> Such growth relied on a highly dualistic and hierarchical society in which a limited number of free white subjects controlled a large slave population. The slaves were legally considered as chattel property and subjected to oppressive living conditions. Even among the white landowners, pauperisation grew exponentially in the coffee era: in 1792, 25,000 of the 40,000 free inhabitants lived in a precarious situation, while ten per cent of the settlers controlled ninety per cent of the slave population.<sup>17</sup>

Although Bourbon shared many similarities with the plantation systems introduced in the Mediterranean and the Caribbean, such as deforestation and food crop reduction, the island possessed unique characteristics. Though

14 J.M. Filliot, *La traite des esclaves vers les Mascareignes au XVIIIe siècle* (Paris: ORS-TROM, 1974), p. 54.

15 Agence d'urbanisme de La Réunion, *La Réunion: Enquête monographique régionale* (Saint-Denis: 1965).

16 D. Lefèvre, 'L'organisation de l'espace à Maurice et à La Réunion : étude de géographie comparée', Thèse de doctorat (Nice: 1986).

17 C. Wanquet, *Histoire d'une révolution, La Réunion 1789–1803* (Marseille: Jeanne Laffitte, 1980), p. 64.

coffee represented the largest share of the exports and value produced on the island, it was never exclusive or even dominant in terms of volume. As stated by Bernardin de Saint-Pierre, a writer and French botanist, the islanders 'lived on rice and coffee, hardly needing anything from Europe'. The island produced and exported 20,000 quintals (one quintal equals 100 kilograms) of wheat and 20,000 quintals of coffee a year.<sup>18</sup> The production of food crops to meet the needs of the inhabitants remained the dominant activity. In the early eighteenth century, Bourbon also fed the population of Mauritius, which the French took over after the Dutch had abandoned the island. In the design of the Company, Mauritius acted as an emporium, a commercial and shipping centre, while Bourbon served as a breadbasket. Moreover, colonial administrators were aware of the risks induced by an economic dependency on coffee. They thus encouraged economic diversification, notably through the cultivation of nutmeg and clove trees, introduced by Governor Pierre Poivre (1767–1772) from the Moluccas, breaking the Dutch surveillance and monopoly established on the spice trees. Under Poivre's supervision, a local autodidact named Joseph Hubert acclimatised many tree species and fine-tuned the agroforestry plantation techniques.

### *The paradox of abolition: a new sugar plantation system (1815–1946)*

At the beginning of the nineteenth century the coffee economy, weakened by decades of structural crisis, collapsed following two series of devastating cyclones in 1802 and 1806. Meanwhile, a major opportunity arose. In 1804, France definitively lost its Caribbean colony of Saint-Domingue, the world's leading sugar producer at the time. Mauritius and Réunion were also captured by England during the Napoleonic Wars. As a consequence, sugar prices rose rapidly and some of Réunion's settlers reoriented their *habitations* to sugarcane cultivation. In 1817, Réunion landowner Charles Desbassayns introduced the first steam-powered sugar mill.<sup>19</sup>

The conversion to sugar relied on the same massification and simplification processes described earlier. Compared to coffee, the production of sugar

18 H. Bernardin de Saint-Pierre, *Voyage à l'Isle de France*, Tome 2, pp. 19–22.

19 J.F. Geraud, 'Des habitations-sucreries aux usines sucrières : la 'mise en sucre' de l'île Bourbon, 1783–1848', Thèse de doctorat (Saint-Denis: Université de La Réunion, 2002), p. 18.



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required an even larger workforce to grow and process the cane.<sup>20</sup> According to Sudel Fuma, more than 200,000 slaves arrived to work on the island's plantations throughout its history.<sup>21</sup> The abolition of slavery in 1848 offered a new economic opportunity to the main landowners: instead of slaves, they now used indentured labourers called coolies or *engagés*. These *engagés* were formally free but suffered slave-like conditions on the plantations during their five-year contracts.<sup>22</sup> Between 1818 and 1882, 117,813 *engagés* were imported from Africa and Asia. As a consequence, the population of Réunion grew from 68,400 in 1815 to 241,677 people in 1941. The simplification of the ecological systems also accelerated. In 1820, 4,265 hectares of land were dedicated to sugarcane and this number rose to 48,000 hectares in 1864. This expansion occurred through removal of previous crops as well as through the extension of the agricultural frontier at the expense of native ecosystems.

The abolition of slavery paradoxically gave rise to a new simplified plantation system of sugar monoculture, with no more coffee or spice trees, which disappeared within four decades. In 1860, sugar accounted for 94 per cent of the island's revenue. If we examine the first steps of the plantation simplification process, we observe that in the early 1850s sugarcane did not replace food crops.<sup>23</sup> This means that the planters cultivated sugar on newly cleared plots or on the former coffee or spice plantations. Xavier Le Terrier has shown that the explosion of sugarcane cultivation was seen as a danger by contemporary press 'because of the deforestation it induces'.<sup>24</sup>

An essential witness to this transition was the engineer Louis Maillard, who described the sugar rush as follows: 'The ease with which sugarcane

20 J. Barrassin, *La vie quotidienne des colons à l'île Bourbon à la fin du règne de Louis XIV: 1700–1715* (St Denis: Académie de La Réunion, 1989), p. 101.

21 S. Fuma, *L'abolition de l'esclavage à La Réunion. Histoire de l'insertion des 62 000 affranchis de 1848 dans la société réunionnaise* (Saint Denis: Océan Editions, 1998), p. 98.

22 H. Gerbeau, 'Engagés and Coolies on Réunion Island. Slavery's Masks and Freedom's Constraints', in *Colonialism and Migration; Indentured Labour Before and After Slavery*, ed. by P.C. Emmer (Dordrecht: Springer Netherlands, 1986), pp. 209–36; A. Stanziani, *Sailors, Slaves, and Immigrants. Bondage in the Indian Ocean World, 1750–1914* (New York: Palgrave MacMillan, 2014); G. Campbell (ed.), *Bondage and the Environment in the Indian Ocean world* (London: Palgrave, 2018).

23 S. Fuma, *Une colonie île à sucre: l'économie de la Réunion au XIX<sup>e</sup> siècle*, (Saint-Denis: Océan Editions, 1989), p. 11; X. Le Terrier, 'L'agriculture cannière et l'industrie sucrière à La Réunion au cours de la seconde moitié du XIX<sup>e</sup> siècle, 1848-1914 : entre croissance et crise', Thèse de doctorat (Saint-Denis: Université de La Réunion, 2008), p. 58.

24 Le Terrier, 'L'agriculture cannière', p. 238.



growers could take out loans with the sugar companies, on the condition, of course, that they pledge their crops to them, led many small farmers to destroy everything in order to take up the new crop.<sup>25</sup> He also claimed that 'on Bourbon, with very few exceptions, the forests no longer exist' and advised that 'further clearing should be resisted'.<sup>26</sup> Still Maillard believed sugar plantations would not last long and the island would return to food crops.

The new plantation system also gradually reduced the areas dedicated to subsistence farming, which accounted for seventy per cent of the cultivated areas in 1820 and less than eighteen per cent in 1885. Maize went from more than half of the crops in 1820 to twenty per cent in 1860. Some cultures, like rice and wheat, completely disappeared within a century. In 1862, Maillard stated 'at the present time, sugar cane and gardening are the only crops in the country'.<sup>27</sup> Many small landowners went bankrupt during the sugar crisis of 1867, due to the drop in prices because of increased competition with other sugar islands and sugar beet improvements. Ruined settlers were forced to abandon their land and many of them moved to the uninhabited highlands once occupied by fugitive slaves.

In these relegated spaces, former slaves and ruined landowners developed a subsistence economy, based on the rainwater cultivation of maize, pulses and vegetables along with the use of natural fibres. Though autonomous and dedicated to a freedom ethos, this neo-peasantry remained highly connected to the plantation system. Many worked part-time in the sugar plantations during the harvest period or occupied marginal lands that belonged to the main landowners. Such occupation was regulated by a kind of sharecropping, the *colonat partiaire*, established in 1882 to counteract the declining number of coolies and the shortage of a labour force. The *colonat* allowed landless peasants to live on land in exchange for a third of the harvest. This institution proved decisive not only for controlling a stigmatised social group, but also for expanding the cultivated areas and diversifying the economy through new export crops. Vanilla plantations on the east coast and in the south of the island made Réunion the leading producer in the nineteenth century, ahead of Madagascar and the Seychelles. Vanilla cultivation helped to preserve remnants of the primary forest, because the crop needed an underwood to grow. By the end of the nineteenth century, many *colons* from the

25 L. Maillard, *Notes sur l'île de la Réunion (Bourbon)* (Paris: Dentu Editeur, 1862), p. 215.

26 Ibid., pp. 195–96 and 207.

27 Ibid., p. 150.

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south and southwest part of the island also produced essential oils, including geranium, vetiver and ylang-ylang. In 1920, Réunion became the world's largest producer of geranium essence. These activities, however, also led to a new period of deforestation on the island's west coast.

### The ecological vulnerabilities of the plantation system

#### *The destruction of native habitats*

Clearing the land for construction and agricultural purposes led to a sharp decline in the primary forests, created by two million years of coevolution. By 1945, half the area of these original ecosystems was destroyed. Only those areas located above the altitude of 1,800 metres or on inaccessible slopes remained intact. The destruction of habitats, combined with direct predation and the introduction of invasive species such as rats, goats, Indian laurel, ginger lily or the giant bramble (*Rubus alceifolius*) exacted a heavy toll on the endemic species that had populated the island: sixty per cent of the indigenous mammals, 58 per cent of birds, and sixty per cent of reptiles went extinct.<sup>28</sup>

Even before the institutionalisation of the plantation system, the impacts of human activities on endemic ecosystems and species prompted the authorities to react. In 1701, the Governor introduced the '50 pas du Roi' legislation that banned all clearing along the shorelines.<sup>29</sup> In February 1715, death penalty was introduced for the destruction of plantations and trees. Faced with the rapid decline of the turtle population, in 1710 Governor Villers prohibited the hunting of all land tortoises and limited the hunting of sea turtles to two per week to prevent their extinction and preserve food resources.<sup>30</sup>

Plantation owners and colonial administrators also tried to limit deforestation by issuing laws to prevent land clearings. However, many of these decrees and the forest code itself did not give forest policing powers to any municipality. Certain landowners also took issue with these regulations, as they were forced to obtain permissions in order to cut trees on their own properties. Though the deforestation was directly caused by the planta-

28 C. Doumenge and Y. Renard, *La conservation des écosystèmes forestiers de l'île de La Réunion* (Saint Denis: Bibliothèque de la Conservation de L'UICN, 1989).

29 P. Holstein, 'La soutenabilité des économies insulaires coloniales et postcoloniales', Thèse de Doctorat (Paris: Institut d'Études Politiques de Paris, Science-Po, 2014).

30 Barrassin, *La vie quotidienne*, p. 33.

tion system, colonial authorities blamed the ecological degradation on the former slaves and poor white creoles who refused to submit to the colonial plantation regime, and their clearings in the highlands.<sup>31</sup> A struggle ensued to limit the access of former slaves and poor white creoles to resources.<sup>32</sup> A cascade of forestry regulations after 1848 also demonstrated this battle for forest resources. According to Varga,<sup>33</sup> between 1769 and 1894 the colonial administration issued no fewer than eight legal measures aimed at preventing land clearings.

In the 1860s, the engineer Louis Maillard recognised that ‘in spite of its numerous decrees, the administration has never managed to plant’.<sup>34</sup> He also shed light upon the island’s social system, blaming not only the creoles of the highlands but also the sugar landowners and their ‘sylvophagy’ spirit:

Many colonists do not seem to feel the importance of shade and greenery; we will not speak only of the little creoles who never hesitate, when they go through the forests, to cut down a lemon tree to collect one or two fruits; nor of the sugar growers who mercilessly cut down the last tree in the middle of their fields: some have at least the pretext of thirst, and others that of a few more kilograms of sugar to produce. But what can we say about a city dweller who, when he buys a house surrounded by trees, begins by cutting down all the plantings under the pretext of a new arrangement or another more futile one? What to say especially of the one who, going to settle in the middle of a forest, starts by cutting down, up to a great distance and without exception, all the trees that cover the ground.<sup>35</sup>

This debate about deforestation on Réunion can serve as evidence for environmental injustice theories that link social to environmental conflicts. According to the well-known studies by Joan Martinez-Alier and Ramachandra Guha,<sup>36</sup> deforestation practised by the poor cannot be judged

31 A. Du Peyrat, ‘Situation de l’agriculture à l’Île de La Réunion en 1868’, *Revue maritime et coloniale* 53 (1870): 763.

32 D. Varga, ‘Gérer la forêt à Bourbon, une priorité pour la colonie à sucre au XIXe siècle’, *Revue historique de l’Océan Indien* 11 (2014): 331–32.

33 Varga, ‘Gérer la forêt’, 320–33.

34 Maillard, *Notes sur l’île*, p. 208.

35 Ibid., p. 207.

36 M. Gadgil and R. Guha, *Ecology and Equity. The Use and Abuse of Nature in Contemporary India* (London: Routledge, 1995); R. Guha, *Environmentalism. A Global History* (New York: Longman, 2000) and ‘Environmentalism of the Poor’, *Economic and Political Weekly* 37 (3) (2002): 204–07; R. Guha and J. Martínez-Alier, *Varieties of Environ-*

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by the same standards as that carried out by the rich. This has essentially two reasons. First, land and forest access is caused by an unequal system of land distribution and inheritance transmission. On Réunion, the European system of inheritance aimed at concentrating the ownership of land and preventing its fragmentation. This transmission of property rights created a growing population of poor white settlers. Secondly, the plantation society refused to increase wages to improve the living conditions of the plantation workers, and avoid violence and miserable conditions on the plantations. The socio-environmental cost of maintaining the profit margin on the plantations was high and jeopardised the social reproduction of the poor islanders. The capitalist plantation system forced poor whites and landless freed slaves to settle in the highlands.

Considering the major ecological impacts of the sugarcane revolution, reforestation became a priority for the colonial administration in the last decades of the nineteenth century.<sup>37</sup> Between 1886 and 1900, 200,000 trees were planted to preserve the soil's stability and regenerate the water cycle. However, these efforts relied mostly on exotic species from Australia, such as eucalyptus and quinine, at the expense of native habitats. During the 1930s, the colony restored the forests with filao trees, maritime pines, thuyas and *cinchona* plants.<sup>38</sup> The last exotic introduction occurred in the 1950s, when the new Forest Service introduced *cryptomeria*, a coniferous species from the southern islands of Japan in order to develop the local timber industry.<sup>39</sup> This confirms Richard Tucker's observation that the most dramatic transformations of sugar societies and landscapes occurred in the biotically fragile environments of islands, with a high degree of endemism but vulnerable to alien species.<sup>40</sup>

*mentalism: Essays North and South* (London: Earthscan, 1997); J. Martínez-Alier, *The Environmentalism of the Poor, A Study of Ecological Conflicts and Valuation* (Cheltenham: Edward Elgar Publishing, 2002).

37 Varga, 'Gérer la forêt', 320–33.

38 Archives Nationales d'Outre-Mer (ANOM), FM/300/7, 1936.

39 Varga, 'Gérer la forêt', 322.

40 R.P. Tucker, *Insatiable Appetite: The U.S. and the Ecological Degradation of the Tropical World* (Berkeley: University of California Press, 2000), p. 20.

## *Erosion, pollution, devastation and food insecurity in the island socio-ecosystem*

As a young volcanic island, Réunion only has a thin soil cover that is particularly sensitive to erosion and climate change. The volcanic island socio-ecosystem suffers erosion accelerated by the island's mountainous profile and its exposure to heavy rainfall. The elimination of the native vegetation destabilised the soil's structure and contributed to major landslides during cyclones. Through the reduction of evapotranspiration, deforestation also altered the local climate, reducing rainfall and increasing the recurrence and duration of drought episodes. Pierre Poivre had observed these consequences on Mauritius already in 1767, and he blamed the settlers for the destruction of the native forests, for drying-up rivers and making the climate drier and more hostile. He also warned the settlers that such practices would make the island inhabitable.<sup>41</sup>

In addition to causing erosion and climate change, the plantation system also altered the soil's fertility. In tropical forests, nutrients are concentrated in the tree cover and not in the soil. As a consequence, the substitution of native habitats with sugarcane monoculture upset the ecological cycles that conditioned soil fertility. The shift toward an intensive agricultural model impeded soil regeneration and caused dependence on larger quantities of fertilisers. The end of the diversified agriculture and crop rotation system that once characterised the *habitations* led to a greater dependence on animal manure and an increase in guano imports from the Seychelles and the Galápagos.<sup>42</sup> Starting in 1830, chemical fertilisation became widespread and planters were among the world's first users of synthetic fertilisers based on nitrogen, sodium and potassium. In 1898, the soils of *Crédit Foncier Colonial* received an average of 430 kilograms of sodium nitrate, 500 kilograms of superphosphate, 40 kilograms of chloride and potassium and 30 tons of manure per hectare.<sup>43</sup>

The introduction of pests also impacted the sugar monocultures. One of the most adverse species was the borer, a sugar pest that emerged on Réunion during the 1850s. Contemporary sources blamed the abandonment of

41 R.H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860*, First Edition (Cambridge; New York: Cambridge University Press, 1995) pp. 168–263.

42 Le Terrier, 'L'agriculture cannière', 58.

43 Holstein, 'La soutenabilité des économies insulaires', p. 335.

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crop rotation and the deforestation of the island for its spread.<sup>44</sup> During the 1850s, plantation owners tried to defend their crops using phenol, a chemical insecticide. However, the acid polluted the soil and caused harm to human health; in addition, its high cost prevented its large-scale use.<sup>45</sup> Due to soil depletion, droughts, cyclones, and proliferation of parasites, sugarcane yields collapsed from 1,569 tons per hectare in 1860 to 519 in 1870.<sup>46</sup>

Like deforestation, debates about food dependency played a major role in Réunion's administrative and political agenda. As early as 1730, governor Mahé de Labourdonnais introduced initiatives to stimulate the production of staple foods such as cassava, corn, wheat and rice to complement coffee production, feed the inhabitants and also meet the needs of the neighbouring island of Mauritius, which was under French rule between 1715 to 1810.<sup>47</sup> Once self-sufficient and a net exporter to Mauritius, Réunion began to rely on imports after the 1850s sugar boom. Crops other than sugarcane were now only grown for the inhabitants' own consumption or abandoned altogether. Moreover, the development of the plantation monoculture led to the decline of the pre-industrial rotation system which combined sugar with cereals, root vegetables and pulses that guaranteed the conservation of soil quality and food self-sufficiency.

The debate about food insecurity intensified during the twentieth century. As historian Daniel Varga has shown, it became an urgency after World War One. In 1917, the colonial government offered premiums for planting corn, potatoes, beans and manioc. These crops were cultivated on domanial lands granted free of charge by the colony. At the same time, there were no plans to cut back on sugarcane production. The following years were crucial. The embargo imposed by some of the governors of Réunion on the export of corn and onions prevented many cultivators from planting food crops, since they could now only sell them on the domestic market. Despite fears of food insecurity, evidenced also by the creation of gardens in all schools in the 1920s, landowners preferred an export crop like sugarcane.<sup>48</sup> In the 1930s, colonial

44 Du Peyrat, 'Situation de l'agriculture à l'Île', pp. 770–71.

45 Ibid., pp. 772.

46 J. M. Chastel, 'Le rôle des institutions dans l'évolution de la filière canne à sucre à la Réunion', Thèse d'agro-économie (Montpellier: Ecole Supérieure Agronomique de Montpellier, 1995).

47 Eve, *Histoire d'une renommée*, p. 100.

48 D. Varga, 'La question de l'autosuffisance alimentaire à La Réunion: une préoccupation ancienne. Etude à partir de la situation de La Réunion dans la première moitié du XXe siècle', in *Alimentation, pratiques culinaires et rites de repas dans les pays du sud-ouest de*

administration again created 'a system of bonuses for secondary crops that would allow a return to reasonable polyculture'.<sup>49</sup> This hardly produced any results, as later evidenced by widespread food shortages when the island was forced into self-sufficiency by a British blockade during World War Two.

### *Epidemics and environmental health conditions*

The dire conditions on Réunion stood in stark contrast with the island's former salubrious reputation: it had been praised by Etienne de Flacourt for its 'benign air',<sup>50</sup> in contrast to the 'unhealthy air' and 'bad season' of Madagascar.<sup>51</sup> Though epidemics were present on the Mascarene archipelago already in the seventeenth century,<sup>52</sup> the sugar-boom era shed light on the degradation of environmental health, induced by the plantation system and its internal vulnerabilities. The need for cheap and disciplined labour led to the import of coolies from Africa and Asia. Yet, despite a quarantine protocol imposed on all migrants, cholera broke out on Réunion twice, in 1820 and in 1859.<sup>53</sup> The guilt felt for reintroducing diseases was atoned by religious processions and Catholic worship. Catholic fervour grew, almost at the same pace as monoculture and malarial fevers. The same process led to the outbreak of malaria on Mauritius, which caused the death of more than 50,000 of its 310,000 inhabitants between 1865 and 1867.<sup>54</sup> The epidemic reached Réunion during the same period and became endemic. It was soon complemented by dengue fever (1873), influenza (1890) and plague in 1864 and 1899.<sup>55</sup>

*l'Océan Indien (XVIIe à nos jours)*, Vol. DVD 3, (Saint-Denis: Association Réunionnaise Communication et Culture, 2012).

49 ANOM, FM/300/7, 1936.

50 Holstein, 'La soutenabilité des économies insulaires', p. 4.

51 Bernardin de Saint-Pierre, *Voyage à l'Isle de France*, p. 220.

52 J. Julvez and G. Larrouy, *Anthropisation et paludisme: éco-épidémiologie historique du paludisme dans les archipels du sud-ouest de l'Océan Indien* (Toulouse: Université Toulouse 3 Paul Sabatier, 1993), p. 191.

53 Y. Pérotin, *Chroniques de Bourbon* (Nérac: Couderc, 1957); J.E. Monnier et C. Ramsamy-Giancone, *Soigner, prier, s'adapter: La Réunion face au choléra de 1859* (Saint-Denis: Presses Universitaires Indianocéaniques, 2021).

54 Holstein, 'La soutenabilité des économies insulaires', p. 395.

55 A. Lopez, 'La santé en transition à la Réunion de 1946 à 1986: bouleversements et limites des conquêtes de la santé dans un département d'Outre-Mer', *Annales de Géographie* 98 (546) (1989): 152–78.



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Once again, many blamed poor creoles and freedmen for the spread of the diseases. Yet, Dr Mac-Auliffe, one of the first Réunionese doctors to write about malaria and other tropical diseases, denounced such prejudices and pointed out the indentured labour as a factor.<sup>56</sup> According to the doctor, malaria spread along the entire coast of Réunion until 1880. Scientific and medical networks were widespread among the Indian Ocean empires in the following years, facilitating knowledge circulation especially on malaria and the use of cinchona cures between the African West Coast, the Indian Ocean islands and British India.<sup>57</sup> In 1912, Jules Auber, the director of the Health and Public Hygiene Service, declared to the Governor that ‘the malaria epidemic continues to rage with intensity and is decimating the population, in spite of the free distribution of preventive quinine to school children and the poor’.<sup>58</sup> In 1937, the health and hygiene department stated that labour conditions were one of the most important factors responsible for the epidemic:

We wish to point out [that] because the poorly housed, poorly clothed and poorly fed individual is the designated prey of the haematozoa, of which he is, along with the child, the most dangerous reservoir ... the improvement of living conditions is ... a preliminary necessity ... Labour in swampy regions, deep earth movements, stay in humid plantations, and generally exaggerated fatigue are the favourite causes of malaria.<sup>59</sup>

In the 1940s, however, World War Two demonstrated the inherent instability of the sugar economy. The island’s governor remained loyal to Marshal Pétain and his pro-Nazi policy. In consequence, the island was blockaded by the British naval force for almost two years. Petroleum was almost completely replaced by a biofuel based on sugarcane alcohol.<sup>60</sup> Two thirds of the agricultural area was ploughed for food crops, particularly

56 J.M. Mac-Auliffe, *Cilaos pittoresque et thermal: Guide médical des eaux thermals* (Saint Denis: Azalées Editions & Grand Océan, 1996, 1902), pp. 199–200.

57 R.D. Roy, *Malarial Subjects: Empire, Medicine and Nonhumans in British India, 1820–1909* (Cambridge: Cambridge University Press, 2017); J.E. Monnier, ‘La médecine comme vecteur des recompositions de l’océan Indien au XIXe siècle’, *Outre-Mers* **402–403** (1) (2019): 41–59.

58 Archives Départementales de La Réunion (ADR), 5M41, Lutte contre le paludisme 1868–1937.

59 ADR, 5M41, 1937.

60 *Bulletin Mensuel de Statistiques Coloniales*, 1946, 9.

corn and cassava. Following the shortage of quinine pills, medicinal plants were planted to replace it, such as cinchona trees. Finally, in the building sector, 'sugar mortar', a cement made with sugar, was substituted for usual building materials.<sup>61</sup> Between 1949 to 1952, some letters that reached the Prefect described Réunion's population as 'a people who groan and starve'.<sup>62</sup> In 1954, the island was still considered 'a country of monoculture with an almost exclusively industrial character' by the CFTC Trade Union.<sup>63</sup> An official report from the Prefecture in 1954 confirmed 'insufficient food production for its needs ... Réunion depends on its imports for almost all of its supplies'. The texts stated that 'the Réunionese people make rice that they do not cultivate and do not know how to cultivate, the basis of their diet'.<sup>64</sup> To avoid hunger, since 1955 'expatriation [was] the only future open to Réunion Islanders'.<sup>65</sup>

## Conclusions

The brief history of Réunion highlights the interdependence and coevolution of ecological and social systems.<sup>66</sup> Created by a volcanic hotspot two million years ago, the island is characterised by its physical remoteness, 3,000 kilometres from the African mainland. Such isolation was magnified by the concentration of the main trade routes in the northern part of the Indian Ocean, which induced a very late human settlement. As a consequence, endemic species and singular ecosystems were able to evolve and thrive without human intervention, making the island one of the few places on earth that still host primary forests today. From the sixteenth century on, physical isolation became an asset for the European powers that established new Southern routes to India and Indonesia, using Réunion as a stopover. It also played a critical role in the later development of the plantation system: the absence of native population combined with the impossibility of fleeing

61 E. Rousse, *Combat des Réunionnais pour la liberté I* (Saint Denis: Editions CNH, 1993), pp. 32–41.

62 ADR, 41W2, 1949 and 1952.

63 ADR, 41W2, 1954.

64 ADR, 41W5, *Ile de la Réunion en 1954*.

65 Ibid.

66 R. Noorgard, *Development Betrayed, the End of Progress and a Coevolutionary Revisioning of the Future* (New York: Routledge, 1994).

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to a neighbouring land (the closest island Mauritius being 260 kilometres away) turned the island into a custodial factory, specialising in tropical speculative commodities such as coffee, spices, sugar and vanilla. The isolation supported the progressive 'radical monopoly' of the plantation system on the island natural and human resources. This monopoly was itself supported by economic, political and legal mechanisms that inhibited the emergence of alternative, rival, organisations, such as maroon societies in the highlands.

The island's characteristics thus allowed for a continuous extension of the plantation system, that relied on the growing import of manpower (slaves and later indentured workers) and the destruction of native habitats. Such extraverted growth soon encountered the physical and ecological limits on the 2,500-square-kilometre island and engendered feedbacks that threatened the very sustainability of the plantation system: loss of ecosystem services, reduction of agricultural productivity, growing food insecurity and dependence on imports, introduction of epidemic diseases, and overt and hidden resistance among the population. These feedbacks generated major vulnerabilities that still plague the island today.

The environmental health history of Réunion demonstrates the importance of examining environmental and human health together in order to understand the historical development of the sugar islands and empires.<sup>67</sup> The introduction of sugarcane monoculture increased not only the ecological vulnerability of the island, but also the social vulnerability of marginalised populations. The reduction of food crop cultivation to less than a third of the available area fostered the spread of diseases linked to malnutrition, such as tuberculosis and malaria. Cholera and mosquito-borne diseases also increased as a consequence of the influx of new indentured labour force.

Yet, on a small island, these highly visible impacts and shared anxieties also stimulated the development of a reflexive agenda. The colonial administration and the inhabitants understood the social and ecological contradictions of the plantation system and attempted to counteract them in order to improve the colonial governance and preserve the island's productive capital through the implementation of reforestation and public health policies. Such reforms played an essential role in the relative stability of the plantation system which maintained its monopoly for three centuries, despite regular and major crises caused by the vulnerabilities it fostered.

67 J.R. McNeill, *Mosquito Empires. Ecology and War in the Greater Caribbean, 1620–1914* (New York: Cambridge University Press, 2010).

Finally, an environmental history of Réunion shows that the transformation of the plantation system into a sugar monoculture brought about environmental injustices. Poor white creoles and freed slaves were excluded from access to land and the newly indentured workers from Asia and Africa suffered from environmental conditions that favoured the spread of diseases such as cholera and malaria. The loss of food self-sufficiency resulted in food insecurity in times of crises and world wars, which worsened environmental injustices concerning land, food and health. The crop diversification incentives of the interwar period, the reforestation plans, the improvement of nutrition and the eradication of malaria in 1960 all addressed the symptoms and consequences, but did not question the radical plantation monopoly. A post-colonial environmental history of Réunion must address the questions of environmental health, food autonomy and biodiversity conservation in order to understand the consequences of the island's identity as a profitable 'Eden' of sugar production.

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## 12. The Savage State:

### Humans, Nature and Governance in Eighteenth-Century Corsica

Joshua Meeks

*On my first research trip to Corsica, I asked my landlords about local cuisine. They talked about the Corsican muscat wine, Corsican cheeses, chestnut flour, even maquis-flavored ice-cream (they informed me this was rosemary, not all underbrush). After they listed these items, I remarked on how excited I was to try such delicious food. They quickly corrected me: 'Oh, none of it is very good!' they said, smiling, 'But it is Corsican.' While I now beg to differ (particularly about the ice-cream, which was truly delicious), this nonetheless highlights the pride that Corsicans have in their distinctiveness, regardless of objective quality.*

*This resonated with me, particularly as I researched the history of the island. Scholars (including myself in some of my earlier papers) often frame the history of Corsica as a study in failure or missed opportunities. Viewed from the mainland this is certainly a valid perspective as most attempts to 'uplift' Corsica foundered on resistance either from the island or the islanders. However, if we flip the perspective, those failures begin to look more like successful resistance to outside forces. While this 'success' was rarely deliberate or even articulated, and often was violent and contradictory, to frame Corsican resistance as failure is to only see the island from the outside looking in. Flipping the perspective to start from the island emphasises the repudiations of attempts to erase that distinctive character and identity. What drew me to Corsica was not a story of failure but a story of resilience.*

*And what a resilient character it is. The mountainous granite backbone of the island both divides the island into fractured communities and serves as a core defining feature of the island's environment and society. As my other friends in Corsica have noted to me, 'We are mountain people, not ocean people.' The forests and rosemary-speckled underbrush give an air of fragrant isolation. Not that the island itself is unwelcoming. In fact, tourism is a significant part of its current economy. But even as it welcomes visitors, the island seems to remind outsiders that while they may be necessary, they are not Corsican.*

In his famous treatise on the relationship between man, nature, and the state, Jean-Jacques Rousseau wrote ‘...there is still one country in Europe which is fit to receive laws, and that is the island of Corsica’.<sup>1</sup> For Rousseau, the key to Corsica’s political potential lay in its environmental poverty. The mountainous interior and malarial coast meant that there was little to no industrial development on the island, and it seemed that Corsica was remarkably resistant to any attempt at exploitation. This more ‘savage’ relationship between humans and nature on Corsica meant, for Rousseau, a wealth of potential, where the chains of civilisation held people less captive than in developed Europe. Of course, not everyone saw the disconnected and borderline anarchic nature of Corsica in such a romantic fashion. Its most famous son, Napoleon Bonaparte (born Napoleone Buonaparte), would write:

Corsica is a nuisance to France ... there she is, like a wen on her nose ... Choiseul once said that if Corsica could be pushed under the sea with a trident, it should be done. He was quite right; it’s nothing but a nuisance.<sup>2</sup>

In this chapter, I will problematise both the ‘noble savage’ framework of Rousseau and the ‘political nuisance’ framework of Napoleon, as they relate to Corsica. Rousseau sought to impose his philosophical understanding of the social contract on the island, while Napoleon sought to integrate Corsica into the nation of France. In both cases there was rhetoric of ‘regeneration’ and ‘uplift’, saving the savage Corsicans from their inefficient and irrational ecological and social practices. While Napoleon eventually succeeded, after a fashion, this chapter is less concerned with that success than it is with the litany of failures that preceded it, particularly in the latter half of the eighteenth century. In truth, Corsica was impoverished by nearly any external standard, and it certainly was a nuisance, first for Genoa and then for France. But if we flip the narrative, it is just as possible to view these failures of state integration and regeneration as successful resistance by Corsicans, wielding, to use James C. Scott’s provocative turn of phrase, ‘weapons of the weak’.<sup>3</sup>

I will confess at the outset to a perspective that is informed by the

- 1 Jean Jacques Rousseau, *The Social Contract*. In *Rousseau: The ‘Social Contract’ and Other Later Political Writings*, ed. by Victor Gourevitch (Cambridge: Cambridge University Press, 1997), iii.OC, p. 391.
- 2 Quoted in Louis Villat, *La Corse de 1768 à 1789* (Besançon, 1924–1925), pp. 228–33.
- 3 James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven: Yale University Press, 1985). See also Scott, *Against the Grain* (New Haven: Yale University Press, 2017) for a more recent text that highlights the tension between

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work of scholars such as James C. Scott, which tends to view the state as a predatory interloper. This is not to say definitively that Corsica within the bounds of the modern state system is a categorically worse place, which is a danger in following Scott's line of reasoning too faithfully. Instead, my focus on Corsica is born of a fascination with its historical resistance to what I call the tyranny of connectivity. Islands are well-suited to resist the lure of connection, or sometimes can be disconnected against their own will, kept apart by another tyranny – that of distance. But in the case of Corsica, located close to both Italy and France, distance was little obstacle. Instead, at nearly every juncture where there is a choice of deeper connections with the apparatus of the state, the 'Granite Island' proves recalcitrant, and at the heart of that recalcitrance is the relationship between Corsicans and the land. The development of social relationships outweighed the accumulation of profits, and property was not a precondition to production, its worth instead defined by its relationship to society.<sup>4</sup> The disconnection of Corsica is of two parts: first, as a physical island disconnected from the mainland, and second as a cultural island, distinct and set apart from outside encroachment and exploitation. These disconnections were far from given, however, as political, economic, and military forces reached out across the water to bring Corsica into the fold.

### Forests and philosophers

The connectivity that threatened to tyrannise Corsica predominately emanated from France, though it was Genoa that controlled Corsica from the thirteenth through the mid-eighteenth century. In the early modern period that control was nominal at best. Corsica has roughly 1,000 kilometres (620 miles) of coast, but significant portions of that coast are rocky and inaccessible or lead to malarial swamps. The major cities are Ajaccio and Bastia, with Calvi and Bonifacio smaller but still sizable settlements. The Genoese mostly stuck to these cities, sending the occasional brave tax collector inland to assess the mountains and clans. Chestnut forests provided the staple flour, and small fields of barley or wheat provided the bare minimum for subsistence.

pastoralism, hunter-gathering and agrarian communities and has provided the genesis for some of the analysis in this chapter.

4 Antoine Casanova, *Arboriculture et société en Méditerranée* (Corte: Le Signet, 1998).

These chestnut forests themselves were a site of fascinating contestation that demonstrates the active role the unique environment of Corsica played in its political and social history. The Genoese promoted chestnut agriculture over the course of centuries as a desirable and realistic form of agriculture, while the Corsicans resisted in favour of more pastoral activities. Herds of goats and sheep which gave milk, cheese, and some meat were the most popular modes of subsistence until Corsicans began to adjust and integrate chestnut cultivation into their social structures. Once this process occurred, Corsicans began to appropriate the chestnut tree as a symbol of freedom, and accommodated chestnut agriculture with pastoral grazing. In many cases, the land itself would remain communal and thus open to grazing, while the chestnut trees would be owned by families, allowing for quasi-agricultural farming to take place.<sup>5</sup>

This convoluted system was a feature of Corsican resistance to outside forces, and also served to strengthen that ability to resist. The chestnut became a symbol of rebellion, as the resiliency of the chestnut forests allowed rebels to subsist off the land in near-perpetuity. And rebellions were a constant for the Genoese in Corsica. Given the inaccessibility and sustainability of the interior of the island, the Genoese would primarily count on internal disunity to put down revolts, promising one faction power and influence over others in exchange for helping maintain peace. This worked relatively well until the first half of the eighteenth century, when Genoa became too weak to manage even that. In 1755 a successful rebellion effectively ended Genoese control.<sup>6</sup> This was the context for Rousseau to write about Corsica in *The Social Contract* in 1762. In 1764 he also began work on *Constitutional Project for Corsica*, on invitation from the leading Corsican political figures of the nascent government, Pasquale Paoli and Matteo Buttafuoco.

Rousseau approached Corsica with a particular model for development in mind.<sup>7</sup> He advocated a strong emphasis on agriculture, cautioning not to put

5 G. Michon, 'Revisiting the Resilience of Chestnut Forests in Corsica: From Social-ecological Systems Theory to Political Ecology', *Ecology and Society* 16 (2): 5 (2011); Almudena San Roman Sanz, Catherine Fernandez, Florent Mouillot, Lila Ferrat, Daniel Istria and Vanina Pasqualini, 'Long-Term Forest Dynamics and Land-Use Abandonment in the Mediterranean Mountains, Corsica, France', *Ecology and Society* 18 (2) (2013).

6 Thadd E. Hall, *France and the Eighteenth Century Corsican Question* (New York University Press, 1971).

7 Mark J. Hill, 'Enlightened "Savages": Rousseau's Social Contract and the "Brave People" of Corsica', *History of Political Thought* 33 (3) (2017): 462–493; Ethan Putterman,

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economic output ahead of a stable population base: 'The island of Corsica, being incapable of growing rich in money, should try to grow rich in men ... To multiply men it is necessary to multiply their means of subsistence; hence agriculture.' He goes on to envision a future where,

when the country is saturated with inhabitants, the surplus can no longer be employed in agriculture, but must be used in industry, commerce, or the arts; and this new system demands a different type of administration. Let us hope that the institutions Corsica is about to establish will soon require her to make such changes! But as long as she has no more men than she can use in agriculture, as long as an inch of fallow land remains on the island, she should cleave to the rural system, and change it only when the island no longer suffices.<sup>8</sup>

At the heart of Rousseau's vision is the idea that a proper relationship with the land will make men more virtuous and thus capable of creating a virtuous political system which in turn will be able to express the sovereign will directly. His 'Constitutional Project' was, theoretically, a case of Rousseau specifically tailoring his broader ideas to the Corsican context. Rousseau, however, never visited the island, which potentially accounts for his insistence on turning mountains into fields. Even beyond the physical geography of the Corsican interior, the islandness of Corsica both allowed Rousseau's idealisation of Corsica and prevented that idealisation from having any basis in reality. As Dorothy Carrington has noted, Rousseau's Corsica is distinct from historical Corsica.<sup>9</sup> Corsica is valuable for Rousseau's thought precisely because of its isolation and remoteness. If he had been able to understand Corsica on a personal, historical, real level, almost by definition it would not have suited his 'noble savage' designs. Instead, its inaccessibility as an island situated it perfectly for Rousseau's schema, and simultaneously made that schema utterly inapplicable for Corsica itself.

Rousseau abandoned his project for Corsica in 1768 when a request for aid from Genoa to France turned into France purchasing the island for

'Realism and Reform in Rousseau's Constitutional Projects for Poland and Corsica', *Political Studies* 49 (3) (2001): 481–494; Hansong Li, 'Timing the Laws: Rousseau's Theory of Development in Corsica', *European Journal of the History of Economic Thought* 29 (4) (2022): 1–32.

8 Jean-Jacques Rousseau, *Constitutional Project for Corsica* [1764] (Whitefish, MT: Kessinger Legacy Reprints, 2010).

9 Dorothy Carrington, *Granite Island: A Portrait of Corsica* (New York: John Day, 1974), pp. 265–66.

forty million livres. The French purchase of the island also put an end to the more real, if less developed, vision for an independent Corsica put forth by Pasquale Paoli. Paoli is, by most standards, the father of the Corsican nation. He was raised in Naples but returned to the island in 1755 to take charge of a rebellion that was in danger of succumbing to the Genoese strategy of simply waiting for internal strife to tear the rebels apart. Paoli's brilliance shone through in his ability to adapt Enlightenment ideals to a Corsican context. He is a mirror to Rousseau here, but while Rousseau was willing to sacrifice the reality of Corsica in pursuit of an Enlightenment vision, Paoli sacrificed much of his Enlightened vision to the reality of Corsica. While he did establish universal suffrage and worked to eliminate the vendetta as a mode of extrajudicial justice, his Corsican Republic was largely founded in a cult of personality surrounding Paoli himself. He maintained this cult of personality by essentially letting the Corsican people pursue their own interests under his acquiescence. While some have argued that Paoli verged into Enlightened despotism, in practice his rule succeeded internally because of benevolent neglect.<sup>10</sup> The island of Corsica created insular communities that actively resisted integration into a whole, even by one of their own.

The end of Paoli's Corsican Republic did not happen quickly or quietly, however. In addition to the upfront cost of forty million livres, the French were forced to send 50,000 troops to subdue the rebellious forces on the island. These troops only barely managed to defeat the Corsican forces in 1769, leaving the French as unwelcome masters of the island.<sup>11</sup> What bordered on strategic necessity also soon became an economic nuisance. In some ways, the French continued the Rousseauian vision of regeneration of society via regeneration of the environment. There were efforts to build roads linking the major cities in the north (Bastia, St Florent and Corte), which would potentially address the perennial issue of access to the interior of the island. In addition, several royal tree plantations were started, especially of mulberry trees.<sup>12</sup> Chestnuts, by contrast, were discouraged as a 'food of laziness' because 'a chestnut forest does not require any cultivation'.<sup>13</sup> Nearly across the board,

10 Peter Thrasher, *Pasquale Paoli: An Enlightened Hero, 1725–1807* (Hamden, CT: Archon, 1970).

11 Hall, *France and the Eighteenth-Century Corsican Question*.

12 Villat, *La Corse*, I, pp. 174–87.

13 Cited in J.R. Pitte, 'The Chestnut Tree in Corsica, Symbol of Subsistence and Cause of Civil Unrest', *Historia* 432 (1982): 140–43.



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however, these efforts met with resistance from the Corsican population. It quickly became apparent that for the island to generate enough income to pay for itself, much less generate a profit, a considerable amount of time and money would need to be devoted to increasing French presence on the island, and curbing the 'savage' traits of the Corsican land and its people.<sup>14</sup>

Part of the issue was that the French simply did not know what resources were available. The island remained a mystery to the interlopers. Silk and mulberry bushes were a small source of income, but not nearly enough to offset the payments to the Genoese, much less the upkeep of the military stationed on the island. One effort to remedy this relative ignorance came in the guise of a cartographic enterprise, the *Plan Terrier*.<sup>15</sup> The instructions declared,

Corsica is a devastated, depopulated country that must be regenerated ... To regenerate a country is to give it the full existence of which it is capable in its population, its agriculture, and its commerce ... not only in what they have been and what they are, but also in what they can become.<sup>16</sup>

To regenerate, however, one first had to assess.

In that assessment, the *Plan Terrier* found that only nine per cent of the soil was good, 47 percent was mediocre and 24 per cent was classified as bad. The rest of the island's surface consisted of water and bare rock. That 'mediocre' quality soil was never properly nourished or cared for, as the Corsicans opted to plant wheat as the only alternative to chestnuts, which meant fields could only be planted once every five years. In the intervening years, the tough underbrush of the *maquis* grew back. To address the issue of the *maquis*, Corsicans either let large herds of goats roam free or, more commonly, used fires to clear the land.<sup>17</sup> The pastoral roots of the island communities remained resistant to outside improvements.

14 Roy F. Willis, 'Development Planning in Eighteenth-Century France: Corsica's Plan Terrier', *French Historical Studies* 11 (3) (1980): 328–51. The *Plan Terrier* itself is found in various places, including the British National Archives, Foreign Office Papers 20/13–19.

15 Ibid.

16 Quoted in Willis, 'Corsica's Plan Terrier', 333. The Plan was continually beset by financial troubles and was not fully finished until the mid-1790s. In this case, the fault did not lie with misadministration, but with political instability.

17 Ibid., 336; R. Tomaelli, *Mediterranean Forest and Maquis* (Paris : UNESCO 1977); J.R. McNeill, *The Mountains of the Mediterranean World: An Environmental History* (Cambridge: Cambridge University Press, 1992); Ian B. Thompson, 'Settlement and Conflict in Corsica', *Transactions of the Institute of British Geographers* 3 (3) (1978): 259–73.

The *Plan Terrier* largely placed the blame for the poor state of agricultural affairs on the Genoese, noting continual mismanagement by the colonial administrators. This may be partially true, but lack of management does not necessarily equate to malfeasance. For the most part, the Genoese simply let the Corsicans manage their own agriculture, with chestnut trees standing as the one exception. Instead of placing blame on the Genoese for mismanagement, an equally plausible explanation is Corsican ‘mis’management. Within any given community, there was division of responsibility for land use, but this did not equal ownership. This meant that there was an incentive for subsistence, but not profit. Again, we cannot discount the impact of the Genoese here: if any profit would be taken by outsiders, that also disincentivised efficiency. The point remains, however, that what the *Plan Terrier* defined as mismanagement was a stable socio-ecological system that the Corsican population embraced and defended. They did not necessarily want or need their island to be profitable, as long as it was livable.

To address this resistance, and the inherent poverty of the island, the French would need to disrupt the established patterns of environmental decision-making and impose upon the islanders a strict regime of forestation and development. This, in turn, required a strong state and either a healthy or domineering relationship between Corsica and France. The Old Regime ultimately provided neither of these things. After five years of military rule, the Treasury was given control of the island, and the infrastructure development waned.<sup>18</sup> Instead, the French began to treat Corsica in a colonial fashion nearly identical to the Genoese. The appointments to the island became increasingly corrupt and venal. To quote one Corsican in this period, the French acted as a ‘swarm of locusts,’ descending upon the island to make personal profit.<sup>19</sup> Thus, throughout the twenty years of rule of Corsica by the Old Regime, the island was a continual drain on the resources of a French state that could ill afford such a burden but could neither afford to remedy the issue with extended and proactive development. To lose control of the island was, for strategic reasons, also not an option. By 1789 the island cost

18 Corsica was given the status of a Pays d’Etat, which empowered the representative assembly, though not in a particularly meaningful way. See Thadd E. Hall, ‘Thought and Practice of Enlightened Government in French Corsica’, *The American Historical Review* 74 (3) (1969): 880–905.

19 Quoted in Arthur Chuquet, *Le jeunesse de Napoléon*, III (Paris: A. Colin, 1897–1899), pp. 30–31.

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the French government roughly 900,000 livres a year.<sup>20</sup> Part of this was the disproportionate military cost of maintaining the unruly island, but a large part was because Corsica contributed virtually nothing to its own upkeep, much less to the coffers in Paris or Versailles. Corsica remained set apart, with the ‘savagery’ of the inhabitants and the environment proving an insurmountable obstacle for the Old Regime French state.

### Focard’s folly

The coming of the French Revolution brought the possibility of change to Corsica. One of the ways that the French monarchy had attempted to build ties between the island and the mainland was through programmes for minor urban elites and nobility, such as the one that allowed for Napoleone Buonaparte to attend a French military school. While this had little success in the 1770s and 1780s, in the 1790s the investment paid dividends, as several young French-educated Corsicans saw an opportunity to reap the benefits promised by closer integration into the French state. In November of 1789, at the urging of these individuals, the Revolutionaries made the decision to welcome Corsica into France as a part of the nation, granting it representatives at the National Assembly and applauding the island’s continued adherence to liberty even in the face of despotism.<sup>21</sup> On the one hand, this was a political and ideological coup, as it expressly sought to reform the misdeeds of the Old Regime and promoted the potential that could be found in the Revolution. On a practical level, it was necessary. The quasi-colonial governance of Corsica had clearly failed. Several reports brought

20 This number comes from Focard de Chateau, *Mémoire Présenté à L’Assemblée Nationale sur l’exploitation des bois dans l’Isle de Corse* (1790), p. 4. It can be found through Google Books, as well as in the *Ministre Affaires Etrangères*, P524. For the purposes of this chapter, I will use an English translation published in 1795 by Frederic de Neuhoff: *The Description of Corsica, with an Account of its Union to the Crown of Great Britain. Including the life of general Paoli, and the Memorial presented to the National assembly of France, upon the forests in that island*. Neuhoff was an interesting character in his own right. He was the son of Theodore von Neuhoff, who was briefly king of Corsica in the 1730s. His work, including Focard’s memorial, was published in the context of the Anglo-Corsican Kingdom as a defence for England taking the island, as well as a programme for how the British should govern and make use of the resources of the island.

21 Archives Nationales de France. Archives Parlementaire, Tome X, 30 Nov. 1789, 335–336.

to light the disastrous nature of Corsican economics and taxation, and the continual drain on the finances of the French state needed to be remedied. Theoretically, a close relationship with the Revolutionary state would finally allow Corsica to be governed fairly, and to meet its potential in terms of resources. This was the new approach, past regeneration: Corsica would gain liberty as part of the French nation, and the French nation would reap the economic benefits of the island's natural resources.<sup>22</sup>

To this end, in 1790 one Focard de Chateau put before the National Assembly a proposal for how to best utilise the island's resources, specifically the forests. He began by noting up front the burden that Corsica has been on France: '... But it is a matter of doubt whether the trivial imports which this province seems at present to bear with such difficulty, will be ever adequate to the defraying of its provincial expenses...' <sup>23</sup> Nonetheless, in his proposal he took as his goal not simply the short-term exploitation of the island, but a vision for the long-term improvement and utilisation of the islands resources. In essence this was a variation on Rousseau's plan, jumping straight to potential industrial production, highlighting the benefits of integration with the French economy. Where Rousseau proposed regeneration through isolation and agriculture, Focard proposed regeneration through integration and industry.

The proposal painted an enticing picture of the possibilities afforded by Corsican timber. Altogether, Focard estimated 420,000 existing acres of forest that would produce upwards of 27,300,000 cords of wood. He also noted that there were an additional 1,120,000 acres of uncultivated and open land that currently contained only shrubs but were fit for planting forests or for agriculture.<sup>24</sup> The first component of his analysis assumed the least advantageous use of the wood (making it into charcoal, or using it essentially as kindling). Using this as a baseline, Focard estimated the total value of the Corsican wood at 356,000,000 livres, more than enough to turn the island profitable. He was quick to point out, however, that this was the least

22 Paul Bamford, *Forests and French Sea Power, 1660–1789* (Toronto: University of Toronto Press, 1956).

23 Neuhoff, *The Description of Corsica*, p. 112.

24 Ibid. His cordage estimate comes from assuming a common coppice of thirty years standing will give twenty cords per acre (eight ft long by four ft high by three and a half in depth; the whole forming a hundred and twelve cubic feet). A critical element to this assumption is the fact that there were many such areas of twenty-plus years of growth after the wood of the island had been mostly neglected by the French and Genoese.

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lucrative use of the forests, and that proper use could triple their value.<sup>25</sup>

His next two proposals relied on industries that did not yet exist in Corsica. He advocated the use of holm oak and pine for shipbuilding. Both timbers existed on Corsica, though not in great quantities. The admitted problem with this proposal lay in the fact that no shipbuilding industry existed on the island. Focard did entertain the idea of shipping the timber elsewhere, but ultimately rejected this due to the initial cost of moving the timber from the mountains to the coast without suitable roads or adequate rivers.<sup>26</sup> His third and final proposal, and the one in which he saw the greatest potential, was to use the timber to supply fuel for iron-producing forges. This, he argued, was the best and most profitable way of employing the forests of Corsica. He went through an in-depth analysis of the potential avenues for development, advocating the use of Catalonian forges, iron ore from Elba and Corsican timber as fuel. He estimated that the general expense of fabricating iron in Corsica would never exceed eleven livres per quintal and that the value would be no less than eighteen livres. In total, he estimated the sustainable annual profit from iron to exceed six million livres.<sup>27</sup> The problem with this proposal? Just as there were no shipyards in Corsica, there were also far too few forges, again necessitating shipping timber off the island. These proposals were entirely contingent on integrating the island into a broader Mediterranean or European system.

Overall, between the iron, the ship timber and the fuel, he estimated that the exploitation of Corsica's forests could potentially result in an annual profit of eight million livres. His proposal noted, however, 'that these advantages accrue from the application of general industry to objects hitherto disregarded and totally neglected'.<sup>28</sup> Recognising this initial difficulty, he then proposed how to actually go about this development. Focusing specifically on the region of Niolin, he detailed the problems and possible solutions. I have already mentioned the issue of roads and rivers, but Focard reserved special animosity for the herds of Corsican goats. Frustration evident, he railed against the pastoral practices, asking,

In what country are goats permitted to graze in the plains and fertile uplands? Are they not, on the contrary, everywhere confined to the summits

25 Ibid., p. 120.

26 Ibid., p. 128.

27 Ibid., p. 144.

28 Ibid., p. 147.

and places of difficult access? These animals therefore feed where no other culture could be attended to, that would turn to a better account. Ought the State to be deprived of the use and value of the extensive forests and woods which this Canton contains, merely to gratify the wishes of the inhabitants of the Pieve ...? Besides, have they either the inclinations or the means to avail themselves of the grant, should it be given in their favour? It is thought not.<sup>29</sup>

The essence of Focard's plan was a dispossession of Corsican land rights and usage and an attack on the pastoral socio-ecological system. Unsurprisingly, he argued that, for the betterment of Corsica and of France, he should be given the rights to develop the land. Aside from the monetary benefits, he also argued that the land clearing and optimisation of the land for woods would increase the population of the island, form more reservoirs, create more agricultural and industrial occupations, improve the air quality and encourage foreign investment in the island. In essence, in the view of Focard, the cures for the ills of Corsica were found in the proper exploitation of the natural timber resources of the island, and the integration of those resources into a broader economic system.<sup>30</sup> Crucially, the Corsicans themselves were incapable of that exploitation or integration.

## Volney's ruins

Focard never had the opportunity to put his detailed proposal into action, as the winds of Revolution swept past him, and instead of granting opportunity for more 'locusts,' the National Assembly opted to give preference to local administrators. This extended beyond simply land use and even went so far as to grant the power to redistribute former royal lands to the inhabitants of the island, theoretically in a way that best benefitted the state.<sup>31</sup> Here was a new variation on the integration: allow enlightened self-interest to guide the individual into a proper relationship with both the state and nature. The argument went that Corsicans would act in a rationally self-interested fashion, so it was the responsibility of the state to align itself with that rational self-interest. If the state went against the best interests of its citizens, then

29 Ibid., p. 151.

30 Ibid., p. 202.

31 Archives Nationales de France. AF/II/149. 'Communiqué au Citoyen Barrère qui a faire le rapport des affairés de la Corse'; Archives Parlementaire de 1787 à 1860, t. XXX, séance du 5 septembre 1791, p. 209

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it should not be supported. Likewise, if ‘unenlightened’ individuals were put into power who pursued short-term luxury over long-term interests, they too should be the prey of the Revolution. Corsica, then, should be allowed to govern itself with guidance from Enlightened examples.

This was the argument of one Constantin Volney. Volney was an aristocratic *philosophe* who had made a name for himself in the 1780s as a travel writer. In 1789 and 1790, as a member of the National Assembly, he voiced his support for the proposal by Mirabeau for integrating Corsica into the French state as a full and equal partner. He then arranged to be appointed Director General of Trade and Agriculture in Corsica and in late 1791 set out to impart his vision on the island.<sup>32</sup>

Volney had just published his most well-known text in 1791, ‘The Ruins, or, Meditation on the Revolutions of Empires.’ In ‘Ruins,’ a genie lays out the trajectory of human history, bound by natural laws. These laws were, according to Volney’s genie, largely related to enlightened self-interest. Empires are ruined when internal organisation stands in the way of this self-interest. The genie claims that society is only as strong as the self-interest of individuals within that society, and that it is self-interest which binds the individual into the collective, so long as that collective is providing a context conducive to the furthering of that self-interest. Throughout history, civilisations rise on the basis of common interests and mutual needs. They thrive as long as they manage to service those interests and meet those needs. Their decline sets in as soon as one section of that society begins to pursue short-term gain at the expense of the collective good.<sup>33</sup>

It was with the intent to use Corsica as a laboratory for these ideas that Volney set out for the island, setting him apart from Rousseau’s absentee theorising. He also sought to differentiate himself from the ‘swarm of locusts’ by not coming as the Director General, but instead as a private individual, theoretically guided by enlightened self-interest. This genie of self-interest directed him to buy the estate of Confina, in the plain of Campo dell’Oro near Ajaccio.<sup>34</sup> His stated goal here was to bring in crops such as sugar and

32 Minchul Kim, ‘Volney and the French Revolution’, *Journal of the History of Ideas* 79 (2) (2018): 221–42.

33 Project Gutenberg, *The Ruins, by C. F. [Constantin Francois de] Volney* (EBook 1397). <https://www.gutenberg.org/files/1397/1397-h/1397-h.htm>

34 Alexander Cook, ‘Entre l’ancien et le nouveau monde. C.F. Volney et la politique des récits de voyages en France, 1782–1803’, *Annales historiques des de la Révolution française*



cotton, which would allow Corsica to prosper and succeed in both linking Corsicans to the French state and make Corsica profitable for the state. It is unclear if Volney was aware of the soil findings of the *Plan Terrier*. The document itself was not published until 1795, but its findings were circulated prior to that date.<sup>35</sup>

Why Volney chose Confina is a bit of a mystery. He certainly had not seen the property in early 1791 when he first made inquiries concerning it. One theory is that a Corsican in Paris, either Cristoforo Saliceti or even Napoleon, directed his search. Regardless, Confina was a property with a convoluted history of ownership. In 1778, it was owned by Georges Stefanopoli, who was the chief of the Greek colony at Paomia. Ownership evidently passed to his son, Jean, but when the land showed up again in the Municipal Records, it was Jean Stefanopoli complaining that he was unable to make use of the land, as rural peasants were using it as pastureland for horses and cattle. In 1790, these peasants petitioned for the land to be granted to them, as they were the ones using it. In 1791, there was a note specifically calling for the land to be set apart as communal land, not in the ownership of one person.<sup>36</sup> In 1792, Volney attempted to buy the land, but was stymied by Stefanopoli, who claimed the land. Volney actually petitioned the Ajaccio Municipal Assembly to grant the rights to Stefanopoli, so that he could then buy it from him. This was denied. From here the conversation only devolves, as there were discussions concerning whether any payment was made, or whether Volney or Stefanopoli were getting any income from the land. The end result, however, was that in March of 1793, Volney left Corsica with nothing to show for his troubles but a deep resentment towards the ‘ruined’ islanders.<sup>37</sup>

Volney would go on to blame a secretive cabal for conspiring against him, and Corsica’s eventual break with the French Revolution by the middle of 1793 confirmed this in the eyes of many. In truth, there is little evidence of conspiracy, beyond the fact that the Confina estate ended the eighteenth century in the hands of Joseph Fesch, none other than Napoleon’s uncle. Barring an intentional conspiracy, however, what seems to have most frustrated Volney’s plans was no secret cabal, or ‘short-term interests in ac-

385 (2016/3): 87–108; André Fazi, ‘Volney et la Corse’, *Bulletin de la société des sciences historiques et naturelles de la Corse* (2007): 27–95.

35 Willis, ‘Development Planning’.

36 Fazi, ‘Volney et la Corse’.

37 *Le Moniteur Universel*, N. 80, 20 Mars 1793 ‘Précis de l’état de la Corse, par Volney’.

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cumulating luxury' as Volney would claim. Nor was it based on any specific disagreements about Volney's philosophical or agricultural beliefs. Rather, the issue was one of communal land use and the Corsicans' resistance to any project that would deprive the local rural inhabitants of the right not just to work the land, but to work the land however they pleased. The 1791 note on Confina claims that, as the rural communities surrounding Ajaccio had very little land, 'troubles would arise every day if a single person were to obtain [Confina]'. And indeed, there are records of violence being used against any that came to claim the land in later years.<sup>38</sup>

To use Volney's own framework, the long-term interests of Corsica were not found in cotton or sugar, but in recovering from decades and even centuries of subjugation. Thus, resistance to Volney's attempts to regenerate the island emerged not from a resistance to his specific project, but from a resistance to all regeneration from outside sources. In 1793, upon his return to France, Volney wrote and published an addendum to 'Ruins,' entitled 'Law of Nature'. His conclusion to this text serves as a fitting epigraph for the various projects for Corsica that littered the latter half of the eighteenth century:

I conclude that...we are not happy except when we observe the rules established by nature for the purpose of our conservation; and that all wisdom, all perfection, all law, all virtue, all philosophy, consist in the practice of these axioms founded on our own organization: Conserve yourself; Instruct yourself; Moderate yourself; Live for others so that they may live for you.<sup>39</sup>

### Affection and vendettas

Whether Genoese, Old Regime or Revolutionary France, Corsica seemed resistant to all efforts at either integration or exploitation of its natural resources. This pattern continued while the British controlled the island from 1794 to 1796.<sup>40</sup> The British did not necessarily fall into the same trap of exploiting the island, but neither were they able to exert control over the inhabitants, especially not in terms of economic reform or environmental development. Moving from the mountains to the sea, the Corsicans displayed a remarkable contempt for coral fishing rights and nearly provoked the Dey

38 A.D. Corse-du-Sud, 1 Q 78, procès-verbal d'adjudication de la Confina.

39 Volney, *Ruins*.

40 Desmond Gregory, *The Ungovernable Rock* (London: Farleigh Dickinson Press, 1985).

of Algiers into a war against Great Britain.<sup>41</sup> The Anglo-Corsican Kingdom was a short-lived phenomenon that harkens more towards Napoleon's conception of Corsica as a nuisance: strategically important, even necessary at times, but a political and economic millstone around the neck of whoever sought to govern the 'ungovernable rock.'

Despite this litany of failures, eventually Corsica did become a (relatively) stable part of the French state. This process of integration remained fraught. Two documented phenomena illustrate the peculiar way that France subverted Corsican autonomy.<sup>42</sup> First, there was a rise in extreme land fragmentation.<sup>43</sup> Hints of this emerged in Volney's case, where the question of who owned the land proved remarkably troublesome. Prior to the nineteenth century, there is evidence of *de jure* fragmentation, but stronger evidence that in practice, the land was worked and held communally, often by superfamilial groups. While it is tempting to view the antagonistic relations that Corsica held with Genoese/French/British integration as an expression of individualism à la Rousseau and even Volney, the reality is that organisation did exist on the island prior to state oversight, but that organisation was largely dictated by the land itself, not by human social structures. In other words, Corsican environmental practices emerged not from studying or profiting from the land, but from working the land. To borrow a phrase from Wendell Berry, it all turned on affection.

A powerful example of the institutionalisation of this affection is the *attione*. Initially this was a customary moral imperative for proper land use that also prevented alienating or selling communal land to strangers.<sup>44</sup> The intention of the *attione* was not just to prevent outsiders from gaining ownership of land, but more specifically to hold members of a family and a community responsible for the land. When the Genoese attempted to codify this, imposing a law in 1571 that officially made land open and belonging

41 Joshua Meeks, *France, Britain, and the Struggle for the Revolutionary Western Mediterranean* (Cham: Palgrave MacMillan, 2017) ch. 5.

42 Francis Pomponi, 'Crise de structure économique et crise de conscience en Corse (fin XIXe début XXe)', in A. Nouschi et al., *Typologie des crises dans les pays méditerranéens (XVIe-XXe siècles)* (Nice, 1977), pp. 75–114; Thompson, 'Settlement and Conflict'.

43 Linda Cool, 'Continuity and Crisis: Inheritance and Family Structure on Corsica', *Journal of Social History* 21 (4) 1988: 735–51.

44 *Statuti civili et criminali dell'isola di Corsica*, Article 39. CNCE013990, Biblioteca Digitale Ligure.

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to all Corsicans, it backfired.<sup>45</sup> Whether this was a deliberate attempt to provoke infighting between Corsican communities or a misguided attempt to codify something that was perceived as a core Corsican value, the effect was toxic. Communities were forced to become increasingly protective of their land. Strangers, after all, could just as easily be someone from the other side of the mountains as from Genoa or elsewhere. The fractured nature of the Corsican geography meant that not only was Corsica the island an insular site, but that the communities on Corsica were their own little islands, disconnected from a larger whole. Corsican national identity was far from strong. Local identity was king.

The attack on communal identity was unrelenting, however, and culminated in the promulgation of the Civil Code on the island in the early nineteenth century. The ramifications of this were far reaching and best explored elsewhere, but the Civil Code created a stable and rigid family structure that was indelibly tied to the state, largely through inheritance law.<sup>46</sup> Exclusive property rights were encouraged and reinforced so that there could be a clear line of inheritance and succession. This new tactic finally worked to reform Corsica. Rather than forcing changes on the land and anticipating those changes work their way upwards to society or proposing sweeping political changes that would trickle down to affect the land, instead the Civil Code went straight to the social structures of the island. By emphasising the importance of family bonds and making the state rather than the land the arbiter of familial continuity, the French state undermined the communal and pastoral relationships that dominated Corsica. Now, finally, the land could be controlled by the state, through the vehicle of family inheritance.

As land ownership became tied to family identity, it became correspondingly divorced from any sense of subsistence or production on the land itself. Instead, the land became property that could be assessed and taxed by the state. Perhaps unsurprisingly, however, this did not result in a marked increase in productivity or even stability. In fact, the nineteenth and twentieth centuries were characterised by hyper-fragmentation of the land, to the extent that there are recorded cases of a certain branch on a tree being passed down, or

45 Ibid.; Francois Penet and Gerard Lenclud, *Berger en Corse* (Grenoble: Presses universitaires de Grenoble, 1977).

46 Suzanne Desan, *The Family on Trial in Revolutionary France* (Berkeley: University of California Press, 2006)

one specific room in a house.<sup>47</sup> It became both legally and socially necessary to maintain continuity of property ownership. In a way, this is a variation on the same theme of resistance against any outside ownership, only now outside ownership could still be inside the community, as the state broke down the bonds of local communal pastoralism.

This directly led to the second phenomenon. As land ownership shifted increasingly from communal to private, there was a corresponding increase in vendettas and feuds on the island. For example, in 1802 the Ortoli feuded with the Marchi in Serraggia. The Marchi claimed that historically they had worked the land and reaped its benefits, while the Ortoli claimed that they had done so while paying rent, indicating that the Ortoli were the proper owners. Also in dispute was the question of damage to lands that were unquestionably Ortoli, as the Marchi had cleared the land they claimed by burning it, thereby damaging Ortoli hedges and fences.<sup>48</sup>

There are three important facets to this case, which was far from exceptional in the early nineteenth century. The first is that the dispute occurred immediately following the death of the Ortoli patriarch, highlighting the role family inheritance played in the emergence of conflict. This is not to say that conflict never occurred prior to this point. Indeed, Corsica was renowned for its vendettas, and interclan rivalry was one of the main tools the Genoese exploited to keep the island subjugated. However, vendettas specifically over land use increased greatly with the advent of the new inheritance structures. Second, and related, is the fact that this conflict was not mediated communally, but rather came before the *justice de la paix*. This showcases the shift in who would be the arbiter of the land, and the increased integration of the Corsican people and land into the apparatus of the French justice system and state. Finally, there is the tension at the heart of the conflict over whether land is something to be used or something to be owned. Ultimately it was the latter view that prevailed in Corsica, and the state grew to manage and eventually suppress the conflicts that its imposition of inheritance law largely caused.

47 Cool, 'Continuity and Crisis'.

48 This dispute, along with many others, can be found in the A.D. Corse-du-Sud, 3.U.5. This particular case was in folder 130, 20 nivose An XI.

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### Corsica connected?

And yet, the eighteenth-century dreams of 'regeneration' remained elusive. Even as the state succeeded in breaking down some of the more resilient socio-ecological structures in Corsica, little was done to replace those structures until the 1950s. An initial population boom corresponded with the relative peace and stability of the nineteenth century, and the population of the island more than doubled from 110,000 in 1798 to 280,000 in 1880.<sup>49</sup> However, as was the case in previous centuries, there was no significant investment in development on Corsica itself, only the opening of the island to the larger European and global economic system to go along with the erosion of the socio-ecological backbone. The population boom turned into a bust, first with the widespread emigration of young Corsicans from the island, and then the devastation of the World Wars. By 1950, the population had reverted back to 110,000, but instead of self-sustaining rural communities, it now lived almost exclusively on the coast. Chestnut forests decayed and *maquis* spread unchecked without the free ranging of goats.<sup>50</sup>

The demographic and environmental crisis of the second half of the twentieth century necessitated a drastic response. In contrast to previous attempts at internal reforms, a regional development plan in 1957 stimulated the economy by looking outside of the island, encouraging immigration, particularly from *pieds noirs*, and pushing the island towards a tourist economy, which remains dominant to this day.<sup>51</sup> As might be expected, however, this resulted in strong resistance from the native Corsicans, and the 1970s featured an explosive and violent struggle for self-determination, which continues to this day. Despite the best efforts of the French state and now the European Union, Corsica remains resistant, despite its functional integration into a European system.<sup>52</sup> As part of the revival of the fight for Corsican autonomy, land that had been abandoned for decades has recently begun to be 'restored' for use as chestnut plantations. The question remains open as to whether

49 P. Lefebvre, 'La Population de la Corse', *Revue Geog. Alp.* (1957): 557–75.

50 Thompson, 'Settlement and Conflict.'

51 P. Simi, *Précis de géographie de la Corse* (Bastia: Société des Sciences Historiques et Naturelles de la Corse, 1981).

52 Farimah Daftary, 'Experimenting with Territorial Administrative Autonomy in Corsica: Exception or Pilot Region?' *International Journal on Minority and Group Rights* 15 (2/3) (2008): 273–312.

the denaturalisation of the ecosystem back towards chestnuts will serve any socio-ecological purpose beyond symbolism.<sup>53</sup>

There is a danger in ascribing too much agency to some ethereal ‘Corsican’ dream of autonomy, independence or even communalism. There certainly was never a concerted or deliberately planned effort on the part of the Corsican population to subvert the schemes of the various states that have ruled the island. Nor was there a noble utopian version of Corsica high in the mountains where savages lived at peace with each other and the land. For either of these to be true, the Corsican people would have had to act in a way contrary to the nature of the Corsican island: remote, fractured, insular and disconnected. But just because the Corsican island and people resisted connectivity does not equate to savagery. Chestnut forests and wandering goat herds represent an alternative vision of the relationship between the environment, people and the state. This alternative vision is one that revels in inefficiency, difficulty and even failure. Crucially, it is a vision of a society that is a product of its environment, not at war with its environment. It is a vision of an island that is both weaponised by its population and actively shapes that population. While integration, exploitation and growth can seem inexorable, a study of Corsica and Corsicans showcases the countervailing forces that can stymie the tyranny of connectivity, though not without cost.

## Disclaimer

This chapter represents the views of Joshua Meeks alone, not the US Naval War College, US Department of Defense, or US Government.

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# 13. The Island of Violence:

## Goli Otok, the Yugoslav Prisonscape

Milica Prokić

*Though I come from the continental, land-locked Serbia, I agree with Peter Conrad's idea that every person is related to an island, either one allotted to them by birth, or one they adopted, or one they were adopted by later in life. No human is without an island. Mine is Goli otok. I inherited (a connection with) it from my maternal grandparents, for their years spent there. Before the political prisoners planted trees there in the early 1950s, during the first decade of Tito's Yugoslavia, Goli otok had been bare and treeless – a cruel habitat, bleached by the Mediterranean sun, whipped by winds from both sea and the land. Today, the prison complex on the island stands abandoned and ruined, an obscure symbol of political oppression and human suffering. When two things came into my possession – a book by former Goli otok prisoner Vera Cenić, and a small notebook with my own grandmother's prison memories – I went to meet the island for the first time. It wasn't what I expected. In the decades of quiet abandonment, the acacias and pines planted by the prisoners grew to shade small portions of its terrain. Strong branches of fig trees now wrap the crumbling prison buildings, growing inwards through rusty window bars. Flocks of sheep wander around. Little yellow butterflies flutter around decomposing sheep carcasses peppered around the rock, small colourful lizards slither between stone cracks. The walls are covered with stuff written by lovestruck teenagers, nationalist football fans and aspiring graffiti artists. The island is its own blend of compelling, idyllic and bizarre. Beyond the family memories and the stories I heard, I felt my own, unexpected, instant connection with the island. I have been studying it for more than a decade and a half now. Goli otok is not the easiest island to be related to. It shaped my career, my work and at times even my mental health. For me, writing about it is a strange concoction of constant, ubiquitous and impossible. How to tell, over and over, the tale of savagery, chaos and despair on the barren sharp rock if not to go back there, each time? Writing*

*about it can also be an intense bodily experience, making the island, in a way, a physical part of me. It is my island, for better or worse, so I find comfort in knowing that there are strands of beauty in the harrowing memories of its prisoners, that there are flowers growing from the stone, and that there are stories of human gentleness, friendship and rectitude, even in times and environments of 'endemic' violence such as Goli otok once was.*

## 13. The Island of Violence

### Introduction

Only stone upon stone  
to commenced eternity departed  
whole

Oh, the shame  
the shattered souls of my brethren  
shall carry it, crumbled  
to bottommost circle

...  
Stone without man is no stone nor  
drystone wall,  
nor is Goli otok where the sea  
foretells the storm<sup>1</sup>

To begin a story of Goli otok (meaning literally *barren island* in Yugoslav languages) with the above verses of the poet, partisan, revolutionary and former Goli otok prisoner Ante Zemljar is particularly fitting. The time between 1949 and 1956, when the harsh limestone terrain of Goli otok was commandeered as the site of the master political prison and labour camp of Tito's Yugoslavia, long occupied a peculiar space in Yugoslav history – one that historian Pamela Ballinger defined as 'an open and shameful secret ... that underlined the regime's power'.<sup>2</sup> For a complex set of reasons, the absence of substantial historiographical accounts on Goli otok persisted from 1956, when the political prison was discontinued, all the way up to the 2000s and 2010s when the archival materials of the Yugoslav State Security Service (UDB) became largely, though not entirely, accessible to researchers.<sup>3</sup> For decades, Ante Zemljar and his fellow former prisoners had kept

1 Ante Zemljar, *Pakao Nade* (Zagreb: Trgorast, 1997). All translations of poetry and oral histories (originally in Serbo-Croatian) are by the author.

2 Pamela Ballinger, *History in Exile: Memory and Identity at the Borders of Balkans* (Princeton: Princeton University Press, 2002), p. 108.

3 Alongside a handful of recent scholarly articles, the first doctoral thesis in the field of history is Martin Previšić's 'Povijest informbirovske logora na Golom otoku 1949–1956' (University of Zagreb, 2014). The first and to date the only doctoral thesis in environmental history focusing on Goli otok is 'Barren Island (Goli otok): A Trans-Corporeal History of the Former Yugoslav Political Prison Camp and Its Inmates' by Milica Prokić (University of Bristol, 2016). Many of Previšić's sources are already

from oblivion the story of the barren island and the fate they shared in its limestone quarries, as their poetry, memoirs and novels substituted for its glaring absence in historiography.<sup>4</sup>

Goli otok was part of a carceral network for ‘self-managed political re-education’ of the so-called *ibeovci* (or Cominformists): those who sided or were accused of siding with Stalin and the Soviet-led Communist Information Bureau (Cominform) in the 1948 Tito-Stalin rift, an event which brought hostility to the Yugo-Soviet relations that lasted until partial rapprochement after Khrushchev’s ascent to power. The ‘Cominformists’, men and women, were Tito’s fellow antifascist partisan fighters from the Second World War, seasoned veterans from the Spanish Civil War, and often highly regarded cadre of the Yugoslav Communist Party. These arrestees, however, were joined and soon outnumbered by civilians, non-party folk, students and even high-school pupils who, though having no ties with Stalin or the Cominform, criticised (often only jokingly) certain aspects of Tito’s leadership. From remand facilities on the mainland which started overflowing with arrestees as Yugo-Soviet relations further deteriorated in 1949, the Cominformists were sent to ‘revise their political stances’ through ‘socially beneficial labour’ at a ‘designated place’, away from the eyes of the Yugoslav public.

The ‘designated place’ which served as the master site of this carceral network and where the majority of about 16,000 prisoners were sent to physically ‘rebuild’ their political stances was Goli otok – 4.3 square kilometres of uninhabited, treeless rock in the Kvarner Bay, set between the regions of Istria and Dalmatia, at the foot of the Velebit mountain range. The signature UDB invention was the ‘self-management’ component of the Cominformists’ sentence: alongside labour in the island’s limestone quarries, the prisoners were forced, through a series of extreme physical and psychological pressures, to prove their successful political ‘re-education’. The required proof was inflicting those same pressures on their fellow inmates. Within their insular carceral environment, this quickly rendered any camaraderie among the inmates virtually impossible and plunged the prisoner community into a vicious cycle of mutual abuse.

The secrecy that surrounded the prison site was also imposed on the prisoners after release. Being forbidden to speak about their experiences of

known through the works of his mentor Ivo Banac, such as *With Stalin against Tito: Cominformist Splits in Yugoslav Communism* (Ithaca: Cornell University Press, 1988).

4 Andrej Inkret, quoted in Banac, *With Stalin against Tito*, 12.

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unsettling acts of brutality, of gruelling forced labour in the island quarries, of torture, disease and shame, wrapped in opacity the barren rock and the human stories alike. The substantial body of former prisoners' poetry and prose, the Goli otok camp literature<sup>5</sup> which largely surfaced after Tito's death in 1980, was quickly submerged by the wave of the tragic war-ridden 1990s dissolution of Yugoslavia. When historians revisited the stories of Goli otok prisoners, cutting through the layers of secrecy, censorship and neglect, they found that the intra-human relations on the island constituted, as Ana Antić defined them, a 'unique culture of violence'.<sup>6</sup>

Another careful look at the verses that opened this chapter, now with the image of the secretive barren island in mind, and with the notion of a *unique* violence that grew on its rocky terrain, shows the layers of Ante Zemljarić's aptitude to speak of Goli otok and of the human fate there. Even visually, his scarce and fragmented verses resemble the sharp, uneven, rugged boulders of the island's peculiar karst terrain. Born on the nearby island of Pag, the site of a death camp ran by the Nazi collaborators Ustaše, Zemljarić writes of Goli otok with the compelling authority of one who possesses tangible knowledge of these arid Adriatic rocks and the nuances between the acts of violence each of them fostered. Zemljarić's frantic, spiky verses seem to pour from his painfully intimate bond with the island, bringing an insight that a historian alone could hardly access through archival materials.

Indeed, people who are bound to islands, those who live with them, study them and think with them, know that every island is peculiar, with its own environmental traits, endemic species, communities, and behaviours. As literary scholar Peter Conrad notes, islands 'narrow and concentrate the rules of selection'; as such, they are 'breeding grounds for idiosyncrasy'.<sup>7</sup>

5 Writers such as Antonije Isaković and Abdulah Sidran (whose father was imprisoned within the Goli otok network) are in this context the most notable contributors to Goli otok literature. However, memoirs, poetry and unpublished manuscripts, as well as oral accounts by former Goli otok prisoners constitute the body of sources which give us the most direct insight in the everyday life on Goli otok. See Banac, *With Stalin against Tito*; Oskar Gruenwald, 'Yugoslav Camp Literature: Rediscovering the Ghost of a Nation's Past-Present-Future', *Slavic Review* 46 (3/4) (1987): 513–28.

6 Ana Antić, 'Therapeutic Violence: Psychoanalysis and the "Re-Education" of Political Prisoners in Cold War Yugoslavia and Eastern Europe', in *Psychoanalysis in the Age of Totalitarianism*, ed. by Matt Ffytche and Daniel Pick (London: Routledge, 2016), pp. 163–77.

7 Peter Conrad, *Islands: A Trip Through Time and Space* (London: Thames and Hudson, 2009), p. 13.



With this in mind, the following chapter engages with the crucial question that historians of islands as places of human incarceration must address: if islands tend to foster zoo-biological endemism and distinctive communities, can we also speak of prison-islands as shapers of island-specific, 'endemic' human violence?

With its own environmental oddities which brought about a site-specific set of relationships between the island, the carceral project and the imprisoned humans, Goli otok presents a good point of departure towards studying the distinct environmental history of prison-islands. In other words, through the story of Goli otok, this chapter seeks to capture the conception of prison-island, this entanglement of societal and environmental insularity: is it a place, a space, or – a process? Since Goli otok was not inhabited before 1949, this chapter traces its becoming a prison-island where this stone-crumbling, soul-shattering 'circle' of violence emerged. The written and oral accounts by Ante Zemljar and his fellow former prisoners trace this becoming from the very 'beginning' – when the first prisoners set foot on this bare rock in the Kvarner Bay.

## The blank page

In July 1949, when the first transport of political prisoners arrived at the cove of Goli otok, there was no pier for the ship to dock. 'There was nothing', recalled Radovan Hrast, aged eighteen at the time of his arrest, save for the 'two wooden planks' provided for the human cargo to come ashore, 'a table with a large book on it', and two chairs, against the backdrop of the vast whitish rock.<sup>8</sup> Hrast defined this image as 'the beginning of Goli otok'. Coming from Dalmatia, the coastal area of Croatia adjacent to Kvarner Bay, Hrast was somewhat familiar with this arid stretch of the Adriatic karst. However, this scarce inventory of human-made objects necessary to establish the labour camp and its administration only underlined the sense of void, an absence of any familiar elements to identify with in this new place. Even to Hrast, the sun-bleached rock seemed prodigiously vacant.

Those from elsewhere in Yugoslavia, like the seventeen-year-old high-school student Vladimir Novičić who was shipped from the hilly and verdant central Serbia and who had never seen the sea or an island before, admitted

8 For Radovan Hrast's testimony, see Previšić, 'Povijest informbirovske logora na Golom otoku', p. 96.

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having ‘rather naïve expectations’ of how an island, any island, should look: ‘with luscious greenery, like from the novel about Robinson Crusoe’. His first encounter with the sea gave him an ‘immense feeling of excitement and exaltation,’ as he noted in his unpublished manuscript: ‘under the blue cupola of the sky, the waves, illuminated by the morning sun, sparkled on the ink-blue water vastness’. Immediately thereafter, however, he faced the barren island ‘so true to its name – terrifying’, with nothing but ‘stone boulders and sharp limestone gravel, all in the same shades of off-white, without a single tree’ in sight.<sup>9</sup>

Indeed, before the UDB chose it as the site for its master political prison and labour camp, Goli otok had been uninhabited by humans for a reason. Its sharp rock, sticking out of the sea in the remarkably stormy Gate of Senj, has no sources of water suitable for human consumption. It is a place with extreme temperature oscillations between the blazingly hot long summers and stormy, icy winter months. As Vladi Bralić, researcher of the prison architecture of Goli otok, noted, ‘the summer temperature frequently rises above 34 °C’. This is a conservative estimate: having been on the island myself in the scorching August of 2011, I measured the temperature as 44 °C when standing on the rock without shade. At the same time, Goli otok is one of the northernmost, coldest and windiest of the Mediterranean islands. In winter, the frequent, storm-force gusts of the chilling *bora* wind (in Yugoslav languages referred to as *bura*) bring temperatures on the island down to eight degrees below zero.<sup>10</sup> This makes the shores of Goli and (partially) the shores of the adjacent Prvić the only ones among both Adriatic and Mediterranean islands that tend to freeze over, with the ice cover reaching up to a metre in thickness.<sup>11</sup> Yet despite its apparent hostility to human habitation, the UDB chose Goli otok to set up a prison and labour camp there. ‘Only a bird can escape it’, boasted Aleksandar Krstić, a high UDB official, following the report by his officers who scouted the terrain.<sup>12</sup> Thanks to its location in the

9 Vladimir Novičić-Trocki, unpublished manuscript, 24.

10 Vladi Bralić and Damir Krajnik, ‘Anthropogenic Elements of the Cultural Landscape of the Island Goli Otok in Croatia’, *Prostor, A Scholarly Journal for Architecture and Urban Planning* 29 (1) (2021): 32–41, at 34.

11 Andrija-Željko Lovrić, ‘Biocentical Ecozonation in Mediterranean Karst of W. Dinaric Alps, Adriatic Islands and Sea Bottoms’, *Documents de cartographie écologique* 24 (1) (1981): 69–78, at 70. See also Andrija-Željko Lovrić, ‘Eolski kserobinomi od Jadrana do Irana’ (Ph.D. thesis, Zagreb, 1995).

12 Božidar Jezernik, *Goli Otok-Titov Gulag* (Ljubljana: Modrijan založba, 2013), p. 39.

stormy sea strait which renders escape by swimming virtually impossible, the island seemed a perfect, *natural* partner to the jailers.

The larger islands of the Kvarner Bay – Rab, Krk, Cres and Lošinj, known to and named by sailors and settlers at least since antiquity – burst with human histories, cultures and myth. The island of Rab (known as Arba in antiquity), for example, was home to the stone cutter and early Christian saint Marino who, after escaping the purges of Christians orchestrated by the Roman emperor Diocletian, built the stone chapel on Monte Titano – the founding building of the *Serenissima Repubblica di San Marino*. Meanwhile, the islands of Cres and Lošinj are also known as *Apsyrtides*. According to *Argonautica* by Apollonius of Rhodes, they rose from the sea as petrified body parts of the mythical hero Apsyrtus, ripped apart and thrown in the sea there by his sister Medea, who was helping Jason and the Argonauts escape with the golden fleece stolen from her father's kingdom.

By contrast, Goli otok's only known name – meaning barren island and also being a homophone for *naked swelling*, as in bodily swelling caused by an injury or a disease – is Slavic, and could not have been given before the sixth century AD when Slavs settled in the area.<sup>13</sup> The human past of the long nameless and long uninhabited Goli otok, or, more to the point, the production of a significant number of human accounts concerning the island, only began with the human carceral experience in the mid-twentieth century. To say this, however, is not to deny its geological, material and temporal reality: the island has been there, in its island form, since the Pleistocene glaciation. Its long existence only briefly overlapped with the timeline of the human carceral project. Yet, to recall Zemljar's verse, Goli otok is not (only) a barren island, where 'the sea foretells the storm', but a prison-island entity – partly, therefore, of human making. And as far as human stories of the island go, the blank book awaiting the names of the newly arrived prisoners on the 'vacant' bare rock, could indeed be seen as Radovan Hrast saw it: as 'the beginning of Goli otok.'

Unlike the subsequent transports, Hrast and his fellow prisoners from the initial groups (the first known human inhabitants of the island) who arrived between 7 and 15 July 1949, were not rushed or beaten upon ar-

13 Though Slavs settled the area in the 6<sup>th</sup> century, it is possible that the island was named significantly later.

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rival.<sup>14</sup> While they had endured beatings at the hands of their interrogators in remand as well as in transit to the island, the guards on the island itself rarely laid a finger on the inmates.<sup>15</sup> This allowed them to approach and observe their surroundings somewhat placidly. To notice, within the first minutes, the improvised prison camp of wooden barracks located up the hill from the big cove where the ship left them. Or to hear the screeches of seagulls – the island signalling presence of more-than-human animate life, despite its seeming ‘void, dead and desolate’, ‘dried dead from the winds and the waves’ as one former prisoner, Slovenian writer Cveto Zagorski, noted, recalling his first encounter with the island.<sup>16</sup> Upon disembarking, the guards ordered the prisoners to strip and throw their clothes on a pile, and then to wash in the sea, which was a boon after the cumbersome, dark ship journey.

Those first moments and days in early July, as the former inmates recall, were clear, with the calm indigo sea surrounding them and their bone-white new habitat. Yet the newcomers had a lot to adjust to in the new landscape. Those who spent months in the cold, dark, and damp cells in remand facilities peppered across the Yugoslav mainland, instantly felt their skin burning under the summer sun. Their eyes were also still to adjust to the brightness reflecting off the stone. Their ‘tender feet’, ‘immediately wounded’<sup>17</sup> by the sharp rock of the island, also signalled that the interrelation of the island and the humans would be a resoundingly corporeal one. The line of hundreds of naked, pale, squinting barefoot men on the vacant whitish rock, clutching newly received island uniforms is an image often recalled in the testimonies of those among the first transport groups.<sup>18</sup> The painter and illustrator, Holocaust survivor and former partisan Alfred Pal described this long line of his ‘strikingly white’ peers moving up the hill of limestone gravel towards the camp on the first day as ‘looking like some strange angels climbing towards the sky.’<sup>19</sup>

14 Testimony by Radovan Hrast given to Previšić, ‘Povijest informbirovslog logora na Golom otoku’, p. 96.

15 Author’s interview with Damir Pavić, 24 May 2015, Belgrade, Serbia; author’s interview with Vladimir Novičić, 25 May 2015, Belgrade, Serbia; testimony by Radovan Hrast given to Previšić, ‘Povijest informbirovslog logora na Golom otoku’, p. 96.

16 Cveto Zagorski in Jezernik, *Goli Otok–Titov Gulag*, p. 212.

17 Novičić-Trocki, unpublished manuscript, 25.

18 Ibid.

19 For the number of prisoners who arrived on 15 July 1949 with the contingent from Croatia proper, see Previšić, ‘Povijest informbirovslog logora na Golom otoku’, p. 83;

The long shifts of labour started immediately, lasting ‘from the last morning stars to the first stars of the night’ (in July the sun rises above Kvarner around 5.00 a.m., and sets around 9.00 p.m.).<sup>20</sup> The prisoners quickly familiarised themselves with the stone: constructing roads to the stone quarries, blasting the boulders with dynamite to produce stone gravel, crumbling it into smaller pieces suitable for building, transporting the stone to the building sites, and even looking for marble among the limestone of the island, as the UDB’s intent, alongside ‘re-educating’ the ‘stranded’ comrades, was also lucrative. Nevertheless, the initial days of carceral dwelling on the island were ‘almost idyllic’ for this first group consisting mainly of young and healthy men – in contrast to subsequent transports which carried the communist veteran cadre. They also spent these days doing practical tasks under the guards’ orders: making initial steps towards the building of the pier for later transports, setting up the electricity generator for the camp, and even building facilities for baking fresh bread. They also made friends among each other and moreover managed to play some organised pranks on their guards – one day, they submerged the entirety of their tools in the soft cement, earning themselves a ‘shirk’ for the afternoon.<sup>21</sup>

The island also showed itself to the humans as an increasingly vivacious place: apart from seagulls that nested on the island alongside several other bird species, the prisoners soon noticed the snakes which slithered out the rock’s crevices disturbed by the picks, shovels and dynamite blasts. These of course frightened the labourers, as Alfred Pal recalled in a conversation recorded by his fellow inmate, writer Dragoslav Mihailović:

There were two open latrines ... Down there, five or six snakes, killed. There were many snakes, terrifying. Venomous snakes at that. There were venomous snakes, understand? We had to be very careful. You’d lift a stone, and you would have to be cautious if there is a snake under it.<sup>22</sup>

for Pal’s account, see Dragoslav Mihailović, *Goli otok, knjiga četvrta* (Belgrade: Službeni glasnik, 2011), p. 247.

20 Novičić-Trocki, unpublished manuscript, 24.

21 Conversation with Alfred Pal in Mihailović, *Goli otok, knjiga četvrta*, p.207; Novičić-Trocki, unpublished manuscript, 25–26.

22 Conversation with Alfred Pal in Mihailović, *Goli otok, knjiga četvrta*, p. 252. There, however, was no cause for concern. Goli otok’s highly salinised rock is not tolerated by, and is even lethal to, the venomous local species that tend to suffocate in contact with this type of terrain. Therefore, the only reptiles the rock tolerated and supported were completely non-venomous snakes and small lizards.

### 13. The Island of Violence



**Figure 1.**

Goli Otok terrain; view of the island's highest peak. Photograph by the author, Milica Prokić.

Moreover, though virtually treeless when the humans first arrived, Goli otok hosted scarce, yet remarkably diverse Mediterranean shrubbery, as well as the barbary fig cacti, and other plant species capable of weathering life on the sun-scorched, stormy rock. Thus, as vacant as it might have appeared to its initial prisoner inhabitants at the time of their arrival, the limestone landscape quickly began to fill before humans' eyes, both with the other-than-human life, and with human-made structures. It was the same with the pages of the once blank registry book, filling with names of the new prisoner transports arriving at an increased pace. Among them, there was a particular transport that changed the course of how the prison-island evolved.

#### **The 'self-managed re-education'**

Unlike Hrast, Novičić or Pal, the inmates from this transport were able to view their surroundings, the sea and Goli otok, as they approached it from atop the ship deck. This group's arrival at Goli otok was also recorded in



the inmates' testimonies as abrupt, loud, violent, and disturbing. The members of this group, although of various ethnicities, were colloquially called 'the Bosnians': this referred to them being arrestees of UDB Bosnia and Herzegovina rather than their nationality.<sup>23</sup> Damir Pavić, aged nineteen at the time of his arrest, was on the construction site when the ship arrived:

On the day when they came, I was working ... breaking off a rock. And then, we heard the *Pumat* ship approaching, the flags, the five-pointed stars, the songs. And some terrible noise was heard, as if the *Flying Dutchman* arrived, singing, shouts of some well-known slogans and chants crystallised through the air ... 'Tito – Party – People – Army' ... and then the 'Bosnians' disembarked, the stout ones. They started beating us, immediately and heavily.<sup>24</sup>

The strange, instantly violent new cohabitants did indeed differ from the island's existing inmates: they seemed well fed, strong and clean, and did not undergo the naked sea-bathing ritual. According to Novičić, they were greeted by the guards 'with visible relief and even triumphant attitude, as if they boasted with the ace they were hiding up their sleeve'. The detail that indicated that they were no ordinary Cominformist prisoners was that they wore 'dandy' sturdy yellow leather shoes.<sup>25</sup> Recalling the disturbing changes this group brought to the inmate population, Novičić defined it as consisting of 'various agitators, criminals, convicted members of Ustaše's Youth, arrested sympathizers of the *Četnik* movement' who had been promised by the UDB 'to be exonerated of their wrongdoings' or who 'revised their stances under physical and moral violence' and agreed to 're-educate' the Cominformists in turn.<sup>26</sup>

The new hierarchy among the prisoners was immediately established. Those greeted by the guards, who were allowed and encouraged to beat the inmates, who came onto the island fully clothed, their feet unhurt by Goli otok's stone, were obviously the authorities. They immediately started demanding spoken revisions of political stances of the men on the island, alongside reports of 'enemy activity' on the mainland – the 'enemy' often being inmates' friends, parents, siblings or spouses. They also demanded that the inmates report on each other's political stances, and 'take an active part' in each other's 're-education'. Those who refused were repeatedly

23 Novičić, unpublished manuscript, 28.

24 Author's interview with Damir Pavić, 24 May 2015, Belgrade, Serbia.

25 Novičić, unpublished manuscript, 28.

26 Ibid.



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and brutally beaten. Yet, in the beginning, almost everyone refused: there were many friends among those who shared the first days and moments on the island. They even physically resisted the new authorities and the newly imposed system.<sup>27</sup>

However, their camaraderie and resistance were promptly snuffed. On 22 July 1949, the first inmate was beaten to death. While this murder was a relatively 'silent' act, in a barrack at night,<sup>28</sup> the murder that happened two days later, on 24 July, was deliberately performative and public. Blažo Raičević, 'an old-school communist, a veteran, a legend', as his younger inmate peers remember him, was brutally beaten, kicked and hit with sticks in front of everyone in the camp, including his fellow inmate son.<sup>29</sup> Novičić was among many eyewitnesses, and he noted in his manuscript that one Omer Pašić from the group of the newly arrived 'gave Blažo the final blow, hitting him on the head with a hammer'.<sup>30</sup> The crushed skull and the blood squirting on the sun-bleached rock signalled, as Alfred Pal recalled, 'that there was no more tolerance' for incongruence.<sup>31</sup>

As the inmates buried their first comrades under heaps of rocks in those days of late July, their tangible and material relationship with the island and its stone, now commandeered by these new authorities, also changed. With the members of 'Bosnian' group among them in the barracks, during meals,

27 Novičić, unpublished manuscript, 28–29.

28 The death of Petar-Nika Andrijašević is recalled in the accounts by his non-inmate friends, who, anecdotally, heard what happened to Andrijašević from some of his barrack mates upon their release, as Dragoslav Mihailović notes in his book *Goli otok, knjiga četvrta*. In the archival materials, the name of Petar Andrijašević appears in several convict lists and registry books. In the federal UDB (now BIA) Archives, held in the Serbian National Archive in Belgrade in the Registry book of the convicts who passed through 'Marble' I/16/II, Dosije 110 fascikla CII, on page 3, the name of Petar (Nikola) Andrijašević appears with the date of his arrest and the date written in the of 'date of release' column with a word 'died' added - noted as 22 July 1949. However, in the 'List of Persons' (CII I/6) registry book which contains the names of all 16,101 known inmates of the Goli otok network his name reappears, with the 'date of release' noted as 22 August 1949. The first inmate group however was not released until 1 October 1949, so this date in the 'List of Persons' registry book can be deemed invalid with a high level of certainty.

29 Miša Pifat in Mihailović, *Goli otok knjiga četvrta*, p. 41.

30 According to the BIA archives, Blažo Raičević died on 24 July 1949.

31 Interview with Alfred Pal in Previšić, 'Povijest informbirovskog logora na Golom otoku', p. 173.

and on the worksite, the moments of observing, familiarising themselves with the rock, shirking and playing pranks on the guards were taken away from the prisoners. The gruelling labour, part of the ‘self-managed re-education’, also became a means of torture: they were now forced to carry heavy stone loads from one point to another without any constructive or productive purpose, stone becoming the ally of the ‘re-educators’. This purely punitive labour, *on* the rock and *under* the rock, ‘sharp as razor’ against the skin as inmates recall, in the blazing summer sun or in the gusts of freezing *bura* in winter, further served the stratification of the inmates. The ‘collective’ and the ‘activists’, those who agreed to revise their political stances and co-operate with the UDB, were allowed to take shifts, at times have rest and drink water, while the so-called *banda* – the newly arrived to the island as well as those who refused to alter their politics or abuse fellow prisoners – would carry heavy stone loads all day every day, stretching their three-decilitre<sup>32</sup> water ration as thin as they could over the blazing summer days.

The particularly oppressed ones among the *banda* were the so-called *boycotted* – the pariahs of the inmate hierarchy, those who were not allowed to sleep at night, but were rather forced to ‘guard the kibble’ – meaning to stand, head over the large bucket which served as the toilet for the entire population of their barrack. During the day, they were forced to crumble the limestone with another piece of rock. Using this ‘tool’, the *boycotted* were also compelled, like all others, to fulfil the daily production norm: one cubic metre of crumbled limestone gravel.<sup>33</sup> They were also forced to work in the so-called *shit brigades* – trying to empty the latrines on the worksites with buckets with holes at the bottom. Everyone was encouraged, and with time, expected to ‘re-educate’ the *boycotted* by beating and insults. Those who did not take part, or refused or rebelled against such treatment were deemed obstructors of the re-education programme, and as such themselves *boycotted*.

However, as Novičić notes, as time went by, and ‘through the hellish combination of the concrete threats of falling under boycott themselves and the daily torture measures which everyone underwent, a number of inmates started making “moral compromises”, by throwing a harsh word or a projectile of spit at the *boycotted* instead of rocks’. But the greatest indicator of the deterioration of the intra-human relationships was, according to him, the fact that many convicts reacted to ‘more and more of new forms of torture

32 Author’s interview with Vladimir Bobinac, 23 Aug. 2011, Krk, Croatia.

33 Novičić, unpublished manuscript, 30.

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with an outward expression of contentment.’ Thus, the new ‘self-managed re-educational component’ which stained the rock with human blood and faeces, also sullied the relationships among the humans, who walked back each day increasingly bruised, soiled, agitated and disturbed to the quarries at heart of the island, their yells, picks, shovels and punches out-sounding the seagulls, the snakes and the waves. The elusiveness of time was another added pressure: most of the sentences to ‘socially beneficial labour’ were from six months to two years in length, but they could be prolonged or curtailed at the authorities’ discretion. Some Cominformists were even released – only to be arrested and sent to the island again after several months or even a year.<sup>34</sup>

As the camp management sought to prevent any camaraderie between the inmates on the island and the subsequently arriving transports, the first ‘gauntlet’ (or *espalier*, an age-old punitive practice where the subject is forced to run between two rows of people, normally fellow soldiers, and be beaten by them) was organised by the ‘Bosnians’ at the arrival of the next transport. Everyone was forced to attend, as Novičić recalled: ‘When the *Punat* ship appeared, we were all withdrawn from the worksite ... and the two-line row was already formed consisting of the “Bosnians” and the “youth brigade”.’ The so-called youth brigades Novičić mentions here consisted of inmates who revised their stance, agreed to co-operate with the UDB, and were promised a prompt release, working and living outside the main camp.<sup>35</sup> ‘The atmosphere was euphoric. Shouting became howling’, recalled Novičić and further noted:

The first people appear, completely naked, and they are ‘greeted’ by the convicts. In front of the row, one ... from the youth brigade, wearing a stethoscope and a white coat, as if in some kind of fancy-dress costume, greets all of the confused and shocked newcomers, in some jester-like tone, asking humiliating questions: Do you have syphilis, lice, nits, fleas, bedbugs? ... From the dark and mould of the remand prison cells, starved, in poor bodily shape, barefoot, these people are now about to run the gauntlet. If it was not for the shower of blows from everywhere and the bloody footprints on the sharp rocks, maybe this whole scene would have resembled some kind of hellish vaudeville, because everyone was deliriously joyful, like in some kind of medieval execution.<sup>36</sup>

34 See Dragan Marković, *Josip Broz i Goli otok* (Belgrade: Beseda, 1990), p. 453.

35 See Prokić, ‘Barren Island (Goli Otok)’.

36 Novičić-Trocki, unpublished manuscript, 38–39.

With the disturbing injection of the violent human factor, the process of Goli otok becoming prison-island had thus unfolded, from 'pale angels' on the vacant rock, to the bloodied 'hellish vaudeville', in a matter of weeks.

### The 'seventh circle'<sup>37</sup>

If the two planks and an empty logbook against its rock in early July 1949 was 'the beginning' of Goli otok, then 1951 was the peak. The 'self-managed re-education' had reached full swing. When Alfred Pal, who was temporarily released and then re-arrested, came back to the island in April 1951, the place which once smelled like fresh bread and the sea received him with the special gauntlet for returning convicts, 'coiled like a gargantuan snake', through which he was made to run in circles until he was so heavily beaten that he was taken straight to the infirmary where he lay slipping in and out of consciousness for two days. As he shared with a fellow inmate, writer Dragoslav Mihailović, after he came to, he stood outside the infirmary on the hill, having a panoramic view of the entire camp and an opportunity to observe the 'progress' of the self-managed re-education system in his seven-month absence:

I heard a strange murmur and noise underneath. I pushed up the bandage away from my eye to see what was going on, since that noise, or murmur, or thunder, was incredible indeed. The strange noise could be understood only if you could see the situation. It sounded like a dull banging ... I saw a scene worthy of Dante's *Inferno*. There were eighteen barracks in a row beneath. In front of each barrack there was an espalier through which the inmates were pushed. Since the path in front of the barracks was covered with gravel, the crushed stone which was sprayed with chlorinated lime for disinfection, a strange mist, dust, rose as they were running. The visual and sound impressions were mixed with the smell of sweat, the smell of chlorine, into an incredible, horrifying symphony. It seemed like Hell. The yelling: 'Boo! Ugh! Banda! ... Down!' could be heard from all sides. I stared astounded ... and, whenever it comes to my mind, I have the same feeling, a thought: Is it possible? Is it possible?<sup>38</sup>

Historian and Goli otok prisoner Vladimir Bobinac, in our 2011 interview asked *what happened to humans on Goli otok*, another question key to

37 In Dante's *Inferno*, the seventh circle is the circle of violence, towards self or other.

38 Mihailović, *Goli otok, knjiga četvrta*, pp. 351–52.

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understanding the story of the prison-island. What did indeed happen to humans on *Goli otok in particular*, as opposed to the rest of the sites within the Cominformist political prison and labour camp network which operated the same 'self-managed re-education' system? Cruel and violent as it was in these other places, only on Goli otok the *boycotted* were forced to work in the so-called shit brigades even amid a raging epidemic of dysentery. Only in the female camp on Goli otok were the *boycotted* women literally immured – immobilised by cement and mortar and attached to the outer walls of their own prison for days and weeks, as captain Miljuša Jovanović, a People's Liberation Struggle veteran, recalled of her fellow prisoner:

There was one, Grandma Ruža ... a petite little old lady ... they built a niche, like some kind of a highchair, so she could not sit down, and building around that they immured her into the wall ... it was a picture of living sorrow, it was hard to watch. Seven days was she immured into that wall, they were only giving her tiny bits of bread and a little water ... that's where she also urinated and defecated ... When she was let out, she was even tinier, like a little hen she looked, her skin was peeling off. Bless her soul, poor grandma Ruža!<sup>39</sup>

Nowhere else in the Cominformist prison network were the prisoners forced to build their own torture chambers, carving them into the very rock of the island: small niches colloquially called doghouses (because of their size), where men were crammed in and left for days, unable to move.

Moreover, nowhere else, it seems, were the prisoners so inextricably materially and corporeally interconnected with the environment of their incarceration as they were on the rocky island. They laboured on it, they were crushing their skulls against it, they buried their comrades under heaps of rocks, they built their own prison on it, with their bodies debilitated by the sunstrokes, dysentery, thirst, avitaminosis and injuries. They also afforested a portion of it, as Bobinac explained:

People wonder how the forest on Goli otok came to be. Because everything that happened on Goli otok, every rock moved from its original place, was moved by a convict. And every tree planted at the first stage in the development of the camp, was planted by a convict. They dig in the ground in between the rocks, put the fertile soil where there was room, then plant the seedling ... into it. But the seedling needs to survive the scorching summer sun. And the man, the convict, must shield the seedling with his shadow. He stands

39 Miljuša Jovanović, in Dragoslav Simić and Boško Trifunović, *Ženski logor na Golom otoku – Ispovesti kažnjenica i islednice* (Belgrade: ABC Produkt, 1990), p. 198.

above it, back turned to the sun, shielding the young plant from the heat. And [he] always moves along the same trajectory as the sun in the sky, so that the plant would always be in the shade. That is how the forest came to be.<sup>40</sup>

The rock, in turn, in one of its multifaceted 'behaviours' when it was not commandeered by the prison regime, offered the inmates 'gifts' of sustenance, healing and solace. On the savage rock, the inmates competed with their serpentine cohabitants for seagull eggs, thereby replenishing the badly needed protein in their bodies. They ate the flowers of the island cacti to save their teeth. The clay from between the rocks which they found in one spot helped the women to heal their wounds and sunburns. Moreover, it gave them the tenderest signs of solace when they most needed it. In the pains and humiliations of the stone labour, covered in sunburn and bedbug bites, struggling to endure the final days before her release, 21 years old at the time, Vera Cenić recalled:

Maybe that is why I found *her*, the little blossomed violet. It emerged, grew, and blossomed from a crack in the stone. On a tiny green stalk, with no leaves. We look at one another. I kneel before her and plunge into her scent. I kiss her. I don't dare to touch her with my hands, rough and toughened. I just kiss her, gently, sadly.<sup>41</sup>

And those who could not endure until the release, the rock assisted in their escape through death, as Vladimir Bobinac recalled:

There was one, from Belgrade, a young man, a student. And when he saw that evil there, evil unimaginable, in him rose the desire to escape. But there is no escape. So he moved to the side as we went to work with stone ... grabbed a stone, and with the stone in his arms jumped off the cliff into the sea ... And they look for him for three days, but he is nowhere to be found. On the third day they hire professional divers to search the seabed. And they find him, on the sea bottom, stone in his arms.<sup>42</sup>

From the whitish rock wounding the pale, tender feet of the newly arrived prisoners, to the stone partnering with prisoners in this tragic, final act of rectitude, the 'shattered souls' figuratively and materially carried the stone to the 'bottommost circle'.

40 Author's interview with Vladimir Bobinac, 23 Aug. 2011, Krk, Croatia.

41 Vera Cenić, *Kanjec filjma. Povest* (Vranje: Književna zajednica Borisav Stanković, 1994), p. 201.

42 Author's interview with Vladimir Bobinac, Krk, Croatia 24 Aug. 2011.



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## Conclusion

After the political prison was discontinued in the 1956, the island, complete with the prison complex built through the forced labour of the Cominformists, was handed over from federal jurisdiction to the Socialist Republic of Croatia to serve as a regular prison for felons. It was finally discontinued in 1988, to be abandoned and left to ruin. The trees planted by the political prisoners between 1949 and 1956, the acacias, common figs and various evergreens, have grown in the subsequent decades to shade one eighth of the island's terrain. Local shepherds from Rab have been bringing their flocks to the island: just as humans could not escape the island alive, the sheep cannot wander off this natural pen. Semi-wild, the sheep now inhabit the old, abandoned prison cells. They roam, die and decompose on the island, feeding the roots of its forest. It is, then, perhaps safe to say, in answer to the question of how to define a prison-island, that Goli otok is indeed a *process*, or rather, a conglomeration of processes, triggered by the human carceral dwelling in the mid-twentieth century, unfolding to this day.



**Figure 2.**

Goli Otok's post-prison afterlife with one of its current inhabitants. Photograph by the author, Milica Prokić.



With this in mind, I turn to Zemljar's verses once again, for the concluding layer of wisdom they offer: 'stone without man', he declares, does not assemble into a drystone wall; the rock wrapped in winds and waves, in and of itself, is *not* Goli otok. It is the entanglement of the human and the rock within a slight, seven-year slice of its Pleistocene-old past, that rendered the island's materiality, as well as its identity, into the Goli otok of which we speak today: the now abandoned prison-island that between 1949 and 1956 fostered the unique culture of violence, not seen in that scope, variety and disturbing intensity in the rest of the Cominformist political prison network. In his seminal work *Stone: An Ecology of the Inhuman*, Jeffrey Jerome Cohen notes that, although stone 'is a primal matter, inhuman in its duration ... despite its incalculable temporality, the lithic is not some vast and alien outside. A limit-breaching intimacy persistently unfolds'.<sup>43</sup> Drawing on that very limit-breaching intimacy with the island's stone, material and embodied, Zemljar and his fellow prisoners gave us a platform to examine this peculiar lithic island environment as the shaper of human experience.

Zemljar's collection of poems about Goli otok is named *The Hope's Inferno*. Since Dante's *Inferno* has been the trope also used by others who recalled and recorded their experience as political prisoners on Goli otok, it seems only appropriate that the voice of this poet, a local, stone-bound Virgil, has been our guide in parts of the journey. The section of *Hope's Inferno* from which the opening verse comes is named 'Barren stone spikes, barren stone scars' (*Goli kameni siljci Goli kameni ožiljci*). The former does not go without the latter in the material existence of the prison-island: whether the scars are those the former prisoners carried throughout their lives, or those they gouged into the stony body of the island in the project of the forced corporeal 'rebuilding' of their political stances. Examining stones, as Cohen suggested, as 'something more than fixed and immobile things ... as partners in errantry', this chapter has engaged with the barren rocky environment of Goli otok as humans' partner in life, in suffering, in solace and in death – with its scar-inducing stone spikes or with its scarce, improbable violets that grow, leafless, from the rock, offering a glimpse of gentleness to young, imprisoned women.<sup>44</sup> Just as peculiar traits of islands enable them to foster idiosyncrasies such as

43 Jeffrey Jerome Cohen, *Stone: An Ecology of the Inhuman* (Minneapolis: University of Minnesota Press, 2015), p. 70.

44 Jeffrey Jerome Cohen, 'Geophilia, or 'The Love of Stone'', *Continent* 4 (2) (2015): 8–18, at 8.

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giant tortoises or colossal monitor lizards, it is perhaps in the nature of the painful bond of humans and this peculiar rock sticking out, bone-like, from the tempestuous sea, that the 'endemic' origins of violence of the Goli otok political prison and labour camp are to be sought.

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I/16/2 'Registar Kažnjenika Koji su prošli kroz Mermer' (Registry of Convicts Who Passed Through Marble).

CII/110 1/6. Spisak lica (List of persons)

# 14. Pristine Grounds, Plastic Histories:

## Narrating Hunga Tonga–Hunga Ha’apai

Jeff Wescott

*Witnessing an island’s birth is a rare opportunity, an epochal transformation caught within the brief flicker of human experience. When Hunga Tonga–Hunga Ha’apai, or HTHH, emerged from the ocean in 2014, news of its surfacing circulated through reports of a ‘baby island’ in the Tonga archipelago, fresh evidence of the power of the Pacific Rim of Fire. Reading those accounts, I thought of anthropologist Mary Patterson’s observation that volcanoes focus attention outward into the world, owing to the fragility of lives lived on moving ground. Yet this uninhabited island evoked something more than mere anticipation of its future entanglements with human concerns. Its arrival was a true event – awe-inspiring, infinitely unfolding, unpredictable.*

*I teach anthropology and marine policy at Sea Education Association, an ocean-focused study abroad school based in Woods Hole, Massachusetts. Our class visit to HTHH in 2018 deepened my fascination with volcanic islands – the way they challenge our terrestrial biases; their ability to hold endurance and ephemerality in beautiful tension. True to character, HTHH abruptly returned to the sea in 2022.*

Important Note: On 15 January 2022, a powerful eruption levelled the volcanic centre of Hunga Tonga–Hunga Ha’apai that had surfaced in 2014, expelling a plume of gas, steam and ash that reached the mesosphere<sup>1</sup> and generating a tsunami that impacted eighty per cent of Tonga’s population.<sup>2</sup> The land bridge that for seven years connected the islands of Hunga Tonga and Hunga Ha’apai disappeared. This chapter describes conditions before the 2022 event.

The life of Hunga Tonga–Hunga Ha’apai has been lived fully within the time of the Anthropocene. Surfacing along the Kermadec–Tonga Ridge in the southwest Pacific Ocean less than a decade ago at the time of writing, it is a young, uninhabited island covered in rock, clay mud and plastic debris. The events leading to its recent formation, however, span centuries. Researchers have traced the long, active history of the submarine volcano lying between Hunga Tonga and Hunga Ha’apai, small islands in the Kingdom of Tonga located 65 kilometres north of Nuku’alofa, the nation’s capital. The dating of charcoal deposits on the two islands corresponds to a significant global cooling event in the twelfth century CE set in motion by a tropical eruption of previously unknown origin.<sup>3</sup> This volatile activity continued intermittently until December 2014, when an eruption led to the surfacing of the volcanic cone, ‘bridging the gap between the original islands’ of Hunga Tonga and Hunga Ha’apai.<sup>4</sup> The merging of these two ancient ‘sisters’ with the newly surfaced cone resulted in the single landmass commonly called HTHH.

This chapter explores the modes of observation and comprehension required of environmental historians seeking to grasp the confounding materiality of islands that surface in oceans littered with anthropogenic waste. The jumbled elements of HTHH’s terrain call to mind Michael Chiarappa and Matthew McKenzie’s argument concerning marine environmental historians’ ‘willingness to abandon Enlightenment traditions separating humans from the nonhuman world’, a willingness that encompasses recogni-

1 Sofie Bates and Mike Carlowicz, ‘Tonga Volcano Plume Reached the Mesosphere’, *NASA Earth Observatory*, 15 Jan. 2022: <https://earthobservatory.nasa.gov/images/149474/tonga-volcano-plume-reached-the-mesosphere>

2 United Nations, ‘80 per cent of Tonga Population Impacted by Eruption and Tsunami’, *UN News*, 20 Jan. 2022: <https://news.un.org/en/story/2022/01/1110162>.

3 S.J. Cronin, M. Brenna, I.E.M. Smith, S.J. Barker, M. Tost, M. Ford, S. Tonga’onevai, T. Kula and R. Vaiomounga, ‘New Volcanic Island Unveils Explosive Past’, *Eos* 98 (26 June 2017).

4 Ibid.

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tion of ‘historical agency’ in nonhuman domains.<sup>5</sup> In what follows, I explore the historical agency of marine plastics in the development of a new and geomorphologically active landmass. I also reflect on HTHH as the site of multiple converging histories, some bearing the resonance of colonial land alienation and environmental disruption in the Pacific.

Islands are favoured spaces for exploring the ecological and human social impacts of the Anthropocene.<sup>6</sup> ‘Islandscape’, a term ‘which encompasses all of the constituent components of an island’<sup>7</sup> and depicts islands as nodal points for ‘assemblages’ of local, regional and global actors and interests,<sup>8</sup> evokes intra- and multi-site connections in ways amenable to investigations of present-day environmental change. Envisioning islands as points of convergence sustains a perception of the contemporary world better attuned to the dynamic relationships between human and nonhuman domains long separated by systems of control and classification. These dynamic relationships include encounters among nonhuman entities that exhibit the potential for acting on and modifying each other – the ‘interveners’ in the world that Bruno Latour identifies as ‘actants’.<sup>9</sup> Among recent contributions to a relational, Anthropocene-epoch mode of thinking is ‘patchwork ontologies’, ways of perceiving and narrating a human-altered world that embrace islands as distinctive spaces for the novel interactions of diverse materials.<sup>10</sup>

This chapter is not a survey of the limited environmental-historical data on HTHH collected to date; rather, it offers observations to guide future studies of islands emerging in oceans of plastic. It engages themes of relationality

- 5 Michael Chiarappa and Matthew McKenzie, ‘New Directions in Marine Environmental History: An Introduction’, *Environmental History* **18** (2013): 9.
- 6 E.g., James C. Russell and Christoph Kueffer, ‘Island Biodiversity in the Anthropocene’, *Annual Review of Environment and Resources* **44** (2019): 31–60.
- 7 Ioannis N. Vogiatzakis, Maria Zomeni and A.M. Mannion, ‘Characterizing Islands: Conceptual and Methodological Challenges Exemplified in the Mediterranean’, *Land* **6** (2017): 14.
- 8 Sarah Nimführ and Laura Otto, ‘Doing Research On, With, and About the Island: Reflections on Islandscape’, *Island Studies Journal* **15** (1) (2020): 185–204; see also Epeli Hau’ofa, ‘Our Sea of Islands’, in *We Are the Ocean: Selected Works* (Honolulu: University of Hawai’i Press, 1993), pp. 27–40.
- 9 Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 2004), p. 75.
- 10 Jonathan Pugh and David Chandler, *Anthropocene Islands: Entangled Worlds* (London: University of Westminster Press, 2021), p. 123.

that capture the confounding materiality of HTHH, and seeks to transcend outmoded views of pre-human, pristine wildernesses toward re-examining ideas of ultimate order and categories of separation. What follows is a call to rethink plastic debris and other anthropogenic material – to take note of received assumptions and learn to narrate more effectively the interfolding histories of HTHH and other islands.

## Of plastics and pyroclastics

Arriving at the northern shoreline of HTHH, a visitor stands before a flat expanse of pyroclastic fragments extending to the island's southern boundary. The terrain invites thoughts of a landscape insulated from human awareness, a Martian proxy by virtue of the sense of immanent isolation it provokes. The view over the tuff cone into the island's centre reveals a turquoise lake encircled by charcoal-coloured cliffs etched like the gills of a mushroom. The descent into the crater is over loose gravel and 'clay-rich volcanic "muds"',<sup>11</sup> a grey desert cast in sharp relief against the gentle green of the two islands that flank the desolate topography. Nearing the shore of the crater lake, the view changes. Hundreds of scattered objects come into focus, conspicuously out of place and varied in their size and colour: the faded oranges, yellows and greens of derelict fishing gear; the scratched, milky surfaces of polyethylene bottles. Along the lakeshore, discarded food packaging, aluminium cans and polystyrene pieces of varying sizes mix with clay and rainwater. Some of the debris may have been deposited ashore during Cyclone Gita, a devastating storm that swept through Tonga eight months earlier. A likely much smaller percentage of additional plastic and other waste may have originated from recent tourist groups boating from Nuku'alofa, Tonga's capital. Much of the remainder has been steadily washing ashore since the days following the volcano's settling.<sup>12</sup> Far from otherworldly in its material composition, HTHH embodies the increasingly commonplace paradox of early geomorphology and anthropogenic impact, an incipient islandscape forged in fire, wind, seawater and plastic.

11 Emily B. Hite, James B. Garvin, Dan A. Slayback, Emily A. Burke, Grace Callahan, Paul Joyce and Kerry Whittaker, 'Exploring the Human-Nature Dynamics of Hunga Tonga Hunga Ha'apai, Earth's Newest Landmass', *Journal of Volcanology and Geothermal Research* 401 (2020): 11.

12 Mafoa Penisoni, personal communication, 14 Oct. 2018.



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I first caught sight of HTHH in October 2016, while aboard the sailing school vessel *Robert C. Seamans* en route to Fiji from Nuku'alofa. Voyaging with fellow faculty, crew and students from Massachusetts-based Sea Education Association (SEA), I observed this fascinating new landform from a distance, appearing as a featureless dune floating on the hazy horizon. At the time, my SEA colleagues and I were in discussions with Tongan government officials and community members to assess local interest in a scientific survey of the island's geology, topography and budding ecosystem. By the time we set sail for HTHH in October 2018 we had assembled a research team that included Mr Mafoa Penisoni, a geologist at Tonga's Ministry of Lands, Survey, and Natural Resources, and Dr Dan Slayback, a research scientist with the US National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center. Slayback led a team to develop a high-resolution digital map, a snapshot of the shifting four-year-old island terrain.<sup>13</sup> The project contributed knowledge of how island masses erode, critical to understanding similar geomorphological processes on Mars ahead of the 2020 NASA Perseverance mission to the Red Planet.<sup>14</sup>

Ashore on HTHH, I guided a team of students around the island to survey the accumulation of anthropogenic waste. We searched the beaches, cliffs and lakeshore, recording as many individual pieces of debris as time allowed. Team members confronted the often-dispiriting nature of the work, improvising strange tales of NASA rovers capturing images of ancient Martian riverbeds, their banks overflowing with plastic dolls and beachballs of mysterious origin. Our evenings anchored off the north shore passed with lively conversations about new islands and old plastic. For students who had spent their days chronicling every discarded bottle cap and cookie packaging tray, feelings of futility incited by plastic's omnipresence gave way to nascent strategies for mitigation and remediation. Our illusions of HTHH's oceanic isolation vanished as we considered the sources and sinks of marine debris. The island is one frontier among many along the vast plastic highway that flows from innumerable sites of unremitting production, consumption and environmental leakage in the Global North to the beaches of Oceania.

13 Ellen Gray, 'Land Ho! Visiting a Young Island', *NASA Earth Expeditions*, 30 Jan. 2019: <https://blogs.nasa.gov/earthexpeditions/2019/01/30/land-ho-visiting-a-young-island/>

14 J.B. Garvin, D.A. Slayback, V. Ferrini, J. Frawley, C. Giguere, G.R. Asrar and K. Andersen, 'Monitoring and Modeling the Rapid Evolution of Earth's Newest Volcanic Island: Hunga Tonga Hunga Ha'apai (Tonga) Using High Spatial Resolution Satellite Observations', *Geophysical Research Letters* 45 (8) (2018): 3445–52.



**Figure 1.**

Aerial view of Hunga Tonga–Hunga Ha’apai, 14 October 2018, with SSV *Robert C. Seamans* anchored off the north shore.

Source: Sea Education Association.

Plastic’s global reach and its accumulation in ocean currents, rock and soil strata and other terrestrial and aquatic sinks confirm its status as a physical marker of the current epoch of human-induced planetary transformation labelled the Anthropocene.<sup>15</sup> A surge in plastic production began following World War Two, providing manufacturers in Global North nations with a versatile polymer that ‘challenged traditional materials and won, taking the place of steel in cars, paper and glass in packaging, and wood in furniture’.<sup>16</sup> The movement of discarded plastic out of households and into landfills coincided with other mid-twentieth-century developments such as the global spread of radionuclides from nuclear weapons testing and the rise in atmospheric greenhouse gas concentration, concurrent events collectively

15 P.J. Crutzen and E.F. Stoermer, ‘The Anthropocene’, *Global Change Newsletter* 41 (2000): 17, <http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf>

16 Susan Freinkel, *Plastics: A Toxic Love Story* (New York: Henry Holt, 2011), p. 4.

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called the Great Acceleration.<sup>17</sup> The ocean has become a primary sink in the plastic debris pathway, with microplastics, mostly invisible to the naked eye, entering largely through terrestrial runoff, plastic industrial wastes, derelict fishing gear and human activities in coastal zones such as fishing and tourism.<sup>18</sup>

The status of plastic as a geological marker derives from its abundance, transportability and durability, although it is susceptible to some degradation due to fracturing and fragmentation caused by the weathering effects of photo- and thermo-oxidation and biofouling.<sup>19</sup> Researchers have described plastic as ‘a refined stratigraphic tool ... widely distributed in most other sediment types’, deposited naturally (e.g., via ocean currents) and through engineering processes (e.g., dammed lakes).<sup>20</sup> Stratigraphic layers feature microplastics as well as a variety of larger macroplastics that include ‘technofossils’, artefacts such as appliances that are at least partly composed of plastic and that provide precise time resolution when excavated and dated.<sup>21</sup> Situated within ocean currents of floating marine debris, islands are common landing sites for plastic waste on beaches,<sup>22</sup> within beachrock deposits<sup>23</sup> and

- 17 Will Steffen, Wendy Broadgate, Lisa Deutsch, Owen Gaffney and Cornelia Ludwig, ‘The Trajectory of the Anthropocene: The Great Acceleration’, *The Anthropocene Review* 2 (1) (2015): 1–18; see also J.R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene Since 1945* (Cambridge, MA: Harvard University Press, 2016).
- 18 Michael S. Bank and Sophia V. Hansson, ‘The Microplastic Cycle: An Introduction’, in *Microplastic in the Environment: Pattern and Process*, ed. by M.S. Bank (Amherst: University of Massachusetts Press, 2022), p. 6.
- 19 Kara Lavender Law, ‘Plastics in the Environment’, *Annual Review of Marine Science* 9 (2017): 211; Bank and Hansson, ‘The Microplastic Cycle’, 6.
- 20 Reinhold Leinfelder and Juliana Assunção Ivar do Sul, ‘The Stratigraphy of Plastics and Their Preservation in Geological Records’, in *The Anthropocene as a Geological Time Unit*, ed. by J. Zalasiewicz, C. Waters, M. Williams and C. Summerhayes (Cambridge: Cambridge University Press, 2019), p. 147.
- 21 Jan Zalasiewicz, Colin N. Waters, Juliana A. Ivar do Sul, Patricia L. Corcoran, Anthony D. Barnosky, Alejandro Cearreta, Matt Edgeworth, Agnieszka Galuszka, Catherine Jeandel, Reinhold Leinfelder, J.R. McNeill, Will Steffen, Colin Summerhayes, Michael Wagemich, Mark Williams, Alexander P. Wolfe and Yasmin Yonan, ‘The Geological Cycle of Plastics and Their Use as a Stratigraphic Indicator of the Anthropocene’, *Anthropocene* 13 (2016): 4.
- 22 E.g., Savannah Franklin Rey, Janet Franklin and Sergio J. Rey, ‘Microplastic Pollution on Island Beaches, Oahu, Hawai’i’, *PLoS ONE* 16 (2) (2021).
- 23 E.g., M.J. Irabien, A. García-Artola, A. Cearreta and E. Leorri, ‘Chemostratigraphic and Lithostratigraphic Signatures of the Anthropocene in Estuarine Areas from the Eastern Cantabrian coast (N. Spain)’, *Quaternary International* 364 (2015): 196–205.

in plant and animal habitats.<sup>24</sup> There are category-confounding formations as well: ‘plasticrusts’, or plastic pieces encrusted within intertidal rocks; and ‘anthropoquinas’, sedimentary rock infused with plastic and other anthropogenic matter.<sup>25</sup> These emerging hybrid forms present environmental historians with novel challenges in efforts to tell the stories of island material transformations in the Anthropocene.

## Pristine grounds

From personal fieldnotes of the HTHH expedition:

*Reaching the eastern wall of the caldera’s interior, we encountered a heavily eroded section of the cliff, a massive accumulation of fallen sediment extending nearly to the edge of the crater lake. [Student 1] surveyed the structure, sifting through its outer layer and taking photos while avoiding the wrath of nesting brown boobies. He pulled a half dozen plastic water bottles and a length of nylon rope from the pile, recorded his discovery, and placed them in the trash bag. Twenty metres further into the caldera rim, [Student 2] dug her foot into loose gravel. Grabbing a knife from her kit, she carved a hasty rectangle around the area on which she was standing and unearthed the detached door of a mini fridge, a slab of heavily rusted steel framed by rubber and plastic insulation (see Figure 2). The students observed how strangely unsurprising it was to them that they excavated a piece of discarded household appliance from the young landscape. As we surveyed the arc of plastic debris extending along the northern shoreline of the crater lake, [Student 1] lamented ‘the ugly mess in this pristine place’, a sentiment echoed wearily by others on the team. (15 October 2018)*

Surveying the terrain of HTHH, with its assortment of basaltic andesite tephra, nesting seabirds, plastic bottles and abandoned fishing gear, one struggles to adequately describe the confounding qualities of the islandscape. ‘Anthropocene thinking’, ways of making sense of a materially reconfigured world that seek to avoid the modern tendency to separate humans from

- 24 E.g., Walter Leal Filho, Julian Hunt and Marina Kovaleva, ‘Garbage Patches and Their Environmental Implications in a Plastisphere’, *Journal of Marine Science and Engineering* 9 (2021): 1289.
- 25 Gabriel Enrique De-La-Torre, Diana Carolina Dioses-Salinas, Carlos Ivan Pizarro-Ortega and Luis Santillán, ‘New Plastic Formations in the Anthropocene’, *Science of the Total Environment* 754 (1) (2021): 5.

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**Figure 2.**

Unearthing a technofossil along the oceanic plastic highway. The door of a mini fridge, excavated from the eastern shore of the crater lake at HTHH.

Source: Sea Education Association.

nonhuman nature,<sup>26</sup> is a facility not readily available to the untested western observer. To our SEA field team, HTHH was an unexpected tangle, a jumble of objects from landscapes and landfills on an island less than four years old. As evidenced by my students' reactions to the 'ugly mess' on HTHH, thoughts of what constitutes 'pristine' – wild, unaltered, uninhabited – manifest in our responses to perceived human disturbances to uncorrupted natural places. For islands in particular, familiar conceptions of 'isolated spaces apart from

26 David Chandler and Jonathan Pugh, 'Anthropocene Islands: There Are Only Islands After the End of the World', *Dialogues in Human Geography* 11 (3) (2021): 396; see also Yadvinder Malhi, 'The Concept of the Anthropocene', *Annual Review of Environmental Resources* 42 (2017): 25.18.

modernity' inspire a 'pristine imaginary' that preclude any human social or technological presence.<sup>27</sup> By contrast, Anthropocene thinking disrupts linear histories of pristine grounds and their subsequent anthropogenic fouling with a view toward confronting the messy temporalities and causalities that inhabit present-day environments.

Environmental historians have long confronted imaginaries of pristine environments, interrogating terms like 'wilderness' and 'wild' within belief systems that have viewed spaces such as pre-1492 North America as expanses of 'pristine nature' devoid of human impact or habitation.<sup>28</sup> The narrative roots that have perpetuated 'the Pristine Myth' of the North American landscape may lie 'in part with early observers unaware of human impacts that may be obvious to scholars today, particularly for vegetation and wildlife'.<sup>29</sup> Tales of unspoiled wilderness awaiting the taming influence of human labour have been nonetheless consequential, challenging Indigenous territorial sovereignty and obscuring histories of colonial domination, exploitation and genocide.<sup>30</sup> While scholars have observed that 'views of nature as wild or pristine' are in fact socially produced 'framings that reflect particular ways of seeing the world',<sup>31</sup> attributions of pristine environmental states in relative terms are at least tacit in quantitative assessments and models associated with the concept of shifting baselines.<sup>32</sup> Emily S. Klein and Ruth H. Thurstan observe that accounts of 'pristine' or 'natural' baseline ecological conditions 'insinuate there is a single previous state that has been disrupted by anthropogenic change' and that 'this state would be stable, or perhaps even static, without human interruption'.<sup>33</sup> Increasingly, baselines research recognises 'tensions' between

27 Elizabeth Hennessy and Amy L. McCleary, 'Nature's Eden? The Production and Effects of "pristine" nature in the Galápagos Islands', *Island Studies Journal* 6 (2) (2011): 140.

28 William N. Denevan, 'The Pristine Myth: The Landscape of the Americas in 1492', *Annals of the Association of American Geographers* 82 (3) (1992): 370; see also Mart A. Stewart, 'Environmental History: Profile of a Developing Field', *The History Teacher* 31 (3) (1998): 358.

29 Denevan, 'The Pristine Myth', 379.

30 Roxanne Dunbar-Ortiz, *An Indigenous Peoples' History of the United States* (Boston: Beacon Press, 2014).

31 Hennessy and McCleary, 'Nature's Eden', 142.

32 Daniel Pauly, 'Anecdotes and the Shifting Baseline Syndrome of Fisheries', *Trends in Ecology and Evolution* 10 (1995): 430.

33 Emily S. Klein and Ruth H. Thurstan, 'Acknowledging Long-Term Ecological Change: The Problem of Shifting Baselines', in *Perspectives on Ocean Past: A Handbook*



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'agencies of human and non-human actors operating at multiple geographic and temporal scales',<sup>34</sup> precluding possibilities for pristine states of nature in measurements of environmental change. Following a similar path of critically examining the privileged dominion of human agency, researchers of emerging islandscapes can reimagine 'pristine grounds' not as late lamented terrains of unspoiled nature, but as describing techniques for observing and comprehending the complex materiality of Anthropocene spaces.

In *Anthropocene Islands*, Jonathan Pugh and David Chandler identify a 'crisis of faith in Western modernity' within academia, where received modes of understanding the world 'as a coherent, controllable and manageable object' fall short when confronted with the complex and confounding interrelations among agencies in the Anthropocene.<sup>35</sup> The authors respond to the ontological and epistemic impasses imposed by nature/culture binaries with a view of human and nonhuman entities as relationally entangled: as assemblages of diverse agencies that are incomprehensible as discrete elements. Relational ontologies, though long familiar to societies whose ways of knowing and being diverge from western modernist frameworks, provide Anthropocene thinking with alternatives to the modes of knowledge production and circulation that gave birth to the planetary crisis it seeks to address. Central to Pugh and Chandler's project is the figure of the island, 'key sites' for conceptualising relational entanglements on a global scale.<sup>36</sup>

*Anthropocene Islands* theorises its relational ontology in two distinct analytics. 'Resilience' cleaves closely to systems theory, where internal operations such as self-regulation guide systems toward increasingly efficient order.<sup>37</sup> By contrast, 'Patchworks' abandons linear progressions toward an imagined terminus of order in support of open-endedness, disruption and unpredictability in the interactions among entangled entities. Life is pictured 'in terms of *patchwork islands* of relational assemblages, knots and nodes of disturbance' that '[move] beyond the human/nature divide'.<sup>38</sup> Anna Tsing's

*of Marine Environmental History*, ed. by Kathleen Schwerdtner Máñez and Bo Poulsen (Berlin: Springer, 2016), p. 15.

34 Sebastián Ureta, Thomas Lekan and W. Graf von Hardenberg, 'Baselining Nature: An Introduction', *EPE Nature and Space* 3 (1) (2020): 3.

35 Pugh and Chandler, *Anthropocene Islands*, p. 1.

36 Ibid., pp. 2, 19.

37 Ibid., p. 9.

38 Ibid. pp. 70–71.



ethnographic analysis of the cultivation and distribution of the Japanese *matsutake* mushroom demonstrates compellingly a Patchwork mode of relation that illuminates the indeterminate qualities of islands. Humans, mushrooms and landscapes – islands of interconnection and feedback – ‘cultivate each other unintentionally’ through their ‘overlapping world-making activities’.<sup>39</sup> Patchwork islands unsettle narratives of pristine baselines as necessary conditions for emergent life; anthropogenic matter like plastic becomes one among many possible agents in the production of potentially novel environments. Islands like HTHH are imagined as innovating spaces arising through the open-ended and uncertain interactions among people, nonhuman biological species and nonbiological entities.

As well as challenging expectations of how materials ought to turn out, the indeterminate nature of patchworks calls into question the systems of categorisation by which we organise and identify said things. Kim de Wolff examines the assumptions that guide marine scientists’ practices of separating plastic debris from their biological entanglements – small bits ingested by by-the-wind-sailors (*Velella velella*); a discarded crate sheltering a surgeonfish.<sup>40</sup> These examples of ‘plastic naturecultures’, associations between entangled things that are intelligible as they present themselves rather than relegated to objects of historical, scientific or ontological separation, challenge received ‘assumptions about what belongs in the ocean or not’.<sup>41</sup> Practices of categorial lumping and splitting extend beyond comparisons of physical and functional traits. Mark Jackson observes that, being nonbiodegradable, plastic does not abide by the same temporal constraints that inevitable decay imposes on biological matter. Plastic is ‘zombie matter’, broken, abraded and photolysed but never reduced to its basic elements and recovered as biologically productive substance like its natural counterparts.<sup>42</sup> Nonetheless, heeding de Wolff’s call for greater recognition of plastic debris as ‘lively and already entangled’ with biological life invites a way of thinking that questions both the material and temporal distinctions by which we separate anthropogenic

39 Anna L. Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015), p. 152.

40 Kim de Wolff, ‘Plastic Naturecultures: Multispecies Ethnography and the Dangers of Separating Living from Nonliving Bodies’, *Body & Society* 23 (3) (2017): 29, 40.

41 *Ibid.*, 30.

42 Mark Jackson, ‘Plastic Islands and Processual Grounds: Ethics, Ontology, and the Matter of Decay’, *Cultural Geographies* 20 (2) (2012): 220.

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waste from other matter, notwithstanding the vitality of constituent ‘parts’ over months or millennia.

Explorations of hybrid formations, particularly in the marine realm, provide opportunities for imagining plastic as other than material out of place and time. SEA marine scientists working in the Pacific identify ocean barnacles as ‘foundation species on plastic debris’. They draw analogies between certain natural environments and plastic with respect to the ‘harsh conditions (e.g., high physical stress, nutrient limitation or predator pressure) [that] promote positive species interactions’.<sup>43</sup> Likewise, scientists in the North Atlantic collected and analysed plastic debris to compare the microbial content on the samples with that of the surrounding seawater. Erik Zettler and his fellow researchers coined the term ‘Plastisphere’ to describe the array of microbial ‘heterotrophs, autotrophs, predators, and symbionts’ adhering to polypropylene and polyethylene marine debris.<sup>44</sup> The species and trophic assemblages adhering to plastic diverged from those of the seawater medium from which the samples were extracted. The research team describes plastic marine debris as ‘a selective environment’, a distinct ecological niche within which potentially novel microbial communities can form.<sup>45</sup>

The Plastisphere and other hybrid formations disrupt pre-Anthropocene ideas of order, confounding narratives of human technology fouling pristine natural wilderness. In our observations of the growth of microbes, barnacles and other organisms on plastic debris, an emerging biological entity becomes the object of focus against its anthropogenic background. Here, life contaminates plastic (see Figure 3). However, the relationship between organism and plastic ‘is ambiguous and can be interpreted in different ways’.<sup>46</sup> Regardless of where we centre our focus at any given moment, these materials are already entangled, the possibility of their separation illusory.

43 Michael A. Gil and Joseph B. Pfaller, ‘Oceanic Barnacles Act as Foundation Species on Plastic Debris: Implications for Marine Dispersal’, *Nature Scientific Reports* 6 (2016): 1; see also Miriam A. Goldstein and Deborah S. Goodwin, ‘Gooseneck Barnacles (*Lepas* spp.) Ingest Microplastic Debris in the North Pacific Subtropical Gyre’, *PeerJ* 1 (2016): e184.

44 Erik R. Zettler, Tracy J. Mincer and Linda A. Amaral-Zettler, ‘Life in the “Plastisphere”: Microbial Communities on Plastic Marine Debris’, *Environmental Science and Technology* 47 (2013): 7137.

45 Ibid., 7141.

46 William Lidwell, Kritina Holden and Jill Butler, *Universal Principles of Design: A Cross-Disciplinary Reference* (Beverly, MA: Rockport Publishers, 2010), p. 96.



**Figure 3.**

Already entangled: Gooseneck barnacles (*Lepas* spp.) growing on the surface of a floating plastic fragment.

Source: Sea Education Association.

HTHH surfaced as an entanglement of geological, oceanographic and anthropogenic materials and processes. The island's history has no critical juncture, no tipping point moment from unspoiled wilderness to anthroposcene. 'Pristine' does not signify a state of wilderness or perfection prior to human impact, but neither does it deny the historical realities of anthropogenic change. Rather, it describes a particular ontological and epistemological stance – a way of knowing the world through grasping its conditions of existence and relations of interaction and dependency.<sup>47</sup> It signals a commitment to identifying and interrogating our assumptions as we shape environmental

47 Zack Walsh, Jessica Böhme and Christine Wamsler, 'Towards a Relational Paradigm in Sustainability Research, Practice, and Education', *Ambio* 50 (2021): 75.

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narratives of a materially altered world. The reflexive commitments of an Anthropocene mode of thinking may also extend to our efforts to properly comprehend the perspectives and experiences of people closely connected to the environments under study.

### Plastic histories

From personal fieldnotes:

*Dinner on the ship tonight with the (Tongan government's) waste management team. Etuate (colleague and teacher from Vava'u, northern Tonga) joined us. He heard an interview on Radio Tonga with members of the Ministry of Environment about the visit to HTHH. As he listened, Etuate imagined a future boat trip to the island with his students to collect rock and soil samples, draw maps and study the interactions of seabirds with the debris that surrounds the crater lake. 'They (the radio interviewees) talked about the plastic, how it filled the cargo hold (of Robert C. Seamans) and a space on deck', Etuate recalled. 'The same plastic we find on beaches around Makave. Thirty fishing buoys? Where did they come from? Japanese (fishing boats), maybe. Maybe New Zealand. Once they wash ashore here, they are ours. New Zealand plastic is Tonga plastic now'. (16 October 2018)*

The islandscape that motivates Etuate's thoughts of possibility and global connection lies within the Kingdom of Tonga, a constitutional monarchy that, despite never having relinquished its sovereignty to colonial powers, shares with its Pacific neighbours a history of encounters with European explorers, whalers and missionaries. Intertwined with these experiences are Tongans' own myth-histories, which include origin stories of their islands' being 'fished up' or 'thrown down' by the Polynesian god Tangaloa or his demigod son, Maui.<sup>48</sup> Ethnographic accounts reveal Hunga Tonga and Hunga Ha'apai as islands 'full of unevenness, that jump backward and forward', evidence of their vulnerability to earthquakes and thus of their origins as 'thrown down from heaven'.<sup>49</sup> The agents, events and materials that produced HTHH lie within the cultural purview of Tongans, hence their relevance to Tongan

48 Patrick D. Nunn, 'Fished Up or Thrown Down: The Geography of Pacific Island Origin Myths', *Annals of the Association of American Geographers* 93 (2) (2003): 352.

49 Edward Winslow Gifford, *Tongan Myths and Tales*, Bulletin no. 8 (Honolulu: B. P. Bishop Museum, 1924), p. 15.

island narratives. So too does plastic carry a history of its own, one that inheres in the mud and rock strata of HTHH. As the material qualities of things entangle in a relational ontology, so do their histories. Understanding how Tongans perceive plastic debris, including whether and how it features in their diverse histories of Pacific colonialism, is relevant for how we view the material composition of HTHH in its wider historical context.

At the centre of every act of colonialism is the dispossession of land or the failure, intended or otherwise, to recognise the imperatives of respecting land sovereignty, as with issues regarding land access.<sup>50</sup> As with colonial occupations of the past and present and their resulting material migrations, pollution enters Indigenous land persistently and unobstructed. Colonial land relations, ‘the assumed access by settler and colonial projects to Indigenous lands for settler and colonial goals’, provide the ethico-political structures that enable and justify the migration of plastic and other pollution onto Indigenous land.<sup>51</sup> These structures and their underpinning values are pervasive, manifesting, for example, in appraisals of environmental and waste management practices in the present-day Pacific. Published reports of household plastic waste generation, waste collection rates and local policy integration in island communities seldom include contextualising histories of colonial-era introductions of disposable food packaging and disruption of foodways. Such accounts also fail to reflect on western systems of norms that value obsolescence and personal convenience and assume available island space for disposal.<sup>52</sup> Modern waste management practices and the institutional impediments that ensure their failure provide one example of how plastic impacts Pacific communities in ways that reveal the colonial resonance of the Anthropocene.

Comprehending the entangled histories and entrenched realities of plastic requires the same commitment to reflexive practice that moves environmental historians to question settled assumptions about ultimate order and routine categorisation. Such an approach brings to light our own expectations regarding which factors likely shape Tongan environmental narratives, including the influences of regional cosmogonies, colonial histories and everyday

50 Max Liboiron, *Pollution is Colonialism* (Durham and London: Duke University Press, 2021), pp. 12, 16.

51 Ibid., p. 5.

52 Mafile’o Masi, personal communication, 16 Oct. 2018; see also Liboiron, *Pollution is Colonialism*, p. 8.

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interactions with plastic and other materials. It also encourages investigation of the potential multiplicity of meanings of plastic and the contexts of their enactment. Environmental historians may take note of artists who incorporate plastic and other discarded material into their works. Viewing art is 'a practical activity, that changes our understandings, our ways of seeing, hearing and behaving, our ways of narrating aspects of our lives and so on'.<sup>53</sup> Creating images, sculptures and installations that feature recycled materials is a meaning-making practice that challenges viewers' preconceptions about value and interconnection.

In Oceania, artistic engagements with marine plastic debris have often been visceral and direct, with exhibitions like 'Current Events' (2021) in Hawai'i displaying artwork made of discarded fishing nets, buoys and bottle caps to 'force viewers to confront the fact that today's plastic waste is tomorrow's environmental disaster'.<sup>54</sup> Others have produced works that bring to light ostensibly paradoxical truths about the presence of discarded material in Indigenous space. For his installation 'Bottled Ocean 2122' (2022), Aotearoa New Zealand artist George Nuku explains that plastic waste is at once evidence of 'our world ... undergoing a chemical mutation' through acts of environmental exploitation and 'a testament to divinity' by virtue of its co-existence with all other things.<sup>55</sup> Nuku's depiction of plastic as both pollutant and sacred object demonstrates the seemingly incongruent meanings conveyed in recycled art and upends viewers' assumptions about whether and how artists integrate these materials into their worlds. Reflecting on recycled art in Oceania, Jean Anderson notes the importance of acknowledging 'the position and context from which such artists speak/create: these works are not merely aesthetic objects, but carry important messages about the continuing impacts of colonisation on the colonised'.<sup>56</sup>

53 Daniel Martin Feige, 'Art as Reflexive Practice', *Proceedings of the European Society for Aesthetics* 2 (2010): 139, emphasis removed.

54 Noe Tanigawa, 'Ocean Plastic Is an Art Medium at the East Hawai'i Cultural Center's New Exhibition', *Hawai'i Public Radio*, 12 Oct. 2021: <https://www.hawaiipublicradio.org/arts-culture/2021-10-12/ocean-plastic-is-an-art-medium-at-the-east-hawaii-cultural-centers-new-exhibition>

55 Martin M. Barillas, 'Māori Artist Gives Glimpse of Future Water-world Full of Plastic', *Newsweek*, 24 June 2022: <https://www.newsweek.com/mori-artist-gives-glimpse-future-water-world-full-plastic-1718998>

56 Jean Anderson, 'Repurposing, Recycling, Revisioning: Pacific Arts and the (Post) colonial', *eTropic* 19 (1) (2020): 197, emphasis removed.

Like the artworks that resemble or reflect on its composite materiality, HTHH is a site of multiple meanings and contradictions. As a postcolonial islandscape, a place for learning, a symbol of national identity or a lucrative tourist destination, it is unlikely to shake recognition by those who walk its terrain and tell its stories of the entangled histories inscribed in its plastic. Opportunities for unearthing the island's brief but complex environmental history lie in heeding Etuate's observation that the debris originating in the Global North and absorbed by his community is 'Tonga plastic now', with all the difficult social, historical and material entanglements that such a realisation entails.

## Conclusion

Like other frontiers along the oceanic plastic highway, HTHH is a microcosm of the contemporary world that Pugh and Chandler describe – 'too rich, vibrant and complex' to be fully comprehended or controlled.<sup>57</sup> The epistemological challenges presented by materially composite islands in the Anthropocene seem analogous to the quandaries raised by the 'temporal and spatial complexities' of the ocean.<sup>58</sup> If material entanglements are black boxes, resisting attempts to make sense of their overlapping world-making activities, to recall Tsing's words, then researchers require an apposite set of terms and concepts to convey the qualities of indeterminacy and categorial ambiguity of spaces like HTHH. Emergent landscapes are a transdisciplinary project in waiting, a conceptual and methodological space for collaborative innovation among environmental historians, political scientists, philosophers and, if the terrain is intriguingly otherworldly, NASA scientists.

Yet there is more to the island's story. Narrating these island spaces equally requires learning from the observations and life histories of local fishers, navigators, historians and artists, and supporting community-guided preservation of all forms of 'embodied and emplaced data' that link knowledge, experience and emotion in connections to place.<sup>59</sup> Finally, understanding

57 Pugh and Chandler, *Anthropocene Islands*, p. 1; see also Penny Harvey, 'Lithic Vitality: Human Entanglement with Nonorganic Matter', in *Anthropos and the Material*, ed. by P. Harvey, C. Krohn-Hansen and K.G. Nustad (Durham: Duke University Press), pp. 143–60.

58 Joseph E. Taylor, III, 'Knowing the Black Box: Methodological Challenges in Marine Environmental History', *Environmental History* 18 (2013): 68.

59 Tuck and McKenzie, *Place in Research*, pp. 105–10.



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HTHH requires non-Tongan researchers – present author included – to reflect on our own histories inscribed in plastic debris and operational in the lives of Pacific and other island communities. Notwithstanding the pristine grounds of our observations, we are always already entangled.

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# Conclusion:

## Islands Past and Present

Milica Prokić and Pavla Šimková

After the island-hopping its chapters have provided, the questions and notions that opened this volume, rather than narrowing down towards a definitive answer, have expanded towards further contemplation. The histories of these islands and archipelagos make clear that questions such as what is and is not an island are fundamental not only ‘to the studies of ecology and evolution’ but also to environmental history. What defines islands – whether their state of isolation, or their simultaneous discreteness and multiple connections – becomes a crucial question in speaking about their environments. In the face of fundamental uncertainties, fragilities, inequalities and insularities of the current era, how does John Donne’s seemingly timeless verse hold up? *Who* is, and is not, an island? And what of ‘actual’ islands, these vulnerable frontiers of our world today?

In this era, when islands are on the front lines of anthropogenic climate change, threatened by rising seas and extreme weather, it may come as a surprise that a substantial number of them are also being built from scratch. Artificial islands have been humanity’s way of responding to environmental challenges and meeting various spatial needs since antiquity, as Travis Proctor’s chapter in this volume about the islands of late-ancient Ephesus shows. Their very existence – the fact that various human societies have felt the need for an island to be so great that they went to the lengths of building one themselves – speaks volumes about the importance of island places for mainland cultures. However, as the geographer Alastair Bonnett argues in his recent book *Elsewhere: A Journey into Our Age of Islands*, more islands are being built today than at any other time in human history.<sup>1</sup> Their

1 Alastair Bonnett, *Elsewhere: A Journey into Our Age of Islands* (Chicago: University of Chicago Press, 2020), p. 1.

intended uses are manifold, but largely correlating with cultural perceptions of islands as separate, distinct places harnessed for a specific purpose. There are island playgrounds and exclusive enclaves, such as Dubai's as-yet unfinished palm-tree-shaped archipelago projected to host luxury residences, hotels and resorts; or Little Island, New York City's new waterfront park.<sup>2</sup> There are imperial island outposts such as China's largely artificial and heavily militarised island bases in the contested South China Sea.<sup>3</sup> There are, ironically, islands that are not victims of climate change but projected bulwarks against it: recently, coastal cities such as Copenhagen or Boston have been planning to build artificial islands or expand existing ones as breakwaters against the rising tides of the future.<sup>4</sup> As such, artificial islands are perhaps the ultimate proof of how indispensable island places are for the predominantly continental cultures of today.

Artificial islands may be an extreme example of humanity's vehemence about transforming the environment. They are, however, far from atypical. Any island born today is in a sense human-made: the young landmass of Hunga Tonga–Hunga Ha'apai, that 'paradox of early morphology and anthropogenic impact', started its short life as a mixture of volcanic rock and ocean plastic. Its story, as told by Jeff Wescott in the final chapter of this volume, speaks of the islandscapes of the present as much as those of the future. It shows, if there were any doubt left at all, that the views of any environment on the Earth as a 'pre-human, pristine wilderness' are indeed long outmoded.

Whether through the human acts (or attempted acts) of conservation, exploitation or experimentation, the histories presented in this volume reflect

- 2 'Dubai Islands: A Budding Seaside Destination for Family Fun', Visit Dubai: <https://www.visitdubai.com/en/places-to-visit/dubai-islands> (accessed 18 July 2023); 'Design and Construction', Little Island: <https://littleisland.org/design-construction/> (accessed 15 Feb. 2024); Michael Kimmelman, 'A New \$260 Million Park Floats on the Hudson. It's a Charmer', *New York Times*, 20 May 2021: <https://www.nytimes.com/2021/05/20/arts/little-island-barry-diller.html>
- 3 'China Has Fully Militarized Three Islands in South China Sea, US Admiral Says', *Guardian*, 21 March 2022: <https://www.theguardian.com/world/2022/mar/21/china-has-fully-militarized-three-islands-in-south-china-sea-us-admiral-says>
- 4 'Kopenhagen plant künstliche Insel als Hochwasserschutz', *Der Spiegel*, 4 June 2021: <https://www.spiegel.de/wissenschaft/mensch/kopenhagen-plant-kuenstliche-insel-als-hochwasserschutz-a-b9bacd31-c398-4b78-910c-2c97271e5fd7>; 'Climate Ready Boston: Final Report', City of Boston, Dec. 2016: [https://www.boston.gov/sites/default/files/embed/2/20161207\\_climate\\_ready\\_boston\\_digital2.pdf](https://www.boston.gov/sites/default/files/embed/2/20161207_climate_ready_boston_digital2.pdf)

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the extreme environmental transformations that many islands have undergone. There are places like Enewetak, the Pacific atoll pestered by various colonial conquerors since the Contact Period and eventually blasted apart and steeped in radiation in the course of 1940s and 1950s US nuclear-weapons testing; or Réunion and Amami, islands taken over by plantations and turned into ecologically fragile production sites of one or two principal crops. They are examples of islands that have experienced dramatic environmental changes amplified by the attributes of their islandness: their boundedness, their remoteness and the vulnerability of their environments.

Materiality and its transformations are also closely tied together with cultural perceptions of islands. Only after environmental issues gained currency in the United States from the 1970s on did the Puerto Rican island of Culebra, the purported home of a rare giant lizard, make the transition from a bombing range into a protected area. The transformation of the Adriatic Brijuni archipelago from a malaria-infested wasteland into a luxury resort and one of the sparkliest ‘windows through which the Habsburg Empire looked to the water’ hinged on an Austrian industrialist’s vision of the islands as his own private Garden of Eden.<sup>5</sup> This way of thinking reflects how islands have largely been perceived and used throughout modern history: as usable appendages to the mainland, as facilities fulfilling a specific purpose.

Conversely, changes in perception have ever been closely tied to transformations of the physical environment: only after the settlers on Neil Island in the Andamans had tackled the impenetrable forest that had previously covered the island, was the place ready for reimagining as a popular tourist resort. The historian Romain Grancher is right when he identifies two main approaches to the environmental history of islands, one intellectual and cultural, focusing on how the very concept of island has produced environmental ideas; and the other, a material one, concentrating on environmental transformations.<sup>6</sup> It needs to be added, though, that these approaches can and should be thought together. They form a whole whose links it is futile and even counterproductive to extricate.

If what qualifies an entity as an island are the contours that tempt us to see it as an object or a body, however vast, then we can stretch Wilson’s and

5 Rebecca Duras, ‘Balkan Waters’, *Women Write the Balkans*, 27 June 2023: <https://www.womenwritethebalkans.com/essays/balkan-waters>

6 Romain Grancher, ‘Hybrid Islands: Some Reflections on the Intersection between Island Studies and Environmental History’, *Coastal Studies and Society* 2 (2) (2023): 155–70, at 169.



MacArthur's definition towards other 'discrete objects that can be labelled with a name' – however small.<sup>7</sup> Perhaps we can, just for a moment, experiment with thinking not just about humans, but also about human and other-than-human organs, corpuscles and cells as island-like entities – distinct in their own contours yet interconnected into larger systems, islands within archipelagos. At the other extreme, the question of whether planets, too, are islands creeps up again.<sup>8</sup> After all, an old Chinese myth of creation tells us that out of an insular egg floating in the chaos Pangu hatched: a giant whose body became our Earth.

In this thinking, what perhaps also qualifies various discrete entities as islands is the very permeability of their boundaries. Just like microplastics made their way into the stratigraphic layers of the nascent island of Hunga Tonga–Hunga Ha'apai, so they did into the human placenta, recent research confirms.<sup>9</sup> Like that of islands, the integrity of bodies, always far from absolute, has been compromised by human-made substances. Apart from our own bodies, microscopic-sized plastic particles have been found in the bodies of multiple species including fish, shrimp, birds and mussels. The latest studies looking into the effects of nanoplastic particles on human health at the cellular level confirmed genotoxic effects and increased risk of an array of diseases at stages as early as embryonic.<sup>10</sup> The vulnerabilities of cells – the building blocks of human and non-human bodies – are of the very same kind experienced by the young islandscape.

Few would doubt that the places, or entities, assembled in this volume are indeed islands in the sense of what the *Oxford Dictionary of English* tells us an island is: 'a piece of land completely surrounded by water'.<sup>11</sup> Among them are representatives of some of the most recognisable categories of

7 Robert H. MacArthur and Edward O. Wilson, *The Theory of Island Biogeography* (Princeton: Princeton University Press, 1967), p. 3.

8 Merlin Sheldrake, *Entangled Life: How Fungi Make Our Worlds, Change Our Minds, and Shape Our Futures* (London: Bodley Head, 2020), p. 86; David Lowenthal, 'Islands, Lovers, and Others', *Geographical Review* 97 (2) (2007): 202–29.

9 Antonio Ragusa et al., 'Plasticenta: First Evidence of Microplastics in Human Placenta', *Environment International* 146 (2021): 1–8.

10 Miodrag Stojkovic, Petra Stojkovic and Konstantina M. Stankovic, 'Human Pluripotent Stem Cells – Unique Tools to Decipher the Effects of Environmental and Intracellular Plastic Pollution on Human Health', *Environmental Pollution* 269 (2021): 116–44.

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## Conclusion

island lore: the pirate island, the prison island, the atomic-test island, the private-paradise island. This volume, however, has delved beyond the identities assigned to islands by humans seeking to use them. It has set out to explore what islands' material environments have meant to humanity, how they have built our world and how the vulnerabilities of our world reflect on these discrete, peculiar and routinely exceptional environments.

For all their perceived and often professed isolation, islands are also always defined by their connections to the outside world. Though studying islands 'on their own terms', as nissologists have been suggesting since the 1990s, is necessary, it is hardly possible to divorce island history from continental history, even – or especially – in environmental terms. Mainland and island are too interwoven; environmental transformations are too often initiated by 'outsiders' from the mainland. At the same time, islands need to be reckoned with as more than just places: they are entities in their own right whose resources, real or imagined, are often at the centre of events and whose environments, though affected by developments on a larger-than-local scale, still work according to their inner logic. As the chapters of this volume show, islands are agentive participants in their shared histories with humans, shaping them as much as being shaped by them over time.

This volume and the island environmental histories it brings together do not presume to present a definitive answer to the questions of what an island is and what defines an island's relation to the rest of the world in environmental terms. What they do, however, is identify connectivity as the crucial force in island environmental history, whether in the guise of succumbing to it or resisting it. It makes out the sum of effects of the often-contradictory forces of isolation and belonging, boundaries and continuity, and centre and periphery on island environments. Whether remote outposts in the ocean like the Galápagos or swimming suburbs like Gallops Island in Boston Harbor, nascent landmasses like Hunga Tonga–Hunga Ha'apai or recalcitrant rocks like Corsica, island environments have all been shaped in one way or another by their connections to other places. Just as there is no man who is entire of himself, so is every island, in a way, a part of the main.

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Islands have played a key role in the history of continents, have been crucial locales of state-making, have served dictatorships as sites of prison systems and have acted as frontiers and stepping stones of empires – but the role of their environments in creating and shaping these histories has so far received little attention. To understand why an island became a penal colony, an atomic test site or a tourist destination we need to look closely at its environmental peculiarities: its physical shape, its geology, its climate, its flora and fauna, and its position vis-à-vis other places. And to more deeply comprehend an island's place in history we must consider the changing ways in which it was perceived, used, valued or dismissed, protected or mistreated over time. In this volume, fourteen stories of islands and archipelagos from around the globe showcase islands as dynamic entities that both shape and are shaped by history. *Entire of Itself?* explores the intertwined temporal, material and identity layers of island environments from antiquity to the present day, and their transformations in response to human endeavours of conservation, exploitation and experimentation. The volume challenges the traditional centre-periphery perspective, and adopts an island-centred approach, delving into both the islands' own stories and their role in larger historical developments.

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