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UNIVERSITY OF CALIFORNIA SAN DIEGO

Inafa' maolek Restoring Balance through Resilience, Resistance, and Coral Reefs: A Study of
Pacific Island Climate Justice and the Right to Nature

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of

Philosophy

in

Ethnic Studies

by

Olivia Arlene Quintanilla

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2020

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University of California San Diego

2020

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3. Co-author, “A Call for Community: A Survey of Humanities PhD Students on Professionalization and Support,” UC Humanities Research Institute, <https://humwork.uchri.org/blog/2017/03/call-community-survey-humanities-phd-students-professionalization-support/>, 2016

ABSTRACT OF THE DISSERTATION

Inafa' Maolek Restoring Balance through Resilience, Resistance, and Coral Reefs: A Study of Pacific Island Climate Justice and the Right to Nature

by

Olivia Arlene Quintanilla

Doctor of Philosophy in Ethnic Studies

University of California San Diego, 2020

Professor Yen Le Espiritu, Co-Chair
Professor Ross Frank, Co-Chair

Inafa' Maolek Restoring Balance through Resilience, Resistance, and Coral Reefs: A Study of Pacific Island Climate Justice and the Right to Nature examines diverse ways coral reefs form the very foundation of Pacific Islands and Pacific Island identities. Bringing together the fields of Ethnic Studies, Indigenous Studies and Critical Refugee Studies with Environmental Justice,

Science Studies and Oceanography, my dissertation makes visible Indigenous organizing for *coral reef climate justice*, advocacy and action on behalf of coral reefs, as an ethical, political, and social justice issue that impacts our planetary functioning. In Chapter one, I examine the use of coral reefs as one of the frames and organizing principles in which Pacific islanders engage self-determination, demilitarization, and environmental policy issues. I identify key elements and distinctive characteristics of *Pacific Island Coral Reef Climate Justice*. In chapters two and three, I use coral as an organizing optic to study how different relationships to coral are significant throughout the Republic of the Marshall Islands (RMI), discursively marked as drowning/disappearing and labeled the first “climate refugees,” with Guam, increasingly targeted for military buildup and protected for its significance to U.S. national security strategy. I analyze what happens when marine life is evaluated “at risk” or not through environmental impact statements (EIS). In chapter four, I examine how the race to harvest mineral deposits on the seafloor, the largest ecosystem on the planet, has raised new and urgent concerns regarding the translation of Indigenous rights to underwater terrains as minerals needed for existing and emerging technology, pharmaceuticals, and raw materials are increasingly sought after in “uncharted” and “unprotected” territories. With these new technological industries, environmental justice efforts must produce and employ scientific data that track environmental hazards, placing a new sort of materiality at the forefront.¹ Pacific leaders argue that this new extractive industry bodes great harm and call for the recalibration of the deep-sea mining regime. Most concerning is the emerging regulatory frameworks do not include

¹ Alaimo, Stacy. *Gender: Matter*. Farmington Hills, MI: Macmillan Reference USA, A Part of Gale, Cengage Learning, 2017. Print.

the United Nation's protection of indigenous communities' rights to free, prior, and informed consent and challenge contemporary understandings of sovereignty.

Introduction

Climate justice² is a term used for framing climate change as an ethical and political issue rather than one that is purely environmental or physical. Climate change occurs when there is a long-term change in average weather patterns.³ Global warming is one aspect of climate change and refers to a rise in global average temperature.⁴ A consensus of international climate scientists argue our current rise in global temperature is attributed to the release of carbon dioxide stored all over the world through activities like fossil fuel burning, animal agriculture, and deforestation that has led to an increase in Earth's temperature since 1900 and the pace of environmental and climatic change has increased.⁵

Climate change is a multiplier issue for the Pacific region. That is, climate-induced change can multiply existing vulnerabilities and make poverty and health disparities exponentially worse. Pacific Islands are facing devastating impacts yet are leading climate action and combining their systems of knowledge with western science to implement locally relevant climate solutions.^{6 7} Impacts from climate change are happening now and include coastal flooding and erosion,

² Bruno, Kenny, Joshua Karliner, and China Brotsky. *Greenhouse Gangsters* vs. Climate Justice*. San Francisco: Transnational Resource and Action Center, 1999. Print.

³ UNFCCC, The. *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*. Geneva, Switzerland: Intergovernmental Panel on Climate Change, 2018. Print.

⁴ IPCC, The. "Part A: Global and Sectoral Aspects." *Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summary for Policymakers*. Stanford, CA: IPCC EG II, 2014. N. pag. Print.

⁵ Ocko, Ilissa. "This Is Why Fighting Climate Change Is so Urgent." *Environmental Defense Fund*. N.p., n.d. Web. 13 Aug. 2020.

⁶ Barnett, Jon, Louisa Earls, and John Campbell. *Climate Change and Small Island States: Power, Knowledge, and the South Pacific*. N.p.: Earthscan Publications, 2010. Print.

⁷ Mcleod, Elizabeth, Mae Bruton-Adams, Johannes Förster, Chiara Franco, Graham Gaines, Berna Gorong, Robyn James, Gabriel Posing-Kulwaum, Magdalene Tara, and Elizabeth Terk. "Lessons From the Pacific Islands – Adapting to Climate Change by Supporting Social and Ecological Resilience." *Frontiers*. Frontiers, 17 May 2019. Web. 13 Aug. 2020.

increasing droughts and water scarcity, changes in rainfall that affect ecosystems and food production, and adverse impacts on human health.⁸

A fundamental proposition of climate justice is that those who are least responsible for climate change suffer its gravest consequences. The climate justice movement consists of diverse movements for environmental justice. It is a continuously growing and evolving transnational network of groups and individuals acting in various ways to achieve socially just and scientifically sound responses to a changing climate including reduced consumption, leaving fossil fuels in the ground, investing in clean, safe and sustainable renewable energy and rights-based resource conservation that enforces Indigenous rights.

In 2020, climate change tensions around the Pacific region pivot on the health of oceans and coral reef. Climate change is both a material and narrative phenomenon impacting the planet. I argue one of the most significant impacts of our generation is the altered relationship between Pacific islanders and the sea that surrounds them. This shift in the relationship is striking given that in the past, the sea was neighbor and life provider, and now internationally people are being primed to *fear the sea* because of increased strength and frequency of storms and rising sea levels while also creating strategies that address *fear and care for the sea* in new ways. Communities that are Indigenous to Pacific islands play a vital role in protecting and caring for the ocean and remaining biodiversity of their islands.

Coral reefs are central to Pacific island identity and climate change concerns. Coral reefs are considered rain forests of the sea and are essential in an island's defense by helping protect the shore from waves and storm damage. Oceans are already warming and becoming more acidic,

⁸ IPCC, The. "Part A: Global and Sectoral Aspects." *Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summary for Policymakers*. Stanford, CA: IPCC EG II, 2014. N. pag. Print.

which hurts and can kill coral reef reducing their capacity to protect the shore from storms and rising tides. The degradation and loss of healthy coral reefs compound the problem of sea-level rise among other critical socio-cultural-economic factors. Thus, the health of coral reefs contribute to risks of relocation and forced migration off-land.

The current global climate goals aim to keep the worldwide increase of temperature below 2 degrees Celsius, but an increase of just 1.5 degrees Celsius will be disastrous for Pacific islands. Pacific Islanders are leading climate goals that call for massive change that is more ambitious than a 2-degree increase and argue for a 1.5-degree increase cap that is necessary to protect their islands. This crucial discrepancy in climate policy and behavior change goals reflect hegemonic climate policy-making and has sparked new collaborations and resistance formations among Pacific islanders and Indigenous people across the planet.

Strategies for managing natural resources and climate change impacts will vary from island to island and from place to place. However, all approaches to climate change are connected because we are in a shared state through our natural systems. Pacific islanders are confronting strategies to climate change that make value assessments based on incomplete models that undervalue the critical functions our oceans and coral reefs play in regulating climate change impacts. In response, they are putting up a fight to have their voices heard, and their own vision for a Pacific future with vibrant islands and reefs intact respected through environmental policy. I examine how legacies of militarizing Pacific islands and coral reefs have altered their rights and capacity to manage their natural resources and reefs on their terms. Despite immense challenges, I show how they are transforming plans and the framing of their situation, and demanding change on multiple fronts.

For these reasons, this dissertation argues that Indigenous Pacific islanders use coral reefs as a frame to explain the stakes of climate justice and to communicate how life below water is very much connected to the health of life on land. Because ecological concerns evolve, I sought to understand at this moment, what constitutes environmental and climate justice from a Pacific island perspective, and what role do coral reefs play in the story. I use coral reefs as a lens to understand the story behind Pacific island climate change concerns and use the characteristics of coral life to make connections between seemingly disconnected interests and phenomena. This research examines climate justice from the perspective of the Indigenous communities of Guahan (Guam), the Republic of the Marshall Islands (RMI), and Papua New Guinea (PNG) to identify key elements and distinctive characteristics of Pacific island *coral reef climate justice*. I employ the term coral reef climate justice as a frame to historize, conceptualize and theorize coral reef change, related advocacy and action on behalf of coral reefs as an ethical, political, and social justice issue with direct consequences that significantly impact our planetary functioning. What role do coral reefs play within environmental justice issues happening in Pacific island communities?

This dissertation starts with the premise that the ocean is not just an object of study, but an active agent of positive change and an actor, fully present, and interacting with our human social systems and greater-than-human animal neighbors. This dissertation argues a Pacific island perspective to climate justice reveals critical ocean-based and relationship-based values and knowledge that is vital for environmental policy planning and achieving a more sustainable future for islands and Earth. I focus on Pacific climate justice mobilization emerging from Guam, the Marshall Islands, and PNG to study how their activism shape local environmental policy and international climate policy responses. I center activism and initiatives emerging from the Pacific

rather than focus on climate mobilization arising out of the U.S continent. I demonstrate how marine and climate science can center optimism through research on regeneration, and how environmental justice from a Pacific island perspective redefines ideas about island resiliency and capacity for community climate leadership.

My fascination with coral history and coral life stems from the Indigenous and Pacific Island lines of inquiry that prioritize justice for non-human life and animals and recognizes the diverse forms in which environmental injustice is experienced. How did these massive, beautiful, intricate, and widespread ecosystems become the hallmark figure of our Anthropocene warning system? Why coral? Further, I argue coral reefs as a methodology starts with questions that center resiliency and the capacity to regenerate. Coral reefs teach us regeneration and healing are possible even in the grimmest and seemingly impossible circumstances if given the right conditions. The resiliency of Pacific islands' communities and culture in the face of genocide, ecocide, and military violence has taught us similar lessons.

Climate is not so much an issue as it is a frame. It charges our existing social movements with existential urgency. "We don't need to become climate activists, we are climate activists."⁹ Who are Pacific climate justice leaders? There are varied roles that define Pacific leadership, from formal government positions like senators and village mayors to youth, parents, families, young adults, and everyday individuals. Informal leadership roles are unpaid and can be time-consuming. Collaborating with other activists who have full-time jobs and family responsibilities is crucial to making progress towards their goals. There is no precise or official definition of a climate justice activist. The nature of the work intersects with other movements for justice. I offer an analysis of how Pacific island indigeneity might function to expose legacies of environmental injustices as

⁹ Klein, Naomi. *This Changes Everything: Capitalism vs. the Climate*. Toronto: Simon & Schuster, 2015. 153. Print.

climate injustice and how a connection to ocean and coral reefs might influence the forms of activism in which they engage.

Pacific island epistemologies, or ways of knowing and being in the world through a Pacific island perspective, are ocean-based and relationship-based. Pacific island perspectives have roots in the sea and vary from island to island, from family to individual, and differ depending on diverse and unique experiences. While I do not attempt to write for all Pacific island perspectives, I write from lessons learned from Chamoru perspectives and commonalities I found through my research about shared Pacific islander values across archipelagos, islands, and cultures.

A Pacific island epistemology is reflective of a deep connection and respect for ocean resources. For Chamorus¹⁰ of Guahan, for the Marshallese of the Marshall Islands, and Papuans of Papua New Guinea, the ocean is life provider. For those growing up in the Pacific, the ocean is in our blood.¹¹ “Our epistemologies and lived cultural praxes reinforce a simple face: we are people of the sea, and the ocean is in us.”¹² Pacific peoples saw the ocean as an extension of the land and a deep respect for the ocean. The ocean serves as protector and guardian of ocean resources, and the spirits of the ocean communicate with islands to look after terrestrial resources. Although most research on the ocean comes from a natural science perspective and focuses on scientific objectives and conclusions, closer examination shows that research from a social science perspective is needed to communicate the stakes of ocean life and health more effectively.

¹⁰ I use Chamorro and Chamoru interchangeably through this dissertation as reflected in the diverse use of the words in the community. Chamoru is the Indigeious spelling of the local culture and language while Chamorro is also widely used. The usage depends on the person, the community, and the context. I also use the words Guam and Guahan interchangeably for the same reasons.

¹¹ Hessler, Stefanie. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 127. Print.

¹² Ibid.

As a feminist scholar of Chamoru ancestry, my Indigenous roots and connection to the sea inform my perspective. My positionality allows me to see things I might not see otherwise. Without centering a Pacific perspective, and for example, if I centered a U.S. centric viewpoint instead, I would miss critical relationships about how nature, humans, and social systems are interconnected in my research methodologies and analysis. I see the world through the lessons and values taught to me by my grandma and her children, my father and his sisters, and my mother, who lived with my grandma and was immersed in the culture and stories of life on Guam. My grandma and my mother instilled within me a deep love and respect for nature and consciousness about what it meant to live life on a Pacific island. It was through her stories of island life and pictures that an ocean-based framework emerged as central to Pacific island identity. The lessons and values my grandma shared with us were passed down to her from her parents and their ancestors. Throughout this dissertation, I share short vignettes of my life reflections because they demonstrate how my positionality as a Chamoru woman living in the diaspora affects my understanding of the research topics and themes. These vignettes appear throughout the chapters in italics.

Even though we were in San Diego my grandma reminded us we were connected by the Pacific Ocean, rather than separated by it. My earliest memories are playing around in the ocean in San Diego and feeling one with the waves. I cannot explain it with words, it is a feeling, but I felt at home in the ocean. I remember calling myself ocean girl, island girl, and feeling that those descriptors breathed life into a longing for being near, in, and with the sea. To this day, if I feel sad, frustrated, angry, at peace, or happy, I drive to the beach just to be near the water. I go to the same spots as it offers familiarity I crave no matter my mood. I can notice changes in the seascape, the birdlife, and landscape, notice changes in the people around me, and I feel rooted in the ocean and a sigh of relief that I can rest and be home with the sea.

An overarching theme of this work demonstrates how sovereignty is needed for sustainability and is a means to preserve island natural resources effectively. I will show throughout this dissertation how the lack of recognition, respect for, and exercise of Indigenous traditional knowledge leads to

the over-exploitation of marine resources, land, and water. Moreover, I connect Pacific island sovereignty to coral reef health. To this end, I combine interdisciplinary and interspecies knowledge to begin answering questions such as: How do an island's political status and perspectives on sovereignty and self-determination impact their experience seeking environmental justice and climate justice? How does climate (in)justice impact Indigenous island communities' pursuit of sovereignty and self-determination? How does an island's political status impact their ability to make decisions about their natural resources and response to climate change? How do Pacific Islanders pursue environmental justice as it relates to coral reefs? How will coral reef health impact Pacific island experiences of climate change?

This dissertation story started when I entered my Ethnic Studies Ph.D. program at UC San Diego, intending to continue my undergraduate research studying undocumented student educational support in Southern California. It was my mentor, Dr. Yen Le Espiritu, who would transform the trajectory of my research and my life. In a class on Critical Migration Studies, Dr. Espiritu introduced me to the study of islands and militarism. She encouraged me to explore the critical questions sparked by my own family's migration patterns through an Oceanic perspective, from Guahan to San Diego. I was never taught Pacific island history, or anything about Pacific islands in school up until that point, except a small footnote mentioning they exist, somewhere, as a territory of the United States. I struggled with my own ethnic identity as a Chamoru woman living in the diaspora, feeling conflicted with feelings of longing for a sense of "home," of authenticity, of belonging. I never considered using my capacity and resources as a graduate student to research my family's ancestral region and examine questions that were simmering with me all my life. Investing in Pacific Island Studies was never communicated to me as an option before. Now that I was empowered to do so my life changed.

I began researching the history of Oceania and Guahan, and learned about the reasons why my own family had migrated off-island, joined the military, lost their land to the U.S. military, and had their lives and island connections completely uprooted and disrupted, but not eliminated. During the second year of my doctoral program, I nervously showed up at the Sons and Daughters of Guam club to make connections and learn more about my culture. While all of my family now resides in San Diego, I craved more exposure to Chamoru culture in an everyday format and to learn more from elders. Respect for elders is a value ingrained in me through my family's culture. I look to them for guidance, knowledge, and support. The mostly elder Guam Club members were ecstatic when I arrived, a young Chamorro woman eager to learn about our island and culture. From there, I was nominated to take on leadership roles in the Guam Club. I also showed up to the Chamorro Hands in Education Links Unity (CHE'LU) meeting to volunteer my time and was later nominated to their board of directors. My community (re)connections and newfound commitments to supporting Pacific islanders translated to my scholarship.

I became entrenched in the contemporary environmental issues facing Pacific islands, inspired by the love and *respectu*, the Chamorro value of respect, for nature instilled in me by my mother and grandmother. I saw very clearly how the stories emerging about Pacific islands' capacity to respond to climate change impacts were so profoundly tied to histories of environmental injustice and violence to Oceania.

This dissertation project emerged in response to overwhelming media representation of islands disappearing under rising ocean tides, and rhetoric of expected environmental crises for already marginalized and exploited communities. I searched for previous research that told the story of the interconnections I saw, but nothing covered the urgent areas I knew needed to be addressed in this moment. The research I found focused on the material effects of climate change, and "future climate refugees" as an object of inquiry, without examining broader histories of genocide, colonization, militarism, war, displacement, and examples of surviving eco-violence. It seemed deficient to study present-day climate concerns in the Pacific without engaging these longer histories that created their current conditions and structured their capacity to respond in

ways that centered their culture and priorities. These revelations and gaps in the existing literature led to this current research endeavor.

Current frameworks and theoretical currents cannot adequately analyze the choices people make for life under contemporary climate injustice conditions; choices that must keep in mind their specific colonial and military context and desire for a future where natural resources are used differently. A Pacific island perspective inspires my concerns regarding the damaging rhetoric and images used to portray experiences of displacement *for* Pacific islanders as embodied evidence of a planet in crises. How do individuals make meaning of colonial violence, military occupation, and stolen land as ecological challenges usher in new pressures of internal and off-island displacement? Their realities deserve new language.

The interdisciplinary framework put forth throughout this dissertation allows us to ask questions about how Pacific island spaces and communities are targeted for displacement, environmental degradation, and climate refugee-making first and disproportionately, before engaging questions surrounding climate solutions. I analyze intellectual perspectives of Indigenous Pacific islanders on their terms and in response to increasing pressure from militarization, extractive industries, and changing oceanic conditions. Pacific calls to center islander voices in stories about climate change drive the research questions, methodologies, frameworks, intentions, and evidence used in this dissertation. It also informs my methods of storytelling that interweave Indigenous language, values, and stories, with academic, legal, and community-driven scholarship, mixed with ocean science and ecology.

The following review of the literature is not exhaustive and serves to introduce the reader to the theoretical pillars that power the chapters that follow. This research is grounded in the fields

of Ethnic Studies, Environmental Justice Studies, Critical Refugee Studies, Indigenous Studies, Pacific Island Studies, and Marine Science Studies.

Environmental justice as a social movement in the U.S. grew out of convergences from activism of communities of color fighting for healthy environments and human rights. The U.S. Civil Rights movements of the 1960's was also grounded in issues of environment, connecting issues of race, class, and rights to access to healthy environments. Primarily championed by people of color, including African Americans, Latinos, Native Americans, and Asian and Pacific islanders, environmental justice advocates posed questions centered on why people of color live in the most polluted environments and sought out solutions to remedy the consequences.¹³ Women of color have played instrumental leadership roles in opposing environmental hazards and articulating the connections between healthy environments, race, gender, and class.¹⁴

Environmental justice activists use grassroots organizing to combat environmental *injustice*, the material result of a power dynamic that positions environmental dangers in communities who do not have societal power to reject the hazards. As a racial project, environmental racism names the process of targeting specific communities and spaces for environmental hazards that create ecological inequity. Most telling is that low-income, Indigenous, and communities of color experience disproportionate burdens of environmental hazards, not by accident, but through deliberate targeting of their environments and neighborhoods.

¹³ In the early 1960s, Latino farm workers led by Dolores Huerta and Cesar Chavez fought for workplace rights, including protection from harmful pesticides in the farm fields of California's San Joaquin Valley. They joined forces with Filipino farmworkers including Larry Itliong who were the first to walk out of Vineyards which fueled the Delano Grape Strike.

¹⁴ In 1986, a group of Latina mothers formed The Mothers of East Los Angeles (MELA) to fight the construction of a state prison in East Los Angeles. They exposed the potential dangers of the development project which lead to widespread community support and they successfully halted construction. They would later grow to be a 400-member organization connected to diverse coalitions and fought against incinerators and hazardous waste treatments plants in their communities because of the environmental and social harms it would bring. They argued their neighborhoods were being targeted for these harmful industries on purpose, because no one thought they had the capacity or knowledge to fight back against state power and industry money.

An environmental racism approach casts racism as environmental to expose how “sociopolitical forces generate landscapes that infiltrate human bodies.”¹⁵ Rob Nixon justly argues environmental racism is a real “slow” form of violence that exacerbates the vulnerability of ecosystems and of people who are poor, disempowered, and often involuntarily displaced.¹⁶ For these reasons, environmental justice movements must produce and employ scientific data that track environmental hazards, placing a new sort of materiality at the forefront.¹⁷ A shift has occurred in which environmental movements are also “arming themselves with the lingual resources of toxicology, risk assessment, biomedicine, environmental impact inventories, nuclear engineering, and other instruments of reason. As environmental scientists become activists, the borders between science and politics erode.”¹⁸

In *Wastelanding*, Ethnic Studies scholar Traci Voyles asks why certain landscapes and the people who inhabit them become targeted for disproportionate exposure to environmental harm.¹⁹ Voyles engages colonial processes that render certain environments for assault and resource extraction and construct particular bodies/landscapes as disposable. Voyles argues that *wastelanding* operates through racial and colonial technologies that naturalize environmental harm and produce Indigenous communities as *pollutable*. Voyles notably argues that Indigenous epistemologies are rendered illegible; the crux of racial/colonial scaffolding that transforms land into *wasteland*. The dispossession of Indigenous peoples from their traditional lands and its subsequent pollution was made possible through technologies of alienation, treaty-making,

¹⁵ Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Bloomington: Indiana UP, 2010. Print.

¹⁶ Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge (Mass.): Harvard UP, 2013. Print.

¹⁷ Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Bloomington: Indiana UP, 2010. Print.

¹⁸ Ibid.

¹⁹ Voyles, Traci Brynne. *Wastelanding: Legacies of Uranium Mining in Navajo Country*. Minneapolis: U of Minnesota, 2015. Print.

separation, debt, and law that delegitimated Indigenous culture and values. Colonial tricks codified into law the use of English-only knowledge institutions, and western perceptions that recast land as property and exploitable resource, and the idea that land was only productive if it was extracting surplus for profit. This paved the way for capitalist accumulation and severed many Indigenous peoples from their land, which altered their capacity to serve as steward over their environment. Settler colonial technologies evolve and can be reorganized and disrupted. It is critical to figure out how these technologies operate.

Traditionally, approaches to environmental issues begin by seeking potential remedies to stop ecological hazards and facilitate due process through equitable reparations. As Voyles demonstrates, an Ethnic Studies approach to environmental justice, an intersectional frame, works from a perspective that asks how certain spaces become targeted for environmental injustice in the first place. This preceding question is key. Wastelanding is not only interested in land as something already polluted, but demands answers to why this space is pollutable in the first place?

The basic framework advanced here is that to confront the emerging climate change tensions around the Pacific region, an emphasis on the interconnected nature of environmental racism, U.S. colonial militarism, and indigeneity is pivotal. I am invested in exploring how policies about the environment and climate shift meanings for people on the ground. I use ocean and coral reefs as an optic to analyze specific Environmental Impact Statements (EIS) and international climate mitigation, adaptation, and loss and damage policy proposals between 2005 – 2020 that impact Guam, the RMI, and PNG. To this end, I build from a theoretical foundation of Oceanic Ethnic Studies, an intersectional analysis of race, class, gender, migration, indigeneity, language, political economy, and social justice.²⁰ I build from anchoring texts in Indigenous Studies on

²⁰ Labrador, Roderick N., and Ethan Caldwell. *Introduction to Ethnic Studies: Oceanic Connections*. S.I.: Cognella Academic Publishing, 2020. Print.

resistance by Jodi Byrd,²¹ Gerald Vizenor,²² Audra Simpson,²³ Mishuana Goeman,²⁴ Adria Imada,²⁵ and Linda Tuhiwai Smith²⁶ that explain key concepts such as “survivance,” and “refusal.”

Not all indigenous peoples share the same understanding of what sovereignty is and why it is important. Sovereignty is a social construct. Sovereignty has its own ideological origins in colonial legal-religious discourse²⁷ and it is also an ancient idea, used to describe both the power and arbitrary nature of the deity of peoples in the near east.²⁸ Sovereignty was about “figuring out the relationship between the rights and obligations of individuals (citizens) and the rights and obligations of nations (states).”²⁹

To be sure, translating Indigenous epistemologies about law, governance, and culture through the discursive rubric of sovereignty was and is problematic.³⁰ Indigenous scholars and activists have argued sovereignty is an inherent and inalienable right of peoples that emerges from unique identity and culture.³¹ The concept of sovereignty also served “colonists in negating indigenous territorial rights and humanity while justifying the right of conquest by claims to national superiority.”³² It is no wonder why sovereignty is such a contested concept as some question whether indigenous peoples’ sovereignty was ever really recognized or respected given

²¹ Byrd, Jodi A. *The Transit of Empire: Indigenous Critiques of Colonialism*. Minneapolis: U of Minnesota, 2011. Print.

²² Vizenor, Gerald Robert. *Survivance: Narratives of Native Presence*. Lincoln, Neb.: U of Nebraska, 2009. Print.

²³ Simpson, Audra. *Mohawk Interruptus: Political Life across the Borders of Settler States*. Durham: Duke UP, 2014. Print.

²⁴ Goeman, Mishuana. *Mark My Words: Native Women Mapping Our Nations*. Minneapolis, MN: U of Minnesota, 2013. Print.

²⁵ Imada, Adria L. *Aloha America: Hula Circuits through the U.S. Empire*. Durham: Duke UP, 2012. Print.

²⁶ Smith, Linda Tuhiwai. *Decolonizing Methodologies: Research and Indigenous Peoples*. London: Zed, 2012. Print.

²⁷ Barker, Joanne. *Sovereignty Matters: Locations of Contestation and Possibility in Indigenous Struggles for Self-determination*. Lincoln: U of Nebraska, 2005. Print.

²⁸ Dunbar-Ortiz, Roxanne. *Economic Development in American Indian Reservations*. Albuquerque: Native American Studies, U of New Mexico, 1979. Print.

²⁹ Barker, Joanne. *Sovereignty Matters: Locations of Contestation and Possibility in Indigenous Struggles for Self-determination*. Lincoln: U of Nebraska, 2005. Print.

³⁰ Ibid.

³¹ Ibid.

³² Ibid.

that every single treaty signed with indigenous peoples in the Americas and the Pacific was broken.³³ “While Indigenous peoples were recognized by the U.S. as constituting nations that possessed rights to sovereignty by treaty, by the constitution, by legislative action, and by court ruling the U.S. has rewritten and reworked sovereignty as it applied to indigenous peoples.”³⁴ The U.S. used sovereignty to say that Indigenous peoples had been conquered and structure their communities under the sole guardianship of the U.S. and make them “dependent” on U.S. protection.³⁵ This aided the U.S. in their pursuit to secure control of lands and natural resources like gold. Despite this tumultuous history, in the context of settler colonialism, Indigenous peoples have engaged sovereignty to challenge colonial law and protect their environments and their organization of society. Following World War II:

Sovereignty became a term through which indigenous artists represented their histories, cultures, and identities, often in opposition to the erasures of their sovereignty by dominant ideologies of race, culture, and nationalism coined in the discourses of eugenics and American patriotism. Used to define a humanity in the face of dehumanization practices and defined indigenous peoples with concrete rights to self-government, territorial integrity.³⁶

The United Nations (UN) identified indigenous peoples as having a right to self-determination – a legal category that came to be defined by both group and individual rights not to be discriminated against and to determine one’s own governments, laws, economies, identities and cultures.³⁷ Self-determination is the power to make decisions about yourself, your community, your environment, and how your nation will be governed, without foreign influence. It is the right to determine your own destiny. Human rights for indigenous peoples became translated to mean rights to a self-

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

³⁷ United Nations, The. *United Nations Declaration on the Rights of Indigenous Peoples: Adopted by the United Nations General Assembly on 13 September 2007*. Sydney, NSW: Australian Human Rights Commission, 2013. Print.

determination that was indelibly linked to sovereignty.³⁸ Climate change creates threats to sovereignty through changes in water and food security, loss of place-based identity and climate-induced forced migration.

I build from David Pellow's work on Critical Environmental Justice (CEJ) to appreciate and critically analyze how human cultures are always deeply interconnected with ecosystems and non-human life. CEJ explores other intersections of inequality and the environment that expand the focus of what Environmental Justice (EJ) studies has traditionally centered. CEJ moves to emphasize more methodologically creative and interdisciplinary approaches and the expansion of social categories under consideration, particularly a more substantial attention to non-human natures.³⁹ Indigenous traditional ecological philosophies extend the ideas of 'personhood' to non-human species, such as fish, animals, and plants.⁴⁰ Most often (and especially on indigenous lands) "the industry and enterprises center on natural resource extraction," and so, "trees, rocks, and fish become resources and commodities with a value calculated solely in monetary terms."⁴¹

My positionality informs my understanding that Indigenous research methods are needed when working in an Indigenous context. Using research methodologies that are culturally sensitive is key for decolonial research that can engage an analysis of imperialism and power relations to tell alternative stories that challenge the gaze of the colonizer through the lens of the colonized.⁴² Linda Tuhiwai Smith's *Decolonizing Methodologies* acknowledges the significance of Indigenous perspectives on research. Smith asserts that Indigenous ways of knowing are the most appropriate

³⁸ Barker, Joanne. *Sovereignty Matters: Locations of Contestation and Possibility in Indigenous Struggles for Self-determination*. Lincoln: U of Nebraska, 2005. Print.

³⁹ Pellow, David N. *What Is Critical Environmental Justice?* Cambridge, UK: Polity, 2018. Print.

⁴⁰ Abate, Randall S., and Elizabeth Ann Kronk. *Climate Change and Indigenous Peoples: The Search for Legal Remedies*. Cheltenham, UK: Edward Elgar, 2013. Print.

⁴¹ Barker, Joanne. *Sovereignty Matters: Locations of Contestation and Possibility in Indigenous Struggles for Self-determination*. Lincoln: U of Nebraska, 2005. Print.

⁴² Smith, Linda Tuhiwai. *Decolonizing Methodologies: Research and Indigenous Peoples*. New York: Zed, 1999. Print.

starting point for meaningful research because it prioritizes Indigenous priorities and social issues through the lens of place-based experiences with colonialism.⁴³

In a familiar way that Indigenous histories have been decentered in favor of stories told by colonizers, this research is a response to legacies of decentering Pacific islands. I build from Na'puti and Bevaqua's call to place islands in the center as a decolonial move. They write:

Guåhan, and specific sacred places within Pacific currents, are frequently marginalized and footnoted (if noted at all). Therefore, this method of placing our island, sacred places, and struggles at the center is an intentional move that strengthens our efforts to resist empire from the roots of Chamoru existence. An affirmation of Chamoru identity, grounded in the specificity of our experiences and sacred places, is crucial to imagining a world beyond colonialism and to providing strength and guidance in our efforts to connect outward. By launching *from* here, we center efforts to restore harmony within our community, which offers ways to deepen connections and foster transoceanic dialogue among existing social movements and indigenous peoples practicing decolonization and resistance throughout the Pacific.⁴⁴

Na'puti and Bevaqua argue specificity matters. Departing from foundational pillars in Indigenous literature, we arrive at Pacific Indigenous literature. The literature I build from in Pacific Island Studies further develops the concept of living in relation to nature and living a communal life of harmony, as opposed to dominating nature, with cultural and place-based specificity needed when working in a Pacific island context. Studying the environment through the nexus of Indigenous and Pacific Island studies reveals how racism operates through colonial and military processes of domination, dehumanization, and exploitation and how Indigenous Pacific Islanders have leveraged their culture and communities to respond, survive, and thrive.

Wastelanding as a theoretical framework, addresses native issues as it applies to land but

⁴³ Ibid.

⁴⁴ Na'Puti, Tiara R., and Michael Lujan Bevacqua. "Militarization and Resistance from Guåhan: Protecting and Defending Pâgat." *American Quarterly* 67.3 (2015): 837-58. Print.

is not unique to the nuances of island geographies.⁴⁵ Through Indigenous and Environmental studies we realize the need to understand land in ways that prioritize relationships in nature, and I argue we need to do a similar shift to think about interlocking issues over the ocean. If we move wastelanding's theoretical frame that thinks about land to think about *islands* we can engage how Pacific waters and coral reefs have been marked as pollutable, conquerable, and sacrificial. I emphasize the “*is*” in islands here, to draw attention to the way islands share similarities (land) but also differ from other landmasses (*island*) because they are land or coral surrounded by ocean, a unique trait that informs their activity and story.⁴⁶ ⁴⁷ Wastelanding of islands transpires through familiar processes that contributed to the dispossession of land for continent/land-based Indigenous communities yet is distinct to actions that engaged the ocean/seascape.

When placed into an Oceanic context, wastelanding places a focus on how the sea influences the landscape and how life on land influences the sea, rendering vital natural system relationships visible and calling attention to the ways human behavior has impacted natural systems of Pacific islands and ocean ecosystems disproportionality. An Oceanic focus adds to theories of wastelanding by offering necessary details and history as to why, how, and where, islands and reefs have experienced wastelanding, and what role ideas about islands, islanders, and ocean played in the process.

⁴⁵ Glen Coulthard notes the importance of land - *places* – that informs indigenous modes of being, thought, and ethics. Competing metaphysics in most Western societies, by contrast, center and derive meaning from the world through time in historical/developmental terms. Moreover, indigenous ways of knowing regarding environment positions oneself as *part of* nature rather than superior to it.

⁴⁶ Coulthard, Glen. *Subjects of Empire?: Indigenous Peoples and the "politics of Recognition" in Canada*. Ottawa: Library and Archives Canada, 2011. Print.

⁴⁷ Consequently, the European and later Western ideologies and hunger for land and wealth accumulation inspired “the transformation of the environment into a ‘natural resource’ needing to be ‘freed’ and ‘secured’ in the modern era was operative when enclosures became an essential political discourse of the nation state (Marzec, 2016). See Marzec, Robert P. *Militarizing the Environment: Climate Change and the Security State*. Minneapolis: U of Minnesota, 2015. Print.

In this dissertation, I look at the intersections of Indigenous Studies, Pacific Island Studies, Oceanic Studies, and Oceanography. Oceanic Studies differs from Pacific Island studies as it treats the sea as the site and subject of investigation and theorization and promotes the intersection of humanistic, scientific, and social scientific inquiry. It prioritizes the ocean versus the land. Oceanography is the study of the physical and biological aspects of the ocean and leaves out the human and cultural aspects. As Chamoru scholars Tiara Na'puti and Michael (Miget) Lujan Bevaqua argue an Oceanic worldview prompts a different engagement with our oceans and the world we inhabit:

The Pacific Ocean remains one of the most significant blind spots for American studies. While it's a huge swath covering almost half of the globe, it is perceived as populated with "small" islands and small island peoples, and thus imagined as a place meant to be traversed by imperial and world powers, rather than a site from which we can understand the structure of colonial power.⁴⁸

Both Na'puti and Bevaqua are inspired by the work of Tongan and Fijian scholar Epeli Hau'ofa and his reconceptualization of Pacific islands as a "sea of islands"⁴⁹ *connected* by ocean in contrast to ideas about isolated and vulnerable islands *separated* by ocean. Hau'ofa's "sea of islands" thesis, in the context of climate change, is about island communities' resiliency and adaptive capacities for leveraging global networks.⁵⁰ Moreover, by combining the sea of islands perspective with the concept of wastelanding, a conceptual framework emerges that both promotes islander resilience and acknowledges wastelanding processes that cause island vulnerability.

As Hau'ofa alludes, the ocean is used to counter stories about crises with hope for the future. If we look at the myths, legends, and oral traditions, and cosmologies of the people of

⁴⁸ Na'Puti, Tiara R., and Michael Lujan Bevacqua. "Militarization and Resistance from Guåhan: Protecting and Defending Pâgat." *American Quarterly* 67.3 (2015): 837-58. Print.

⁴⁹ Hau'ofa, Epeli, Eric Waddell, and Vijay Naidu. *A New Oceania: Rediscovering Our Sea of Islands*. Suva, Fiji: School of Social and Economic Development, The U of the South Pacific in Association with Beake House, 1993. Print.

⁵⁰ Brenneis, Donald Lawrence, and Peter Thorpe. Ellison. "Sea Change: Island Communities and Climate Change." *Annual Review of Anthropology*. Palo Alto, CA: Annual Reviews, 2012. 285-301. Print.

Oceania, we learn that they did not conceive of their world in such microscopic proportions, and their universe was not comprised just of land surfaces. “Pacific islands connote small areas of land surfaces sitting atop submerged reefs and seamounts...Oceania connotes a sea of islands with their inhabitants... and people who are at home with the sea.”⁵¹ This more active engagement with the island scape has the power to reframe fears of forced migration to center traditions of Oceanic migration and consistent movement. It is the artificial borders placed upon Oceania that cause the notion of crises when faced with a changing environment. If they were able to freely move around and make connections to people outside of their islands without restriction, they would not be in a crisis as we understand it today. Nineteenth-century imperialism erected boundaries that led to the contraction of Oceania, transforming a boundless world into Pacific islands states and territories that we know today.⁵² Our new climate change reality makes our artificial borders look irrational and inoperative. Hau’ofa says, “islands have broken out of their confinement, are moving around and away from their homelands, not so much because their countries are poor, but because they had been unnaturally confined and severed from much of their traditional sources of wealth, and because it is in their blood to be mobile. They are once again enlarging their world, establishing new resource bases and expanded networks for circulation.”⁵³ Further, Ha’ofa’s sea of islands framework offers a view of Oceania that is optimistic and resilient.

Cartography has historically served as a colonial tool to demarcate areas for occupation and natural resource exploitation. Indigenous peoples have strategically pushed back on colonial cartography and its impacts on their communities and rights through countermapping, on land and

⁵¹ Hessler, Stefanie. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 108. Print.

⁵² Ibid.

⁵³ Hessler, Stefanie. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 108. Print.

ocean. In *Mark my Words Native Women Mapping our Nations*, Mishuana Goeman⁵⁴ builds from Aboriginal scholar Linda Tuhiwai Smith's work on the interconnections among policy, people, and the mapping of space to contribute her conceptualization of (re)mapping that uproots gendered spatial geographies and cartographies to reveal settler colonialism as an enduring form of gendered spatial violence. Because we know maps are ideology,⁵⁵ such counter-mapping reframes the aerial/surveillance gaze born out of islanders' subjectivity from military settler-colonial mapping and imperial regulation by way of military cameras.⁵⁶ Re(mapping) names the labor native peoples undertake to create and curate new possibilities.

In the Pacific context, mapping has contributed to the "small and isolated islands" trope by projecting islands as tiny specks on continent and U.S. focused maps used in schools and for government functions, including policymaking. Elizabeth Deloughrey argues islands embody archipelagraphy as spatial intervention, "a re-presentation of identity, interaction, space and place that comes across in different combinations of affect, materiality, performance, things."⁵⁷ In the field of Island Studies, the archipelago is one of the least examined metageographical concepts that understand islands as mutually constitutive and island-to-island against the western dichotomies of land and sea.⁵⁸ Thus, thinking with the archipelago⁵⁹ is counter-mapping praxis that requires "a double-destabilization: dislocating and de-territorializing the objects of study-the fixity of island difference and particularity-and constituting in the place a site or viewing platform

⁵⁴ Goeman, Mishuana. *Mark My Words: Native Women Mapping Our Nations*. Minneapolis, MN: U of Minnesota, 2013. Print.

⁵⁵ Wilson, Rob, and Arif Dirlik. *Asia/Pacific as Space of Cultural Production*. Durham: Duke UP, 1995. Print.

⁵⁶ Imada, Adria L. *Aloha America: Hula Circuits through the U.S. Empire*. Durham: Duke UP, 2012. Print.

⁵⁷ Cilano, C., and E. Deloughrey. "Against Authenticity: Global Knowledges and Postcolonial Ecocriticism." *Interdisciplinary Studies in Literature and Environment* 14.1 (2007): 71-87. Print.

⁵⁸ Ibid.

⁵⁹ Pugh, Jonathan. "Island Movements: Thinking with the Archipelago." *Island Studies Journal*, Vol. 8, No. 1, 2013, Pp. 9-24 Vol. 8.No. 1 (2013): 9-24. Print.

by which they are perceived and analyzed afresh and anew.”⁶⁰ With this in mind, thinking with the archipelago is a continuation of Epeli Ha’ofa’s sea of islands frame that counters colonial mapping to say we not isolated but connected.

My departure contributes to Ethnic Studies scholarship by staging new frames in which to approach environmental justice *with* Pacific islands *through* the archipelago. Archipelagic thinking denaturalizes the conceptual basis of space and place and therefore engages “the spatial turn” presently sweeping the social sciences and humanities and requires a significant shift in how we frame analysis and engagement.⁶¹ These efforts aim to identify better methods to inform climate policies and protections that respect individual dignity and Indigenous rights. As an alternative geo-formal unit:

archipelagos can interrogate epistemologies, ways of reading and thinking, and methodologies informed implicitly or explicitly by more continental paradigms and perspectives. Keeping in mind the structuring tension between land and water, and between island and mainland relations, the archipelagic focuses on the types of relations that emerge, island to island, when island groups are seen not so much as sites of exploration, identity, sociopolitical formation, and economic and cultural circulation, but also, and rather, as models.⁶²

Archipelagic framing centers how living within networks of islands are constitutive of a certain way of thinking. This way of thinking centers interisland connections born from islandscapes that require a different way of understanding movement and community building that goes beyond today’s nation-state territorial boundaries and perspectives of islands as disconnected. These perspectives inform diverse Pacific Island epistemologies or ways of knowing. My focus on coral reefs as an optic further extends an archipelagic American Studies by addressing a submarine

⁶⁰ Cilano, C., and E. Deloughrey. "Against Authenticity: Global Knowledges and Postcolonial Ecocriticism." *Interdisciplinary Studies in Literature and Environment* 14.1 (2007): 71-87. Print.

⁶¹ Pugh, Jonathan. "Island Movements: Thinking with the Archipelago." *Island Studies Journal*, Vol. 8, No. 1, 2013, Pp. 9-24 Vol. 8.No. 1 (2013): 9-24. Print.

⁶² Stephens, Michelle Ann, and Yolanda Martínez-San Miguel. *Contemporary Archipelagic Thinking: Towards New Comparative Methodologies and Disciplinary Formations*. London: Rowman & Littlefield International, 2020. Print.

formation. Such a focus understands maritime space as fluid and interrelated and shorelines as zones of transition between high and low tides, and exchanges between ecosystem, between humans and nature, and between human communities.⁶³

Wastelanding is useful to understand how racist ideas about Pacific environments and its people made possible the destruction of coral reefs and violence to their islands and ocean ecosystems. And, as I argue, building from an understanding of wastelanding as processes that identify the cultural production of people as pollutable and the material impacts of real pollution, we must understand the ways in which wastelanding embodies how epistemic violence enables the material.

The Pacific Ocean, islands, and people have long been a key focus of U.S. and global military endeavors. The ocean has its own sociopolitical history and context that requires specificity. The Pacific Ocean and Pacific islands play a crucial role in U.S. military history and current national security strategy as maritime peripheries normalized as a militarized marine borderland.⁶⁴ Deloughrey attends carefully to the gendered binary of land (masculine) and water (feminine) and suggests “the spatiality of the island also sets up basic opposition or eternal contest between these elements, often resolved in favor of land at the expense of water.”⁶⁵ Our oceans are increasingly exploited, and coral reef ecosystems are experiencing direct consequences.

⁶³ Hessler, Stefanie. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 122. Print.

⁶⁴ Davis, Sasha. *The Empires' Edge: Militarization, Resistance, and Transcending Hegemony in the Pacific*. Athens: U of Georgia., 2015. Print.

⁶⁵ DeLoughrey, Elizabeth M. *Routes and Roots: Navigating Caribbean and Pacific Island Literatures*. Honolulu: Univ Of Hawai'i, 2007. Print.

The strategic preference to target islands for military purposes is *military colonialism*⁶⁶, which deals with land in different ways, occupying land for the sole purpose of military use, building bases, testing weapons, and using Indigenous lands as training playgrounds and toxic dumpsites. According to Cynthia Enloe, militarism is a concept that refers to a sophisticated package of ideas that, all together, fosters military values in both military and civilian affairs and justifies military priorities and military influences in culture, economic, and political affairs.⁶⁷ The military beliefs according to Enloe are the belief that men are natural protectors and that women should be grateful for manly protection; the belief that soldiers deserve special praise for their contributions to countries; the valuing of physical force over other modes of human interaction to resolve differences; and the idea that any country without a state military is not an entirely “mature” state.⁶⁸ Further, militaristic views are deeply imbued with gendered assumptions and values.⁶⁹ The takeaway is that militarism is not natural or inevitable, and militarization requires specific decisions to be made. *Militarization* is defined by Enloe as “the step-by-step process by which something/someone becomes controlled by, dependent on, or derives its value from the military as an institution or militaristic criteria.”^{70 71}

Wastelanding deconstructs how racism and militarism functioned against Pacific island(ers) to render their seascapes pollutable and as sites for the disposal of toxic waste. Further, it makes visible the intersections of wastelanding islands and the stakes of militarized violence regarding climate change for Indigenous peoples. Race has been a defining factor in the selection

⁶⁶ Enloe, Cynthia H. *Globalization and Militarism: Feminists Make the Link*. Lanham: Rowman & Littlefield, 2016. Print.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Enloe, Cynthia H. *Maneuvers: The International Politics of Militarizing Women's Lives*. Berkeley: U of California, 2000. Print.

⁷¹ John Gillis defines militarization as the process by which “civil society organizes itself for the production of violence” (Mariscal, 2003).

of Pacific island coral reefs, land, and its people^{72 73 74 75} as sites to experiment, contaminate, and occupy for the development of national security, trade, and capital gain. As far as this concerns Oceania, “derogatory and belittling views of indigenous cultures are traceable to the early years of interactions with Europeans,”⁷⁶ calling them savages and behaving in a barbaric manner. In *Cultures of Commemoration*, Chamoru scholar Keith Camacho details how race informed military colonial discourse on Guam:

The military officers some of whom claimed to know the islands’ customs and values employed policies that often-reflected white American values rather than indigenous ones. Much of the language used in planning documents and public statements was permeated with racist and cultural assumptions about the alleged superiority of the mainland and Caucasian-American values...American officials perceived the Pacific islanders as helpless children who needed paternalistic guidance from the United States in their every thought and action.⁷⁷ This narrow and deterministic viewpoint of islands, and islanders as inferior demonstrates the racism inherent to settler military colonial power.⁷⁸

The racist descriptions erased the presence and long tenure of the land and produced new discourses about what the land might mean now. The military created new maps that erased Chamoru names for places and replaced them with English versions. These new visual representations of the island and seascape were turned over to military and industry contractors, which structured development possibilities for the island. Land that was clearly occupied by

⁷² Arvin, Maile. *Possessing Polynesians: The Science of Settler Colonial Whiteness in Hawai‘i and Oceania*. Durham: Duke UP, 2019. Print.

⁷³ Vine, David. *Island of Shame: The Secret History of the U.S. Military Base on Diego Garcia*. Princeton, NJ: Princeton UP, 2009. Print.

⁷⁴ Cameron, Craig M. "Race and Identity: The Culture of Combat in the Pacific War." *The International History Review* 27.3 (2005): 550-66. Print.

⁷⁵ Davis, Sasha. *The Empires' Edge: Militarization, Resistance, and Transcending Hegemony in the Pacific*. Athens: U of Georgia., 2015. Print.

⁷⁶ Hessler, Stefanie. *Tidialectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 103. Print.

⁷⁸ Camacho, Keith L. *Cultures of Commemoration: The Politics of War, Memory, and History in the Mariana Islands*. Honolulu, HI: Center for Pacific Islands Studies, School of Pacific and Asian Studies, U of Hawaii, Manoa, 2011. Print.

families, by farms, by communities, or by ancestral gravesites was mapped as a potential base, military housing location, decontamination, or contamination site. After U.S. nuclear weapons testing commenced in the Marshall Islands during the 1940 – 1950s, “contamination not just from the tests but from the washdown of equipment, ships, and airplanes that could not be cleaned in Kwajalein were taken to Guam where they didn’t tell the people what they were washing.”⁷⁹ Further, reefs were marked for dredging, and inlets of the island were marked for harbor expansion and naval ship parking lots. Racism underpinned how nature was transformed and wastelanded through the military, and this demonstrates the importance of ecologically attentive critiques to militarism.

Racialized understandings, depictions, and experiences of Indigenous Pacific islanders have translated to racialized violence to their environments and the *wastelanding* of Pacific coral reefs in particular. I deploy wastelanding as a verb to describe the active (re)making of the environment undertaken through a racialized ideology that frames Pacific ecosystems as disposable. In *Coral Empire*, Ann Elias investigates early twentieth-century visual representations of the underwater realm and visual culture related to coral reefs around the Bahamas and the Australian Great Barrier Reef – two outposts of the British Empire – to argue it was the coral islands, reefs and waterways that were known as the empire’s “possessions” in the 1920s.⁸⁰

With these exotic seas and islands in its possession, the British Empire was also a ‘coral empire’ in which the figure of the coral reef became a suggestive symbol of expansionism. It gave the empire a framework for understanding itself. Symbiotically, the reef, with its busy, colonizing ‘workers’ and expanding territory, came to define the imperial project, and in that scenario the body of the reef was imaginatively mapped onto the figurative body of Britain.⁸¹

⁷⁹ Hessler, Stefanie. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 205. Print.

⁸⁰ Elias, Ann. *Coral Empire. Underwater Oceans, Colonial Tropics, Visual Modernity*. Durham: Duke UP, 2019. Print.

⁸¹ *Ibid.*

Coral Empire's argument is generative for the Pacific context because the acquisition of coral islands was also seen as the accumulation of "useless lands and peoples, and dangerous environments."⁸² In this way, colonial discursive and material processes imbued with racial meaning were mapped from ocean elements to land/human ones. Further, the power relations embedded in imagining human and nature characteristics of Pacific islands contributed to its wastelanding.

Racialized identities of Pacific islanders as inferior and savage led to real-life action towards their environments, materializing in the dispossession of land and displacement, and the militarization of the reefs. In the context of the Marshall Islands and Guam, military colonialism has, in many ways, created the conditions for long-term environmental dispossession and displacement of islanders.⁸³ The process of militarizing communities and environments is an extremely invasive and intimate endeavor that is abstracted and naturalized over time and can ultimately lead to a militarized community actually (un)intentionally reproducing the very structures that militarize themselves and others. Military traffic, airplanes, shooting sounds, uniforms, weapons, restricted zones, warships, the smell of burning debris, and the like, become everyday sites of normalcy for those living under military occupation. In these conditions, it becomes an immersive experience and increasingly challenging to detangle military life from previous iterations of communities and environments and to imagine past and future realities where militarism is not the norm. In this way, the militarization of everyday life infiltrates into the level of the mundane and the ordinary to the point where the militarized cannot easily recognize or

⁸² Ibid.

⁸³ Davis, Sasha. *Islands and Oceans: Reimagining Sovereignty and Social Change*. Athens: U of Georgia, 2020. Print.

distinguish between militarized and un-militarized lifeworlds, all the experiences that make up the world of an individual or community life.

Settler colonial racialization of Pacific islanders led to their Indigenous populations, coral atolls (Marshall Islands), coral reefs, and fossilized limestone reef (Guam) being disproportionately militarized and perceived as both waste islands and valuable military hubs. Deriving strategic value through their ideological transformation by settlers, islands, and reefs have been made vulnerable because of their demography, topography, and location. I will explain the reef distinctions directly in chapter one and analyze the islands' specific reef-human history in chapters two and three.

In the Pacific context, U.S. military colonialism has created underlying conditions of health and poverty disparities and disenfranchised the rights of native people. This restricting of island power has moved land rights to the military and transnational hotel corporations to satisfy the militourism appetite. Pacific scholars have critiqued the intersections of the military and tourist industries that have become the major sources of income islands like Guam. Teresia Teaiwa's term "militourism"⁸⁴ refers to contexts in which "military or paramilitary force ensures the smooth running of a tourist industry, and that same tourist industry masks the military force behind it."⁸⁵ Pacific interventions⁸⁶ into the tourism industry are emerging in creative forms, such as the *Detour: Decolonial Guide book* series by Vernadette Gonzalez and Hokulani Aikau that collects travel literature for tourism crafted by locals.⁸⁷ The "de" in the "Detour" is all about demilitarization and decolonization. The stories of the land in these travel books unsettle traditional tourist approaches

⁸⁴ Teaiwa, Teresia. "Reflections on Militourism, US Imperialism, and American Studies." *American Quarterly* 68.3 (2016): 847-53. Print.

⁸⁵ Teaiwa, Teresia K. "Bikinis and Other S/pacific N/oceans." *Militarized Currents* (2010): 15-32. Print.

⁸⁶ Keown, Michelle. "Children of Israel: US Military Imperialism and Marshallese Migration in the Poetry of Kathy Jetnil-Kijiner." *Interventions* 19.7 (2017): 930-47. Print.

⁸⁷ Aikau, Hokulani K. *Detours: A Decolonial Guide to Hawai'i*. N.p.: Duke UP, 2019. Print.

to visiting Pacific islands by acknowledging the tragic loss and lesser-known stories of impacts to place from military occupation and remembers the landscapes in its previous iterations.

A detour perspective on tourism asserts decolonial narratives by prioritizing local knowledge to reframe visitors' encounters with islands. The move directs visitors to take in the sights and history of a place with historical and indigenous context and perspective that should lead to more informed decisions, such as spending money at establishments that support the local economy, combat food insecurity, high costs of living, and benefit the environment, including climate change.⁸⁸ Whereas a traditional travel guidebook might highlight the best and most beautiful places to visit coral reefs, the “Decolonial Guide to Hawaii” centers local interpretations of reef change:

The reef and coastal resources that once sustained area families with abundance are now significantly degraded. Overfishing may have played a role in the decline. Elders shared concern that technological advances such as plastic masks, scuba tanks, spear guns, fine mesh nets, and freezers facilitate overharvesting.⁸⁹

The Detour guide accompanies local accounts such as this with a photo of a local family. This blend of knowledge is a strong example of how Pacific voices can intervene in the tourism industry and redirect energy and impact in ways they deem more appropriate. I am hopeful new versions of Detour guides will include local stories and decolonial narratives of reefs as well.

For Guam and the Marshall Islands, coral reefs are a major tourist attraction. Reef history and cultural dynamics are often obscured by the interesting dichotomy with coral in which the figure of the reef is simultaneously produced as an exotic destination and exploitable ecosystem

⁸⁸ The authors say the essays, stories, artworks, maps, and tour itineraries in *Detours* create decolonial narratives in ways that will forever change how readers think about and move around a place.

⁸⁹ Aikau, Hokulani K. *Detours: A Decolonial Guide to Hawai'i*. 100: Duke UP, 2019. Print.

for tourists but not marked for long-term protection. It is also the case that in the Marshalls, their reefs that recovered from nuclear violence and host sunken warships attract visitors.^{90 91} Increasingly, “doom” tourism^{92 93 94} inspires tourists to visit reefs before they bleach. Moreover, declining coral health triggers a loss in profit for island economies but also sparks new waves of “last chance” tourism⁹⁵ to witness disappearing destinations.

A Pacific islander perspective on climate justice considers the role of the U.S. and global militaries’ impacts on Pacific environments, economies, sovereignty, and the ways that military occupation has transformed Indigenous islanders’ voice in global affairs. For Pacific islands, exercising sovereignty in the context of settler military colonialism has been especially challenging. In the Pacific context, military colonialism has created underlying conditions of health and poverty disparities and disenfranchised the rights of native people. Pacific Islanders’ strategies for mitigation and migration regarding climate change are limited by this history. Pacific islands' ability to adapt and plan for climate changes and potential migration off-island if their islands are made uninhabitable continue to depend on characteristics of elevation, colonial status, and power of stakeholders fighting for their protection.

I build from Pacific island studies scholars such as Vincent Diaz and Epeli Hau’ofa, and Chamoru Studies scholars, Anne Hattori, Michael (Miget) Lujan Bevaqua, Keith Camacho, Tiara Na’puti, and Lola Leon Guerrero who engage with island specific experiences of seeking

⁹⁰ "Bikini Atoll Dive Tourism Information." *Bikini Dive/Tourism Information*. N.p., n.d. Web. 13 Aug. 2020.

⁹¹ Marsh, Nigel. "Best Wreck Diving in the South Pacific and South East Asia." *Diveplanit*. N.p., 03 Sept. 2019. Web. 13 Aug. 2020.

⁹² Piggott-Mckellar, Annah E., and Karen E. McNamara. "Last Chance Tourism and the Great Barrier Reef." *Journal of Sustainable Tourism* 25.3 (2016): 397-415. Print.

⁹³ Gerstacker, Diana. "10 Places to Visit Before They Disappear." *Yahoo! Yahoo!*, n.d. Web. 13 Aug. 2020.

⁹⁴ Lemelin, Harvey, Jackie Dawson, Emma J. Stewart, Pat Maher, and Michael Lueck. "Last-chance Tourism: The Boom, Doom, and Gloom of Visiting Vanishing Destinations." *Current Issues in Tourism* 13.5 (2010): 477-93. Print.

⁹⁵ Gibson, Megan. "10 Places to Visit Before They Disappear." *The Pioneer Press*. N.p., 06 Nov. 2015. Web. 13 Aug. 2020.

sovereignty and self-determination while living under military colonial occupation. Indigenous studies and Island studies are extensively discussed as different lines of inquiry and fields of study. I purposefully bring together Pacific island studies to inform environmental racism studies from the angle of settler military colonialism.

As a driver of change and mutation across the planet, the actual operations of military bases and outposts have consequences for the bodies, communities, and environments adjacent to them that lead to local opposition that in turn, jeopardizes their operation.⁹⁶ I align my inquiries with Yen Le Espiritu's invitation to examine *militarized violence*; "the raw, brutal, and destructive forces that Western imperial powers unleash on the lands and bodies of racialized peoples across space and time."⁹⁷ U.S. investments in militarism and war have led to violence against the earth at multiple scales; through direct violence with bombs, for example, killing of people and non-human species as collateral damage and through experimentation, and by contributing the most significant amounts of fossil fuel use and carbon dioxide emissions than any country or industry on earth. Warfare and the promise of national security, has given almost unlimited license for militaries and the U.S. military, in particular, to practice dangerous environmental behaviors that have been largely left out of contemporary discussions of the Anthropocene.⁹⁸ When national security as a concept is militarized threats appear magnified.⁹⁹ Security does not have to be militarized.

In *Militarizing the Environment*, Robert Marsec argues the environment continues to be made "viable in terms of its ability to yield energy, and this energy must be guarded as a matter of

⁹⁶ Davis, Sasha. *The Empires' Edge: Militarization, Resistance, and Transcending Hegemony in the Pacific*. Athens: U of Georgia., 2015. Print.

⁹⁷ Espiritu, Yen Le. *Body Counts - the Vietnam War and Militarized Refugees*. N.p.: U Of California, 2014. Print.

⁹⁸ Grove, Jairus Victor. *Savage Ecology: War and Geopolitics at the End of the World*. Durham: Duke UP, 2019. 12. Print.

⁹⁹ Enloe, Cynthia H. *Globalization and Militarism: Feminists Make the Link*. Lanham: Rowman & Littlefield, 2016. Print.

national security” in this new era of climate change.¹⁰⁰ Carefully untangling how empire transforms through militarism and mobilizes through discourses of nature is important for the study of history and U.S. imperialism. The global network of U.S. military bases constructs a new form of empire from the forms already intact, especially as bases shift their objectives from serving primarily as defensive to offensive, to “just in case” politics and strategies.¹⁰¹

With more frequent natural disasters, the role of disaster relief in the justification for military involvement in humanitarian operations and making claims to “protect”/occupy/expand on islands in the name of national security/aid will materialize as never before. Achille Mbembe argues, “contemporary wars belong to a new moment and can hardly be understood through earlier theories of ‘contractual violence’ or typologies of ‘just’ or ‘unjust wars.’”¹⁰² These interventions increasingly conflate war and natural disaster as humanitarian crisis points to be managed by intervention, “a form of naturalization of depoliticization of war.”¹⁰³ Mbembe points to opportunities for rationalized intervention materialized through natural disaster emergencies. This conflation of disaster relief and military power is *disaster militarism*.¹⁰⁴

Pacific islands bare a disproportionate burden and risk with disaster militarism. The stakes are heightened for Pacific islands, especially Guam, the Marshall Islands, and Hawaii, because of their political status (unincorporated territory/colony, Compact of Free Association with the U.S.,

¹⁰⁰ Marzec, Robert P. *Militarizing the Environment: Climate Change and the Security State*. Minneapolis: U of Minnesota, 2015. Print.

¹⁰¹ Building from U.S. President George Bush’s 2005 push to prioritize the Asia-Pacific region, President Barack Obama’s “Pacific Pivot” beginning in 2011, and with President Donald Trump’s Indo-Pacific Strategy formalized in 2018, U.S. Pacific Military operations have continually repositioned itself as investing additional funding, forces, amphibious ships, and personnel to enhance its presence in region. As a national security and economic strategy to counter the expansion of global powers staking claim to “uncharted” and contested territories such as the South China Sea, this military strategic vision requires a commitment to a secure continental United States at the expense of an uncertain and unsecure Pacific, with rhetoric of defensive necessity while playing down the offensive nature of the “pivot.”

¹⁰² Mbembe, A. "Necropolitics." *Public Culture* 15.1 (2003): 11-40. Print.

¹⁰³ Ibid.

¹⁰⁴ Eastwood, James. "Rethinking Militarism as Ideology: The Critique of Violence after Security." *Security Dialogue* 49.1-2 (2018): 44-56. Print.

and a stolen U.S. state) creates the conditions where their islands are and will continue to be used as strategic hubs, stopover points, stepping stones, relief and recovery destinations, decontamination zones, and humanitarian housing.¹⁰⁵ Climate change will also create opportunities for the military to justify intervention in foreign places and especially islands under their control in order to “protect” or “aid” those spaces.¹⁰⁶ Robert Marzec importantly argues how militarized national security creates the conditions for the environment to become the enemy in the context of climate change:

The security society uses the event of climate change to shackle any and all human relations with nature to the ‘security buildup’ of adaptive arms against an enemy that cannot be trusted, an enemy that is everywhere (in the atmosphere, in the seas, etc.)...In the case of climate change, the enemy is both other nations (that pose a threat to energy security, food, and water resources etc.) and the environment itself (now replete with greenhouse gases). In this sense, environmentality names an age when the very substance of existence itself- a planetary environment filled with methane and carbon dioxide.¹⁰⁷

The military industrial complex is preserving and transforming the U.S. empire through military expansion and environmental policy that challenges Indigenous rights to land and water. Throughout this dissertation, I show that the environment has always been a victim in warfare¹⁰⁸ , but with the Anthropocene emerged a new kind of environmental warfare. Today’s climate narratives are strikingly similar in nature to environmental narratives that underpinned imperialist and authoritarian interventions against local populations.¹⁰⁹ This perspective is vital in connecting

¹⁰⁵ Dian Million says, “human rights and indigenism as a collective and political identity are closely aligned...Humanitarian campaigns performing within the sites of multiple forces and agendas are never neutral (Million 9).

¹⁰⁶ Million, Dian. *Therapeutic Nations: Healing in an Age of Indigenous Human Rights*. Tucson: U of Arizona, 2014. Print.

¹⁰⁷ Marzec, Robert P. *Militarizing the Environment: Climate Change and the Security State*. Minneapolis: U of Minnesota, 2015. Print.

¹⁰⁸ Lanier-Graham, Susan D. *The Ecology of War: Environmental Impacts of Weaponry and Warfare*. New York: Walker, 1993. Print.

¹⁰⁹ Selby, Jan, and Clemens Hoffmann. "Water Scarcity, Conflict, and Migration: A Comparative Analysis and Reappraisal." *Environment and Planning C: Government and Policy* 30.6 (2017): 997-1014. Print.

ongoing dialogue about nuclear and environmental justice happening on Guam and the Marshall Islands to global discussions on climate change planning. “As governments gradually orchestrate their modes of governmentality toward ecological issues of crises, these tactics begin to reveal their intimate associations with military formations of production.”¹¹⁰

At the same time, these strategic visions are being implemented; the Pacific is facing epistemological threats because of changing environment and climate conditions that the U.S. military is also responding by incorporating climate change into its planning. Robert Marzec offers an account of Pacific ‘climate change war games’ that illustrates the buildup of a combat-oriented approach, one launched from understandings of a human-nature divide. Marzec shows that the combat approach threatens to supplant ideas of sustainability with demands for adaptation. Adaptation is important, but so is radically changing our human and institutional behavior to prevent peoples from being displaced from their homelands.

Another critical component of this conversation pivots around how the ocean also drives climate and our weather and thus creates different patterns of movement. Knowledge about oceanic migration is urgent as climate change promises to displace millions globally. Examining Pacific climate justice through wastelands produces questions such as why were places like Guam and the Marshall Islands targeted for military experimentation and violence in the first place? Why are some of the world’s first “climate refugees” coming from these Pacific islands? I argue the consequences of testing nature’s limits to replenish itself are leading to diverse forms of community relocation. I am intentional not to center narratives about refugees from the perspective of government or non-governmental organizations (NGOs), as those perspectives of refugees as

¹¹⁰ Marzec, Robert P. *Militarizing the Environment: Climate Change and the Security State*. Minneapolis: U of Minnesota, 2015. Print.

objects of study, victims in need of rescue, are already prevalent. Instead, I focus on Pacific critiques to the climate refugee label over concerns the refugee framing asserts an islandless future.

While important work has been written on the impacts of militarism on communities, this dissertation pivots to center the ways Indigenous activism impacts military operations, forcing them to change plans, select other areas, pause their developments and other forms of disruptions as a method of resistance and life-making. I build from scholars studying Indigenous activism as it relates to the environment and climate change^{111 112 113} and Pacific Indigenous activists producing their own scholarship and literature about the work they do.^{114 115 116 117}

I build on the literature of Indigenous activism to understand how narratives, representations, and their materialities are fundamental to our understanding of climate justice in the Pacific context. I use *strategic participation*, a methodology I define that starts with Indigenous life *first* as a decolonizing force, rather than critical theory around the empire, because a warming planet is not an abstract theory for low-lying islands. *Islands and Oceans* and *Military Power and Popular Protest: The U.S. Navy in Vieques, Puerto Rico* trace how Pacific and island activism challenge military desire, security interests, and naval hegemony.¹¹⁸

¹¹¹ Davis, Sasha. *Islands and Oceans: Reimagining Sovereignty and Social Change*. Athens: U of Georgia, 2020. Print.

¹¹² Streeby, Shelley. *Imagining the Future of Climate Change: World-making through Science Fiction and Activism*. Oakland: U of California, 2018. Print.

¹¹³ Aguirre, Adalberto, and Shoon Lio. "Spaces of Mobilization: The Asian American/Pacific Islander Struggle for Social Justice." *Asian American and Pacific Islander Population Struggles for Social Justice*. San Francisco, CA: Social Justice, 2008. 1-17. Print.

¹¹⁴ Pacific Media Centre PMC Newsdesk The Pacific Media Centre - TE AMOKURA - at AUT University Has a Strategic Focus on Māori. "Julian Aguon: 'We Cannot Footnote Our Way to Freedom'." *Julian Aguon: 'We Cannot Footnote Our Way to Freedom' | Pacific Media Centre*. N.p., 18 June 2018. Web. 13 Aug. 2020.

¹¹⁵ Bevacqua, Michael Lujan. "Guam: Protests at the Tip of America's Spear." *South Atlantic Quarterly* 116.1 (2017): 174-83. Print.

¹¹⁶ Na'Puti, Tiara R., and Michael Lujan Bevacqua. "Militarization and Resistance from Guåhan: Protecting and Defending Pâgat." *American Quarterly* 67.3 (2015): 837-58. Print.

¹¹⁷ Kuper, Kenneth Gofigan. "Myopic View Doesn't Undermine CHamoru Self-determination." *Pacific Daily News*. Pacific Daily News, 10 Aug. 2019. Web. 13 Aug. 2020.

¹¹⁸ McCaffrey, Katherine T. *Military Power and Popular Protest: The U.S. Navy in Vieques, Puerto Rico*. New Brunswick, NJ: Rutgers UP, 2002. Print.

In a similar manner, I center Indigenous actions by examining how Pacific islanders rewrite narratives of environmental impact through a lens of coral and ocean life that pivots on resilience and regeneration across time and space. This project thinks seriously about the connections between coral reefs and displacement by tying ocean space management with climate refugee concerns of the region. This focus builds on existing research in new ways to consider the multiple modalities in which humans and society interact with the environment.

I engage in literature about the use of ocean science and critiques of the way science is produced and utilized. While climate-sensitive decision-making incorporates science, we see in our current moment, how decisions about our planet's future are made through tainted political and economic scaffolding that upholds the conglomeration of wealth and drive for technological progress over systems that maintain sustainability for our ecosystems. In the late 18th century, Swiss naturalist Horace Benedict d'Saussure discovered the greenhouse effect and developed the hypothesis that the atmosphere, like glass or a garden greenhouse, traps the sun's rays and heats the earth.¹¹⁹ While society has come to accept this reality more with the help of extensive media coverage between 2009 - 2020, it is not a recent discovery. In 1955, American physicist Charles Keeling built an observatory for monitoring atmospheric carbon dioxide levels on the summit of Mauna Loa volcano in Hawaii. Every year, Keeling recorded the increase in CO₂ levels until the scientific community began to seriously investigate the climate change theory in the early 1970s.¹²⁰

Science has traditionally had a strong reliance on cartographic representation, demarcating specific environments, and boundaries to study various phenomena. Today we see academics and scientists move to create new maps to demarcate areas in need of conservation and protection, oftentimes without consulting the local communities in the areas that are marked for protection or

¹¹⁹ Argos, Collectif. *Climate Refugees*. Cambridge, MA: MIT, 2010. Print.

¹²⁰ Ibid.

marked for exploitation by default when an area is not marked for protection. This is another process where environments become wastelanded.

Science is, by default, presented in a falsifiable way, it can be proven either right or wrong, and in this way, it is a poor communicator. “Perhaps the most dramatic example of the negative consequence of poor communication between scientists and the public is the issues of climate change, where a variety of factors, not the least of which is a breakdown in the transmission of fundamental climate data to the general public, has contributed to widespread mistrust and misunderstanding of scientists and their research.”¹²¹ In the case of climate change, much of the literature I reviewed played to a simple and linear narrative – that climate change is already here and it is getting worse and there is not much that can be done, a case of doom and gloom. In *Global Change and the Future Ocean: A Grand Challenge for Marine Sciences*, Carlos Duarte wrote that “recent media reports on problems in the ocean so not leave much room for optimism.”¹²² This overly pessimistic framing runs the risk of signaling to the public and policymakers that the ocean is beyond restoration. “Doom and gloom rhetoric tends to signify the immensity, irreversibility, rapidity, and urgency of an environmental issue, often by emphasizing a narrative where present conditions are describes as worse than previous thought and outcomes are projected to coalesce in a final catastrophic end-point beyond the purview of human agency.”¹²³ ¹²⁴ ¹²⁵ Science does not always do a great job of communicating the capacity for resilience when it comes to climate change

¹²¹ Brownell, Sara E, Jordan V Price, and Lawrence Steinman. "Science Communication to the General Public: Why We Need to Teach Undergraduate and Graduate Students This Skill as Part of Their Formal Scientific Training." *Journal of Undergraduate Neuroscience Education : JUNE : A Publication of FUN, Faculty for Undergraduate Neuroscience*. Faculty for Undergraduate Neuroscience, 15 Oct. 2013. Web. 13 Aug. 2020.

¹²² Duarte, Carlos M. "Global Change and the Future Ocean: A Grand Challenge for Marine Sciences." *Frontiers in Marine Science* 1 (2014): n. pag. Print.

¹²³ Brummett, Barry. *Rhetorical Dimensions Of Popular Culture*. Tuscaloosa: Univ of Alabama Pr, 1991. Print.

¹²⁴ Foust, Christina R., and William O'shannon Murphy. "Revealing and Reframing Apocalyptic Tragedy in Global Warming Discourse." *Environmental Communication* 3.2 (2009): 151-67. Print.

¹²⁵ Johns, Lisa N., and Jennifer Jacquet. "Doom and Gloom versus Optimism: An Assessment of Ocean-related U.S. Science Journalism (2001-2015)." *Global Environmental Change* 50 (2018): 142-48. Print.

and coral reefs in particular. Interdisciplinary collaboration could bring much-needed tools for improving effective science communication.¹²⁶

There is some science emerging that takes up a more complicated and non-linear narrative – that climate change is here, but that things can change, recover, get bad again, we adapt and recover again. This complexity and non-linearity is the hope that we need to communicate alongside the power of human storytelling. In the remaining chapters, I will explore how Pacific island methods of storytelling are more straight forward than most science sources and can motivate behavior change through emotion that science alone cannot. We can use stories instead or alongside graphs, and we can use pictures alongside statistics. Storytelling is also more accessible to the broader public than climate or ocean science and can be told in a community's own language. It can provide insight into how natural systems have behaved and worked overtime.

There is emerging research interested in the differences and capacity of deep-water versus shallow-water reefs to withstand the temperature functions and impacts from storms, serving as a deep water refuge for marine organisms to escape significant damage. Recent efforts by the Scripps Institute of Oceanography in San Diego have studied the hope for coral reefs to regenerate. Ecologists, biologists, and computer engineers with the 100 Island Challenge are collecting coral reef data from 100 tropical islands to gain a holistic understanding of how reefs are adapting to our rapidly changing planet and to decipher what the future holds.¹²⁷ ¹²⁸Their efforts offer an oceanography approach to describe the current state of coral reefs and contribute insights into how and why reefs are changing over time. Since many coral reefs are found in developing countries

¹²⁶ Sciences, National Academy of Science Communication: *Inspiring Novel Collaborations and*. S.l.: National Academies, 2018. Print.

¹²⁷ Smith, Jennifer E., Rusty Brainard, Amanda Carter, Saray Grillo, Clinton Edwards, Jill Harris, Levi Lewis, David Obura, Forest Rohwer, Enric Sala, Peter S. Vroom, and Stuart Sandin. "Re-evaluating the Health of Coral Reef Communities: Baselines and Evidence for Human Impacts across the Central Pacific." *Proceedings of the Royal Society B: Biological Sciences* 283.1822 (2016): n. pag. Print.

¹²⁸ See www.100islandchallenge.org

and small islands, these countries could benefit from international funding to set up marine protected areas, and coral restoration programs linking to research institutes. Compared to research that focuses solely on degradation and causes of mortality, this line of inquiry highlights a difference in centering the agency on the part of coral reefs that often gets overlooked.

However, just because corals do not ‘dominate’ a habitat does not mean that it is not ‘healthy.’ Scientists suggest “new definitions of reef health based upon reef-building capacity: it is not just the reef state at any given point in time but the trajectory or change overtime that will ultimately determine reef health and resilience.”¹²⁹ This science perspective challenges the narrative of coral reefs from one solely focused on coral degradation, to one focused on resilience. It identifies the potential capacity for coral reefs to recover and rebuild. This frame of resilience forefronts critical dialogue to recognize nature's capacity for regeneration under the right circumstances, and if given enough time to heal and regrow. Coral can do amazing things to heal from trauma if given reasonable temperatures and minimal human disturbance.

We need more creative methods to integrate climate and environmental science with human communication and storytelling to be effective and culturally sensitive. The current climate crises have brought into view the interest and intersections of our collective future on Earth. These realities call for a different approach to communicating the issues. The current political climate has prompted a challenge for academics and experts to communicate science and optimism accompanied by deep sustainability in more accessible formats to be understood by everyday

¹²⁹ Smith, Jennifer E., Rusty Brainard, Amanda Carter, Saray Grillo, Clinton Edwards, Jill Harris, Levi Lewis, David Obura, Forest Rohwer, Enric Sala, Peter S. Vroom, and Stuart Sandin. "Re-evaluating the Health of Coral Reef Communities: Baselines and Evidence for Human Impacts across the Central Pacific." *Proceedings of the Royal Society B: Biological Sciences* 283.1822 (2016): n. pag. Print.

people. This research is a response to that challenge. I write from a Pacific islander perspective on climate justice as an ethical and decolonizing act.

My investigation builds off a critical reading of Indigenous Pacific island critiques to environmental impact statements (EIS). An EIS is a document that has been required by United States federal environmental law since the 1969 National Environmental Policy Act (NEPA).¹³⁰ The goal of an EIS is to make an assessment of any significant impact on the environment available to the public and federal agencies to support informed decision making. Environmental assessments, in any shape, are important sites for the study of the intersections of culture, ecology, law, society, class, history, nation, race, empire, gender, ideology, and urban planning. EIS attempts to present a comprehensive overview of all necessary conflict solutions during the project's construction and subsequent use. I use EIS as an object of ethnographic inquiry within my ethnographic research process. My ethnographic fieldwork and digital ethnographic work focus on the ways Pacific islanders deal with environmental impact and how EIS is an integral part of U.S. environmental management policy. Because the notion of "impact" encapsulates the point-of-view of a particular group on its environment explicitly,¹³¹ I argue the decision-making process associated with them needs examining because it formalizes power relationships regarding sustainability and transforms ideas about nature and changes the physical environment. EIS is a starting point to examine changing relationships between human societies and nature. This frame offers epistemological and methodological possibilities for redefining how empire operates through climate issues and "green" development in the Pacific region.

¹³⁰ EIS should also include an alternative plan to the one centrally proposed in the assessment. Some states like California also have additional environmental assessments such as the California Impact Report (CIR) that must be completed and submitted to the state.

¹³¹ Mazé, Camille, Jennifer Coston-Guarini, Anatole Danto, Adrien Lambrechts, and Olivier Ragueneau. "Dealing with Impact. An Interdisciplinary, Multi-site Ethnography of Environmental Impact Assessment in the Coastal Zone." *Natures Sciences Sociétés* 26.3 (2018): 328-37. Print.

I employ digital ethnography in chapters two and four by examining online descriptions and records and digital archives of climate activism (blogs, social media, and online videos). Chapter three cites evidence gathered from fieldwork while working for four weeks with Independent Guahan and with the Center for Island Sustainability on Guam in July 2018 and fieldwork on Guam conducted over four-weeks in January 2020. I employ *patchwork ethnography*,¹³² which refers to ethnographic processes and protocols designed around short-term field visits using fragmentary yet rigorous data... and research efforts that maintain the long-term commitments, contextual knowledge, and slow thinking that characterize so-called traditional fieldwork. Patchwork offers a rethinking of fieldwork as a process that requires long-term stints and relocation to another space. It acknowledges the ways ethnographic practices are being reshaped by researchers' own lives and our own multiple professional and personal commitments and constraints; family obligations, class considerations, poverty, and first-generation scholars who cannot afford to travel for fieldwork, and now COVID-19 has made in-person fieldwork difficult, if not in possible. Patchwork ethnography attends to how we innovate methods in the face of challenges.

This dissertation emphasizes Pacific environmental policies because it is through colonial and military environmental policies that indigenous peoples have been disenfranchised and framed as incapable stewards of their ancestral environments, and it is also through such policies that long-term protections can be instituted, reformulated, and eliminated. Environmental impact assessments have been a key site in environmental justice struggles. In many ways, Pacific islanders use speculative design to assert Indigenous futures and sustainable environmental planning into policymaking. Speculative design is a design method to address major problems in

¹³² Gökçe Günel, Saiba Varma. "A Manifesto for Patchwork Ethnography." *Society for Cultural Anthropology*. N.p., 2020. Web. 13 Aug. 2020.

society by speculating scenarios possible in the future to create creative solutions. Through critiques to environmental assessments that portray development and military activities as causing no harm, or no long term consequences, or no major disruptions to the environment, they move beyond single issues and expand the scope of possible impact such activities can have on environmental and human systems. While the military may cite a “small” destruction zone here, and cutting off access to a “small” area of the forest there, they look at the big picture of what these incremental changes mean to the environment and community as a whole and in the long-term. Speculative design thrives off of imagination and dreaming of futures that meet our needs and have the potential to remedy problems in the present. Pacific climate activism prototypes the future by arguing for a future that is equitable, sustainable, and a future where their islands are protected on their terms.

This dissertation is written for Pacific islanders, to demonstrate their tenacious resilience and creative engagement with the legal and colonial structures that set out to tame and subdue. I show how they navigate colonial policies to their advantage and for the benefit of their culture and communities. It is my hope that by writing with, to, and for, Pacific islanders, the lessons learned will be generative to other communities and inspire new modes of being with each other and advocating for the environment.

At this moment, I urge us to reconsider how society frames the management of, and interactions with, the natural world and non-human life. In order to understand the origins and meanings of Pacific environmental struggles, I argue it is urgent we read Pacific actors as theorists that give us language to understand our current historical moment where global concern is mounting about dispersal and displacement. If we do so, we can read catastrophic environmental warnings as opportunities where we can renew our relationship to the ocean and coral reefs.

It is important to understand how the stakes both change and remain similar depending on the elevation, topography, and geology in the different island scenarios. I am careful about centering the details of the environment as influential in island affairs because our environment dictates our lives. We must be attentive to how different scales of environmental change have intersected and exponential impacts. This is an example of employing a Pacific island perspective, one that values the significance of the environment and all its nuances, never prioritizing human life over the non-human, and embracing the value that multi-species perspectives bring to our world and academic work.

Through a methodology of the everyday - listening to what community members said, observing their actions and placing them within the larger historical and geographical context, I bring new insight into climate concerns and Pacific island mobilization in Oceania. Individuals and organizations increase power when they come together to achieve the same goal. Throughout my chapters, I analyze grassroots organizing as a method of advocacy and a source of everyday evidence, driven by common people, as opposed to formal leadership, in a political party, group or organization. I employ critical ethnography, environmental data analysis, conversations with Pacific island leaders, community members, stakeholders, and activists as evidence. Based on a study of community, government, military, and every day re(actions), documents, meetings, and activities that cite reference, or name coral reefs in claims for Pacific justice of many forms, I argue their actions involving coral reefs are political and decolonial.

Coral reef as a method is used to historize, conceptualize and theorize coral reef change, related advocacy and action on behalf of coral reefs as an ethical, political, and social justice issue with direct consequences that greatly impact our planetary functioning.¹³³ Coral as a lens, helps us

¹³³ I define advocacy as a process by an individual or group which aims to influence public-policy and resource allocation decisions within political, economic, social systems and institutions.

see non-human life and impacts in a new light and retell familiar stories that center interspecies relations. As a method, it looks to resilience and regeneration to evaluate things - systems, approaches, discourse, framing, policies, funding. In this way, it is a tool for analyzing data and evidence. I use coral and its characteristics (potential to regenerate and be resilient, to span across time and space) to focus not just on protection but restoration, and as a tool to analyze evidence.

To do this work, I historicize and contextualize diverse forms of coral reef data and narratives to tell alternative stories about coral relationships, disruptions, intrusions, and resilience. What does it mean to be connected by coral? For this purpose, I strategically gather evidence from Indigenous environmental justice actions to underscore unexamined dimensions of climate change grounded in hope, relationships, regeneration, and collaboration.

As the stakes of climate change are heightened for Indigenous communities living on Pacific islands, many articulate critiques of their environmental conditions, and refuse their projected realities, through charged responses that engage ocean and coral focused language. I examine these articulations found in everyday acts and cultural forms circulated through the internet. I argue the digital forms of culture, critique, and activism emerging from the Pacific are rich sites of analysis and powerful tools of creativity and resistance that bridges physical space and demonstrates an interconnected and collaborative Oceania.

I selected island-centric examples as entry points because they illuminate the nexus of ecological challenges, displacement concerns, and indigenous traditional knowledge and rights that warrant urgent investigation. Indigenous Pacific island peoples have produced global repertoires of literature and action embedded with ecological insight. As Candace Fujikane explains, our connection through ocean interweaves our struggles. “Those of us who live in Asia and the Pacific are connected by ocean currents and thus have a responsibility to build on each

other's struggles."¹³⁴ To honor this responsibility, I demonstrate how displacement happens differently in Guam and the Marshall Islands compared to give specificity and nuance to their unique experiences and shared struggles. Further, I juxtapose The Marshall Islands, discursively marked as *drowning/disappearing* and labeled the first "climate refugees," with Guam, increasingly targeted for military *buildup* and protected for its significance to U.S. national security strategy and potential host for new waves of displaced "climate refugees." The study of PNG's deep sea resources are a rich site of analysis to understand how narratives and perceptions about the ocean translate to treatment of the deep ocean. I contribute a relational analysis with these sites to show how these island groups and seascapes are related but not equivalent.

I selected coral reef as an organizing optic to study how their different relationships to coral is significant for their environmental and climate justice struggles. These three sites, Guam, the Marshall Islands, and PNG have been selected because (i) they are all subject to tensions between climate change, conservation, and exploitation; (ii) they refer to different situations in terms of colonialism, militarism and extractive industries; (iii) they display diverse strategies for managing environmental impact and "testing" zones; (iv) their communities have different modes of interaction with nature and strong attachment to an oceanic identity inherited from long traditions of place-based and ancestral ties to their environments; (v) their coral reefs are uniquely targeted and vulnerable to human-induced stress.

I frame Pacific communities as the center rather than the periphery. This adjustment positions the future of Pacific islands and their peoples as critical to the health and wellbeing of the world. This method counters popular rhetoric about Pacific islands as testing grounds, places far away, small, and disconnected, and as figures of the past, barbaric and backward. This research

¹³⁴ Quoted in Na'Puti, Tiara R., and Michael Lujan Bevacqua. "Militarization and Resistance from Guåhan: Protecting and Defending Pâgat." *American Quarterly* 67.3 (2015): 837-58. Print.

approached Pacific islanders as leaders and innovators in environmental stewardship and looks to their culture, identities, and environmental practices as sources of active worldmaking and future building.

Ultimately, the challenges of climate justice and Pacific island struggles for Indigenous rights to land and life are thoroughly interconnected with issues regarding ocean. To attend to the place-based, ocean-centric, concerns of island communities, we must shift our gaze from a land-centric lens to one that takes the tensions and disagreements over understandings of ocean and environment seriously. This view of Oceania connotes something so vast it compels a drastic review of existing perspectives and policies of the Pacific region by imagining our relationship to inhabitants of the sea. From a Pacific island perspective, non-human species, including coral reefs are an extension of kinship and the ocean is more than a resource in the western sense.

While I draw disproportionately from examples in the Pacific, the analyses put forth are relevant to environmental justice and decolonization struggles worldwide because of the underlying critiques to systems and structures of power that (re)produce inequalities and disproportionate damage to targeted communities. Joanne Barker reminds us to look to our natural world to understand power relations better: “In most traditional Indigenous conceptions, nature and the natural order are the basic referents for thinking about power, justice, and social relations.”¹³⁵ I build from this sentiment and look to coral for insight into how power operates through the environment in the Pacific.

Each chapter centers coral reefs in unique ways and offers coral as both a model and method to better understand climate justice and Pacific island resilience. The chapters explore

¹³⁵ Barker, Joanne. *Sovereignty Matters: Locations of Contestation and Possibility in Indigenous Struggles for Self-determination*. Lincoln: U of Nebraska, 2005. Print.

varied elements of coral reef life worlds and its relation to the respective islands, such as low-lying versus higher elevation islands, submerged lands and deep water reefs, the particularities of topography, economic and tourism impacts, coral bleaching, regeneration, dredging and violence, and native justice organizing that pivots on coral reef health. The following chapters will examine Pacific island climate justice activism and actions to protect ocean and coral ecosystems alongside fighting for the protection of Indigenous rights, sovereignty, and healthy futures.

Chapter one examines what it means to be connected by coral. By starting with coral reef *first* through an Oceanic frame, we can understand and navigate between different types of Pacific passages, movements, and possibilities grounded more seriously in ocean ecosystems. This chapter demonstrates how coral reefs offer an alternative way to narrate stories of climate change and looks to climate justice activism that mobilizes ocean and coral reef as an organizing optic.

Chapter two shows how patterns of targeting Indigenous Pacific island communities have led to the targeting of Marshall Island coral atolls in unique ways, specific to their low-lying elevation and layout of their reefs. This chapter argues island topography and elevation matter in the colonial spatialization of Indigenous lands and bodies as proven through nuclear experimentation and intentional contamination. The low-lying nature of the Marshall Islands coral atolls continues to matter through climate change impacts in Indigenous island spaces that are heavily settler militarized. I ground the chapter in the poetry of Marshallese ecopoet Kathy Jitnil-Kijiner as an entry point to discuss Pacific and coral resilience, climate migration, climate activism, and Marshallese youth climate leadership. This chapter departs from concerns of Marshallese climate activists to chart their response first, and then, trace back their concerns which illuminate other issues.

In chapter three, I analyze what happens when marine life is evaluated “at risk” or not in different environmental impact assessments on Guam. I examine the coral reef specific concerns related to Guam as a higher elevation island with its ancient fossilized reefs, limestone forests, all under siege by the military. In Guam, communities are fighting the continual displacement of indigenous peoples from ancestral lands. I examine how these environmental injustices can all be tied to the lack of political leverage Guam experiences as an unincorporated territory or colony, of the U.S. I analyze how discourses of nature have been deployed to enforce military control of Guam’s natural resources. I center Chamoru critiques to such conditions through legal challenges to environmental impact statements, public demonstrations, and collaborative climate justice activism.

One of the most resonant sites for an Oceanic critique is the Pacific sea-floor. Chapter four considers how climate justice works when applied to concerns over submerged lands, the deep sea, and the sea-floor. I center concerns over deep-sea mining (DSM) around the South Pacific islands of Papua New Guinea (PNG). Many Papuans are fighting for a 10-year moratorium, or a pause, on activities until an adequate and informed environmental impact assessment is conducted. I see the crux of *decolonizing the future of our ecosystems* as dependent on how DSM legislation incorporates protections for international Indigenous rights and the depth of Indigenous engagement within industry conversations.

Chapter 1: Coral Reefs for Climate Justice: Life Below Water

This chapter demonstrates how the status of ocean, coral reef, and Indigenous rights unfold within international climate debates. I analyze Indigenous responses to climate inaction through their own climate actions that demand immediate and long-term climate justice. I center how Pacific Islanders are leaders in fighting for global Indigenous rights and push for the inclusion of ocean in international climate policy. As well, I explore some of the implications for coral reefs. In the following chapters, I will show through evidence how the status of coral reef health and an island's political status leads to different forms of Pacific activism that cite past and ongoing damage to coral through calls for self-determination, demilitarization, and sovereignty.

Before we dive in, it is important to introduce some terminology related to coral reefs. Coral reefs are colonies of individual animals called *polyps*. The polyps are the animals primarily responsible for building reefs. Shallow water, reef-building coral polyps have tentacles to feed on plankton and host zooxanthellae, symbiotic algae that live within their tissues and give coral its

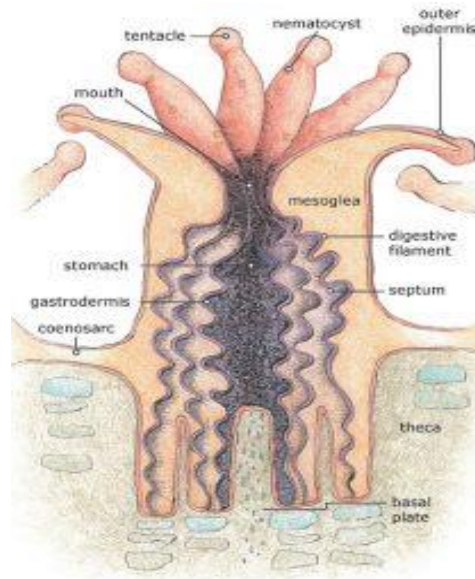


Figure 1.1: Drawing of a coral polyp. Photo courtesy of Miriam Schutter.

vibrant color.¹³⁶ The coral provides CO₂ and waste products that the algae need for photosynthesis and in turn, the algae nourish the coral by producing carbohydrates the coral uses for food along with oxygen.¹³⁷ Since both partners benefit from association, this type of symbiosis is called mutualism.¹³⁸ This mirrors the Indigenous values of relational reciprocity and shared harmony. Then, a fantastic self-protective transformation happens. The coral uses these compounds to synthesize calcium carbonate (limestone) with which it constructs its skeleton – the coral reef. “Reefs can take many forms from large reef-building colonies, graceful flowing fans, and even small, solitary organisms.”¹³⁹ The stony, shallow-water corals known as hermatypic, or hard corals, that build reefs are only one type of coral. There are also soft coral that can resemble plants and trees and deep-sea corals.¹⁴⁰ Deep-sea coral lives in much deeper and colder ocean waters and lack zooxanthellae. Unlike their shallow-water relatives, they do not need photosynthesis to survive. Instead, deep-sea corals take in plankton and organic matter for their energy needs. I discuss special deep-sea coral considerations and the deep ocean environment more in depth in chapter four.

¹³⁶ NOAA National Centers for Environmental Information. "Coral Reef Ecosystems." *Coral Reef Ecosystems / National Oceanic and Atmospheric Administration*. N.p., n.d. Web. 13 Aug. 2020.

¹³⁷ Ibid.

¹³⁸ Ibid.

¹³⁹ Ibid.

¹⁴⁰ US Department of Commerce, National Oceanic and Atmospheric Administration. "What Are Corals? - Corals: NOAA's National Ocean Service Education." *What Are Corals? Corals Tutorial*. N.p., 01 June 2013. Web. 13 Aug. 2020.



Figure 1.2: Photo of table coral common throughout the tropical Pacific. Photo courtesy of Greg McFall/NOAA.

The beautiful reef structures we have come to know are made by hundreds of thousands of living coral polyp animals and their skeletons. “New coral polyps live on the exoskeletons of their ancestors, adding their own exoskeleton to the existing coral structure. As centuries pass the coral reef gradually grows”¹⁴¹ until they become the massive underwater rainforest of the marine environment. An *ecosystem* is a community made of a living organism and their environment. Coral reef ecosystems refer to all the life beaming within and around the reef, including all the fish and marine animals that are attracted to reefs for the shelter and food it provides. Humans are attracted to reefs for similar reasons.

Our oceans are what keeps the world as we know it alive. The ocean’s phytoplankton produces much of our oxygen and absorbs mass amounts of heat and carbon from the atmosphere. Most of the CO₂ we are emitting into our atmosphere through things like irresponsible fossil fuel use, spew into our environments and the ocean absorbs it for us, without us having to do anything. In return, this carbon dioxide warms the ocean and creates carbonic acid, which alters the pH level

¹⁴¹ Ross, Rachel. "What Are Coral Reefs?" *LiveScience*. Purch, 24 Sept. 2018. Web. 13 Aug. 2020.

of the water. The low pH level makes it more difficult for some coral reef to maintain their calcium carbonate structures and can cause it to dissolve and become unstable. Another threat is stress due to temperature increase. When corals overheat the increased heat transforms it into a toxin. They react to this stress by expelling its colorful symbiotic algae which results in coral bleaching and leaves the reef a white color. "Bleaching leaves corals vulnerable to disease, stunts their growth, affects their reproduction, and severe bleaching kills them."¹⁴²

Coral acidification and bleaching are two different threats and are both impacted by anthropogenic CO₂ from global warming. If the coral reef dies, the marine life that depended on them for food and shelter will die off, too. Corals can recover from bleaching before they die but it takes many years of restoring the right temperature conditions before they can heal.

There are many parallels between coral reefs and Pacific life and lessons to be learned from their resilience and capacity to regenerate as well as the interdependence and harmony of animal life within reefs. This ability of an ecosystem to return to a similar ecological state following disturbances and long-term stresses is called resilience.¹⁴³ The study of resilience emerged in ecology which focused on the resilience of ecosystems but the concept of resilience is now applied more broadly in ecology, economics, engineering, law, natural resource management, psychology and sociology to study integrated social-ecological systems.¹⁴⁴

Coral reefs are key in an island's defense by helping protect the shore from waves and storm damage, serving as a natural way to break the waves and lessen the impact to the shore. When coral is not healthy, and the reef is not healthy, the reef does not protect the shore in the

¹⁴² Cho, Renee. "Losing Our Coral Reefs." *State of the Planet*. N.p., 09 Dec. 2019. Web. 13 Aug. 2020.

¹⁴³ National Research Council, The. *An Ecosystem Services Approach to Assessing the Impacts of the Deepwater Horizon Oil Spill in the Gulf of Mexico*. Washington, D.C.: National Academies, 2013. Print.

¹⁴⁴ National Research Council, The. *An Ecosystem Services Approach to Assessing the Impacts of the Deepwater Horizon Oil Spill in the Gulf of Mexico*. Washington, D.C.: National Academies, 2013. Print.

same way and storm surges or gradual increases in sea level has the potential to destabilize the island seascape. Starting in the 1970s, researchers began to study the main causes of coral mortality and the degradation of coral reefs¹⁴⁵ and those studies continue today. Because there are so many different species of reefs, scientists must study the unique conditions of specific reefs (species-specific, location, temperature, local impacts) to understand its mortality and the conditions needed for its regeneration. Combining fossil data, historical records, and underwater survey data, researchers found that some coral health has declined since at least the 1950s from local human impacts like fishing and land clearing that set the stage for widespread coral declines that are now accelerating because of warming and acidifying oceans.¹⁴⁶ The lack of baseline data available prior to the 1970s makes it difficult to determine the precise reasons for coral die off,¹⁴⁷ and this is where generations of local community knowledge can play an important role by sharing with researchers their observations of reef and marine life change over time. There is increasing concern about the progressive degradation of the world's coral reefs as anthropogenic risks combine and interact with other large-scale disturbances.¹⁴⁸

Coral reefs are among the most ancient and diverse ecosystems on earth and serve as stationary archives. They are also important indicators of health for an ecosystem. The health of the reef is intricately tied to the animal and human life that lives within and around it. The diverse water cultures of the Pacific region include everything from freshwater aquifers, to coastal

¹⁴⁵ Arizona State University. "Caribbean Coral Reef Decline Began in 1950s and 1960s from Local Human Activities." *ScienceDaily*. ScienceDaily, 22 Apr. 2020. Web. 13 Aug. 2020.

¹⁴⁶ Cramer, Katie L., Jeremy B. C. Jackson, Mary K. Donovan, Benjamin J. Greenstein, Chelsea A. Korpany, Geoffrey M. Cook, and John M. Pandolfi. "Widespread Loss of Caribbean Acroporid Corals Was Underway before Coral Bleaching and Disease Outbreaks." *Science Advances* 6.17 (2020): n. pag. Print.

¹⁴⁷ Arizona State University. "Caribbean Coral Reef Decline Began in 1950s and 1960s from Local Human Activities." *ScienceDaily*. ScienceDaily, 22 Apr. 2020. Web. 13 Aug. 2020.

¹⁴⁸ De'ath, Glenn, Katharina E. Fabricius, Hugh Sweatman, and Marji Puotinen. "The 27-year Decline of Coral Cover on the Great Barrier Reef and Its Causes." *Proceedings of the National Academy of Sciences* 109.44 (2012): 17995-7999. Print.

ecosystems, to shallow waters and reefs, to deeper waters, the seabed, and all of the life below the ocean's surface. Coral reef life is part of Pacific life and identity. Chamoru and Marshallese Pacific islander communities have developed deep connections to reefs through cultural practices as reefs are a foundational part of their island's topography and geology, from shallow water reefs, to deep water coral, to ancient fossilized reefs that transformed into limestone and now reside at higher elevations. For these reasons, coral reef impacts are experienced more immediately and more intensely by Pacific islanders first, and in ways that are unique to their cultural and everyday relationships to reefs. Many Indigenous communities that live nearby reefs are dependent on reef fish to provide healthy and affordable food for their families. Coastal ecosystems in general, and coral reefs, have proven to be highly vulnerable to a variety of human impacts, most notably when these impacts are combined.¹⁴⁹

The loss of coral reefs compounds the problems of sea level rise and reduces the capacity of communities to interact with coral reef in the ways they have traditionally been accustomed to and are important to their cultural identities. Coral reef concerns are present across Oceania and the ways they impact specific islands is unique to an island's elevation, topography, and geology. Islands experience different risks with coral reef degradation for example, low-lying coral atoll islands are especially more at-risk for sea-level rise thus contributing to risks of relocation, either away from the shore and inland, or at a higher elevation, or depending on the size of the island and available and accessible land to move to, relocation off-island might become necessary.¹⁵⁰ Existing elevation of the island and coral reef matter a great deal when deciding on

¹⁴⁹ See Jackson et al., 2001 www.coralreef.gov/mitigation/atlanticmit.pdf

¹⁵⁰ Storlazzi, Curt D., Stephen B. Gingerich, Ap Van Dongeren, Olivia M. Cheriton, Peter W. Swarzenski, Ellen Quataert, Clifford I. Voss, Donald W. Field, Hariharasubramanian Annamalai, Greg A. Piniak, and Robert Mccall. "Most Atolls Will Be Uninhabitable by the Mid-21st Century Because of Sea-level Rise Exacerbating Wave-driven Flooding." *Science Advances* 4.4 (2018): n. pag. Print.

potential mitigation efforts to address sea level rise and coral reef health. Studies found that increased flooding due to sea level rise will render many reef islands uninhabitable in the next few decades.¹⁵¹



Figure 1.3: Photo of American Samoa coral reefs. Left side taken in December 2014 and right side taken months later in 2015. Photo courtesy of Mongabay News.

It is critical that decision makers be attentive to the diverse concerns for coral reef emerging from Pacific Islands that illuminate important community, climate, and ocean science considerations for environmental and climate policy as well as development activities. One size fits all strategies will not work for every island as islands vary in terms of culture, language, identity, elevation, sovereignty, history, coral reef species, and coral reef health status. As I explain in more detail in chapters two, three, and four, I argue it is important to understand such coral threats holistically with other reef vulnerabilities such as pollution, sedimentation, mining, and dredging.

Human induced damage and vulnerability to coral reef can be conceptualized as an “invisible” form of invasion and mode of assault in a long history of colonialism for native

¹⁵¹ Masselink, Gerd, Eddie Beetham, and Paul Kench. "Coral Reef Islands Can Accrete Vertically in Response to Sea Level Rise." *Science Advances* 6.24 (2020): n. pag. Print.

people.¹⁵² Coral reef degraded health¹⁵³ ¹⁵⁴ is often cited as proof that Pacific islands are disappearing and beyond repair.¹⁵⁵ ¹⁵⁶ ¹⁵⁷ Coral reef bleaching as a symbol of climate crisis has permeated through popular media, visually representing the underwater consequences of a warming earth that are invisible to a layperson. Coral changes are a key issue that most non-scientists cannot “see” and visual representations of life underwater play an important role in influencing how humans imagine coral reefs. Invisibility is under-theorized in the literature on coral reef ecosystems. Frequently used are images of white bleached reefs, and before and after photographs of healthy reefs before bleaching juxtaposed with the same location after it bleached.¹⁵⁸ Above is an often-cited photo from the reefs of American Samoa, the before taken in December 2014 and the after taken just three months later. Photographs and videos of our underwater world are important communication tools to convey the impacts coral are experiencing from a warming and acidifying ocean. Visualizations of reefs threats are important and visualizations about reef resilience are just as important.

Showing striking visuals of bleached and unbleached reefs can be productive at soliciting a shock reaction but less effective, perhaps at creating real change. Non-contextualized images of bleaching paired with “drowning islands” headlines run the risk of uncritically perpetuating the “disappearing islands” and “dangerous ocean” narratives. Creating more comprehensive and

¹⁵² Abate, Randall S., and Elizabeth Ann Kronk. *Climate Change and Indigenous Peoples: The Search for Legal Remedies*. Cheltenham, UK: Edward Elgar, 2013. Print.

¹⁵³ De'ath, G., K. E. Fabricius, H. Sweatman, and M. Puotinen. "The 27-year Decline of Coral Cover on the Great Barrier Reef and Its Causes." *Proceedings of the National Academy of Sciences* 109.44 (2012): 17995-7999. Print.

¹⁵⁴ Burke, Laretta Marie. *Reefs at Risk Revisited*. Washington, D.C.: World Resources Institute, 2012. Print.

¹⁵⁵ Welch, Craig, and Laura Parker. "Coral Reefs Could Be Gone in 30 Years." *National Geographic*. N.p., 23 June 2017. Web. 13 Aug. 2020.

¹⁵⁶ Meyer, Robinson. "The Great Barrier Reef Is Probably Doomed No Matter What." *The Atlantic*. Atlantic Media Company, 15 May 2017. Web. 13 Aug. 2020.

¹⁵⁷ King, Andrew D., David J. Karoly, and Benjamin J. Henley. "Australian Climate Extremes at 1.5 °C and 2 °C of Global Warming." *Nature News*. Nature Publishing Group, 15 May 2017. Web. 13 Aug. 2020.

¹⁵⁸ Horton, Helena. "Great Barrier Reef Is Damaged beyond Repair and Can No Longer Be Saved, Say Scientists." *The Telegraph*. Telegraph Media Group, 29 May 2017. Web. 13 Aug. 2020.

contextualized visualizations and narratives about what impacts reefs and how reefs impact humans can better educate the public on real action needed to support their health.

Coral is also damaged by other forms of pollution from plastics, oil, toxic chemical dumping and other commercial (underwater) extraction activities. Because these environmental ills are not visible to the eye of the majority, the cloak of invisibility that this “out of sight out of mind” behavior produces is catastrophic for our global oceans. It has proven difficult to get people to care and act for environmental concerns they can see, and extremely difficult to propel action and change behavior for issues they cannot see. In many ways, coral bleaching is both invisible and visible. To the average non-diving person changes to coral reefs are a mystery while photographs of coral bleaching signal visibility for climate change consequences. The image of a white coral is a tangible signifier through which climate change can be made visible but the context, intention, and audience matter.

Visual representations guide interpretations of reef health, human behavior, and policies towards reefs. Because environmental data is key to measuring risks, benefits and responses, narratives that complement or challenge environmental data impact responsive environmental policy. Coral reef action strategies are designed and implemented based on the best available scientific data. For answers about the coral “die-off” crises, we usually turn to scientists. Science plays a critical role in how we understand our natural world and it is urgent that Ethnic Studies scholars and scientists work together to link our data and support critical dialogue about environmental research across disciplines.

In our current moment where the president of the U.S., Donald Trump, forcefully denies climate science and directs government funding to mask climate science data, wiping it out and erasing it completely in some situations, the global community must stay on heightened alert to

information coming from high-level and “official” sources with the threat of fake news and fake science. It is also important for knowledge and resource sharing to counter attempts to deny real evidence. We must ask questions, have conversations, and assess everything.

Society has entered a new era of human-induced global planetary change, commonly termed the *Anthropocene*. Chemist Paul Joseph Crutzen, one of the term’s most well-known popularizers, suggested that the geological era began roughly 225 years ago with the advent of the industrial revolution in Western Europe and its concomitant rise of greenhouse gas emissions, mass deforestation, and an ever-expanding range of pollution-generating human activities, while others argue humans have been drivers of environmental change since far earlier. Scholars and scientists still debate whether the term privileges humanity at the expense of other species. Much of the scientific community and geologists dispute the induction of the term “anthropocene” because they argue it does not qualify as a true epoch in the first place.¹⁵⁹ This timescale work is noteworthy for debates over the Anthropocene categorization and pivots on questions about how science should combine with history and politics, and to measure human timescales alongside environmental and planetary systems.

What is the Anthropocene and study of geologic time from a humanistic and cultural perspective? Academic conversations and publications about the concept of the Anthropocene¹⁶⁰

¹⁶¹ gained steam in the 2000’s and grew to be more critical and interdisciplinary in the last ten

¹⁵⁹ In 2018, the International Commission on Stratigraphy (ICS) announced that the current stretch of geologic time, the Holocene Epoch, spanning the last 12,000 years, would be split into three subdivisions without formally recognizing or mentioning the Anthropocene, a move that some geologists say trivialized and slighted the Anthropocene. Stratigraphy is the effort to name and describe rock layers and the ICS is the global governing body that formally associates rock layers with specific stretches of name and officially names geologic eras. According to stratigraphy and the ICS, for an epoch to exist, there must be a clear boundary in the sedimentary rock record where the Anthropocene clearly begins.

¹⁶⁰ Schmitz, Oswald J. *The New Ecology: Rethinking a Science for the Anthropocene*. Princeton ; Oxford: Princeton UP, 2017. Print.

¹⁶¹ Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry* 35.2 (2009): 197-222. Print.

years. While not an epoch, according to stratigraphy, I argue there is a purpose to understanding the Anthropocene as a departure point that recognizes human impact across specific timescales as a new and fundamental driver of planetary change.

Per a 2017 report from the American Psychiatric Association: “Gradual, long-term changes in climate can also surface a number of different emotions, including fear, anger, feelings of powerlessness, or exhaustion.”¹⁶² This “fear of extreme weather” can approach “the level of phobia and the ‘unrelenting day-by-day despair’ that can be experienced during a drought,” as “can watching the slow and seemingly irrevocable impacts of climate change unfold, and worrying about the future for oneself, children, and later generations.”¹⁶³ The APA terms this condition “ecoanxiety.” This condition suggests climate change does not just impact communities through momentary eruptions of ecological crises but causes disruptions and pain through acts of waiting, and feelings of agony and anticipation for the unknown.

Such experiences of an extreme change to environmental conditions are not new for everyone, as indigenous peoples have experienced continual ecosystem and species collapse since the beginning of colonial occupation. While climate change only became conceptualized as a global problem for the majority in the last two decades, as Leanne Betasamosake Simpson has concisely put it, “the uncertain future of ecoanxiety hides a temporal secret. The “new abnormal” isn’t very new at all for most of the communities living on this earth.”¹⁶⁴ In this framing, “anxiety” over anticipated environmental change is a privileged position compared to histories of indigenous communities never experiencing that waiting period, but instead sudden and forceful domination

¹⁶² Whitmore-Williams, Susan C., Christie Manning, Kirra Krygsman, and Meighen Speiser. "Mental Health and Our Changing Climate: Impacts, Implications, and Guidance." *PsycEXTRA Dataset*(2017): n. pag. Print.

¹⁶³ Ibid.

¹⁶⁴ Simpson, Leanne. *Islands of Decolonial Love: Stories & Songs*. N.p.: Arbeiter-Ring Publ., 2016. Print.

and change. Ecoanxiety is a prime example of consequences that cannot easily be addressed or measured.

It is vital for scholars and grassroots organizers to be versed in the science of environmental destruction just as it is important for scientists to understand the interlocking stories behind such destruction. Pacific communities reject colonial “parachute”¹⁶⁵ or “helicopter” science¹⁶⁶, where developed countries’ researchers come to developing countries and leave without any human capacity investment while ignoring local experts and conservation efforts.¹⁶⁷ It is important for scientists to understand the implications of their research on Pacific communities as well as ethical concerns surrounding the methods¹⁶⁸ and audience of their work.¹⁶⁹

Coral is alive and communicates in its own way, and humans are picking up on some of their methods of expression. As Daniel Wildcat argues in *Red Alert*:

Planet Earth, a living being known to many Indigenous peoples today as Mother Earth – is trying to tell us something in her own language... and its time to issue a red alert for those wanting to act, an alert issued from the Earth herself; that she is going through dramatic change, on that threatens her lifeways and those of most of human kind on the planet. A red alert of hope, hopefulness resides in those willing to reconstitute lifeways emergent from a nature-culture nexus...what humankind actually requires is a climate change – a cultural climate change, a change in our thinking and actions.”¹⁷⁰

Following Wildcat’s provocation to listen to messages from nature as guidance for future action I argue we can look to coral reefs as messengers. New research has found that corals also send out

¹⁶⁵ Vos, Asha De. "The Problem of 'Colonial Science'." *Scientific American*. Scientific American, 01 July 2020. Web. 13 Aug. 2020.

¹⁶⁶ Minasny, Budiman, Dian Fiantis, Budi Mulyanto, Yiyi Sulaeman, and Wirastuti Widyatmanti. "Global Soil Science Research Collaboration in the 21st Century: Time to End Helicopter Research." *Geoderma*. Elsevier, 13 May 2020. Web. 13 Aug. 2020.

¹⁶⁷ Arvin, Maile. *Possessing Polynesians: The Science of Settler Colonial Whiteness in Hawai‘i and Oceania*. Durham: Duke UP, 2019. Print.

¹⁶⁸ Datta, Ranjan. "Decolonizing Both Researcher and Research and Its Effectiveness in Indigenous Research." *Research Ethics* 14.2 (2017): 1-24. Print.

¹⁶⁹ Chambers, David Wade, and Richard Gillespie. "Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge." *Osiris* 15 (2000): 221-40. Print.

¹⁷⁰ Wildcat, Daniel R. *Red Alert!: Saving the Planet with Indigenous Knowledge*. Golden, CO: Fulcrum, 2009. 17-20. Print.

"distress" signals when they are in trouble, which serves as a repellent to prospective fish, inciting a vicious cycle of coral decline.¹⁷¹

Building from Pacific coral reef climate justice, I depart from the assertion that coral reefs are knowledge producers so we can understand island ecosystems with more intention and ask questions we would not get to otherwise. Coral reefs are knowledge producers because their health tells scientists how global warming is impacting our oceans and marine life and offers clues to what change is needed for coral regeneration and to reverse course and restore balance to our planet. Communities that live near reefs learn from changes to reef dynamics such as a decrease in reef fish and decreased shoreline protection from waves and storm surges that reefs provide, that communicate climate change is already creating harmful transformations to our ecosystems. I depart from coral as a knowledge producer because it builds from the theoretical interventions offered by Indigenous communities that listen to and work alongside nature as opposed to an approach of humans dominating and controlling nature, one that studies coral as a passive object. Pacific coral reef climate justice asserts coral is alive and an active agent in the story of climate change.

It is well documented that climate change is a planetary phenomenon underway for decades which makes pursuing legal remedies to hold those most responsible for climate change and those committing climate crimes, such as fossil fuel corporations and global militaries, challenging. The negative impacts to our planet from global warming are not accidental but carried out according to a bigger plan of wealth accumulation, occupation, and imperial desire. Such planetary conditions are difficult to trace and quantify, making even more difficult any attempt to assign responsibility and hold entities accountable for their environmental and societal obligations.

¹⁷¹ Coral have their own special ways of communicating and humans have discovered that healthy coral use chemical signals or smells, to attract fish, serving as locating devices in the vast open ocean.

Protecting and seeking justice for coral reefs through coral related litigation is even harder to directly trace and prosecute unless a specific event is well-documented or investigated. This is why climate justice activists articulate care and concern for coral reefs through other language, such as Indigenous rights, recognition of ocean impacts, sovereignty, demilitarization, and other environmental ills that are more visible or documented. They do this work at international levels and also locally, on their islands, with their archipelagos, and across Oceania.

I argue Pacific activists partake in *coral reef climate justice* by working on behalf of coral reefs to protect and seek justice for coral itself, and to motivate human behavior change to lessen impacts to coral from climate change. How are concerns for coral reef articulated by Pacific activists? Since the mid-2000s, there has been an increase in coral reefs as one of the frames and organizing principles in which climate activists push for clean energy and divestment from fossil fuels, in response to grim coral reef forecasts from bleaching, acidification, overfishing, dredging, and land-based pollution to name a few. Much of the climate-related coral reef activism works to bring awareness to coral bleaching, acidification, and the importance of a healthy reef to protect islands from rising seas and storm surges, among a long list of other critical functions coral, serves to regulate the health of our oceans. An example of this was the 2015 action when 100 protestors trespassed on a coal shipping terminal to protest a coal mine expansion¹⁷² they argued would hurt the Great Barrier Reef. Coral reef climate justice builds from environmental and climate justice but is unique to coral ecosystems.

There are initiatives to decolonize science within environmental fields that argue science must confront how settler-colonial systems can continue to operate under the guides of partnership. “Meaningful inclusion within dominant climate science is not merely a matter of increasing

¹⁷² Gertz, Emily J. "Protesters Call for Ending Coal's Threats to Great Barrier Reef." *TakePart*. N.p., 22 June 2015. Web. 13 Aug. 2020.

presence but of reclaiming inclusive Indigenous governance. Such reclaiming decolonizes how climate science is done so that Indigenous peoples can conduct science in ways that further empower their communities.”¹⁷³ Inclusive governance also rebuilds Indigenous peoples’ relationships with one another: person to person, across Native Nations, and with other-than-human entities inhabiting culturally important ecosystems.¹⁷⁴ ¹⁷⁵ The feminist critique of science, “particularly after Chernobyl - has made it eminently clear that all current science and technology is quite fundamentally military science and technology, and not just when it is applied in bombs and rockets.”¹⁷⁶

While visualization is a powerful tool for communicating science and environmental health, in a different way, verbal communication through poetry is a powerful method of human storytelling because it connects to people on an emotional level. Decolonization and behavior change have to start with our thinking. There is immense power in storytelling and as a form of political action, it can change hearts, minds, and conversations. Pacific storytellers held respected positions in Pacific society.¹⁷⁷ To “talk story” in Chamoru culture means to exchange stories and knowledge through conversations and poetry.

Poetry has also served as an important tool of critique and resistance. Pacific “ecopoetry” has circulated across the internet and has inspired Pacific islanders to rise up and stand tall, in response to depictions of islanders sinking and drowning, and to make their voices and stories

¹⁷³ Dhillon, Carla M. "Indigenous Feminisms: Disturbing Colonialism in Environmental Science Partnerships." *Sociology of Race and Ethnicity* (2020): 233264922090860. Print.

¹⁷⁴ Hall, Thomas D., and James V. Fenelon. *Indigenous Peoples and Globalization: Resistance and Revitalization*. London: Routledge, 2009. Print.

¹⁷⁵ Whyte, Kyle. "Indigenous Environmental Movements and the Function of Governance Institutions." *The Oxford Handbook of Environmental Political Theory*. By Teena Gabrielson, Cheryl Ann Hall, John M. Meyer, and David Schlosberg. Oxford, United Kingdom: Oxford UP, 2016. 563-79. Print.

¹⁷⁶ Mies, Maria, and Vandana Shiva. *Ecofeminism*. London: Zed, 2014. Print.

¹⁷⁷ Perez, Teresita Lourdes. *CHamoru Legends: A Gathering of Stories*. N.p.: U of Guam, 2019. Print.

heard when it comes to what a changing climate means to them. Connections to coral reef are interwoven throughout the poetry of Kathy Jetñil-Kijiner who calls the Marshall Islands home, and Craig Santos Perez, a native of Guahan. Their work has served as a model for the impact decolonial and Indigenous-inspired art can have across the Oceania and the world. Their words communicate coral reef life, connections to human life, and coral health concerns in a way science does not do. Their words foster empathy and engagement and are more straight forward and clear than data or a graph. They connect with and inspire peoples from the diaspora to listen, to exchange knowledge, and to use collaborative methods to support a healthy Oceania. In chapters two and three, I examine how their poetry has taken control of language and narratives of Pacific life to offer a very different mode of representation than the earlier photographs of bleached coral. By accessing deep Indigenous knowledge, their poetry serves as a method for climate organizing and community storytelling.

Pacific island epistemologies that center respect, caretaking, and relationships with ocean and coral as central to their identity drive demands for climate action. Pacific climate activists have demonstrated how they choose to respond to global climate inaction with their own climate actions. Pacific island epistemologies are key in understanding responses to high-level inaction on climate change. As Indigenous people privilege subsistence lifeways that live *with* nature, they experience the consequences of climate change and dirty energy first and their activism reflects these inequitable realities.

In 2014 hundreds of South Pacific climate change protestors and 30 self-declared Pacific Climate Warriors across 15 Pacific Islands blocked shipments of coal from Australia's largest port. The Pacific Climate Warriors formed in 2009, a network of young Pacific Islanders began to form under the name of 350 Pacific, to join with the global climate change movement. They have a unique approach of empowering young people to understand the issue of climate change and act as a united Oceania to protect and enrich their islands.¹⁷⁸ They traveled from their home islands to Australia, carrying with them traditional hand-made canoes decorated with symbols of support from their homelands to highlight the effects of burning coal that cause sea-level rise for their islands.



Figure 1.4: Photo of Pacific Climate Warriors. Photo courtesy of 350.org

The islanders organizing strategy launched from the perspective of the canoe opens new questions and political potential for seafaring activism. Chamorro scholar Vincente Diaz argues that seafaring, as practiced in the Pacific, can furnish an analytic and practical way to advance the political and cultural struggles of indigenous peoples in lands heavily-settler-colonized (13). Diaz notes, “the story of survival and revival of traditional seafaring practices can provide an indigenously-ordered, anti-colonial praxis that can simultaneously furnish what we might identify

¹⁷⁸ 350.org. "The Pacific Warrior Journey." *The Pacific Climate Warriors*. N.p., n.d. Web. 13 Aug. 2020.

as an Indigenous oceanic critique of political programs that are centered firmly on nation-state based claims of sovereignty.”¹⁷⁹ Therefore, “grounding” oneself in a canoe, an indigenous commuting technology¹⁸⁰ center “an oceanic culture that survives the generative and transformative histories of colonialism and offers a deep, substantive vantage point with which to map and move the mobile coordinates of indigenous cultural and political consciousness.”¹⁸¹ Working from an understanding that identities are always in flux and *fluid*, how might we tailor our thinking to understand better *flows, currents, tides, floods, and waves* of Pacific resistance?

In 2014, an image of some of the Pacific Warriors standing waist-deep in the water with their hands raised in the air circulated online. The photo served as a powerful counter-narrative to the news headlines at the time that depicted Pacific Islands as drowning helplessly under rising tides. The strong stance of their bodies in the water, standing firm in the waves, not wavering, wearing traditional dress and adornments, coupled with their banner that read “We are not drowning we are fighting,” reclaimed the narrative and the story of their future. As peoples who



Figure 1.5: Photo of Pacific Climate Warriors preparing their canoe. Photo courtesy of 350.org.

¹⁷⁹ Diaz, Vicente. *Simply Chamorro: Telling Tales of Demise and Survival in Guam*. N.p.: U of Hawai'i Center for Pacific Islands Studies, 1994. Print.

¹⁸⁰ Clifford, James. *Returns: Becoming Indigenous in the Twenty-first Century*. Cambridge, MA: Harvard UP, 2013. Print.

¹⁸¹ Diaz, Vicente. *Simply Chamorro: Telling Tales of Demise and Survival in Guam*. N.p.: U of Hawai'i Center for Pacific Islands Studies, 1994. Pg 22. Print.

are most comfortable near the ocean and in the ocean, the image showed them partially covered in water, the very situation the “doom” news stories used to signal the end of islands was near, and they flipped it, by representing themselves in water and in control but not drowning. "We are not willing to drown because of climate change. We are trying to change the narrative from 'we are drowning' to 'we are not drowning, we are fighting,'" said Fijian activist George Nacewa.¹⁸² This delegation of Pacific Climate Warriors also traveled to Canada to build solidarity and protest with Indigenous peoples fighting the Alberta tar sands expansion.

For the Pacific Climate Warriors the destructive nature of pipelines contributes to climate change, which means rising sea levels threatening their communities. Their action argues their climate struggles are linked and geographically unique. They respond to their “doomed” they use activism to make a statement and drive action:

Every morning, we wake up and the ocean is there, surrounding our island. But now the ocean, driven by climate change is creeping ever closer. Unless something changes, many of our Pacific Islands face losing everything to sea level rise. For 20 years we've asked world leaders to take action to stop polluting the atmosphere. We cannot wait longer. Now, warriors of the Pacific are rising peacefully to protect the Pacific Islands from climate change. Our message: We are not drowning. We are fighting.¹⁸³

Their choices about what constitutes an effective climate action are informed by their Pacific Island epistemologies, connection to ocean and to traditional seafaring technologies. They frame their concerns as a united Oceania forever connected to the ocean. They warn, “We have lived in harmony with the ocean for generations. Climate change threatens to destroy that harmony.”¹⁸⁴ Their activism decisions are strategic, well-coordinated and employ Indigenous Futurism to assert their islands in the future and not underwater.

¹⁸² 350.org. "The Pacific Warrior Journey." *The Pacific Climate Warriors*. N.p., n.d. Web. 13 Aug. 2020.

¹⁸³ Ibid.

¹⁸⁴ *Pacific Climate Warriors - Stand Up for the Pacific!* Dir. 350 Pacific. *YouTube*. N.p., 2014. Web.

Because Indigenous people are deeply connected to the earth, they are concerned with climate negotiations that impact the future of our natural world. A compelling example of this perspective at work is the historic kayak on December 6, 2015, when indigenous groups from around the world convened on the Seine River for a collective paddle downstream. This action was organized by the Indigenous Environmental network (IEN) a grassroots organization working for environmental and economic justice. White flags attached to the back of their kayaks and handmade banners draped down from a bridge overhead filled with indigenous people and supporters from North and South America, Pacific islands, the Congo, Indonesia, and more. The action was meant to draw attention to the strong presence of Indigenous Peoples at the 21st United Nations Climate Change Conference of the Parties (COP21) in regard to signing the United Nations Framework Convention on Climate Change.



Figure 1.6: Indigenous groups paddle down the Seine River in climate action demonstration. Photo courtesy of Indigenous Environmental Network.

COP21 was convened to mobilize knowledge from global governments about the challenges of climate change. This was a historic international effort to address climate change. Over 250 Indigenous delegates were present and advocated for the including of Indigenous rights

in the international climate agreement as well as stronger human rights wording in the text. Inside conference rooms, 200 nations including Austria, the European Union, and the United States, were taking part in climate negotiations in Paris, France. During the COP21 process, national governments celebrated and congratulated themselves for coming to a consensus over new international plans for long-term climate management but outside of the negotiations, a different conversation took place.

Despite the vocal presence of Indigenous groups throughout COP21, delegates from Austria, the European Union, Norway, and the United States pushed for the reference “right of Indigenous peoples” to be dropped from the agreement. In the original draft of the 2015 Paris climate accord, recognition of Indigenous rights was included in the would-be legally binding main text in Article 2.2. but moved to the preamble in the final agreement, transforming its significance. Indigenous rights were framed as legally non-binding and purely aspirational when positioned in this way. Semantics in the text point to further watering down of Indigenous rights. For example, “any obligations following the verb “shall” are legally binding, however those following “should” are not. The final agreement says in the preamble that states ‘should’ respect, promote and consider these rights among others in carrying out climate related activities”¹⁸⁵

A blind spot in the climate agenda has been to ensure that Indigenous peoples’ priorities and perspectives are embedded in their countries negotiating positions for COP21. And, the role of Indigenous peoples in preventing land degradation through their stewardship. Climate activists hailed the Paris agreement as a performance of empty promise making, a false solution with “deadly flaws.” This blow to Indigenous peoples’ was not a surprise to many and proved the participating nations political leaders are not truly concerned about real change. Dian Million

¹⁸⁵ ""Annexed:" The Rights of Indigenous Peoples in the UN Climate Change Conference 2015." *Cultural Survival*. N.p., 16 Dec. 2015. Web. 13 Aug. 2020.

reminds us, space wherein indigenous peoples seek protections can never be perceived as a neutral, objective or safe legal space.¹⁸⁶ Indigeneity is never a non-factor. To take advantage of every opportunity to deliver their message in this international platform many Indigenous Peoples dressed in traditional clothing and performed traditional ceremonies during COP21. Hundreds of media cameras flashed to capture images of the Indigenous speakers and performers, yet their rights were still erased in the final agreement. The failure of international climate agreements to acknowledge Indigenous groups violates their rights as sovereign nations and deprives all of us of their knowledge and solutions to address climate change.

The politics surrounding the COP climate negotiations is an important site of analysis. Their demands call attention to the role of Pacific Islanders in the movement of global Indigenous rights. Pacific island leaders have been proactive in raising Indigenous rights concerns, “using scientific arguments related to their special circumstances and claiming that climate change poses an existential threat to them.”¹⁸⁷ The Pacific island region contributes less than 0.03 percent of the world’s total greenhouse gas emissions yet are amongst the most vulnerable to the impacts of climate change. Despite this uneven distribution, Pacific islands are committed to transitioning to low-carbon economy activities that use less fossil fuels to generate energy.

Central to the demands for recognition of indigenous rights before and post COP21 is a call for the protection of water, and Pacific Island delegates and activists pushed for action that recognized climate concerns through the lens of ocean and oceanic priorities. Another point of struggle at COP21 was the fight to include language that referenced “ocean,” which was eventually also added to the nonoperational preamble. The final agreement preamble regarding ocean reads,

¹⁸⁶ Million, Dian. *Therapeutic Nations: Healing in an Age of Indigenous Human Rights*. Tucson: U of Arizona, 2014. Print.

¹⁸⁷ Ourbak, Timothée, and Alexandre K. Magnan. "Correction To: The Paris Agreement and Climate Change Negotiations: Small Islands, Big Players." *Regional Environmental Change* 18.8 (2017): 2209. Print.

“Noting the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of "climate justice" when taking action to address climate change.”¹⁸⁸ This was the only mention of ocean in the Paris agreement. The issues most pressing for Indigenous Pacific islanders were marked only as issues countries should consider when developing nation specific climate policies. Without recognition of the importance of ocean, issues facing coral reefs cannot be engaged. Bolder climate action must be taken to address the underlying causes of coral reef decline and adopt more holistic approaches to safeguarding reefs by focusing on land as well as ocean. Reefs will not disappear if we address the root causes of their decline and global emissions need to be slashed to 45% of 2010 levels by 2030 according to 2019 study.¹⁸⁹ This transformation is not impossible, but it requires real change, real commitments, and real recognition of Indigenous Pacific Island concerns.

At stake in the COP21 debate over recognizing the ocean-specific connections/threats/consequences to climate change was loss and damage. Loss and damage falls under the category of climate finance. Determining loss and damage pivots on developed countries and national governments allocating millions for vulnerable spaces threatened by climate change impacts. Including a standalone provision for loss and damage was a red line on all sides of negotiation that no want wanted to cross. Indigenous peoples’ saw the exclusion of loss and damage as unacceptable and not up for negotiation and major players like the U.S. saw any inclusion of liability as not up for negotiation either. There was no mention of liability and

¹⁸⁸ United Nations, The. "Paris Agreement." *Climate Change and Law Collection* (n.d.): n. pag. Print.

¹⁸⁹ Morrison, Tiffany H., Terry P. Hughes, W. Neil Adger, Katrina Brown, Jon Barnett, and Maria Carmen Lemos. "Save Reefs to Rescue All Ecosystems." *Nature News*. Nature Publishing Group, 18 Sept. 2019. Web. 13 Aug. 2020.

compensation by the developed countries towards the most vulnerable countries who do not contribute to global warming.

If ocean concerns and loss and damage were made legally binding it would have required countries to center ocean relationships to climate change in their responses and put money towards addressing climate crimes against ocean and oceanic communities. Without compensation mechanisms in place to force some countries to provide compensation for large scale fossil fuel use, some Indigenous people are using their power to take legal action against corporate polluters and fossil fuel producers. While the prime minister said “we will not do that (litigation). We will just sing the song louder.”¹⁹⁰ COP21 will continue to animate the discussion of loss and damage for years to come.

Despite these challenges, Indigenous peoples across the world are demonstrating they do not need to rely on the spectacle of COP to create systems and processes that will serve the environment. The work of Indigenous and climate activists happening after and outside of COP21 is even more impactful. What they did achieve, was raising ambition to reduce greenhouse gas emissions to help secure more ambitious long-term temperature goals, bringing more progressive voices to the negotiating table, made climate change a focus of their international diplomacy, and advanced the complex debate on loss and damage.¹⁹¹ We are seeing more and more people demand climate justice and demanding the rights of Indigenous peoples be included in legally binding documents.

In response to exclusion in international climate policy, island nations have staged symbolic events such as underwater cabinet meetings, hunger strikes and more to bring attention

¹⁹⁰ Paul, Stella. "Honour Our Right to Exist, Say Pacific Island Leaders at COP21." *Honour Our Right to Exist, Say Pacific Island Leaders at COP21 | Inter Press Service*. N.p., 2015. Web. 13 Aug. 2020.

¹⁹¹ Ourbak, Timothée, and Alexandre K. Magnan. "Correction To: The Paris Agreement and Climate Change Negotiations: Small Islands, Big Players." *Regional Environmental Change* 18.8 (2017): 2209. Print.

to their plight. They have been very successful in raising awareness of their position in the media and within the UN system. A well-known example is the underwater cabinet meeting held by the government of Maldives in 2009 to highlight the threat of climate change for low-lying nations.¹⁹²

¹⁹³Participants used scuba diving gear and sat at long tables and used hand gestures to communicate. Their action performed the reality of low-lying islands' risks to sea level rise, signaling the immediacy and severity of the threats, and also signaling they will continue to assert their rights and island affairs no matter what conditions they face.



Figure 1.7: Underwater activism demonstration calling attention to death of coral reefs. Photo courtesy of Greenpeace Pacific.

¹⁹² Ourbak, Timothée, and Alexandre K. Magnan. "Correction To: The Paris Agreement and Climate Change Negotiations: Small Islands, Big Players." *Regional Environmental Change* 18.8 (2017): 2209. Print.

¹⁹³ "Maldives Cabinet Makes a Splash." *BBC News*. BBC, 17 Oct. 2009. Web. 13 Aug. 2020.



Figure 1.8: Underwater activist action calling for end to mining reefs. Photo courtesy of Greenpeace Pacific.

The celebratory reflections of COP21 by high-level national governments¹⁹⁴ that they were able to agree on anything at all were perceived as low expectations by Pacific islanders because it still does not help low-lying island communities. The Pacific remains a critical voice in international climate conversations through advocacy initiatives and continue to build on a strong and united Pacific voice. One of the COP21 sessions for small island states was titled “We the Pacific” to synchronize their calls for climate action by building a common diplomatic discourse and influencing strategy.¹⁹⁵ “We have been singing the same song for so many years: reduce carbon emission and global warming, because it threatens our existence...you have a right to live and so do we” said Enele Sosele Sopoaga, the prime minister of Tuvalu during COP21.¹⁹⁶

After COP21, consultations among Indigenous groups have taken place around the world. Pacific Islanders worked with other Indigenous groups to create the energy needed for real climate

¹⁹⁴ Osborne, David. "Obama Has Celebrated the Paris Climate Deal That 'transformed the US'." *The Independent*. Independent Digital News and Media, 13 Dec. 2015. Web. 13 Aug. 2020.

¹⁹⁵ Ourbak, Timothée, and Alexandre K. Magnan. "Correction To: The Paris Agreement and Climate Change Negotiations: Small Islands, Big Players." *Regional Environmental Change* 18.8 (2017): 2209. Print.

¹⁹⁶ Guterres, Antonio. "Remarks during Joint Press Encounter with Prime Minister of Tuvalu Enele Sosene Sopoaga Secretary-General." *United Nations*. United Nations, n.d. Web. 13 Aug. 2020.

action and respect for Indigenous rights that have built the momentum of our current moment. They continue to call for strengthening Indigenous land rights as a critical tool to fight climate change and that the same development that drives climate change is violating people's human rights. In the context of strengthening community forest rights to prevent deforestation, a 2014 report by the World Resources Institute found that strengthening community rights is good for the climate and good for people and is a powerful strategy to address climate change.¹⁹⁷ We can think about preventing deforestation as similarly important to preventing the degradation of coral reefs, our rainforest of the sea. Through this lens, land and ocean rights for Pacific Islanders are powerful strategies for addressing climate change through a Pacific Island epistemology.

Climate policy is an important mechanism for ecological healing and reflects the intersection of the environment and human social systems. The Indigenous rights and ocean recognition demands alert us to why Indigenous rights cut from the Paris agreement concerns us all. The tensions around climate policies emerging from and after COP21 demonstrate how ideas about the environment continue to imagine the Pacific as an empty space in need of rescue (Suzuki 361), which leads to environmental mismanagement and exploitation. COP21 also demonstrated how on the international stage Pacific Islands are postured as a space of experiment, to test how climate impacts play out. And, at the same time, postured as disconnected from the rest of the world, isolated to the point of excess, which legitimizing the logic that they do not deserve meaningful resources for their communities to enhance their capacity to be resilient and thrive. If this dominant narrative was not the case, Indigenous rights and ocean would have been recognized

¹⁹⁷ Stevens, Caleb, Robert Winterbottom, Jenny Springer, and Katie Reytar. *Securing Rights, Combating Climate Change How Strengthening Community Forest Rights Mitigates Climate Change*. N.p.: n.p., 2014. Print.

in the legally binding text. Now, when rights of Indigenous peoples all over the world are being violated by “green projects” (explored in chapter four) in the name of “mitigation” (explored in chapters two and three) bold action must be taken to center Pacific Island epistemologies.

Pacific climate activists articulate concern that only centering scientific forecasts of climate impacts to the region sets up a predictive and dangerous Oceanic future where becoming islandless is an inevitable reality. Popular understandings of scientific research offer a problematic approach to understanding climate change by viewing impacts as isolated experiences. A scientific research study might look to specific changes to an environment, but less research looks holistically at change to multiple natural systems overtime. This is because of the nature of scientific research, funding mechanisms, and scope of projects. Such a lens erases interconnected issues of military colonialism and environmental exploitation that created the conditions of island specific change for some areas over time, and presents a view that is disconnected from other socio-cultural-economic phenomena. Linking science, island history, and island politics is critical. This abstraction can be grounded in a more comprehensive understanding of a place by centering Pacific Island knowledge. A Pacific Island perspective can tell the story of change over time from another lens, and combined with science, more informed and sustainable policy can emerge that prioritizes regeneration and resilience of islands over time.

International climate policy that centered Indigenous Pacific Island epistemologies would greatly impact U.S. military operations. As a major carbon polluter and global force of power, its activities and stance on climate change is relevant to international climate conversations. Further, because the military occupies Indigenous Pacific Island territory and ocean space for its military bases and training, the status of international Indigenous rights and liability for loss and damage impacts its operations.

Since January 2017, at least thirty-five senior officials at the U.S. Department of Defense (DoD) have publicly raised concerns about, and made recommendations to address, the security implications of climate change.¹⁹⁸ Their comments demonstrate how the military strategically incorporates climate science into its planning. My review of these documents found that the majority of concern about climate change is how to build military capacity to threat and climate risk assessment tools. Officials prioritized using government military funding to increase the resilience of their existing military bases from things like extreme weather and sea level rise and how to respond to climate driving uncertainty and conflicts over resources. Their documents reveal climate change related risk to 50% of military infrastructure and they expect that number to increase in coming years.¹⁹⁹ It is clear from their testimonies that the DoD approaches climate change through the lens of its mission.²⁰⁰ Robert McMahon, Assistant Secretary of Defense for Sustainment said on October 16, 2019 that:

Our installations are key platforms for our nation’s defense. They are our power projection platforms and support every mission the DoD Components undertake to defend this nation. Therefore, we must ensure installations and infrastructure are resilient to a wide range of challenges – regardless of the source- to include weather, climate, natural events, disruptions of energy or water supplies, and direct physical or cyber attacks.²⁰¹

The military is working to address climate change which cannot be addressed by traditional power at all. In June 2019 the DoD released its Indo-Pacific Strategy Report which highlighted the negative consequences of climate change, stating “...we believe strongly in respect for a safe, secure, and prosperous, free and open Indo-Pacific that must preserve small states’ sovereignty.”

¹⁹⁸ Femia, Francesco, and Caitlin Werrell. "UPDATE: Chronology of U.S. Military Statements and Actions on Climate Change and Security: Jan 2017- Oct 2019." *The Center for Climate & Security*. N.p., 03 Nov. 2019. Web. 13 Aug. 2020.

¹⁹⁹ Ibid.

²⁰⁰ Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. "Department of Defense Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report." (2018): n. pag. Print.

²⁰¹ Ibid.

In April 2019, the DoD released a guide on climate change adaptation for “Natural Resource Managers” at the DoD. In a memo accompanying the release of the guide, Mahone states: “DoD installations will experience significant impacts from a changing climate which could comprise their capacity to support readiness and undermine DoD’s ability to protect and restore the native ecosystems needed to conduct realistic training and testing activities.”²⁰² These comments highlight how the military is transforming its plans and approaches to the environment and raises troubling questions about what they mean when they say they will “preserve islands sovereignty” when islands like Guam and the Marshall islands experience of faux sovereignty is problematic. What will the military do to other places, other islands, other environments, to “preserve” sovereignty? Preserve whose sovereignty and at what costs? And what does it mean that the DoD’s capacity to “protect and restore native ecosystems needed” for realistic training is uncertain, when the DoD already does not protect or restore ecosystems, but the opposite. It inflicts environmental violence at every scale imaginable. The military is prewriting alibi scripts for future environmental harm and negligence. Their responses illuminate how climate change will drive more language of uncertainty, environmental crisis, and depictions of nature as the enemy and abstract threat. It also demonstrates how the military is using the uncertainty of climate change to proactively posture itself as a humanitarian organization for the world. This posturing sets up the “need” for more military funding and licenses to act as they see fit, when they see fit, to protect national security and protect *everyone* from nature.

Supporting community leadership to address human rights issues, for which climate justice is most clearly one, is a key tenet of climate justice. Supporting community leadership and

²⁰² McMahan, Robert H. "Climate Adaptation for Department of Defense Natural Resources Managers." Letter to Assistant Secretary of the Army and Assistant Secretary of the Navy. 3 June 2019. MS. N.p.

Indigenous rights can increase the capacity of islands to respond to climate impacts themselves and proactively, without the interference of military or other aid that may come with contingencies, like occupation or debt.

What insight can coral reefs provide in this moment? Coral reefs are an important figure, model, and method of the climate justice movement. Coral reef as a methodology starts with questions that center the capacity to regenerate. As an approach, coral importantly looks to understand not only how anthropogenic climate change impacts ocean environments, but how impacts to ocean environments like coral reef affect human society. Coral reef as a method is interdisciplinary and can connect issues of environmental damage and racism through impacts to coral reef, a type of intersectional environmentalism, that makes visible how struggles are always interconnected.

Pacific islanders are leading the way for sustainable development by designing and implementing local natural resource management and resiliency plans to (re)claim their vision of a Pacific future. The cultural forms produced through Indigenous-led social movements signal exciting opportunities for Indigenous island leadership to innovate their futures with capacity building through grassroots organizing. Despite the challenges presented here, subsequent chapters will examine how Pacific climate activists use environmental law as a strategy in other ways, such as fighting for equitable climate policies and collectivizing their experiences to change the narrative of development in the Pacific. The indigenous peoples of the Marshall Islands, Guam, Papua New Guinea, and islands across Oceania continue to lead ambitious strategies for climate action that demand massive change to international climate goals and behaviors because they will not settle for anything less. Their histories and climate justice actions teach us the importance of self-determination in climate change adaptation strategies.

Chapter 2: The Militarization of Coral Reef and the Pacific Island Climate Refugee

This chapter builds from Chapter 1, which demonstrates how coral reefs offer a way to re-tell stories of climate change and serve as a lens to understand the stakes of international climate policy and Indigenous rights debates. There is nothing more reflective of an oceanic critique than one centered through coral reef. Here, I show how patterns of targeting Indigenous Pacific island communities in the Marshall Islands have led to the targeting of coral atolls in unique ways. Marshall Island reefs and coral atolls were targeted based on colonial and racist ideas about the populations living on these islands coupled with military ideas about the strategic use of their islands based on the layout of their reefs and perceived isolation of their islands.

This chapter argues island topography and elevation matter in the colonial spatialization of Indigenous Pacific *islands* and bodies and in the context of climate change. Such lands and bodies are altered through militarization that uses islands and oceans for nuclear experimentation and intentional contamination. I examine how Marshallese sovereignty was offered only through pressuring/tricking/misleading communities to give up parts of their island and health for military bases and testing ground. I discuss implications of this history that has led to present day vulnerabilities from climate change and determined forms of activism that are unique to their cultures, low-lying elevation, political status, and military occupation.

I ground my analysis in the Marshall Islands, the coral atolls of Bikini, Kili and Kwajalein in particular. I depart from concerns of Marshallese climate activists to chart their response first, and then, trace back their concerns which illuminate other issues. Starting with activists' concerns shapes the way I read their engagements as text, evidence, and interventions. The goal of this chapter is to unpack the connections Kathy Jitnil-Kijiner's ecopoetry and many Marshallese activists make between intergenerational military violence to their islands and people, and the

impacts of climate change through the lens of connection to coral reefs. I argue Marshallese activism are examples of *coral reef climate justice*, through their use of coral reefs as a site for indigenous activism, and care for coral reefs, as a form of intervention amid waves of militarization, environmental injustice, and climate change. Through this activist-driven analytical framework it reveals interconnections between concerns, communities, and ecosystems we would not see otherwise.

For the Marshall Islands, healthy reefs serve as protectors, acting as barriers between shoreline communities and rising tides and storm surges. Starting from the premise that healthy reefs are essential and of strategic value for the health of the world's ocean and planet at large, this chapter denaturalizes U.S. military colonialism in the Pacific region. I offer an Ethnic Studies and Pacific Island approach to analyze existing and unfolding power dynamics that inform limitations and opportunities for Marshallese communities in providing local and global climate leadership.

In 2014, Kathy Jetñil-Kijiner, a Marshallese poet, scholar, and climate change activist, read one of her poems at a United Nations climate change gathering in New York City, only days after the massive People's Climate March, the largest climate march in history. Jetñil-Kijiner's poem "Dear Matafele Peinem"²⁰³ is written as a letter to her daughter:

dear matafele peinam,
don't cry
mommy promises you
no one will come and devour you
no greedy whale of a company sharking through political seas
no backwater bullying of businesses with broken morals no blindfolded
bureaucracies gonna push
this mother ocean over
the edge
no one's drowning, baby
no one's moving

²⁰³ Jetñil-Kijiner, Kathy. "United Nations Climate Summit Opening Ceremony – A Poem to My Daughter." *Kathy Jetñil-Kijiner*. N.p., 13 Feb. 2019. Web. 13 Aug. 2020.

no one's losing their homeland
no one's becoming a climate change refugee

Through this poem, Jetñil-Kijiner made a personal plea for the world to act on climate change that brought UN delegates to their feet and has since been shared with communities across the world. I first came across this poem when researching Pacific Island climate change concerns. I was familiar with the history of military nuclear experimentation around the Marshall Islands, but I did not understand at the time, how deeply her calls for climate justice were connected to the Marshall Islands nuclear legacy. Article²⁰⁴ after article,²⁰⁵ ²⁰⁶ online videos²⁰⁷, and documentaries such as *An Inconvenient Truth*²⁰⁸ painted a picture of a Pacific region at risk of drowning and disappearing with eye-catching headlines such as “Eight low-lying Pacific Islands Swallowed Whole by Rising Seas,”²⁰⁹ and “The Marshall Islands are Drowning,”²¹⁰ and showed pictures of white bleached coral reefs as *proof* that the ocean was responsible for their demise. I felt frustrated because I was inundated with scripts that seemed to already write a future for Oceania without offering any alternative of hope. This led me to research the global tension around the use of the label “climate refugee” and the loaded political and humanitarian debates transpiring over the lack

²⁰⁴ Johnson, Freelance Correspondent Kurt. "Could This Drowning Nation Actually Be the next Dubai?" *ABC News*. N.p., 22 July 2019. Web. 12 Aug. 2020.

²⁰⁵ Maps, NGM. "Water May Erase These Pacific Islands, but Not the Culture." *Water May Erase These Pacific Islands, but Not the Culture*. N.p., 01 Oct. 2015. Web. 12 Aug. 2020.

²⁰⁶ Cave, Damien. "His Pacific Island Was Swallowed by Rising Seas. So He Moved to a New One." *The New York Times*. The New York Times, 26 July 2018. Web. 12 Aug. 2020.

²⁰⁷ *Climate Change Causes Islands to Disappear | 60 Minutes Australia*. *YouTube*. N.p., 2019. Web.

²⁰⁸ *An Inconvenient Truth: A Global Warning*. Dir. Al Gore. *An Inconvenient Truth*. N.p., 2006. Web.

²⁰⁹ Klein, Alice. "Eight Low-lying Pacific Islands Swallowed Whole by Rising Seas." *New Scientist*. N.p., 07 Sept. 2017. Web. 12 Aug. 2020.

²¹⁰ *The Marshall Islands Are Drowning*. Dir. Democracy Now! *YouTube*. N.p., n.d. Web. 2019.

of a legal designation that could offer protection for those facing climate-induced stressors that lead to forced migration.



Figure 2.1: Map of Oceania. Courtesy of graphicmaps.com

I dug deeper into the specific challenges faced by different atolls in the Marshall Islands and learned that each atoll faced its own unique stressors that depended on the health of their coral reefs combined with their elevation because those factors determined how likely, or how soon, they would be at risk of sea level rise. Sea level rise can lead to less land to live on and to grow and produce food, which then leads to the need to move off-island because life on-island can no longer be sustained. Each atoll's experience with sea-level rise was different depending on elevation and atoll size that determined the amount of usable land available to move inland.

The Marshall Islands' reef diversity mirrors the diverse histories of displacement of the atolls' inhabitants. A major factor that contributed to the health, economic stability, and self-sufficiency of the atolls was their history with U.S. nuclear testing between 1946 and 1958 and the relocation routes forced upon them by the U.S. military. The interisland forced movements differed from atoll to atoll, and displaced communities onto different atolls without providing enough support or infrastructure for them to sustain a relocation process. It caused generations of

Marshallese communities to struggle while many insisted and still desire to return to their home atolls. Combine decades of trauma, inadequate support to rebuild on new islands, with new forced location pressures from rising sea level rise and you have a community of islands that are fed up with experiencing the front line of impacts of existential threats they have no responsibility for creating. Add the global media posturing their islands as drowning, disappearing, and sinking and it feels like their fate is being prescribed before they have a chance to say no, they will not relocate or no, they are not drowning, they are still here.

As a challenge to representations of her islands already sinking, Jetnil-Kijiner's poetry rejects the erasure metaphors that continue breathing life into colonial arrogance. Jetnil-Kijiner's poem rejects the notion that her Marshallese people are going to become climate refugees. She issues a stern warning that she will continue to fight, that we will all fight. Jetnil-Kijiner offers a vantage point as someone whose life is explicitly connected with and determined by the tides of the ocean and repositions Marshallese migration and identity by framing her ancestors' connection to ocean as a source of hope rather than the source of extinction. In her poem, "Tell them" she says, "tell them...we are descendants of the finest navigators in the world...of canoes as fast as the wind slicing through the pacific sea...we are the ocean...terrifying and regal in its power..."²¹¹ And throughout her many poems and invited talks now as Climate Envoy for the Marshall Islands Ministry of Environment, she rejects the climate refugee label by naming, calling it out in confidence as a reality she refuses to sign off on. By explicitly naming the climate refugee refusal she repositions the conversation in a purposeful way, "no one's drowning, baby no one's moving no one's losing their homeland no one's becoming a climate change refugee."²¹² Her words echo

²¹¹ Jetnil-Kijiner, Kathy. "Poem: Tell Them." *Kijiner*. N.p., 03 Feb. 2014. Web. 12 Aug. 2020.

²¹² *Statement and Poem by Kathy Jetnil-Kijiner, Climate Summit 2014 - Opening Ceremony. YouTube*. N.p., 2014. Web.

the theme of resilience and assert an Indigenous Pacific Island future where no one loses their homeland and forced displacement ends.

Jetñil-Kijiner was born in the Marshall Islands, what is known today as the Republic of the Marshall Islands (RMI). She moved to Hawai'i at 7 years old and moved back to the Marshall Islands at 25. Her experience as a diasporic Marshallese woman in another heavily settler militarized island informs her writing and positionality of her work. Her poetry and activism index the legacy of nuclear testing conducted in the Marshall Islands, militarism across Oceania, health, cultural identity, and climate change impacts.

In December 2008, the RMI made a detailed submission to the UN Human Rights Commission documenting and analyzing the implications of climate change upon a wide range of social, economic, and legal characteristics of the nation. In summary, the report concluded that “the reclassification of Marshallese as a displaced nation, or, loosely defined, as ‘climate refugees,’ is not only undesirable, but also unacceptable as an affront to self-determination and national dignity. It is unlikely that larger nations, with greater political power, would easily accept such a fate for their political boundaries and peoples.”²¹³ The sentiment that becoming climate refugees is an unacceptable future became a prominent theme in her literary work and media presentations.

Coral offers insight into why small details matter for Marshallese climate migration, identity, and formulation of the Pacific Island Climate Refugee figure. Even a warming event that can seem insignificant, perhaps an increase of only 1-2 degrees, can cause corals to lose their symbionts, their main source of nutrition, and become stressed and often susceptible to

²¹³ Muller, Phillip H. "Republic of the Marshall Islands: Views regarding the Possible Security Implications of Climate Change." *United Nations*. N.p., 2009. Web.

opportunistic infections. The corals die from a combination of heat stress starvation, and lethal infections.”²¹⁴

In Jetñil-Kijiner’s recent video poem “Two Degrees is a Gamble”²¹⁵ she reminds us all details, even ones that seem small like their islands, still matter because the Marshall Islands are “not yet underwater.” In her effort to counter colonial climate renderings that attempt to naturalize the disappearance of her islands, she uses her poetry as a vehicle to challenge climate negotiation arguments that promote capping global gas emissions at a rise of 2 degrees and touting that as a benchmark of climate success when scientists predict we are on track to already exceed an increase of 3 degrees. Her community is pushing for an increase of no more than 1.5 degrees because a cap of 2 degrees puts her islands underwater. She says .5 degrees is the difference between life and death, underwater or not, and that .5 degrees is not small, it is lifesaving. Her poem highlights the everyday experience of the projected outcomes. She describes, “those with nuclear trauma waking up to rising tides,” and says her father told her climate change is not a new story, that they’ve been fighting this fight for years, walking on the edge of the reef, not yet under water. She calls for urgent action and a refocus not solely on projections but calls for a courage to face our realities as they are in the present.

The next stanza of “Dear Matafele Peinem”²¹⁶ frames this courage through a conversation with her daughter in the form of an apology and declaration to fight:

To the carteret islanders of papua new guinea
And to the taro islanders of fiji
i take this moment
to apologize to you

²¹⁴ Harvell, C. Drew. *Ocean Outbreak: Confronting the Rising Tide of Marine Disease*. N.p.: U of California, 2019. Print.

²¹⁵ Jetñil-Kijiner, Kathy. "Poem: 2 Degrees." *Kathy Jetñil-Kijiner*. N.p., 13 Feb. 2019. Web. 13 Aug. 2020.

²¹⁶ Jetñil-Kijiner, Kathy. "United Nations Climate Summit Opening Ceremony – A Poem to My Daughter." *Kathy Jetñil-Kijiner*. N.p., 13 Feb. 2019. Web. 13 Aug. 2020.

we are drawing the line here
because we baby are going to fight
your mommy daddy
bubu jimma your country and your president too
we will all fight

Rather than assume the global community cannot muster the collaboration it takes to enact real change to stop and slow carbon emissions, Jetñil-Kijiner encourages us that we can make change and reminds us we can demand it too.

In the poem to her daughter “Dear Matafele Peinem,” she reaches out to Taro Island in the Solomons which is preparing to relocate their communities entirely off-island as they face sea level rise. She apologizes to the Carteret islanders of Papua New Guinea, where in 2009, 40 families were the first to officially relocate off-island because of climate change. In her apology not only to her daughter but to the Carteret and Taro Islanders, the pathos evokes a sense of loss in solidarity, and at the same time, expresses intense emotion and obligation to fight back against existential threats. Her choice to reference her own family and other islands in Oceania speaks to her awareness that what impacts her islands impacts their islands, and asserts we are all connected by ocean and by climate change. Her words elicit feelings of strength for her daughter, future generations, and all of Oceania. Her words echo to stand firm on one's ground through strong roots and a sense of rootedness to place, and rootedness to their reefs, while other Pacific Islanders have already started to move away from their islands.

By applying coral reefs as a methodology and lens to study resilience, we can see through Jetñil-Kijiner’s work how she centers themes of Pacific Island resilience over generations, such as proudly referencing her lessons learned from her ancestors, in the face of violence and disruption. Her writing about displacement, health, and ongoing struggles of diasporic Pacific communities has served as a discursive intervention widely disseminated through the technological platform of

the internet. Jetñil-Kijiner's poem and advocacy work point to a refreshed conception of justice that looks to understand present day concerns like climate change, through historical conditions like nuclear legacies and militarism, that impact natural capacities of Pacific islanders and coral reefs to exercise resilience.

Jetñil-Kijiner's poetry signals the importance of studying resilience in a non-linear way as opposed to traditional science and social science research that is focused on linearity. For example, traditional research would study coral reefs through a lens that looks to what happened to coral reef ecosystems in order of events, reefs were healthy, there was a disruption, more disruptions, long term stress, they are bleaching, they will die. Whereas Jetñil-Kijiner's poetry and activism signals to the status of coral reef ecosystems and Pacific island life that recognizes things can change, adaptation can happen, and says let us find conversations and answers that get to this non-linearity, this possibility for an alternate future where her community is not islandless, where reefs are not bleaching, where they are not climate refugees. Her form of storytelling communicates the capacity for resilience in ways traditional science does not.

Considered an eco-poet, Jetñil-Kijiner's protest literature extends portrayals of justice to include representations of ocean connections to island cultural identity and visions of coral health and nature. Further, her emphasis on Marshallese cultural identity and references to coral reef and non-human life reminds us we are not the only species. She also offers us a Marshallese vantage point to ecological and community disruptions caused by imperialist legacies of militarizing Pacific coral reefs and how these patterns have fueled the figure of the Pacific Island climate refugee. An interest in representing reef values and connections to Marshallese cultural identity makes sense because she directly lives on coral reefs and her everyday life is influenced by the health of inshore and offshore coral.

The substance of the Marshall Islands itself is a mixture of ancient, fossilized, and live



Figure 2.2: Map of Marshall Islands. Courtesy of graphicmaps.com

coral reef. We should look to the reef itself for a reframing of knowledge, history, and insight on our ecological challenges. The Marshall Islands are a concentration of about 1,000 islands spread over 29 coral atolls in the Pacific Ocean with most of the country being open ocean. I offer a new kind of elevation analysis here. The average elevation of the Marshall Islands is about 2 meters above sea level and brings unique challenges as a low-lying chain of islands. The atolls and islands of the Marshalls formed when fringing reefs began to establish and grow around emergent volcanoes. The ancient volcanic peaks then gradually sank and shrank, while fringing reefs continued to grow, eventually becoming coral atolls after the volcanoes disappeared entirely beneath the sea.²¹⁷ In Marshallese, *aelōn* is a word that means not only atoll and island, but also land and country; it has a deep rootedness in Marshallese identity.

²¹⁷ Spalding, M.D., Ravilious C., and E.P Green. "World Atlas of Coral Reefs." *ReefBase*. N.p., 2001. Web. 12 Aug.



Figure 2.3: Coral reef around Marshall Islands. Photo courtesy of reefbase.org

Like coral, a migratory organism, many people have voyaged across the sea to the Marshall Islands bringing their own histories and creating new history.²¹⁸ Coral polyps voyage in the ocean currents based on flows and currents of the sea, eventually joining with other coral communities atop underwater volcanoes that rise miles from the sea floor to break the surface. The Ri-Kuwajleen, the Islanders who first settled Kwajalein, told history through coral. It is understood in their oral traditions that the entire atoll, this whole ring of islets, originated from one massive coral head in the center of the lagoon, known as Tarjañ,²¹⁹ what anthropologist Laurence Carucci has called the “central symbol of Kuwajleen identity.”²²⁰

2020

²¹⁸ Dvorak, Greg. *Coral and Concrete: Remembering Kwajalein Atoll between Japan, America, and the Marshall Islands*. Place of Publication Not Identified: Univ of Hawai'i, 2020. 21. Print.

²¹⁹ Ibid.

²²⁰ *Anxious Anticipation of Kuwajleen's Uneven Fruits: A Cultural History of the Significant Locations and Important Resources of Kuwajleen Atoll*. Huntsville, Ala.: United States Army Space and Strategic Defense Command, 1997. Print.

Coral reefs are highly respected and central to Marshallese culture still today. Jetñil-Kijiner's words raise questions and pose problems connected to how military development and climate change threatens both island culture and coral reefs. Prior to Western contact, the people of the Marshall Islands relied on fishing and tropical agriculture for subsistence. In this environment, the Marshallese developed world-renowned seafaring skills, which included the design of ocean-going canoes and the creation of a complex navigation system based on stars, swell, currents and wave refraction patterns.²²¹ Greg Dvorak's concept of "atollism" is useful to account for the flows and interconnections between Islanders, in the literal sense. *Atollism* takes into consideration "the broader relationships of people to place, and the transformations and linkages that happen through migration and settlement" that like coral, bring different people to symbolically participate in the creation of a reef.²²²

The impacts to coral are not highlighted and rarely mentioned in colonial and military history of the region. Never discussed, are the connections between coral reef and sovereignty. Every change in the social and political dynamics brought major transformation to the islands' economy, rights, and coral reefs. Sovereignty is highly debated as something (in)effective, abstract, fiction, and always changing. Indigenous peoples across the world and in the Pacific have critiqued sovereignty and challenged it because they argue western and European conceptions of sovereignty are not the correct frameworks to guide society for a myriad of reasons.²²³ One of the most striking in the argument against sovereignty is that it causes harm to those it claims to protect and serve.

²²¹ While Europeans and Asians may have settled in Oceania in recent centuries for any number of reasons, it is significant that they have indeed started new lives in these places, initiated their own relationships to the local context, and symbolically participated, like coral, in the creation of the reef."

²²² Dvorak, Greg. *Coral and Concrete: Remembering Kwajalein Atoll between Japan, America, and the Marshall Islands*. Place of Publication Not Identified: Univ of Hawai'i, 2020. 21. Print.

²²³ Davis, Sasha. *Islands and Oceans: Reimagining Sovereignty and Social Change*. Athens: U of Georgia, 2020. 6. Print.

Coral reefs provide an articulation of a different imagination of sovereignty. Just like the diversity of reefs, islands' experiences vary, and we must look to the details of their history and circumstance to understand how power operates in place-specific ways. Through coral we can engage the nuance of Indigenous Pacific islands' fight for sovereignty and self-determination and how these struggles always engage nature. It by testing the assumptions of sovereignty through nature that we learn just how the power of sovereignty works, or does not work, in favor of communities who supposedly possess it. As Sasha Davis explains, "by examining how landscapes can be thought of as actors in their own right (rather than merely canvases for human action), how power can operate differently, and how interconnection is woven into place, scholars in the Pacific region have demonstrated how sovereignty is anything but an autonomous process that floats above and manages the economy, the land, the water, and the culture."²²⁴ Understanding coral reef underwater-scapes as actors demonstrate how sovereignty works on land as a process and how those experiences of sovereignty on land impact reefs.

For example, a community's experience with sovereignty on land, their right and power to self-govern, informs their ability to make decisions about their natural resources and to say no to proposed ocean activities such as coral dredging, bombing, mining, or other development activities that impact reef health. What works or does not work on land does not automatically apply to ocean or the underwater realm. By looking at how sovereignty works through coral reefs the nuances of power become more visible and communities can take action to address gaps and deficiencies.

²²⁴ Davis, Sasha. *Islands and Oceans: Reimagining Sovereignty and Social Change*. Athens: U of Georgia, 2020. 6. Print.

Exercising sovereignty through nature is complex in a heavily militarized island. Destruction of reefs continues to be pitched as necessary development in the name of national security and to “make room” for naval ships and runways. Reefs have always been important actors in the story of islands. During the Japanese occupation of the Marshall Islands from 1914 - 1944, the low-lying atolls such as Bikini suddenly became strategic locations in the eyes of the military and during the buildup of the region in anticipation of WWII. One of the first harms to coral reefs in the Marshalls occurred through dredging. Roi-Namur, part of Kwajalein atoll, used to be the four islands, Roi, Namus, Enedrikdik, and Kottepina. The pass between the islands was filled with sand and coral fill that was dredged from the lagoon by both Korean laborers working for the Japanese and Americans between 1940 -1945, building the foundations of ports that are still used today. The separate islands were joined into long airstrips that blocked the natural water circulation of the atoll.

In the late 1930s, Japanese battalions of setsuei-butai construction workers, mostly Korean laborers and Marshallese, used dynamite to break enormous holes in the reef around the main islets of Kwajalein.²²⁵ These reef rocks were used to build seawalls, buildings, and the first runway. The logic of military colonialism has made possible the dredging of healthy coral reef to form hard land for military complexes, aircraft runways, and naval passages. In *Coral and Concrete*, Dvorak explores the history of Kwajalein atoll in the Marshalls and many other heavily militarized islands throughout Oceania such as Guam, where coral was used as an aggregate, mixed with cement and water to form quick-drying concrete that could be used to construct fortifications or to form roads and runways.²²⁶ In many ways, militaries relied on coral as a wartime resource. Military planners

²²⁵ Fukushige, Hiroshi. *Gyokusai No Shimajima*. Tōkyō: Ushio Shobō, 1987. Print.

²²⁶ Dvorak, Greg. *Coral and Concrete: Remembering Kwajalein Atoll between Japan, America, and the Marshall Islands*. Place of Publication Not Identified: Univ of Hawai'i, 2020. 21. Print.

have designed strategies that depend on destroying reefs that are in the way or selecting other areas with “less dangerous reefs” or choosing “unimportant” ecosystems that can be wastelanded.

U.S. forces took control of the Marshall Islands in February 1944 after Navy artillery assailed both islands. The U.S. military was greeted by some Marshallese as liberators because of the harsh conditions created by Japanese occupation. The U.S. military capitalized on their liberator brand. Beginning in the late 1940s, a new era of traumatic reshaping of the reef and rewriting of land transpired.

The most infamous “use” for the Marshall Island atolls is the nuclear weapons testing by the U.S. military.²²⁷ On July 18, 1947 the U.S. requested and was granted the first and only Trust Territory of the Pacific Islands (TTPI) status by the United Nations that put the United States in charge of the administration of the islands from 1947 to 1994.²²⁸ The TTPI status paved the way for the U.S. military to use the Marshall Islands as a Pacific laboratory for nuclear weapons testing and was known as the Pacific “Proving Ground.” The nuclear testing at Bikini Atoll, part of the Marshall Islands archipelago, was a series of 23 nuclear devices detonated by the U.S. between 1946 and 1958 at seven test sites on the reef itself, on the sea, in the air and underwater.

Submerged coral was of interest to the military, too. As part of its nuclear weapons testing projects, the U.S. military drilled deep into limestone reefs around Enewetak Atoll in the Marshall Islands in order to test the site’s geological stability for detonating the world’s first hydrogen bomb.²²⁹ The detailed impacts of these tests on the coral reef environment are still unknown,

²²⁷ Dvorak, Greg. *Coral and Concrete: Remembering Kwajalein Atoll between Japan, America, and the Marshall Islands*. Place of Publication Not Identified: Univ of Hawai’i, 2020. 21. Print.

²²⁸ Laughlin, Stanley K. "Our Island Friends: Do We Still Care? The Compacts of Free Association with the Marshall Islands and Micronesia." *SSRN*. N.p., 20 Sept. 2007. Web. 12 Aug. 2020.

²²⁹ Helmreich, Stefan, Sophia Roosth, and Michele Ilana Friedner. *Sounding the Limits of Life: Essays in the Anthropology of Biology and beyond*. Princeton, NJ: Princeton UP, 2016. Print.

although there were obviously significant physical effects in the areas of direct impact, while a number of large ships were also sunk in the atoll lagoons.



Figure 2.4: A satellite image of Bikini Atoll, showing the outline of reefs built up over millions of years. Photo courtesy of NASA



Figure 2.5: Earth Observatory image of Castle Bravo crater in Bikini Atoll coral reef in 2019. Photo courtesy of NASA.

At the same time the Marshalls were marked as a sacrifice zone, the archipelago was articulated as a safe and secure place to conduct testing as communicated to their Navy personnel who had to relocate to conduct the test, monitor its aftermath, and build up bases. The colonial conceptualizations and characterizations of islands as small and sparsely populated, comparatively

“empty” of people,²³⁰ that scholar Epeli Hau’ofa has pointed out, has played a role in spatial mythologies that have made Pacific environments a key site for military testing. This racist logic created new patterns of targeting Pacific communities and reefs for experimentation and militarization. The Marshallese experience is a prime example of environmental racism and injustice, and demonstrates how social, cultural and environmental issues are intertwined with coral reef history.

World War II galvanized President Harry Truman’s experimentation with nuclear weapons on Pacific land and waters because of their perceived remote location and small population. In preparation for the nuclear testing, the military moved the Bikini people to Rongerik Atoll, after persuasion from the military commodore Ben Wyatt who framed their relocation as sacrificial “for the good of humankind and to end all wars.” In declassified documents from 1946, a confidential Navy classified message to the Pacific fleet’s commander, Wyatt wrote of construction plans for Kwajelein as well as plans to move Bikinians to Rongerik:

Natives of Bikini were personally told by me in much detail of the forthcoming experiments...The natives of Bikini were very proud to be part of this wonderful undertaking and if it was the desire of the United States government for them to live elsewhere they would be happy to do so. When told they were free to move to any of the islands in the Marshall group that they choose outside the danger area...the 12 heads of families (know as aleps) cast a vote...and favored Rongerik...it was the desire of all the families to remain united.²³¹

The interpretation of Marshallese communities as move-able²³² and disposable combined with the interpretation of their islands, reefs, and ocean environment as a wasteland, not being used to its fullest potential, led to its wastelanding. The upbeat rendition of the request/order to leave Bikini

²³⁰ Keown, Michelle. "Waves of Destruction: Nuclear Imperialism and Anti-nuclear Protest in the Indigenous Literatures of the Pacific." *Taylor & Francis*. N.p., 2019. Web. 12 Aug. 2020.

²³¹ Burr, William, and Stav Geffner. "Bikini A-Bomb Tests July 1946." *National Security Archive*. N.p., 15 Aug. 2018. Web. 13 Aug. 2020.

²³² Mydans, Carl. "Commodore Ben H. Wyatt Addressing the Bikini Island Natives." *National Museum of American History*. N.p., 1946. Web. 12 Aug. 2020.

and Wyatt's portrayal of Bikinians as enthusiastic and loyal to the desires of the U.S. , how "happy" they were to leave the atoll, demonstrates a military attempt at sanitizing language and activities through an appearance of island complicity. After much deliberation, King Juda, then the leader of the Bikinian people, stood up and announced, "We will go believing that everything is in the hands of God."²³³ One of the Bikinians involved later said that "we didn't feel we had any other choice but to obey the Americans."²³⁴ This relocation of Bikinians off-island was the start of their communities working to understand western and military science and reconcile with their cultures' understandings of harmony, collective benefit, and peace and it would not be the last.

Bikinians were moved to Rongerik atoll, only one-sixth the size of Bikini and was known in Marshallese culture to house evil spirits. During this time, the Bikinians faced near starvation with inadequate food and fresh water supplies, and the inability to harvest enough food on the poor soil of Rongerik. After pressure from U.S. investigators who witnessed the poor conditions of the Islanders, and after a brief move to another atoll Ujelang, that would then also be claimed for testing, Bikinians were transferred to Kwajalein Atoll to live in tents behind a U.S. military airstrip. In 1948, Bikinians elected to move to Kili Island because it was uninhabited. The move to Kili completely transformed their traditional diet and way of life based on living and fishing around the lagoon and was a single island compared to their Bikini home of 23 islands.

Early in the morning on March 1, 1954, the hydrogen bomb, code named Bravo, was detonated on the surface of the reef in the northwestern corner of Bikini Atoll. Millions of tons of sand, coral, plant, and sea life from Bikini's reef and from three islands blasted into the air. Nuclear fallout in the form of white ash scattered throughout the air and resembled snow. The ash fell on

²³³ "Operation Crossroads." *The Dirty Dozen Expeditions*. N.p., n.d. Web. 13 Aug. 2020.

²³⁴ Weisgall, Jonathan M. *Operation Crossroads: The Atomic Tests at Bikini Atoll*. Annapolis, MD: Naval Institute, 1994. 107-08. Print.

Rongelap Atoll and the islanders living there, and the children played in ash and would soon start seeing and feeling physical consequences from the nuclear toxicity. There was no warning from the U.S. military about the tests or fallout and this would only be the beginning of intense health issues, death and intergenerational health problems for Marshallese people.

Jetñil-Kijiner's mother, the first woman president of the Marshall Islands, Hilda Heine, reflected on the lasting impacts to her communities from these detonations.

Babies without bones that were born by women who were—who lived in the islands that were contaminated. And we still have people who have not returned to their homelands after 50 years of being displaced from their homelands....We have islands that were vaporized by the nuclear testing program. Of course, these islands belonged to people. And those can never be recovered. So we're still seeking nuclear justice for the people of the Marshall Islands. This is one of the—the legacy of the U.S. presence in our country. And it seems like we're repeating with the climate change issue coming on, also same force from outside being brought to influence or to impact the livelihood of Marshallese...We continue to seek justice.²³⁵

It was women who found themselves with birth defects after exposure to the radiation and fallout. “Jellyfish babies” is what they call them. Between 1958 and 1985 Rongelapese experienced increased rates of stillbirths, miscarriages, and thyroid tumors.²³⁶ This is a loss Marshallese have had to bear “for a greater good” – a reasoning that is terribly similar to those who are convinced that our need for consumption outweighs the livelihoods of others.

The U.S. evacuated Rongelap inhabitants following the tests due to high radiation levels also to Kwajalein Atoll which comprises 97 islands and inlets. Between 1955-1957 internally

²³⁵

"1st Female President of the Marshall Islands & Her Poet Daughter: We Need Climate & Nuclear Justice." *Democracy Now!* N.p., 2017. Web. 13 Aug. 2020.

²³⁶ In 1984 Marshall Islands senator Jeton Anjain urgently requested evacuation assistance from Greenpeace because the U.S. denied the senator's requests for evacuation. The experience of seeking acknowledgement and retribution in response to the nuclear devastating and its devastating effects inspired the term “radioactive colonialism” and “nuclear justice.” Finally, in 1985, Green Peace's *Rainbow Warrior* vessel made three trips to evacuate the Rongelap community to Majetto and Ebeye islands in Kwajalein Atoll, another inter-island displacement phase.

displaced Rongelapese who are now commonly referred to as “nuclear refugees,” repeatedly petitioned the U.S. to return to their atolls after experiencing vomiting, diarrhea, skin burns, and hair loss caused by the radiation. Notably in 1957, the Atomic Energy Commission declared Rongelap safe for re-habitation. U.S. scientists noted: "The habitation of these people on the island will afford most valuable ecological radiation data on human beings."²³⁷

This is one of many examples from Pacific island history in which the region was treated as an oceanic laboratory, its reefs and its people, signaling the start of a new era of Indigenous dispossession and displacement through the transformation of healthy reefs and coral atolls to officially recognized “radiation atolls.” In “The Myth of Isolates,” Elizabeth DeLoughrey considers the relationship between cold war science, nuclear testing, and the emergence of the studies of ecosystem ecologies, developed in the aftermath of U.S. nuclear weapons testing in the Pacific Islands. DeLoughrey argues Pacific Islands were transformed into vital laboratories for experiment through, “metaphorical concepts of island isolation and distributed visually by the Atomic Energy Commission films that upheld an aerial vision of the newly acquired atolls for an American audience...the myth of isolation is also at work in the ways in which Marshall Islanders exposed to nuclear fallout became human subjects for radiation experiments due to the idea of the biological isolate.”²³⁸ The U.S. bombing and weapons testing on Rongelap atoll was made possible through the military’s perception of the atoll as a sacrifice zone, with full knowledge the nuclear fallout would reach it and other islands. It is only through the premise that the Marshall Islands were sacrificial, and their people justified as disposable and pollutable, that such violence could occur.

²³⁷ Giff, Johnson. "Micronesia: America's 'strategic' Trust." *Taylor & Francis*. N.p., 1979. Web. 13 Aug. 2020

²³⁸ DeLoughrey, Elizabeth M. "The Myth of Isolates: Ecosystem Ecologies in the Nuclear Pacific - Elizabeth M. DeLoughrey, 2013." *SAGE Journals*. N.p., 2012. Web. 12 Aug. 2020.

In a familiar sense, the Marshall Islands climate change experience is being broadcast as though they are the front-line responders to climate change for the rest of the higher elevation world to test the impacts from a safe distance. In a similar manner that the Marshall Islands were targeted for nuclear experimentation and their people marked as test subjects, their communities again serve as a site of organized experimentation to test who is sacrificial in the climate change era and determine who lives and dies. “More than a result of contemporary white supremacy or lingering white privilege, the territorialization of who lives and who dies, who matters and who must be left behind for the sake of humanity, represents a five-hundred-year geopolitical tradition of conquest, colonization, extraction, and the martial forms of life that made them all possible through war and through more subtle and languid forms of organized killing.”²³⁹

Connecting traditions of conquest to climate injustice makes visible how organized killing and targeting of particular places and peoples happens in relation to wastelanding, the logic of deliberately targeting a certain space, environment, or people over other spaces, environments, or people, for pollution, contamination, and violence. Wastelanding is done on purpose and not by accident. This linking is important because it demystifies the abstract liability of climate change and says these impacts are an extension of violent systems we have already been dealing with. The historical conditions that made the Marshall Islands nuclear refugees and wastelanded their atolls contributed to their status as future climate refugees.

²³⁹ Grove, Jairus Victor. *Savage Ecology: War and Geopolitics at the End of the World*. Durham: Duke UP, 2019. Print.

The logic of wastelanding is bolstered by racialized ideas that Pacific islanders, those “brown,” “backwards,” “barbaric,” “others,” and their “small,”²⁴⁰ “in the middle of nowhere”²⁴¹ islands are worthy of such violence because no one cares, is a dangerous pattern of thought and action that translated to violence to Pacific reefs. The islands’ story reveals how U.S. national security increasingly depended upon the insecurity of many colonized peoples and the centrality of Pacific environments in the buildup of the U.S. empire through its global military regime.

Coral reef history shows us how a multi-scalar logic is operational within military geography and its targeting of Pacific Islands. This is best explained by connecting race and space. That is, studying racialization from a spatial perspective. Building from a foundational understanding of Omi and Winant’s theorization of racial formation,²⁴² I understand racial meaning to be always in flux and shifting with the times, always infused with power dynamics and multi-level, overlapping dimensions. Focusing on the geographical scale and elevation of coral we better understand how elevation contributes to human-environment relationships and how reefs are militarized. In other words, island elevation influences military decision making, and legacies of racial meaning informed the selection of specific islands to oppress and occupy for the sake of military operations.

Military perspectives of racial meaning fused with the coral atolls “out of the way”²⁴³ *enough* and “in the middle of nowhere” locations informed its selection of the Marshall Islands

²⁴⁰ DeLoughrey, Elizabeth M. "The Myth of Isolates: Ecosystem Ecologies in the Nuclear Pacific - Elizabeth M. DeLoughrey, 2013." *SAGE Journals*. N.p., 2012. Web. 12 Aug. 2020.

²⁴¹ Hessler, Stefanie. *Tidialectics: Imagining an Oceanic Worldview through Art and Science*. London: TBA21 Academy, 2018. 103. Print.

²⁴² Omi, Michael, and Howard Winant. *Racial Formation in the United States: From the 1960's to the 1990's*. Routledge: n.p., 1994. 60. Print.

²⁴³ DeLoughrey, Elizabeth M. "The Myth of Isolates: Ecosystem Ecologies in the Nuclear Pacific - Elizabeth M. DeLoughrey, 2013." *SAGE Journals*. N.p., 2012. Web. 12 Aug. 2020.

and its reefs as “the best”²⁴⁴ and “safest”²⁴⁵ place to experiment with nuclear weapons and build bases. Colonial representations of brown-skinned islanders informed the geographical sphere of decision-making from a military lens that framed their islands and oceans as an empty space that could be used, and their island people moved, and sacrificed. Through this interwoven logic the detonations were perceived as strategic. From Jetñil-Kijiner’s perspective and from an ecological point of view, the detonations and violence done to her islands was not a “test,” it was induced warfare under the guise of benevolent experimentation.

U.S. nationality security has depended on the displacement of native peoples from their lands and in the Pacific context, it has caused multiple layers of inter and off-island displacement and changed their relationships to coral reefs. Coral reef furnishes an analytic to advance the understanding of anti-displacement organizing and negotiations from Marshallese communities in the face of nuclear testing and forced climate migration. Coral offers an important lens to better understand our interconnectivity as multi-species neighbors facing an urgent need for global collaboration. In “Utilomar” Jetñil-Kijiner’s retelling of a dream illuminates such connections:

I dreamt of a dead shark
we were at a family party
my mother asked me to check the oven and
when I opened it
there it was
massive, gray leathery skin, jaw open
like a metal trap

I dreamt of eating a shark
When I woke up I met my mother in the hallway
I told her about my dream
how it felt

²⁴⁴ Hirshberg, Lauren. "Nuclear Families: (Re)producing 1950s Suburban America in the Marshall Islands." *OUP Academic*. Oxford University Press, 01 Oct. 2012. Web. 12 Aug. 2020.

²⁴⁵ Kesling, Ben. "U.S. Military Refocuses on Pacific to Counter Chinese Ambitions." *The Wall Street Journal*. Dow Jones & Company, 03 Apr. 2019. Web. 12 Aug. 2020.

foreboding²⁴⁶
together we went outside and that's when we found
the world
flooded
Water
everywhere
Our neighbors wandering outside
morning daze on their faces
homes inundated, families evacuated
sent to sleep on classroom floors at the nearby elementary school

My family is a descendant of the RiPako clan, the Shark clan
known to control the waves with roro, chants
it was said that they turned the tides with the sound of their voice
they sang songs to sharks encircling their canoes, we were connected
to these white tipped slick bodied ancestors carving
through water
we would never
have eaten them

Jetñil-Kijiner's retelling of a dream where she consumes a shark causes her angst because she is from the shark clan where her family reveres the shark as a living ancestor, connected through the rhythms of the waves and the ability to communicate across species through cultural chants. She wakes up from a bad dream to find her family home covered in water and her community evacuating from rising tides. She describes "water everywhere" in regard to flooding and I interpret it as also "water everywhere" regarding oceanic life. "Through water" she says, is how she communicated with sharks and to control the waves, in a synergetic current through nature where the tides worked in their favor and for protection. In this poem, her dream of eating a shark, an ancestor she never would eat, signifies a disruption in the cycles of nature, and her consciousness that her ability to communicate with the tides is altered. Kathy makes hope for Pacific people, islands, and reefs visible through her poetry by decentering the human, here with her focus on

²⁴⁶ Jetñil-Kijiner, Kathy. "Utilomar." *Kathy Jetñil-Kijiner*. N.p., 13 Feb. 2019. Web. 13 Aug. 2020.

what shark life makes visible, and amplifying stories of human/animal/ecosystem interdependency, a practice rooted in Indigenous oral traditions throughout Oceania.

Wastelanding initiates new forms of what Rob Nixon describes as “slow violence”²⁴⁷ that exacerbates existing conditions. Both Jetñil-Kijiner’s poetry *and* coral reef demonstrate creative forms of resistance. Both utilize methods of what I understand to be *slow resistance* to counter slow violence. Jetñil-Kijiner and coral reef work to communicate the need for individual and global change. As coral works to resist warming and acidification, to regrow and disperse after destruction and against all odds, it offers its own form of slow resistance.

In Marshallese cosmology, the far western edge of Kwajalein island was home to a legendary utilomar, or zebra wood, flowering tree that bore precious flowers and was thought to have spiritual powers. The utilomar is represented as a tree that derives its life source from the reef itself as do Oceanic people. It was said the sea around that area was the source of enough flying fish to feed all of the Marshall Islands.²⁴⁸ Marshallese would travel from their atolls to collect the “fruits” of the tree and explains why Kwajalein holds a special place in Marshallese culture.²⁴⁹ In “Utilomar” Jetñil-Kijiner reflects on Kwajalein and utilomar legacies that remind her in her dreams of her responsibilities to her Marshallese ancestry and informs her leadership decision making regarding climate impacts.²⁵⁰

Here’s another story of a tree
On one of our atolls known as Kwajelein
There was said to be a flowering tree at the south end
that grew from the reef itself
a utilomar tree
it was said its magical white petals fell

²⁴⁷ Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard UP, 2011. Print.

²⁴⁸ “Kwajalein in Japanese Times.” Interview by Ato Langkio and Sam Kirong. *Lecture with Greg Dvorak at Marshallese Cultural Center, Kwajalein, Marshall Islands* 2005: n. pag. Print.

²⁴⁹ Kwajalein’s name was likely adapted from a European mispronunciation of rukjanleen, “the people who gather or harvest the fruits of the place known as Kwajalein” (Carucci 1997, 49).

²⁵⁰ Here is a video of Jetñil-Kijiner reciting her poem “Utilomar” for the non-profit Climate Generation: https://www.youtube.com/watch?v=r5V7qSH_Ga0.

into the water and bloomed
into flying fish

The utilomar has witnessed much change on Kwajalein. The natural formation of Kwajalein Atoll's lagoon, surrounded by mostly shallow dynamic reefs, as a result of the submerged ancient volcano head, was interpreted as a "natural" target for U.S. missile testing and determined safer to test inside the lagoon than on the outside of it.

The story behind the Compact of Free Association between the RMI and the U.S. is important and reveals how U.S. national security increasingly depended upon the insecurity of many colonized peoples and reefs.²⁵¹ It also reveals the shady methods used to secure contested land leases in the Marshall Islands and explains why many Marshallese are still seeking just compensation and land return while simultaneously seeking climate justice protections. This story highlights the social, political, and cultural impacts of the militarization of coral reef and how intertwined the impacts are to the figure of the Pacific Island climate refugee. According to a recent report commissioned by the Department of Defense (DOD) the multibillion-dollar installation on Kwajalein is expected to be completely submerged by sea water at least once annually, making it uninhabitable. Marshall Island leaders and research funded by the DoD warned that sea level rise would be a major threat to the new build up because of the atolls elevation of just 10 feet above sea level.²⁵² Their warnings were ignored.

Despite this DoD study outlining sea level rise risk and the military's own investigation of diverse risks, including ocean flooding, there was no mention of climate change in a required 2014 environmental assessment of the site before construction. A single line reads: "Based on historical

²⁵¹ Carucci, Laurence Marshall, and Alfred Capelle. *In Anxious Anticipation of Kuwajleen's Uneven Fruits: A Cultural History of the Significant Locations and Important Resources of Kuwajleen Atoll*. Huntsville, Ala.: United States Army Space and Strategic Defense Command, 1997. Print.

²⁵² Perry, Nick. "AP Exclusive: US Ignored Rising-sea Warnings at Radar Site." *AP NEWS*. Associated Press, 18 Oct. 2016. Web. 12 Aug. 2020.

data, there are no anticipated issues with ocean tide and/or wave flooding.”²⁵³ The Marshall Islands Environmental Protection Agency (EPA) wrote a response to the environmental assessment and described the U.S. military’s overall treatment of the climate change threat to Kwajalein as “wholly inadequate” and questioned whether the military was overstating the atoll’s elevation and criticized its reliance on historical data when the problem is rising seas, a more recent phenomenon.²⁵⁴ In the final environmental assessment report the military responded: “Detailed study of sea-level rise risks are beyond the scope of this document.” Their response demonstrates negligence and blunt disregard for how nature is never beyond the scope. Nature is the scope.

The same DoD report that studies the impacts of sea level rise also mentioned the need to relocate the installation and equipment and raises the question, where will they select to build another test site next?²⁵⁵ Climate projections of continuous sea level rise and histories of military patterns and investment in infrastructure trends point towards the likely selection of another, higher elevation, Pacific island. The Regan site provides intercontinental ballistic testing and space operations support programs and is considered from a military viewpoint, unique²⁵⁶ and indispensable,²⁵⁷ while the Marshall Islands and the Pacific region are considered disposable and wasteland-able as shown through military activities.

²⁵³ Storlazzi, Curt D. "The Impact of Sea-Level Rise and Climate Change on Department of Defense Installations on Atolls in the Pacific Ocean (RC-2334): U.S. Geological Survey Administrative Report for the U.S. Department of Defense Strategic Environmental Research and Development Program." (n.d.): n. pag. Print.

²⁵⁴ Perry, Nick. "AP Exclusive: US Ignored Rising-sea Warnings at Radar Site." *AP NEWS*. Associated Press, 18 Oct. 2016. Web. 12 Aug. 2020.

²⁵⁵ When the army's ballistic missile defense chief, Major General Grayson Tate, was asked by a Congressional committee what the army would do if it had to leave Kwajalein, he replied: " ...We really would prefer not to even think about it ... We have looked at some other places and we can say that they would be very expensive and would be very disruptive to our ongoing programs."

²⁵⁶ General Accounting Office, US. *FOREIGN RELATIONS: Kwajalein Atoll Is the Key U.S. Defense Interest in Two Micronesian Nations*. United States: General Accounting Office Washington Dc, 2002. Print.

²⁵⁷ Hirshberg, Lauren. "Nuclear Families: (Re)producing 1950s Suburban America in the Marshall Islands." *OUP Academic*. Oxford University Press, 01 Oct. 2012. Web. 12 Aug. 2020.

Land ownership in the Marshall Islands is passed down through one's matriline and clan. In Marshallese culture, extended families are considered to share 'land rights' and the product of the land is split amongst *irooj* chiefs, *alap* clan heads, and *rijerbal* commoners/workers. No one owns the island, but one *belongs to* the island. The concept of land ownership is a western ideology and the constitution of the Republic of the Marshall Islands makes it clear that the government can only own land in limited circumstances.

Today, the Republic of the Marshall Islands is self-governed and a "freely associated republic" with the United States as a result of the 1983 Compact of Free Association that gave the Marshall Islands the appearance of independence and full sovereignty with the stipulation that the U.S. military could lease Kwajalein for 50 years from Marshallese landowners. Sovereignty was deployed by the U.S. as a strategy to secure Marshall Island land in exchange for "security." The Compact also established the nuclear claims tribunal for the purpose of assessing and awarding compensation to Marshallese as a form of justice from the nuclear fallout that was caused by the nuclear testing.



Figure 2.6: Satellite map of Kwajalein Atoll. Photo courtesy of earthobservatory.nasa.gov

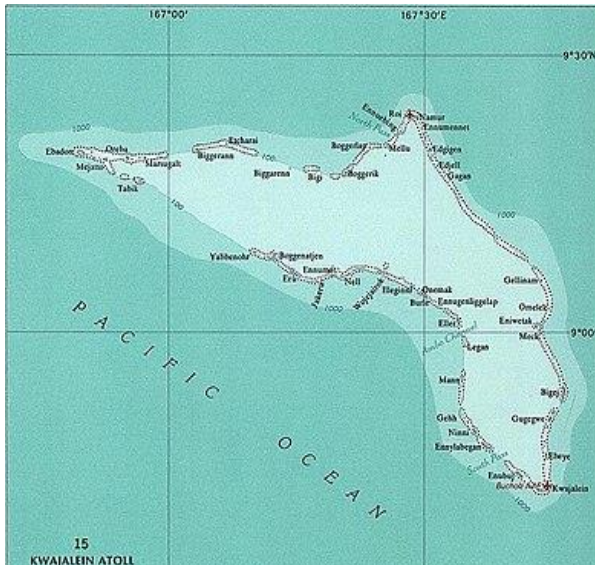


Figure 2.7: Map of Kwajalein Atoll. Courtesy of National Atlas of the United States.



photo by Julian Riklon [CCK, p. 31]

Figure 2.8: Marshallese women weaving baskets and matting during the 1982 Operation Homecoming protest. Photo by Julian Riklon.

Rather than only focus on the impacts of the military and nuclear testing on Marshallese, I emphasize how Marshallese are impacting military development through their critiques and challenges in diverse forms. When the compact was signed in May 1982, Kwajalein landowners

were outraged that their supposed sovereignty agreement perpetuated American military control over their islands.²⁵⁸ More than 1,000 landowners began the largest nonviolent protest "sail-in" to their home islands, called "Operation Homecoming," in June 1982.²⁵⁹ The "Operation Homecoming" protests involved islanders re-inhabiting their land at Kwajalein, Roi-Namur, and other military restricted sites. The protest goals were to prevent the operation of the base at which nuclear testing and missile testing took place, to gain monetary compensation for the landowners most affected by their forced removal, and to shorten, if not end, the lease agreement. In these photos, Marshallese women weave baskets during the protest and sit together in tight circles to counter the intention to remove them.

In response to Operation Homecoming, the Marshallese President Amata Kubua used eminent domain to seize control of Kwajalein and negotiate without the landowners. Some of the concessions in the new terms included the reduction of the minimum lease term to 30 years and added some funds to improve the islands. Protestors ended their physical protest but not the ideological battle. The U.S. Army has leased Kwajalein Atoll for the test site until 2066 and is renewable until 2086 under the Compact.

Although the terms of the Compact were not in favor of the landowners, the landowner resistance protests forced the U.S. military into negotiation and informed the creation of the first Land Use Agreement (LUA) between Marshallese landowners, the Republic of the Marshall Islands, and the U.S.²⁶⁰ A consensus of landowners refused to sign what they understood to be an inadequate new agreement because they said they were not consulted and believed it should have

²⁵⁸ Weapons testing also limited the islands on which natives of the atoll could live, forcing most to live in slum conditions on the island of Ebeye.

²⁵⁹ Keown, Michelle. "Children of Israel: US Military Imperialism and Marshallese Migration in the Poetry of Kathy Jetnil-Kijiner." *Taylor & Francis*. N.p., 2017. Web. 12 Aug. 2020.

²⁶⁰ The original LUA was negotiated for 11 million dollars annually to landowners and was set to expire in 2016. The new agreement was negotiated in 2003 with a new annual payment of 15 million dollars as part of the Compact of Free Association.

come with more funding, at least 19.1 million dollars annually they argued, that would be designated for the improvement and support for Marshall Islanders' health, welfare and security. The revised LUA was signed anyway and finalized by the RMI in 2013. The landowners still have not signed and have since formalized a boycott.²⁶¹

The concept of just compensation for Kwajalein is a problematic colonial concept from the start because it legitimizes the U.S. presence. Not all Marshallese residents are Kwajalein landowners either. Many “nuclear refugees” lack land claims as part of the Compact. Similar to the problem of climate change litigation discussed earlier in this dissertation and this chapter, the focus on the terms of the Compact is a settler strategy that shifts the focus from independence and decolonization to a question of compensation that normalizes western notions of land ownership.

This Kwajalein story is important because this “agreement” and pressure from the U.S. to lease Marshallese land has created inter-island tension. Some residents shift blame towards landowners for loss of funding that could have gone to support their communities, especially in light of the need for funding for climate change mitigation and adaptation measures. Some argue it's the bigger battle of forcing the U.S. to increase payment and take seriously their valuation of their atolls, ocean, land and lives, and take responsibility for the health and wellbeing of the islanders that makes the boycott worth it. As in the past, there were strong sentiments among residents wanting to return to their land permanently. In addition, increasing awareness of the nuclear activity at the range motivated a small but growing group of Kwajalein people to question the right of the U.S. to use their islands for developing weapons of war. Those against the signing

²⁶¹ Because the U.S. views the Compact as an internationally binding agreement, the difference of 4 million dollars between the original 11 million dollars and the new 15-million-dollar agreement, has been held in an escrow account since 2008. The Compact agreement stipulates the escrow account funds are to be given back to the U.S. until the agreement is signed by the landowners, and so until then and if they decide to sign, the Marshall Islands lose the escrow account money.

argue the compensation assessment fails to account for the role the United States played in destroying a largely self-sufficient way of life, and in failing to replace it with any sustainable alternative.

The new model put forward as a result of the Compact disempowers landowners and works to legitimize and normalize the U.S. military presence under a veil of innocence because “they have the paperwork.” Because the nature of the Kwajalein atoll base is a *test* site, missile companies and the military will experiment and often send missiles *to* Kwajalein from places like Vandenburg Air Force Base in California to test for accuracy and speed. The Compact agreement formalizes the Marshall Islands as a continued *wasteland* beyond 2086 and puts increased risk towards these communities of future experiments and “accidents.” This ongoing reality demonstrates the U.S. approach to use any means necessary and any land desired to carry out its “indeterminate mission to promote national security and global peace.”²⁶² “By sanctioning U.S. imperial control over Micronesian lands to support U.S. defense, the United Nation (UN) Trusteeship Agreement hastened the rise of a U.S. military *imperial* industrial complex during the Cold War.”²⁶³ Under American control, the Marshall Islands entered a new era of contamination and military colonialism.

In spite of Marshallese inhabitants experiencing their homes seized²⁶⁴ and lives disrupted by the U.S. military, first in the 1940’s by nuclear tests at Bikini and Enewetak, and in the 1960’s at Kwajalein for ballistic missile testing, they continue to remake life and assert their visions of

²⁶² Hirshberg, Lauren. "Nuclear Families: (Re)producing 1950s Suburban America in the Marshall Islands." *OUP Academic*. Oxford University Press, 01 Oct. 2012. Web. 12 Aug. 2020.

²⁶³ *Ibid.*

²⁶⁴ Bender, Daniel E. *Making the Empire Work: Labor and United States Imperialism*. New York, NY: New York U, 2015. 338. Print.

their desired futures and reclaim their islands, ocean and coral through climate justice action. They have learned from experience that the most effective response is to take action themselves. Their experiences teach us how land and environment are deeply intertwined with Pacific island identity. The history of Kwajalein clearly demonstrates military tactics used to facilitate dispossession and disrupt Indigenous traditional ways of life that impact their ability to experience sovereignty and practice self-determination in order to make decisions about their land, lives, and environments. Fighting for environmental justice is hard work and these islanders are fighting against threats to their most basic needs. They are motivated by a desire for true security.

The story of Operation Homecoming highlights the emergence of a new form of anti-displacement organizing against the U.S. military. Thus far, I have shown in diverse ways how military development threatens Pacific culture and reefs, and the reef centered factors that contribute to environmental health vulnerability and injustice in the setting of the Marshall Islands. Marshallese have paid the highest price for U.S. military testing and are facing disproportionate impacts again, this time with climate change. In the sections that follow, I show how the Operation Homecoming movement and consciousness raising served as a foundation for future anti-displacement organizing. It informed a Pacific framework for pushing back on the climate refugee label and I highlight the central role of coral reef in their story.

Coral reefs have borne the brunt of U.S. development from bases and nuclear weapons to absorbing carbon dioxide from industrial pollution and adapting to acidification.²⁶⁵ Militarization of atolls and coral has continued, and this human induced change is no accident. Climate change

²⁶⁵ De Ishtar, Zohl. "Poisoned Lives, Contaminated Lands: Marshall Islanders Are Paying a High Price for the United States Nuclear Arsenal." *Seattle Journal for Social Justice*. Issue 1 ed. Vol. 2. N.p.: n.p., 2003. N. pag. Print. Article 58.

clearly evokes notions of emergency and “accident” on a global scale. As the military importance of the Pacific region increases dramatically, the threat of military intervention for security purposes in respect to climate change is inescapable for Pacific islands. The U.S. military is also responding to climate change impacts and threats and incorporating them into its planning. Robert Marzec offers an account of Pacific ‘climate change war games’ that illustrate the buildup of a combat-oriented approach, one launched from understandings of a human-nature divide. Marzec shows that the combat approach threatens to supplant ideas of sustainability with demands for adaptation. Adaptation refers to the understanding that drastic changes to the environment are inevitable and focus on adjusting to the changes rather than prevention. At stake is the military’s ability to declare “accidents” and authority over Pacific Islands in the name of protecting them and American citizens from climate change or natural catastrophe while impacting Pacific Islander political and economic freedoms.

The prioritization of self-determination in climate change adaptation strategies is imperative and urgent. Marshallese activists argue for recognition of an Indigenous right to environmental self-determination, which would allow indigenous peoples to maintain their cultural and political status upon their traditional lands and elsewhere in the case of forced relocation. The current predictability of drastic climatic changes and forced displacement is distinct from past understandings and preparations of refugee “crises.” What if the Marshall Islands do become uninhabitable and residents must relocate – what happens to their sovereignty as a nation?

Kathy interweaves familiar tropes of a Pacific paradise in her poetry with celebrations of Marshallese seafaring traditions, the power of chant, and imagery of ocean/water/animal connections that are central to Marshallese culture. The prospect of being forced to relocate off-

island gives energy to intense feelings and fears of “rootlessness.” In response to any fear of becoming island-less, she calls on Marshallese youth to lead the way, creating new legacies of island leadership inspired by their ancestors and culture. This sense of collective empowerment is felt in the last passage of “Utilomar:”

In the Marshall Islands I teach Pacific Literature
Together we read the stories our ancestors told around coconut husk fire
So what are the legends
we tell ourselves today?
What songs are we throwing into the fire . . . what
are we burning?
And will future generations
recite these stories by heart, hand
over chest?
Maybe
In one legend
It'll start by saying
in the beginning
was water
I still nightmare of dead leather sharks
But I'd rather dream
I'd rather imagine our/next generation
their voices turning the tides
how our underground reservoir will drink in their chants
how they will speak shark songs and fluent fish
how they
will leap
petal-soft
beautiful
unafraid
into the water
before blossoming
to fly²⁶⁶

According to a 2009 report by the RMI submitted to the United Nations, “the potential “vanishing” of a sovereign nation, without a successor state, may rise to the level of a threat to international

²⁶⁶ Jetñil-Kijiner, Kathy. "Utilomar." *Kathy Jetñil-Kijiner*. N.p., 13 Feb. 2019. Web. 13 Aug. 2020.

peace and security.”²⁶⁷ How does a state protect itself from foreign intrusion or violence to their communities if they do not have physical land, or, how do they protect themselves on land that “belongs” to another nation? How will their communities be greeted when attempting to cross international borders and boundaries? We have seen the violence towards used against peoples fleeing violence and other pressures when trying to cross into the United States. Will this repeat in the case of Pacific Islands?

Of further complexity is the task of defining boundaries in the sea and on the seabed when an island nation becomes uninhabited: “the partial loss of land in the RMI may lead to loss of base points for Exclusive Economic Zone (EEZ) boundaries which could considerably reduce Marshall Islands territory with its important pelagic and sea bottom resources....” The report notes that the RMI should “achieve international agreement on land loss [due to sea level rise] and possible EEZ change through the framework of the Law of the Sea.”²⁶⁸ In the context of climate change effects upon the low-lying atoll nation of the RMI, there is little distinction between the force of an invading human military force and rising seas caused by international anthropogenic activity; the outcome (the loss of territory) from either scenario is equivalent in its direct and physically coercive effect.²⁶⁹ Does a sovereign nation cease to exist once it is underwater? Does it cease to exist the moment the highest peak submerges, or when exactly? These important issues have not been resolved in the international discussions on climate change.

²⁶⁷ Republic of the Marshall Islands to the United Nations, The. "Republic of the Marshall Islands: Views regarding the Possible Security Implications of Climate Change." *UN General Assembly Resolution A/RES/63/281* (n.d.): n. pag. Print.

²⁶⁸ Ibid.

²⁶⁹ The Republic of the Marshall Islands may be able to maintain its legal personality despite the formal lack of physical territory; the 1933 Montevideo Convention on the Rights and Duties of States lists "defined territory" as a condition precedent to legal statehood, but may also permit the view that a state which "disappears" may maintain elements of 25 statehood so as to protect its citizens.

The modes in which people respond to climate impacts and pressures to relocate are different. Jetñil-Kijiner brings to light problems that force people to move between atolls and the impacts to one's community and sense of identity from any forced off-island movement. I engage with the figure of the Pacific climate refugee as a construct that has been relevant in attempts to categorize and conceptualize migration pressures and vulnerabilities to climate induced change. Applying the term "refugee" to climate-induced migration comes with possible humanitarian protections and legal implications but can be difficult to legally claim. Critical Refugee Studies offer an alternative frame of analysis to re-conceptualize the scenario of being stateless and displaced, understanding the experience is just as real with or without a legal "refugee" designation.

As I charted the inter-island forced displacement earlier in the chapter, we learned many Bikinians selected to resettle on Kili Island because it was uninhabited. While Marshallese adapted and rebuilt their lives on new atolls, things would always be different. In 2016, Kili Island began experiencing devastating sea-level rise and Bikinians living on Kili will soon be dislocated again, but this time because of climate change. This ongoing and layered displacement generated feelings of betrayal by the U.S. because their islands and people were viewed as sacrifice zones. And the sacrifice zones continue.

In the context of planetary climate change, Pacific islanders are framed as front-line responders and powerful political icons as climate change victims.²⁷⁰ Because their low-lying seascapes are experiencing disproportionate climate impacts that may lead to forced relocation, the concept of climate refugees has emerged in popular culture and policy circles though with uneven application. The term "climate refugee" attempts to capture "the social, political, and

²⁷⁰ Davis, Sasha. *The Empires' Edge: Militarization, Resistance, and Transcending Hegemony in the Pacific*. Athens: U of Georgia., 2015. Print.

economic factors that combine with environmental pressures to give rise to vulnerability and motivate mobility."²⁷¹ For Pacific islands, the figure of the climate refugee builds from imperial and military fantastical understandings of islands as exotic destinations for rest and relaxation, tourism, and warfare and has formalized in global imaginations and perspectives.²⁷²

The framework for how we think about climate change and the term, “refugee” collides with established conceptions of forced migration. To engage climate refugees we must extend definitions of violence to include violence *inflicted to and through the environment* and recognize how such harm translates to threats to humans through a changing climate. To recognize the climate refugee condition, it necessarily requires a centering of how nature and humans function in relation. In her important text, *Body Counts*, Yen Le Espiritu notes “refugee policies are active producers of meaning – a site for consolidating ideas not only about the desperate refugees but also about the desirability of the place of refuge.”²⁷³ Following Espiritu’s work on how refugees can also recover agency, my inquires hinge on the role of refugee as agent/actor throughout various stages of climate justice process.

To avoid (re)producing refugees as objects of rescue in the climate change context we must understand the racial, social, and historical triggers that inform emerging representations of people connected to plight. Critical Refugee Studies (CRS)²⁷⁴ departs from the understanding that refugees and those who are displaced are agents, not objects of study. Refugees are knowledge producers in their own way and on their own terms, whether they qualify for an official UN refugee status it not as important. Articles such as “The Marshall Islands set to Become Climate Refugees

²⁷¹ Lazrus, Heather. "Sea Change: Island Communities and Climate Change." *Annual Review of Anthropology* 41.1 (2012): 285-301. Print.

²⁷² Ibid.

²⁷³ Espiritu, Yen Le. *Body Counts - the Vietnam War and Militarized Refugees*. N.p.: U Of California, 2014. Print.

²⁷⁴ "The Critical Refugee Studies Collective." *The Critical Refugee Studies Collective*. N.p., n.d. Web. 12 Aug. 2020.

before International Law can Catchup”²⁷⁵ is an example of Marshallese communities being primed through the media to become climate refugees. Through CRS we can understand the experience of displacement and the causes of displacement outside of any international or government framework by centering the people who are impacted.

Instead of assuming the Marshall Islands will disappear and their people will drown, or, become climate refugees, Marshallese argue for a closer look at their history and the power dynamics at work that are making them the figure of climate refugees. Their islands gain new meaning through these media portrayals and become a representative icon of what climate change impacts look like (drowning islanders and sinking Pacific islands). In the Marshallese case, Critical Refugee Studies intervenes to restage the experience/fear of being island-less and looks to the ways individuals and communities create life, love, community, and culturally vibrant futures while retaining the right to not leave their islands or give up hope that their islands will exist in the future, even in the midst of uncertainty.

The Compact of Free Association with the U.S. formalized new fiscal dependencies that reconfigured Marshallese internal and off-island mobilities.²⁷⁶ The Compact is especially significant for Marshallese climate change planning because it sets the terms for resettlement off-island though was not specific to climate change. In 2015, the late Marshallese Prime Minister, Tony De Brum, met with members of Congress to request a restructure of the terms in the original fund to support Bikinians and Marshallese resettlement. De Brum was known as a climate champion and master of climate negotiations. The current terms only allocate resources to support

²⁷⁵ Deeply, Refugees. "Marshall Islanders Set To Become Climate Refugees Before International Law Can Catch Up." *HuffPost*. HuffPost, 07 July 2016. Web. 12 Aug. 2020.

²⁷⁶ As a result of the Compact, Marshallese can establish nonimmigrant residence status and employment in the continental U.S. however they must still petition for naturalization. The Compact allows the U.S. to demand land for bases and operate armed forces in the Compact island nations of the Marshall Islands, Federated States of Micronesia, and Palau.

inter-island resettlement in the Pacific, but De Brum was requesting relocation of Marshallese to the U.S. mainland. This Pacific strategy is known as migration as adaptation. De Brum's early career focused on helping his country recover from the consequences of the nuclear testing, but in his final years the focus shifted towards assessing and articulating the costs of climate change and the issue of loss and damage.

How does climate change concerns (re)figure the Pacific as a site of critical engagement? Currently inundated with waves, the use of ocean metaphors to explain climate change has been highly criticized by Pacific islanders due to its panic-inducing and dehumanizing influence. Metaphors associated with water and ocean are used in conjunction with words associated with crises, security threats, despair, and erasure, giving rise to depictions of environmental change as always already out of control and with no solution other than immediate adaptation to this new normal.



Figure 2.10: Marshall Islands shore demonstration. Photo courtesy of 350.org



Figure 2.9: Underwater Marshallese activist actions calling out carbon polluters for killing coral reefs. Photo courtesy of 350.org

Discourse engaging new ocean-related fear mongering delivers a potent dose of abstraction that preys on vulnerabilities to recast reality, and masks histories and decision-making patterns that set the stage for human-induced climate change. The rhetoric often acts as satirical commentary while maintaining a colonial gaze that predicts or guarantees islandless futures. For example, recent news articles and videos titled, “The Marshall Islands are Drowning,”²⁷⁷ “The

²⁷⁷ *The Marshall Islands Are Drowning*. Dir. Democracy Now! *YouTube*. N.p., n.d. Web. 2019.

Marshall Islands are Disappearing,”²⁷⁸ “How to Save a Sinking Nation,”²⁷⁹ “These Islands are Literally Drowning,”²⁸⁰ “These Nations Guaranteed to be Swallowed by the Sea,”²⁸¹ “Kiribati: a drowning paradise in the South Pacific,” “Pacific Nations Drowning,” or “Pacific Nations Swallowed Whole” illustrate how connection to ocean is used to capture attention while playing on island tropes mentioned earlier such as the smallness of islands and here, low elevation is used, to say they will easily disappear under rising tides. Climate refugee illustrations are not neutral depictions, but representations already imbued with colonial memories, meanings, and fantasies about the (lack of) indigenous futures and a disregard for natural environment life systems.

Despite extreme violence to their communities and environments and new threats to their security, Marshallese are empowered to counter victim narratives and work together through climate leadership in pursuit of climate justice. Marshallese communities have pushed back on this reframing through similar declarations as the Pacific Climate Warriors, that they are not drowning. Further, they flip the presentation of themselves as near water and submerged to show evidence they are still here and fighting. I read their activism in this way to articulate it is not islands that are sinking, it is the seas that are rising. Their strategies shift the elevation perspective to present an alternative view and relocates the problem. They engage the figure of the climate refugee and offer alternative images and language that asserts their agency and vision of a vibrant Pacific future.

²⁷⁸ Davenport, Coral, and Josh Haner. "The Marshall Islands Are Disappearing." *The New York Times*. The New York Times, 02 Dec. 2015. Web. 12 Aug. 2020.

²⁷⁹ Malin, Stephanie, James Dyke, Becky Alexis-Martin, and Jonathan Turnbull. "How to save a Sinking Island Nation." *BBC Future*. BBC, 2019. Web. 12 Aug. 2020.

²⁸⁰ Zaidi, Nadia. "These Islands Are Literally Drowning." *News about Energy Storage, Batteries, Climate Change and the Environment*. N.p., 23 June 2019. Web. 12 Aug. 2020.

²⁸¹ Leahy, Stephen. "The Nations Guaranteed to Be Swallowed by the Sea." *The Nations Guaranteed to Be Swallowed by the Sea*. N.p., 2014. Web. 12 Aug. 2020.

Degraded coral reefs that increase threats of rising sea levels forcing islanders to relocate is hyper focused in the media but there are other impacts to rising sea levels such as limiting fresh water sources for the Marshall Islands. Sea water can infiltrate fresh water sources and the salt makes it not safe to drink. The salination of fresh water on islands is an under focused issue that is also impacted by elevation because the rising tides seep into the freshwater aquifer. In this excerpt from “Utilomar” Jetñil-Kijiner describes the flooding of their underground freshwater reservoir by salty sea water. She highlights the irony of the ocean, known as life giving force, turned vindictive and angry, contaminating the fresh water with salt, and leaving them thirsty:

water from the sea that flooded our homes our land and now
our only underground reservoir
what we call a fresh water lens
shaped like the front of an eyeball, nestled deep in our coral
feeding on rainwater it watches us, burning and angry it is
vindictive
it poisons us
with salt
leaving us dry
and thirsty

Climate scientists warn of intensified heat
this heat threatens Minnesota’s great North Woods
a forest nearly 12,000 years old
scientists predict the mixed hardwood and conifer forest
will follow glaciers and retreat north by as much as 300 miles in the next century

While she and her community experience the oceans wrath of revenge, it is not meant to be directed at her, but just as she described her connection to the tides earlier in the poem, she now details how the ocean communicates back to her, offering its own warning and message for the rest of the world.

Rising sea levels will impact the Marshall Islands in yet another way. Today in the Marshall Islands, a weathered concrete Runit Dome holds more than 3.1 million cubic feet, or 25 Olympic-sized swimming pools, of U.S. produced radioactive soil and lethal amounts of plutonium. A *Los*

*Angeles Times*²⁸² review of thousands of documents and interviews with U.S. and Marshallese officials, found that the U.S. government did not tell the Marshallese that the U.S. also conducted a dozen biological weapons tests and in 1958 dumped 130 tons of soil from an irradiated Nevada testing site to the Marshall Islands, filling the dome, also referred to as the concrete coffin or tomb, with some of the most lethal debris on earth. The Times found the U.S. “withheld key pieces of information about the dome’s contents and its weapons testing program before the two countries signed a compact in 1986 releasing the U.S. government from further liability.”²⁸³ This dome remedy was not designed for the low-lying atolls elevation vulnerabilities and is at risk of collapsing from rising seas as tides creep up on its sides.

Officials in the Marshall Islands have lobbied the U.S. government to help address the dome and its risks only to be met with the rejection of responsibility. U.S. officials argue the dome is on Marshallese land and therefore their government’s responsibility. How is this possible? Hilda Heine said in a 2019 interview, “We don’t want it. We didn’t build it. The garbage inside is not ours. It’s theirs (the U.S).” This shifting blame and denial of ownership of environmental catastrophe is representative of the U.S. treatment of environmental destruction and waste in Oceania. Many Marshallese feel deceived by the U.S. for the intent and consequences of their military experiments and toxic pollution.

The Marshall Islands case clearly demonstrates how risks from nuclear weapons, toxic pollution, and climate change intersect with their position as militarized Indigenous islands and how their risk continues to be impacted by their low-lying elevation status and atoll archipelago. Not only are Marshallese migrating because of these environmental factors, but they are moving

²⁸² Rust, Susanne. "How the U.S. Betrayed the Marshall Islands, Kindling the next Nuclear Disaster." *Los Angeles Times*. Los Angeles Times, 10 Nov. 2019. Web. 12 Aug. 2020.

²⁸³ *Ibid.*

off island because their island economy is drastically impacted by an environmental reality that postures an uncertain future.



Figure 2.11: Marshallese youth shares photo of herself for 1.5 to stay alive campaign. Photo courtesy of jkijiner.wordpress.com.



Figure 2.12: Marshallese woman shares photo of her growing belly holding the next generation for 1.5 to stay alive campaign. Photo courtesy of jkijiner.wordpress.com.



Figure 2.13: Collage of online submissions from Marshallese and youth from around the world sharing their creative expression for 1.5 campaign. Photo courtesy of jkijiner.wordpress.com.

One of the overarching goals of Pacific Island climate justice, Jetñil-Kijiner’s work, and the Republic of the Marshall Islands is to provide clean energy. The phrase “1.5 to Stay Alive” was made famous by Jetñil-Kijiner and the late Prime Minister of the Marshall Islands, Tony De Brum. The phrase refers to the need to hold the rise in global temperatures below 1.5 degrees Celsius to save island nations.²⁸⁴ The phrase has inspired a global campaign and climate justice movement that calls for accountability of global powers to take responsibility for their disproportionate influence on carbon dioxide emissions and the more immediate impacts they cause on islands and for Indigenous communities. The 1.5 to Stay Alive campaign demonstrates

²⁸⁴ De Brum played a key role in securing the 2015 Paris climate agreement and convincing the signatory countries to commit to reducing greenhouse gas emissions to levels that would achieve the 1.5 degrees Celsius target.

Marshallese leadership capacity to push back on international projections and assert new climate goals based on optimism and hope.

Jetñil-Kijiner's non-profit, Jo-Jikum, launched a campaign focusing on the number 1.5 as a target goal and asked their supporters to take photos of themselves with the "1.5 to stay alive" slogan, as well as "climate justice" and "Marshall Islands" and post it to their Facebook or social media networks. Jetñil-Kijiner posted sampling of the responses to their call on her blog and reflected on the turnout of Marshallese youth:

There are very few opportunities to be an "activist" in the Marshall Islands. It seems that many of us learned long ago, I would say mostly from the tragic legacy that is the US nuclear testing, that we aren't allowed to demand more. That we can yell till we turn blue, and no one will hear us. That the world can turn its back on us, ignore us, and that we will continue living, even if it's not really living. Sometimes it seems like our society has learned that it is easier to wade through our lives, and never dive into the depths. The activist culture that is common and prevalent in the United States such as the Bay area, New York, or in Hawaii with the Mauna Kea movement, is not present at the moment here in the RMI. There hasn't been a movement that included or prioritized engaging our youth as a population, in doing something, fighting for something that matters, something bigger than ourselves. That's what made these photos so exciting for me to see...What I can see us doing now is taking the formula and the energy that came out of our campaign, and bringing it to other areas in our lives. If we, as a rimajel youth, were able to hold the world accountable, why can't we hold our leaders in our country, our local council, our community members, even ourselves accountable as well? Why can't we demand change, demand justice, or even just demand more – from everyone?²⁸⁵

Jo-Jikum's focus on empowering Marshallese youth to be climate leaders plays out in different forms. A popular workshop format for the non-profit is facilitating climate discussions and brainstorming through art workshops and creative expression. In a 2016 blog post, Kathy reflected on a recent Climate Change Art Camp that brought together 30 Marshallese high school students: "We drew inspiration from presentations on climate change effects on our islands and its links to waste and coral reef bleaching... We dove into the waters outside of delap park to swim through

²⁸⁵ Jetñil-Kijiner, Kathy. "Glass Marbles and Mutual Inspiration." *Kijiner*. N.p., 24 Aug. 2016. Web. 12 Aug. 2020.

dying, and living coral.”²⁸⁶ Jo-Jikum’s strategy of fostering “mutual inspiration” finds value in the exchange of each other’s creative energy as a source of inspiration and empowerment.

The climate change conferences such as COP21 and use of the internet and social media as demonstrated through Jo-Jikum’s work, are important opportunities for Marshallese to (re)present themselves internationally. Such forms of grassroots globalization are mobilizing internationally dispersed Marshallese youth in new forms of world enlargement, transcending geographical and conceptual boundaries established by the United States and other imperial nations who once divided Oceania’s vast sea of islands between themselves.

Jo-Jikum also recruits and trains Marshallese youth on grant writing and how to apply for grant funding that can help families cope with climate change impacts and strategize innovative ways to protect their islands and culture. Speaking about the work of Jo-Jikum, Jetñil-Kijiner connects the motivation to preserve Marshallese culture as rooted in the intimate knowledge of their coral reefs and says: “Our big concern is the loss of culture. We’re so rooted in our land. We could point at a reef and know the story behind it, the fishes there. If we lose the reef, we lose all the stories, all the knowledge,” she said. “This program is about safeguarding that knowledge and preserving it for the future.”²⁸⁷ Jetñil-Kijiner and many Marshallese activists express concern that their low-elevation vulnerabilities has shifted the priorities of the country from a focus on development of their islands to one of preservation. She claims, “It’s changing how we think of our country, how we prepare for its future.”

As island risks are directly tied to its geography, and for the Marshalls, its geography is coral atolls, the media hyper focuses on images and videos of rising tides and coral bleaching

²⁸⁶ Ibid.

²⁸⁷ Goering, Laurie. "Pacific Island Poet Marshals Youth against Climate Threats." *Reuters*. Thomson Reuters, 18 Nov. 2016. Web. 12 Aug. 2020.

accompanied by aerial photos²⁸⁸ to highlight the smallness of the land compared to the encroaching ocean, as evidence the islands are doomed. Jetñil-Kijiner has a different vision. She organizes youth and teaches them how to redirect their climate fear and anxiety, and past intergenerational trauma, block out damaging outside rhetoric, and channel their energy into a framework of empowerment and leadership.

The 1.5 rise in global carbon dioxide emissions climate goal made its way to the text of the Paris Climate Agreement at COP 21 as a result of the Pacific voices, Jetñil-Kijiner and Tony De Brum's work and advocacy, and global supporters that argued for its inclusion. As part of the Climate Agreement, countries promised to provide updated pledges by 2020 and in 2018, the Marshall Islands was the first country to submit two new, binding targets to the United Nations as a signal to others to commit to more ambitious emissions cuts.²⁸⁹ Through lessons learned from the Compact of Free Association, Operation Homecoming, and continued struggles seeking retribution and support from nuclear testing, the Marshalls need strong commitments and real action, not piecemeal plans, and empty promises. These reasons drive our thirst for creative solutions coming out of the Pacific.

Jetñil-Kijiner's poetry and activism are one of the few places where connections to climate justice, culture and coral reefs is made explicit. Coral reef is a "silent" and sometimes invisible key player in the climate justice movement. Through her teaching, poems, and climate leadership she brings visibility and understanding to the value, history, and interconnectedness of coral reefs to the future of her islands and the future of humanity. I argue Jetñil-Kijiner's activism and advocacy work is coral reef climate justice because it is working on behalf of coral and

²⁸⁸ Ibid.

²⁸⁹ Chestney, Nina. "Marshall Islands First Nation to Submit New, Binding Climate Targets." *Reuters*. Thomson Reuters, 21 Nov. 2018. Web. 12 Aug. 2020.

communities to protect coral itself. The future of the reef is deeply intertwined with the future of the Marshall Islands, and the rest of the world.

Some Marshallese residents argue compensation from the Marshall Islands nuclear testing should be used for climate adaptation such as raising islands and building desalination facilities to turn seawater to fresh water.²⁹⁰ Elevating existing islands and building artificial ones or *island building* has been a popular adaptation strategy floating around. One proposal is to dredge coral reef from Majuro lagoon to build an island at a higher elevation to be “secure” from sea level rise. Speaking at a climate change conference in Majuro, climate scientist Chip Fletcher expressed “I would rather destroy some reef than see an entire culture go extinct.” Studies to assess the feasibility and potential location for such an adaptation project are underway. Island building is expensive and would create new scenarios in which the Marshall Islands must depend on money from the U.S.²⁹¹ or other foreign entities, with the possibility to restructure their sovereignty and dependence on aid again for impacts they did not cause. No matter the mitigation or adaptation strategy, it is imperative Marshallese lead their efforts to resist becoming stateless, nationless, and island-less.

Like the Marshall Islands, the Republic of Kiribati, a sea of 33 Pacific coral atolls and reef islands as part of the Line Islands, is another strategic site for the study of climate change and proof of similar tensions. Through the 1950s – 60s the United Kingdom and the U.S. conducted nuclear testing around Kiribati without evacuating the local population. Kiribati recently launched Migration with Dignity, a migration campaign that asserts their presence in response to notions that their culture and home are disappearing because of rising sea levels. The Republic of Kiribati

²⁹⁰ Hanna. "The Marshall Islands Are Experiencing Their Worst Historical Coral Bleaching Event." *Coral Reefs Blog*. N.p., 2016. Web. 12 Aug. 2020.

²⁹¹ Haner, Photograph by Josh. "Rising Seas Give Island Nation a Stark Choice: Relocate or Elevate." *Rising Seas Give Marshall Islands a Stark Choice: Relocate or Elevate*. N.p., 17 Dec. 2018. Web. 12 Aug. 2020.

is making plans to keep their communities strong. Their relocation strategy focuses on establishing diasporic Kiribati communities proactively and purposefully by negotiating land for their relocation and figuring out how their rights will function outside of their homelands. It is important for this work to be done by asserting Kiribati's dignity and preferences and not negotiated under crises. As the Marshall Islands and Kiribati stories demonstrate, Pacific islands have been continually targeted as strategic sites for empire building and military experimentation for "national security" purposes and coral reefs have played a central role in the decision-making of selecting targets.

One essential element of the Marshall Islands efforts to curb emissions is to rely less on commercial imports and shipping and instead rely on their long history of traditional sailing methods for voyaging of different lengths. They see culture as the most sustainable way of life. Traditional ways of living are in sync with nature's seasons, flows and balances. It incorporates the land and ocean as a sacred part of one's collective identity.

The examples I have woven together in this chapter reveal our climate change conditions are a ripe scenario for reworking of past violence that inform new fears of becoming island-less. Many Pacific Islanders articulate how loss of *island* creates the conditions for loss of culture. That is, if a community loses access to their homeland that is an island, they will migrate off island and take their culture with them, but it will be experienced differently and younger and future generations will not have a physical island to return to; the culture source will be the diaspora. If the culture is not lost, it is at the least transformed forever. This is what is meant by loss of island translating to likely loss of culture at different scales.

Marshallese communities and Pacific island supporters are raising awareness of risk and the resilience of Pacific peoples, reefs, and their rights. Climate activists successfully leveraged

their activism and global awareness raising as an effective strategy to advance their input on necessary climate goals through global climate policy. For Jetñil-Kijiner, it is crucial that youth lead the fight for climate justice amidst climate threats as the Marshall Islands parliament officially declared a “National Climate Crises” in October 2019.

Like Pacific people, coral can span different environments, to thrive and recover, even in the most harsh and violent conditions. I have found that Pacific island communities emphasize the natural capacity for coral reef to regenerate and use its resilience as proof that change can still be made to make serious advances to save these important ecosystems and to help Pacific islands maintain the health of their islands. The overlapping themes emerge as centered around the resilience and recovery of Pacific coral and Pacific people.

Ocean science is backing the hope Pacific islands are promoting. A recent study explored the capacity for coral plasticity which basically means that some coral can have characteristics that make them better able to adapt to environmental stress and survive even in extreme temperatures. The study found that elevated plasticity in coral revealed a “novel genomic mechanism of resilience to a variable environment demonstrating that corals are capable of a more diverse molecular response than previously thought.” This is big news for the future of coral reefs. It is even more interesting that the study suggests corals thriving in regions with naturally high water temperature, like the Pacific, may hold a reservoir of temperature resistant coral with the possibility to populate other areas with lower but increasing water temperatures.²⁹² Therefore, it is critical to further study and protect these resilient corals to help us better understand and predict the future of coral reefs. Instead of giving up when we hear that half of the world's reefs are gone, and that 70 – 90% are expected to be gone by mid-century, Pacific Islanders and some scientists

²⁹² Kenkel, Carly D., and Mikhail V. Matz. "Gene Expression Plasticity as a Mechanism of Coral Adaptation to a Variable Environment." *Nature News*. Nature Publishing Group, 07 Nov. 2016. Web. 12 Aug. 2020.

are focusing on the 30% that can live,²⁹³ and the potential for those coral to inspire growth and regeneration in other geographic regions. And so, Pacific coral reefs may hold the hope for the future, but curbing carbon emissions is still central for the future of our reefs because if that change does not happen, coral reefs will not have a fighting chance.

We must also be careful of interpretations of Pacific reef recovery as an excuse to erase the intergenerational harm inflicted on the region through its nuclear legacy and the most harmful damage ever done to the world's ocean. The Marshall Islands are considered to have some of the most “pristine” reefs in the world according to scientists²⁹⁴ because they have experienced minimal bleaching in the past and see minimal impacts from local fishing and sedimentation. This pristine declaration is made despite being declared a nuclear wasteland in the past. We must remember the description of reefs as pristine is in the context of nuclear violence. Because Bikini atoll was bombed and the human population forced to leave, aside from the unique stressors of the nuclear violence, the Marshall Island reefs as a whole have experienced “protection” from some human pressures that other islands experienced. Marshall Island reefs are also referred to as pristine because some reefs have recovered from nuclear violence given this “protection.” Scientists also think the presence of healthy reef today may be partially due to older reef systems dying off and new ones growing. The resiliency and capacity for reefs to regenerate must not erase military culpability for harm inflicted.

²⁹³ Sawall, Yvonne, Abdulmoshin Al-Sofyani, Sönke Hohn, Eulalia Banguera-Hinestroza, Christian R. Voolstra, and Martin Wahl. "Extensive Phenotypic Plasticity of a Red Sea Coral over a Strong Latitudinal Temperature Gradient Suggests Limited Acclimatization Potential to Warming." *Nature News*. Nature Publishing Group, 10 Mar. 2015. Web. 12 Aug. 2020.

²⁹⁴ Pinca, Silvia & Beger, Maria & Jacobson, Dean & Keju, Terry. *The State of Coral Reef Ecosystems of Te Marshall Islands*. N.p.: n.p., 2010. Print.

The radiological legacy of U.S. nuclear testing in the Marshall Islands still impacts Marshallese today and will continue to impact future generations. It is important to understand the nuclear testing as a military experiment on the effects of nuclear weapons and radiation on Pacific people, and the start of an experiment on how coral reefs recover. Scuba divers and reef enthusiasts now flock to Bikini specifically to tour for these *pristine* reefs as well as the sunken ships and nuclear history. The important question is will this “protected” and “pristine” nature be long-term? The recovery of Bikini’s reefs is remarkable, but we must remember and understand its current health in the context of its nuclear history.

This chapter examined Marshallese theoretical interventions that argue questions such as “where will you go?” “what will you do when your islands are underwater?” are framed around assumptions of defeat and act as insult. The right questions are to ask “how can we help” “what do you need” not to construct islanders as helpless and in need of assistance from foreign countries, but to construct them as leaders, ready to regenerate. This reorientation of how we think about providing support is critical. Support and resources must be shared in the context of recognizing liability for climate harms, the disproportionate impacts experienced by those not contributing to the problem, and Pacific Islanders as not only capable of managing their resources but as models of how to do it well. They are still fighting. We are still fighting.

Indigenous Pacific struggles oriented around the question of ocean and coral health shows how one cannot separate nuclear legacies from climate change. Through the examples I discussed, they outlined how “nuclear refugees” become “climate refugees” and I centered Marshallese perspectives on these matters. Indigenous problem-solving in the climate change context is emerging from new generations of climate justice leaders challenging hegemonic decision-making processes that assess climate impacts, identify risks and calculate loss. Pacific leaders have

continued to question confusing environmental apologies and settler strategies used to justify and solve planetary warming. More specifically, they (re)present themselves as environmental leaders instead of environmental victims. Now, as Pacific islands lead the world in calling massive global decreases of carbon dioxide emissions and unsustainable fossil fuel consumption, it is now more important than ever that we rethink and reimagine human relationships to coral reefs. As I'll demonstrate in the chapters that follow, Indigenous people have been working throughout the last century to build equitable futures that push back against the idea that they, their culture, their islands, and reefs will disappear. They partake in this work every day.

Chapter 3: The Right to Nature

In this chapter, I explore ways reefs sometimes become victims of militarism and misplaced “progress” while serving as life preserver and source of hope for regeneration of Pacific culture and rights. To better understand contemporary relationships between coral reef and humans, I analyze Guam’s local activism and advocacy efforts that challenge and rearticulate environmental impacts of the military build-up, strategies for environmental mitigation, sustainability practices, and threats to the ocean and freshwater sources.

The U.S. Department of Defense is investing in Guam’s resilience as a military base, banking on the island’s higher elevation airstrips, and installations remaining intact. This is an interesting and important distinction to be noted in military planning matters. The island's elevation in the era of climate change informs decisions about base investments and targeting specific areas for build-up or relocation. The military investment in Guam is creating more problems for Chamorus to control their freshwater aquifers and make planning decisions, especially as lower lying bases such as Kwajalein in the Marshall Islands become at risk. The military also depends on Guam’s groundwater and surface water to sustain its operations and personnel on the island.

I argue anti-military build-up, demilitarization, and Chamoru rights movements serve as a form of climate justice activism. Efforts do not need to explicitly state, “this is climate justice activism!” for it to do the work of pursuing climate justice. As I have explained thus far, fighting for healthy environments, and addressing disproportionate pollution and harm to communities, wastelands, that lessens their capacity to respond to climate change is climate justice work. In this chapter I show the everyday conversations, research, community work, and activism that informs Pacific island climate justice at the local level in Guam. Working towards protecting rights

of Indigenous communities who steward the environment in the ways we need to slow climate change and protect coral reefs, is the most important climate justice work that transpires. The everyday activism I engage is also specific to coral reef climate justice because demilitarization and justice for Chamorus deeply intertwines with justice and health for coral reefs, another example of the human/nature nexus.

In July 2019 and January 2020, I attended environmental community meetings, workshops, and met with Guam residents, scholars, activists, traditional healers, lawyers, Chamorro senators, and politicians on Guam. The story presented in this chapter contains accounts from dozens of military memos, cultural productions, reports, internal documents, and studies from various grassroots and advocacy organizations based on Guam. This story includes my experience working with the Center for Island Sustainability at the University of Guam in summer 2020. I employed participant observation to discuss and better understand how the status of Indigenous rights on Guam informed environmental concerns. I sought to understand how Guam's environmental concerns engaged coral reefs if at all, and how these concerns might be impacted by climate change.

This chapter identifies how coral reefs are impacted differently depending on issues related to elevation (high cliff limestone, shallow reef, off-shore reef) and the status of military control of the area. I analyze examples from the northernmost point of the island, Litekyan, the western side of the island at Apra Harbor, and the southern stretch of the island focusing on the Umatic and Pago bay to examine how the different elevations and local conditions on Guam inform different strategies for activism.



Figure 3.1: Independent Guahan community meeting January 30, 2020. Listening to opening remarks. Photo courtesy of Miget Bevaqua.

On January 30, 2020, I attended an Independent Guahan general assembly meeting on Guam, where residents discussed how Guam’s political status impacts Indigenous Chamoru rights to nature. The role of Independent Guahan (IG) is to advocate for independence as the best future political option for Guam. A 2016 video posted by IG underscores the push for independence on Guam is not new. The public service announcement outlines IG’s perspective of what sovereignty and self-determination means in an Unincorporated Territory of the U.S.:

For 3,500 years Chamorus lived in the Marianas and governed themselves. Centuries of Spanish, American and Japanese control took this away from Chamorus. While dozens of other colonies have become self-determined, Guam remains a possession of the US and our people remain colonized...A change in Guam’s political status will allow the island to grow a thriving, self-determined communities with greater possibilities for economic and political growth.²⁹⁵

The ongoing struggle by Chamorus to address their lack of autonomy and civil rights dates back to the earliest days under U.S. occupation. A result of the Spanish-American-Cuban War of 1898 was that the U.S. acquired sovereignty from Spain over Puerto Rico, the Philippine Islands, and

²⁹⁵ *Independence PSA - Hacha*. Dir. Independent Guahan. *YouTube*. N.p., 2016. Web.

Guam. Under the Treaty of Paris, The U.S. was obligated to determine the civil rights and political status of the people of Guam. President William McKinley issued a two-sentence executive order placing Guam completely under the Department of the Navy.²⁹⁶ The entire island was designated a naval station and its harbor was declared a closed port. “All policies relating to Guam were formulated with its military value as the determining factor; human rights and fundamental freedoms of the native inhabitants were disregarded.”²⁹⁷ The Supreme Court approved a series of decisions known as the *The Insular Cases* that made the island an “unincorporated territory” in 1901. This case also determined that the U.S. constitution would apply differently in Guam because the island is not “on the path to statehood.” Today, people who live in Guam are not represented with voting power in Congress and the federal government does not count their votes in national elections.

From 1898 to 1950 the Department of the Navy ruled Guam until 1950 when the territory of Guam was created under the Organic Act of Guam. Before the Organic Act, the U.S. determined Guam’s local officials and the community held little power. During this time, the U.S. Navy forced families off their land, seizing it with insufficient compensation if any at all.²⁹⁸ Without power, they could do little to fight back, and ancestral land was put under the control of the Navy. These are the military colonial legacies that have structured the present day struggles of Chamorus to get their land back and to assert power over decisions about their environment, because they were denied rights for so long. “Militarization of the island has been responsible for environmental contamination, with toxic chemicals and heavy metals sludging through the island’s arteries.”²⁹⁹

²⁹⁶ Taitano, Carlos P. "Guam’s Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020.

²⁹⁷ Ibid.

²⁹⁸ Unpingco, Antonio R. “Liheslaturan Guahan 1999 (first) Regular Session." *Www.guamlegislature.com*. N.p., n.d. Web.

²⁹⁹ Kuper, Kenneth Gofigan, Bob Dreyfuss, Samuel Ramani, Annelle Sheline, and Giorgio Cafiero. "Living at the Tip of the Spear: Guam and Restraint." *Responsible Statecraft*. N.p., 20 July 2020. Web. 13 Aug. 2020.

Today, the DoD holds about 30% of Guam's land. Through the Organic Act of 1950 the U.S. Department of the Interior took over from the Navy. The Department of the Interior dealt with conservation and development of natural resource of the U.S. and its territories, and guardianship of Native American Indians.³⁰⁰ Chamorus continue to advocate for the removal of U.S. federal laws that impede the island's economic growth and policies that reflect U.S. commercial and military interests over the wishes of the Chamoru people.

Chamoru citizenship *looks* and *feels* different. Because of Guam's colonial status, the island and its people lack full self-government and protected civil rights available to other U.S. citizens. Their inclusion into the U.S. is crafted to give the U.S. access to the island for the building of bases, to use for weapons testing, and military training. As an unincorporated territory/colony, the U.S. has ultimate control in matters that could threaten U.S. military power and to use the island as they see fit to protect "national security" interests. This colonial relationship contradicts the U.S.'s fundamental democratic and constitutional principles.

While all political status options are controversial, independence is one of the most contested because it could mean restructuring and even eliminating the U.S. military presence on Guam. IG recognizes there are diverse opinions on the topic, and they encourage honest and open debate about what these options mean for Guam. Their goal is to have a conversation in the first place. IG is a grassroots effort that organizes outreach around educating elected leaders and the community about the importance of changing Guam's political status and the possibilities should it be independent. IG works with the Fanohge Coalition, a collective of groups and individuals united in their support for the rights of the Chamoru people to exercise self-determination and the

³⁰⁰ Taitano, Carlos P. "Guam's Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020

protection of their unique connection to Guam, to help bring the issues of self-determination and decolonization to candidates for the Legislature and Congress.

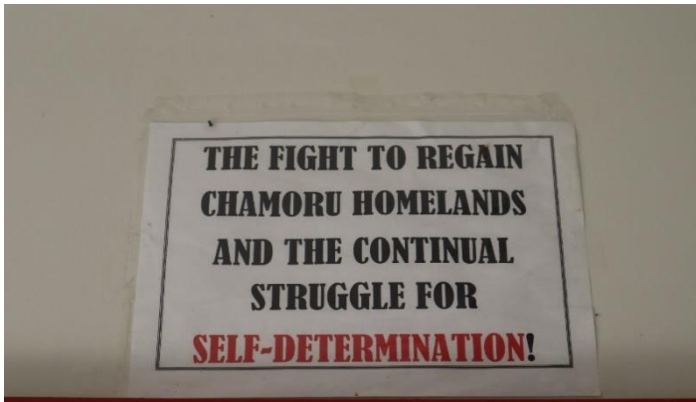


Figure 3.2: Small poster for Chamoru self-determination at the Chamoru culture center. Personal photo.



Figure 3.4: Collage of newspaper clippings of stories covering Chamoru demilitarization, self-determination, and land return activism. Personal photo taken at the Chamorro Culture Center.



Figure 3.4: Another collage of newspaper clippings of stories covering Chamoru demilitarization, self-determination, and land return activism. Personal photo taken at the Chamorro Culture Center.

In 2018, I volunteered with IG during the Liberation Day parade to pass out educational materials on the political status options for Guam and to advertise a concert organized by the group. I walked up and down the street while a massive and hours long parade passed through the main road on Guam, Marine Corps Drive. On both sides of the street for as far as the eye can see, Chamoru families set up canopies with their last names on customized banners hanging over their area. Families arrived early in the morning to find parking and claim a spot big enough for their families. Groups set up their own fiestas and BBQs while they watched the parade. It seemed like everyone on Guam was there. Most attendees watched the parade while eating off a Styrofoam plate, drinking soda, or the iconic and sugary Mr. Brown canned coffee, sharing laughs with their

family, while they took turns circulating around a long picnic table decorated in platters of BBQ'd meats, red rice, chicken kelaguan, and other traditional Chamoru dishes.

I was nervous to walk through the crowds of families to pass out information about Guam's political status because many families cheered and waved as the military floats and hundreds of military members dressed in their blues and camouflage marched down the street. I was repeatedly hit with candy being thrown by navy members throwing candy and handing out small American flags to excited kids running along the parade. I was nervous because I was not sure how we would be received when sharing information that challenged the existing non-political status of Guam and by default challenged the current military control of the island. The liberation day parade is meant to celebrate the "liberation" by the U.S. from Japanese occupation which is celebrated every year on July 21st.

I passed out our IG materials and answered questions as best I could about the intention of IG's outreach, an overview of the different political status options, and encouraged families to join us at the concert to learn more. Not everyone accepted my invitation to take a pamphlet, but I was encouraged by how many people engaged with me and wanted to learn more about what IG was doing. I was surprised to learn how many people did not understand the details of Guam's political status debate, yet they were eager to become informed.



Figure 3.5: Photo of myself with other Independent Guahan volunteers at the liberation day parade, July 21, 2018. Photo courtesy of Miget Bevaqua.

At the January 2020 IG meeting I recognized many familiar faces in attendance that I had met in 2018 and seen over the past month at various environmental meetings, community

gatherings, and at the Micronesian Area Research Center. The meeting was held in the Chamorro Village in Hagatna, in a covered area in the center of the village, usually filled with music and dancing by the community throughout the week. The meetings are held once a month and are open to the public. The participants ranged in age from small children to elders 80 and older with the average age around 40. On this day there was no band, but they opened with a Chamoru song and oral history storytelling by an elder Chamoru woman discussing her memories growing up on the island and learning how to farm and use the natural world around her to thrive. With a stark shift in tone, while tears began to fall down her cheeks, she then recalled learning for the first time that public access to Litekyan, the ancient Chamoru settlement, would be cut off, and only specific routes would be open to access the beach. She recounted her feelings of anger and frustration about “the excuses given by the military” as to why they needed to use the land to expand their base build up. The whole room kept their attention focused on her story, heads nodding in reluctant agreement at the spirit of her message.

Litekyan, also known as Ritidian, has been under U.S. control since 1963, when Indigenous Chamorus were moved off the land. It is home to at least four ancestral villages and burial sites and an area where traditional healers forage for medicinal plants and herbs. Litekyan is now part of the Ritidian Wildlife Refuge, and is the site of a proposed U.S. Marines firing range, part of an \$87 billion construction project known as the Guam build-Up. Over the next five years, 5,000 Marines and their families will relocate from Okinawa, Japan, to the new base, which will include housing and firing ranges. The U.S. Marine Corps is building and expanding a base that will destroy 1,000 acres of limestone forest, which are habitat for numerous endangered species.

Limestone forests were once submerged tropical reefs made by corals and other organisms that produce calcium carbonate skeletons, and now contain many trees that grow in the limestone

rock. It took millions of years for the coral reefs to fossilize and for the trees to grow. More than half of Guam is limestone, and these ancient fossilized reefs hold specialized knowledge about our Earth's history. Limestones play a critical role in recording events in the history of life on Earth:

As their production and preservation is intimately related to cycles of nitrogen and phosphorus in the lithosphere, hydrosphere, and atmosphere. The records preserved in limestones provide researchers and policymakers with critical insights into the possible consequences of human activities for the future of reefs and human civilizations.^{301 302}

Guam's natural habitats such as these limestone forests are gradually disappearing because of military and tourism development that impacts terrestrial environments, water, and the off-shore reefs.

The theme of the Independent Guahan January monthly meeting was "the Right to Nature." Present were community members, families, local scholars studying at the University of Guam, and regular members of IG. The evening started with a presentation by Kyle Galindez about the relationship between sovereignty and the island's environment. Sovereignty is the condition of being politically free. Galindez explained that "the loss of sovereignty also means the loss of a basic right to have a say over what happens to the natural world around you."

Many Chamorus and IG continue the fight for Guam to exercise its right to self-determination – or Chamorus to vote for their desired political status, to be an incorporated territory, a state, be in free association with the U.S., or become independent. Chamorus have long fought for the right to self-determination and sovereignty because these rights also mean the right to nature and the right to make decisions and determine laws about the natural environment and plant and animal life. Without formal sovereignty, Chamorus have still made their wishes known.

³⁰¹ Limestone also naturally functions as a mechanism for storage of large quantities of CO₂.

³⁰² Hallock, Pamela. "Reefs and Reef Limestones in Earth History." *Life and Death of Coral Reefs* (1997): 13-42. Print.

It is now more important than ever to highlight (extra)ordinary people meeting their needs outside of the state through creative cooperation, solidarity, mutual assistance, and grassroots organizing. Chamoru grassroots organizing and environmental activism navigate constraints of seeking justice *through the state* as colonized people by leveraging environmental laws that may offer a source of power to pause, stop, or reroute harmful military and development plans. At the same time, they fight for self-determination and sovereignty *through and outside* the state.

With sovereignty, Chamorus could design a constitution that would allow them to not only protect the environment but assert the need to inform the community about what is happening in the environment. With stronger environmental regulations and protection, communities can put pressure on the government and the courts and also on oil companies and industries to change their bad behavior. While sovereignty could potentially offer more rights to make sustainable decisions, Chamorus and other Indigenous communities also find strength in pursuit of independence and alternative forms of governance outside of the nation-state. David Pellow offers valuable insight tensions that arise when seeking to make change through the state when it has caused intergenerational violence. Pellow notes that much of the literature on theories of justice does center on the state, and this is problematic because the state is one of the primary forces contributing to environmental injustice and related institutionalized violence.³⁰³ “If we take a different approach to social change, we might find that many communities seek to walk away from the state rather than toward it.”³⁰⁴ The messy status as an unincorporated territory has led to unprecedented challenges when it comes to asserting Chamoru rights to manage the environment, reclaim stolen land, and protect natural resources and culture. Grassroots activism, public

³⁰³ Pellow, David N. *What Is Critical Environmental Justice?* Cambridge, UK: Polity, 2018. Print.

³⁰⁴ Ibid. pg 13.

demonstrations, especially outside of military base construction, and community meetings has served as a key strategies for Chamorus to express their voice and make plans outside of the state.

During the IG meeting, IG members provided formal presentations to share knowledge about what was happening on island regarding the environment. Several community members also shared stories about what they have noticed changing around island and voiced their concerns. I learned from the meeting that while the community has been able to keep up with the developments happening around Litekyan to the best of their knowledge, there is no information available on the status of the other major military project on island, the coral reef dredging at Apra Harbor, also part of the Guam military buildup. The military frequently discusses these projects as separate, to make the activities appear as small changes and isolated projects that are needed to provide necessary land for training that cannot occur anywhere else. The community on the other hand, understands the projects as connected from a holistic approach that recognizes these activities are all coming from the military and are all part of the same military buildup project, and are all impacting the environment, coral reefs, and their communities in different ways. The IG community meetings are a unique space to gather to discuss these projects and exchange updates and knowledge together.

Guam's Apra Harbor is one of the most well-known coral reef systems found on Guam, the largest deep-water port in the Western Pacific, and the busiest in Micronesia. Apra comes from the Chamoru word *apapa* meaning "low" and was home to rich fishing grounds and ancient Chamoru villages and remains a popular recreational area for locals and tourists.³⁰⁵ Under the United States administration, the U.S. Navy began to develop the harbor. Over the years, thousands

³⁰⁵ During the whaling era the port was a popular rest site for whaling ships and later used during WWII to repair and refuel Japanese submarines and warships.

of tons of explosives were used to destroy coral reefs that were deemed too dangerous for ships to navigate and to make room for the passage of military and commercial ships.

Today, most of the harbor is controlled by the U.S. Navy.³⁰⁶ The northern side of Apra Harbor is a commercial port, and Naval Base Guam was constructed in the southern end. It is also where the U.S. military proposed to dredge over 70 acres of mostly coral-covered seabed, according to the 2010 Environmental Impact Statement (EIS). An EIS is a document prepared to describe the effects of a proposed activity on the environment. The person funding or conducting the EIS should be unbiased in an ideal world; however, they hold power in determining environmental value, assessing risk, and articulating long-term impacts for various stakeholders, including local community members.

The EIS can dictate whether a project requires further environmental study to determine if the proposed activities are environmentally safe, and they can also declare that an activity is safe to proceed. Part of the argument outlined in the EIS is the military's "need" to expand Apra Harbor to allow for additional ships to dock there as part of the military realignment plan. In Apra Harbor, developments by the U.S. Navy and Port Authority of Guam may already be affecting water quality and reef communities.³⁰⁷ The reefs of Apra Harbor have persisted through two world wars, anthropogenic activity, and extensive alterations such as construction and dredging, yet are still thriving in some areas. The coral reef dredging at Apra Harbor and the new firing range at Litekyan are both the result of the military build-up on Guam and base relocation.³⁰⁸

³⁰⁶ Over the years, Apra harbor was used as a coaling station and for nuclear and weapons transfer.

³⁰⁷ Burdick, S., C. Li, V. Martynov, T. Cox, J. Eakins, T. Mulder, L. Astiz, F. L. Vernon, G. L. Pavlis, and R. D. Van Der Hilst. "Upper Mantle Heterogeneity beneath North America from Travel Time Tomography with Global and USArray Transportable Array Data." *Seismological Research Letters* 79.3 (2008): 384-92. Print.

³⁰⁸ Taitano, Carlos P. "Guam's Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020.

The Independent Guahan meeting demonstrated the shared concern among the local community about their need and demands for transparency from the military and sharing of information, especially as it relates to the dredging at Apra Harbor. According to Victoria-Lola Leon Guerrero of Independent Guahan, “the only thing the military has said publicly is that they were going to study the impacts (of the dredging at Apra Harbor) and that after that study they would determine if they would begin construction.” The military has never released the studies to the community. Chamoru senator Therese Terlaje has raised concerns about recent underwater detonations happening at Apra Harbor that have alarmed the community. When we think about sovereignty in the everyday context, it empowers a community to demand information on what is happening in their neighborhoods or villages. Currently, Chamorus are not able to gather the information they need when it comes to military development and are often dismissed when they try. The community has not been informed of the details of the detonations or how it is impacting the environment or human health. In Galindez’s presentation, he explained how he contacted the military to request updated information about the dredging only to be told: “some dredging has occurred.” Still, they provided no details on where, how much, or any study of the consequences of the work undertaken. “If some dredging already occurred, there must have been contractors hired to conduct the work. Where is the information about the contracts? Where is any information?” said one community member.

The case of the dredging at Apra Harbor makes clear that transparency and communication about actions undertaken according to an EIS are not always enforced. EIS can serve to inform action if conducted with credible environmental and cultural information. This has not been in the case in Guam. The Guam community has no footing to legally demand answers from the military because the military can site a “lack of public information” as a matter of national security. In

other words, we do not have to tell you what is going on because releasing that information would put national security at risk. This is a fallacy.

Guam's military occupation also threaten the island's coral reefs. Guam's reefs play a vital role in breaking waves and protecting shorelines, with a healthy reef capable of reducing the size of a wave during a storm by half. Whereas coral reefs are crucial to safeguard low-lying islands and atolls as explored in Chapter 2, reef impacts and contributions are even more nuanced on Guam. The waters surrounding Guam are experiencing extreme warming and coral reef bleaching. Further, Guam's legal status as a U.S. colony impacts Chamorus capacity to challenge development and military activities that harm reefs, therefore impacting their ability to protect coral reefs.

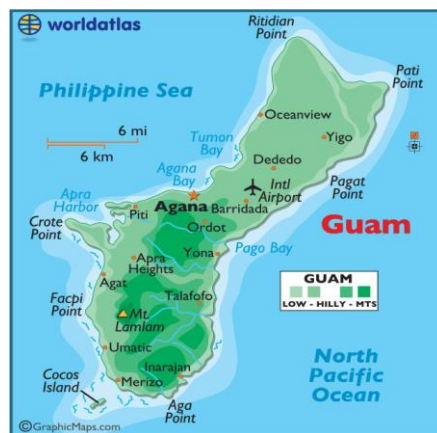


Figure 3.6: Map of Guam. Courtesy of worldatlas.com

The diversity of an island's topography, the land's surface shape, and geology, what the ground is made of, explains the unique ways the island has been navigated by animals and humans over time. Studying the topography of islands from an Ethnic Studies and Pacific island epistemology illuminates a new story about the reasons why certain parts of the island became targeted for military use, warfare, experiments, wastelanding, and protection. Guam and the Mariana Islands were formed millions of years ago by underwater volcanoes and reside at a

naturally higher elevation. The northern part of the island is a forested coralline limestone plateau, while the south contains volcanic peaks covered in forest and grassland. A coral reef surrounds most of the island, except in areas where bays exist that provide access to small rivers and streams that run down from the hills into the Pacific Ocean and Philippine Sea (USGS).³⁰⁹ Guam's coral reefs have survived for thousands of years and have protected and supported Chamorros of Guam and have sustained its rich biodiversity.



Figure 3.8: Rusted sign at a beach in Guam explaining how Chamorus traditionally fished as a community based on inafa' maolek value. Personal photo.

Guam's coral reefs are home to over 4,500 species, including a thousand species of fish, hundreds of species of coral and algae, giant clams, crabs, and endangered sea turtles. Today, coral reef and fishing maintain Chamoru connections to the sea. Our Chamoru ancestors of Guam had

³⁰⁹ Taitano, Carlos P. "Guam's Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020.



Figure 3.7: Rusted sign at a beach in Guam explaining meaning of Inafa'maolek. Personal photo.

strict rules about who could fish, and where. Women and children would gather crabs, shellfish, and other food from lagoons and fish with nets on the sandy flats within the shallow reefs. Boat and deeper sea fishing was reserved for men and boys, and only elite Chamorro classes had the privilege to fish in the open sea. Women's relationship with the reef was one of sustenance, livelihood, and shaped her role within her family unit and clan. Fishing and sharing of reef fish are used for Chamoru cultural events like weddings, village fiestas, funerals, church events, and those who fish to provide for their families every day.

The Chamoru philosophy of Inafa'maolek, or to make good and right, center the importance of reciprocity and shared well-being. Inafa'maolek is a central tenet of Chamoru culture. It guides the Chamoru community's reaction and response to threats to their rights as Indigenous peoples and caretakers of their island and environment. I analyze examples of Chamoru activism in this chapter through *inafa'maolek* as a guiding principle that informs advocacy for

local (natural) resource governance. Inafa'maolek informs calls for transparency, free, prior and informed consent, and civic engagement from a perspective of Indigenous rights.

The interesting dichotomy with coral reefs is that they are simultaneously produced as an exotic destination and exploitable ecosystem but not marked for protection. Wastelands of coral traces coral reef harm as a continuity from the European colonization of native peoples to the present exploitation of natural resources. As I learned from my conversations with Chamoru activists, organizers, and community members, unsustainable development and careless tourism practices are also significant factors of land use that impacts coral reefs. Of major concern to local stakeholders is the tourism industry on Guam and the massive amounts of off-island investment, mainly from Japan and China, that is funding the creation of more hotels and selling land to foreign investors not committed to the island's environment. Another concern for Guam and the Marshall Islands is the growing, unregulated exploitation of reef fish for the local markets.

My focus on the Palaske (parrotfish) serves as my own form of resilience and resistance through a care for ocean life and coral reef. It gives me a sense of connection to Guam, to study and write about such an important fish for Chamorus and for coral reefs. I write this section as my love letter to the Palaske in hopes others will learn to love, respect, and protect it.



Figure 3.9: Photo of Guam's parrotfish. Photo courtesy of nature.org

The parrotfish is stunning with its iridescent color. With about 60 species of parrotfish in the world, these special fish provide an irreplaceable benefit to coral reefs. A parrotfish spends about 90% of its days feeding off algae on the reef and acts as a filter that cleans the reef, a beautiful function of reciprocity that only nature could dream up. The parrotfish has a system of teeth in its throat that grinds up coral bits and excretes tiny white sand particles. Scientists say just one parrotfish can poop out 700 pounds of sand a year. This process is known as bioerosion and helps control the algae population and creates new surfaces for young coral to attach and grow.³¹⁰ What's even more interesting about this unique fish is that it creates a cocoon of protective mucus around its body when it sleeps and likes to hide in the coral for shelter.³¹¹ Parrotfish are also delicious and nutritious for island communities and have served as a stable food source for Chamorus. With increased tourism, visitors to the island also developed an appetite for this fish that is critical to reef health. Most restaurants list parrotfish as the fish of the day. I learned the larger species of parrotfish such as the bumphead parrotfish, went extinct in Guam from being overfished and are now heavily depleted in Papua New Guinea, Fiji and Samoa.

Now the parrotfish we know today are at risk. Fishing for parrotfish was a sustainable practice for islanders and understood as part of Chamoru "roots," but today, commercial overfishing is a significant problem. The increased population and tourists consuming marine life for leisure make those same practices unsustainable through a tourism perspective, no matter how bad visitors want an "authentic" or "local" island meal. Important to Chamorus culturally, spiritually, and economically, the status of coral reef fish on Guam is an essential indication of overall reef and ocean health. By understanding the history of this transpacific tropical fish and its relationship to coral, we can realize lesser-known modes in which islands connect to one another

³¹⁰ "Parrotfish." *The Nature Conservancy*. N.p., n.d. Web. 14 Aug. 2020.

³¹¹ *Ibid.*

through non-human species, ocean health, and coral connections. The parrotfish also draws tourists to explore Guam's underwater habitats.

I cannot count the number of times that a stranger learns I'm Chamoru and excitedly shares with me "Oh wow, Guam?! I lived there/visited when I was stationed there for the military. It has best snorkeling and diving spots ever. The reefs are beautiful. The water is so clear. Have you been? You have to go!" These comments have all come from non-Chamoru military connected persons and the comments always pulled at my heart, stinging it. Because the only thing I ever wanted was to return home. It was painful to hear Guam recommended to me in a tourist framing through the exoticization of reefs, knowing if I could afford it, I would return home for other reasons, and not because of their unsolicited travel review.

In 2018 the International Year of the Reef, which only occurs every ten years, was declared in Guam, Guam's Year of the Reef (GYOR). Throughout 2018, Guam's coral reef resources gained visibility through social media, community events, newsletters, and new business partnerships. Through the effort, local businesses created unique banners and outreach materials that focused on the value and beauty of reefs and pledged their support to *care for reefs*. The most common *care for reefs* themes appeared through reminders of the interconnection between reefs and humans and promises to recycle and not pollute³¹².

In July 2018, I met with the Umatac youth in Southern Guam who participate in the reef monitoring program. The youth are trained by local community members to educate others about the proper uses of Guam's reefs and the types of land use and behavior that can harm them. I employed participant observation and ethnography during my fieldwork to learn about the community work happening to care for coral reef. The Umatic reef monitoring's mission statement is "Care for Ocean as the Ocean Cares for Us." Three young girls staffed a canopy tent and gave

³¹² Guam's appreciation and respect for reefs are evident through the Guam Community Coral Reef Monitoring Program. The program was launched in 2012 and created more opportunities for Guam residents to engage in coral reef management through experiential learning about Guam's coral reefs and first-hand observation of the challenges facing them.

a presentation to visitors and community members about their Okra program as they explained the conditions of the local reefs and charted their ongoing efforts to practice community reef monitoring and intergenerational reef education.

Guided by one of their youth members, we toured the village of Umatac and their old Spanish churches, gravesites, and sacred lookout points. They taught me how to weave palm leaves and then guided our small group on a hike to one of the most sacred sites on the island. We ended the day with a village fiesta complete with traditional Chamoru dishes served family-style. We talked story, or shared stories, and cooled off in the shallow rocky waters reflecting on the day's conversations. The Coral Reef monitoring program in Umatac is an example of Pacific Island interventions and demonstrates everyday methods to resist U.S. imperialism by (re)centering Indigenous knowledge. The youth taught me how intricately the island industries intertwine with the social, political, economic, and military histories of the island that are all impacting the reefs.

One of the more surprising factors I learned from the Umatac youth was the threat to coral reef from fire. Fire is not a natural part of the island's environment with no lava or natural ignition source that would typically cause a fire to the island's environment. Humans cause all fires on Guam, and the animals and plants are not well adapted to frequent burning. Most fires are started intentionally and illegally by hunters clearing the line sight to shoot animals or to attract pigs or deer to specific locations to make them easier to kill. Residents will also burn brush to clear the roads and areas around their homes.

The environmental impact of fire extends beyond the forests and grasslands. Impacts from wildfires extend into the ocean and onto Guam's coral reefs. Fires remove vegetation, leaving bare ground that is susceptible to erosion when it rains. According to the National Park Service, the eroding topsoil travels to the ocean, where it settles on corals, potentially killing them. Locals and

several international conservation agencies have identified sedimentation as one of Guam's primary threats to its coral reefs. Soil erosion also damages the land. Plants need topsoil to grow, and Guam's topsoil is thin, forming a layer about five inches thick in many places. This topsoil layer, which has taken tens of thousands of years to develop, can be entirely lost with as few as 15-20 burn events. Once the topsoil has eroded, the underlying clays, which are alkaline and nutrient-poor, cannot support vegetation, leading to "badland" areas, those patches of bare red dirt that are a common sight on southern Guam. Badlands are incapable of naturally re-vegetating, and they will continue to erode and release sediments onto Guam's nearshore coral reefs.³¹³

In Southern Guam, the Umatac Watershed Adventures Project seeks to protect Umatac's land and ocean through conservation efforts, including addressing badland areas. At Fouha Bay, coral reefs were seen covered in sedimentation, which the Umatac youth taught me deprives coral of sunlight by smothering it. The project aims to lessen such stressors by informing the public about improving the management of their shared environment. In 2017, the Watershed project invited council members to make seed slingstones – a cultural twist on a Chamoru weapon and conservation, involving compost, soil mix, and seeds - to disperse on the hillside to sprout new generations of trees that can help with erosion control and heal wildfires areas. The roots of the new trees will secure the soil and prevent sediment from smothering coral below.

The University of Guam Center for Island Sustainability (CIS), Executive Director Austin Shelton, a native of Guam was the Humatak Watershed Adventures project manager. I worked with Dr. Shelton in July 2018 through my internship with the CIS. I supported their efforts to pass new legislation to ban plastic straws and Styrofoam products on island. In this role I assisted by researching environmental data and concerns on island, reviewing past and pending legislation

³¹³ "National Park Service." *National Parks Service*. U.S. Department of the Interior, 2019. Web. 14 Aug. 2020.

regarding the environment and sustainability, and met with stakeholders to discuss issues concerning sustainability for Guam. In preparation for our work to support the new bill, our team met with Senator Regine Biscoe Lee to discuss her recently passed Bill 268, “Choose to Reuse: Mungnga Ma Ayek I Plastek.” The bill banned the use of single-use plastic bags on island and we discussed her experience navigating environmental politics as a Chamoru women.

It was through working with the Center for Island Sustainability that I met Phil, their coordinator for everything sustainability related. Phil is Chamoru and fell in love with environmental stewardship at a young age. He prepared presentations about sustainably decision making for all grade levels on island and acts as a liaison between the CIS and their various research and community engagement efforts.

I did not have a car on island, and Phil graciously offered to drive me around for acai bowls, and I rode with him to get his tires changed. As we waited in the mechanic waiting room I learned about the roots of his passion for protecting the environment, his dreams to travel the world for sustainability conferences, and his disappointment that he and his partner had to miss an upcoming Beyonce concert because of another conference he had to attend on behalf of the center. He got to travel off island for his work with CIS and expressed he would gladly sacrifice a good time at a concert for improving the health of the island.

After learning of my research on coral reefs, Phil invited me to accompany him on his first day with their new interns to observe their training to monitor and record tourist companies' use of the local reefs. The training transpired incognito because CIS was concerned that if the tourist companies learned of their study, they would move to another location or change their behavior when being watched. The study was interested in finding out how many tourists were illegally walking on the shallow reefs and which companies were the worst culprits with the goal of regulating tourism operators and drafting potential legislation based on the findings.

Direct damage to reefs is often caused by fin and equipment strikes on coral, grabbing kneeling, walking, and standing on corals. The Tasi Beach Guides Project is investigating the

relationship between human use and coral health on coral reefs around Guam. The project collects data on the frequency and intensity of human users at two popular diving locations, both in-water and on land. The research will help improve the management of these sensitive natural areas and develop locally relevant strategies for reducing recreational impacts to Guam's coral reefs.³¹⁴ The CIS interns trained to act like they were just relaxing or studying at the beach under a palm tree. Still, they were instructed to carefully watch each vehicle that pulled into the parking lot and watch the actions of the tour companies coming in with groups of divers, mostly Japanese visitors during the hours I was present. Phil taught the interns how to monitor and record the different tide cycles and how to know when someone was walking on the reef. When a large group of divers suddenly walked by and caught us off guard, we all acted like we were talking about something else. The Umatak Coral Reef Monitoring Program and the Tasi Beach Guides Project programs demonstrate how local observations and interpretations of coral reef change and data help inform environmental community planning. These programs also highlight how and why Chamorus develop coral reef protection initiatives across sectors to dictate community and industry behavior change that is needed to restore and maintain healthy coral reef environments.

Guam's tourism industry supports over 21,000 jobs annually, representing 34% of total employment and 60% of the island's yearly business revenue.³¹⁵ Over 30% of visitors cite the marine environment as a top reason for visiting Guam³¹⁶ and each year, Guam's reefs host over

³¹⁴ The project team included staff and interns from the UOG Center for Island Sustainability, NOAA's Coral Reef Conservation Program, Friends of Reefs Guam, and the Bureau of Statistics and Plans.

³¹⁵ Guam Visitors Bureau. "I ESTORIA Guam Visitors Bureau 2018 Annual Report." (2018): n. pag. Print.

³¹⁶ Ibid.

300,000 tourist snorkelers and 100,000 tourist scuba divers.³¹⁷ Coral reef-related tourism contributes \$323 million per year to Guam's economy.³¹⁸

The health of coral reefs are vital to the tourism industry and will influence Guam's plan to expand tourism in the coming years. In 2016, over 1.5 million visitors came to Guam and spent over \$1.5 billion on the island.³¹⁹ The Guam Visitors Bureau hopes to attract two million annual visitors by 2020.³²⁰ The growing population has increased the strain on Guam's coral reef resources. Given this increase in visitor arrivals and spending, and the importance of Guam's coral reef and associated activities for the tourism industry (snorkeling, diving, etc.), the economic value of Guam's reefs has presumably increased in the last decade. The island is home to over 167,000 people, with a density that presents challenges. A study found that "reefs surrounding densely populated islands had lower fish biomass, fewer top predators, less coral cover, and greater abundance of fleshy macroalgae."³²¹ The increase in human inhabitants and visitors means Guam's reefs experience more significant impacts from pollution and runoff, coastal development, and recreational activities. The military base build-up and increase in military economies on the island are already straining limited resources.

Guam's status as a U.S. territory has meant different things in terms of political representation, the environment, the economy, and tourism. The displacement and loss of ancestral lands caused by the U.S. military combined with militourism make it easier for foreign investors

³¹⁷ NOAA's Coral Reef Conservation Program (CRCP). "Coral Reef Condition: A Status Report for GUAM." (2017): n. pag. Print.

³¹⁸ Spalding, Mark D., R. Dan Brumbaugh, and Emily Landis. *Atlas of Ocean Wealth*. Arlington, VA: Nature Conservancy, 2016. Print.

³¹⁹ Guam Visitors Bureau. "I ESTORIA Guam Visitors Bureau 2017 Annual Report." (2017): n. pag. Print.

³²⁰ Ibid.

³²¹ Sandin, Stuart A., Jennifer E. Smith, Edward E. Demartini, Elizabeth A. Dinsdale, Simon D. Donner, Alan M. Friedlander, Talina Konotchick, Machel Malay, James E. Maragos, David Obura, Olga Pantos, Gustav Paulay, Morgan Richie, Forest Rohwer, Robert E. Schroeder, Sheila Walsh, Jeremy B. C. Jackson, Nancy Knowlton, and Enric Sala. "Baselines and Degradation of Coral Reefs in the Northern Line Islands." *PLoS ONE* 3.2 (2008): n. pag. Print.

and businesses to petition for access and development. The temporary and permanent military land leases that seized ancestral land opens the door for foreign contracts hired by the military to create new development that can permanently alter the environment, in addition to bringing construction workers and their families on island during projects. Economic arguments for increases in militarization on the island center the logic that Guam needs the military to survive economically and for physical protection of the island. This is a dangerous narrative of dependence that has been internalized by some Chamorus, mostly elders, that legitimizes the military buildup and frames Chamorus as helpless. Younger generations argue against the naturalization of militarization of the island and assert militourism is not the only way to offer stability and security for Guam.

Because land-use activities impact coral reef health, the work of Save Southern Guam is the everyday work of coral reef climate justice in practice. Through my Chamoru network, I met a local woman in her jewelry store in Chamoru Village. Lasia Casil was running for public office as a Democratic candidate for Senator, and she reiterated her frustration that the island keeps accepting money from people who will turn land into high rises and pollute the water. She told me about her efforts as President of "Save Southern Guam " to challenge the development of the Pago Bay Ocean Resort. She founded the group in response to another controversial hotel project in the village of Agat that threatened the surrounding wetlands.

The non-profit environmental group Save Southern Guam held public protests in 2017 and 2018 to challenge the height variance in court proposed by the resort developers, which would build higher than the zoning maximum of three stories. "We are not anti-development. We're pro-responsible development,"³²² Casil said in a recent article. She was selling pins that said "Save Southern Guam" at the register of her store, with all proceeds going to support their efforts.

³²² Sablan, Jerick. "Save Southern Guam to Celebrate Victory over Pago Bay Development with a Wave." *Pacific Daily News*. Pacific Daily News, 14 Aug. 2018. Web. 14 Aug. 2020.

My pin is proudly clung to my favorite bag, serving as a form of material culture that I wear proudly in San Diego and jump at the chance to start a conversation with anyone who asks about the meaning of the pin's message.



Figure 3.10: Photo of Save Southern Guam pins at jewelry shop in Chamorro Village. Personal photo.

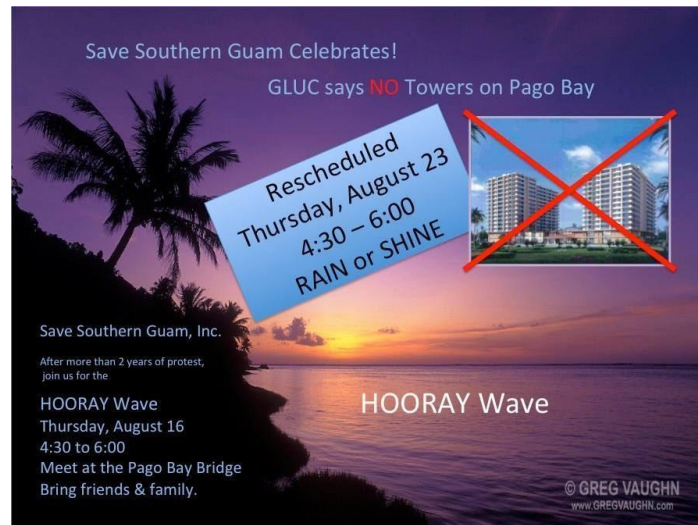


Figure 3.11: Save Southern Guam Hooray Wave flyer. Photo courtesy of Save Southern Guam's Facebook page.

After two years in court battles against the Guam Land Use Commission, Save Southern Guam pushed for several laws, including one that created the Guam/Hybrid Land Use Commission

(Pacific Daily News, 2018). The group regularly posted live streams and photos of the Land Use Commission Meetings on Facebook to increase access to information. Save Southern Guam’s activism forced the Pago Bay developers to halt their project and resubmit a new land use application with stricter guidelines.

To celebrate the halt, Save Southern Guam held a collective and symbolic “Hooray wave” in August 2018 at Pago Bay. The group gathered along the side of the road, smiling with signs that read “Honk for Happiness” and “Tower Permit Revoked” “Hooray!” The group is made up of ordinary people fighting for quality of life on Guam for future generations and is the everyday work of environmental and climate justice in practice.



Figure 3.12: Save Southern Guam Hooray Wave. Photo courtesy of Save Southern Guam's Facebook page.

Indigenous peoples have the ability to adopt the perspective of non-human life, creatures, spirits, rocks, and animals. The examples of activists and social movements in this chapter “reveal engagements with non-human natures” – what Pellow calls the human/non-human nexus.³²³ Craig

³²³ Pellow, David N. *Total Liberation: The Power and Promise of Animal Rights and the Radical Earth Movement*. Minneapolis: U of Minnesota, 2014. Print.

Santos Perez's poem, "We Aren't the Only Species"³²⁴ reminds us of this connection and responsibility to honor our non-human ancestors. In the poem Perez flows, "We aren't the only species who age who change who language who pain who play who pray who save who mate who native....who speak who breathe who breathe who breathe who think who drink..."³²⁵ Here he reminds us of living a life based on an understanding of shared harmony with nature that is a central tenet of Chamoru culture and a Pacific Island epistemology. Perez's poem, "A Sonnet at the Edge of the Reef" depicts Pacific reef life recreating itself under the right conditions, rooting itself to the seafloor:

We dip our hands into the outdoor reef exhibit and touch sea cucumber and red urchin as butterfly fish swim by. A docent explains: once a year, after the full moon, when tides swell to a certain height, and saltwater reaches the perfect temperature, only then will the ocean cue coral polyps to spawn, in synchrony, a galaxy of gametes, which dances to the surface, fertilizers, opens, forms larvae, roots to seafloor, and grows, generation upon generation.³²⁶

Here, Perez provides a visualization of coral life growing and regeneration, giving us the details of regeneration, generation upon generation. He incorporates scientific language of coral life, "coral polyps to spawn...a galaxy of gamete..." and does so with the finesse and flow that represents Pacific culture and storytelling. Perez builds from coral reef life to breathe life into coral reef on paper with his poetry.

Here, Perez unravels his emotions of grappling with reef life and bleaching when thinking about his daughter's legacy, "At home, we read a children's book, *The Great Barrier Reef*, to our daughter, snuggling between us in bed. We don't mention corals bleaching, reared in lab, or frozen. And isn't our silence, too, a kind of shelter?"³²⁷ Perez's poetry is an exemplary example of the

³²⁴ Perez, Craig Santos. *Habitat Threshold*. Oakland, CA: Omnidawn, 2020. Print.

³²⁵ Ibid.

³²⁶ Perez, Craig Santos. *Habitat Threshold*. Oakland, CA: Omnidawn, 2020. Print.

³²⁷ Ibid.

power of poetry to connect with people's hearts and minds to raise awareness about environmental issues in Oceania. His poetry indexes the harms of plastic and capitalism to our oceans and marine life, and critiques Pacific vulnerabilities in the era of climate change when compounded with military occupation. His play on words and irony in the “Age of Plastic” charts everyday engagements with climate change. He blends familiar everyday life routines, and emotions such as care and love, with his meditations of his daughter’s experiences growing up in the Anthropocene as the backdrop, and centers raw descriptive imagery of a vulnerable planet. In “Halloween in the Anthropocene,” Perez writes:

Darkness spills across the sky like an oil plume. The moon reflected bleached coral. Tonight, let us praise the sacrifice. Praise the souls of black boys, enslaved by supply chains...Tonight, let us praise the souls of native youth, whose eyes are open-pit uranium mines, veins are poisoned rivers, hearts are tar sand tailing ponds. Tonight, let us praise our mothers of fallout, mothers of cancer clusters, mothers of slow violence, pray for us, because our costumes won’t hide the true cost of our greed...³²⁸

His poetry centers inafa’maolek that recognize the interconnectedness of communities, of environment, and ocean and coral reefs in our shared health and wellbeing. Perez confronts sustainability, development, resource use, militarism, and conservation alongside articulating a robust love and respect for Pacific culture and coral reefs. As Chamorro culture and other Pacific islands teach us, coral reefs are a significant source of livelihoods, protection, hope, health, and value untethered to money.

In “ginen fatal impact statements” Perez directly addresses environmental impact statements to reveal Pacific Island perspectives on the EIS process. After readings hundreds of online comments his renderings of the sentiment, frustration, and anger from the public about the military plans depicted in the EIS are accurate:

DEIS Public Comment: “This is a huge document to digest”

³²⁸ Ibid.

DEIS Public Comment: “Buenas. First off, thank you for the false sense of participation created by the comment period. The opportunity to vent, while completely meaningless, is at least very cathartic” and “if they do take the lands that they want, what will the meaning of guam be?”

DEIS Public Comment: “it doesn’t matter what we gain from the buildup; its what we lose³²⁹

Themes emerge from the public comments around the unreasonable length of the EIS which makes it impossible for an average person to read and the language is inaccessible with jargon that makes it hard to comprehend on purpose. Many comments reveal they think the military conducts the EIS and public comments as merely a required formality and that their voices will not be considered anyway. The comments also speak to a consciousness that the military activities are not isolated or short term but that they will transform the islandscape and the community forever. They tie the loss of land through actual loss, and loss through transformation, as tied to a loss of culture.

The National Environmental Policy Act (NEPA) and environmental impact statements that the U.S. congress implemented in the 1970s have proven to be both a useful and destructive tool. EIS has the power to blunt military maneuvers toward seizing ground from the Chamorro people or codify environmentally hazardous policies and practices into law or security policy. The Guam military build-up development project underwent a formal EIS process. In November 2009, the Department of the Navy (DoN) released a 10,000 page Draft Environmental Impact Statement (DEIS) outlining the plans and anticipated impacts of the proposed military build-up. The community had only 90 days to comment. In response to the buildup, a group of community members, including mothers, educators, artists, lawyers, business owners, and students, Chamorus came together to read through the DEIS and to collect their findings.³³⁰ This group later would come to be known as We Are Guåhan.

³²⁹ Perez, Craig Santos. *From Unincorporated Territory*. Richmond, CA: Omnidawn, 2014. Print.

³³⁰ Taitano, Carlos P. "Guam’s Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020.

The story of We Are Guåhan and the 2010 EIS controversy was repeatedly brought up in my conversations with community members when discussing present day environment and Indigenous rights concerned on Guam. It was referenced to remind others of the power of community action and to empower Chamorus to keep fighting. Further, the story of “Save Pagat” is important context to understand current environmental issues on Guam. In 2009 in response to the military’s release of the EIS We Are Guåhan began sharing fact sheets that summarized information taken from the DEIS at public hearings held by the DoN. The fact sheets highlighted the negative impacts that the proposed military build-up would have on the island, including the destruction of more than seventy acres of coral reef and the construction of a firing range complex on and around Pãgat Village, an ancient Chamoru village and burial site. The group also emphasized the lack of mitigation measures contained in the DEIS to address the significant impacts on Guam’s schools, hospitals, traffic, and affordable housing. To ensure that there would be enough local public response to the DEIS, We Are Guåhan organized a DEIS comment drive to encourage the public to provide their input using the online “public comment” function of the EIS. More than 10,000 comments were submitted, outlining community concerns and problems with the proposed plan. Through this effort, We Are Guåhan became the most well-known activist organization on Guam in opposition to the proposed military build-up.

When considering areas to locate the firing range complex, the DoN initially identified two alternatives: Pãgat Village and Sasayan Valley. Because of Pãgat’s significance as an ancient



Figure 3.14: Save Pagat cultural production campaign painting. Photo courtesy of We are Guahan.



Figure 3.13: We are Guahan demonstration for Save Pagat. Photo courtesy of We are Guahan.

Chamorro village site, Guam’s elected officials and the community urged the DoN to leave Pãgat alone. However, when the DoN released its Final Environmental Impact Statement (FEIS) in July 2010 they maintained their “preferred alternative”³³¹ of building a firing range complex at Pãgat Village, a national historic site registered since 1972.³³² The DoN has tried to define Pãgat as a

³³¹ *Guam and CNMI Military Relocation: Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force*. Pearl Harbor, HI: Joint Guam Program Office, 2010. Print.

³³² Taitano, Carlos P. "Guam’s Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 202

small area but failed to acknowledge that Pãgat is a village complex that extends much further than the boundaries they outlined in the EIS.

We Are Guåhan, the Guam Preservation Trust and the National Trust for Historic Preservation sued DoD in November 2010, arguing that DoD had failed to consider all “reasonable alternatives” for its firing range complex. We Are Guåhan also initiated a campaign to educate the community on the significance of Pãgat Village. This campaign included several media appearances, a series of cleanups, bus stop paintings, a newspaper ad, production of t-shirts, and a “sticker up” day. Images created by We Are Guåhan activists include the illustration of the Mariana eight spot butterfly. This butterfly is endemic to Guam and was listed as endangered in 2015 under the Endangered Species Act. The Mariana eight spot butterfly is an important pollinator. It’s larvae feed on only two known host plants that live in wet and shaded native forest areas with exposed limestone karst. All the butterfly’s habitat has been turned in military bases. A recent article pointed to the irony of such a delicate, tiny, beautiful endangered animal living in a violent place “Butterfly on a bomb range.”³³³ But the eight spot butterfly’s home was not always a bomb range. It was dense and lush tropical limestone forest beaming with life. Putting an animal on the endangered species list is a strategy of last resort to protect it from becoming extinct. The use of the eight spot butterfly for Save Pagat activism signals to storytelling through the butterfly that to save Pagat from military destruction, is to save the butterfly and other species from extinction, and to protect chamoru culture from becoming extinct like the eight spot butterfly.

In July 2011, federal officials met with local officials and visited the ancient Pãgat village.³³⁴ We Are Guåhan organized a demonstration to both send a message and to educate the

³³³ Seth Borenstein, The Associated Press. "Butterfly on a Bomb Range: Endangered Species Act at Work." *Military Times*. Military Times, 19 Nov. 2019. Web. 14 Aug. 2020.

³³⁴ Taitano, Carlos P. "Guam’s Political Development." *Guampedia*. N.p., n.d. Web. 13 Aug. 2020.

visitors on the significance of the area. More than 400 demonstrators surrounded the entrance to the ancient site, holding signs, yelling, chanting, and singing. Thanks in part to such grassroots activism, the DoN adjusted its proposal in 2012. The DoN conceded they were at fault for not considering other alternatives and agreed to prepare a Supplemental EIS (SEIS).

This strategic coming together of community groups and residents deployed tactics that forced a “pause” and a slowing down, another form of *slow resistance*. They used U.S. environmental law to sue the military. Because of the island’s colonial status, the conversation pivots on where the firing range should be, and residents cannot legally say no. The efforts to save Pagat were successful, forced the military to start the selection process all over again and to select a different location. They set their eyes on another ancestral village outside the largest military landholding on the island, Litekyan.

The military base expansion at Litekyan is the project we discussed at the IG meeting. Litekyan is a cliff-top refuge, and its limestone forest habitat for dozens of endemic and endangered species of bats, birds, butterflies, geckos, skinks, tree snails, cycads, trees, ferns, and orchids.³³⁵ Litekyan is one of the only places you can still hear the wingbeats of an endangered Mariana fruit bat and the very last place on the island to be with Guam’s single mature *hayun lågu* tree, the tallest tree in the Marianas Islands and one of the most endangered species in the world. The military has promised the tree will be left standing surrounded by a 100-foot buffer and, beyond that, according to plans, a practice area for machine gunners.

As mitigation for the destruction of limestone forest, the military is funding forest “enhancement” to remove invasive species from fenced zones and plant native saplings, grown

³³⁵ Its flowers, sprays of magenta threads dipped in gold, bloom from only one tree on Guam and 30 or so others on the neighboring island of Rota.

from seeds salvaged from the construction zone.³³⁶ Many local residents and the U.S. Fish and Wildlife Service (USFWS) argue the military could have picked a site requiring far less destruction, such as building on the southern half of the island, where grazing, wildfires, and World War II bombing have already converted the landscape to a grassy savanna. The local community also expressed fears the development will undo years of conservation work.

In the case of the military, mitigation still means destruction. Anytime mitigation is mentioned it raises red flags for the community. This mitigation narrative presented by the military prioritizes restoration and conservation of Guam's ecosystem by correcting invasive species impacts dangerously distracts from the conversation about the development in the first place.

The brown tree snake (*Boiga irregularis*) arrived on Guam in the late 1940s, probably on the landing gear of a U.S. military plane. The snake, which eats eggs, has nearly eradicated the island's bird life. "Without birds, the spider population has spiked to 40 times higher than in adjacent islands, and seed dispersal of native fruit trees has declined by up to 92 percent. Guam is the only place in the world where all fruit-eating wildlife species are functionally extinct. Of Guam's 13 native forest bird species, three have gone entirely extinct."³³⁷

Although invasive species have altered the island's ecology, development is the primary reason that limestone forests are one of the most endangered forest types in the world. Joni Quenga Kerr, an associate professor of science at Guam Community College, has spent her career studying this ecosystem. "I am a Chamoru and I care deeply about our limestone forests,"³³⁸ Kerr says. "Tearing down the trees and flattening the karst in a pristine area, just to have a place for marines

³³⁶ The fence's success depends on maintenance into perpetuity, but biologists on Guam question how long funding will last.

³³⁷ Ebeling, Kelsie. "Tourism's Effect on Guam Reefs Importance of Coral Reefs to Guam." *Guampedia*. N.p., n.d. Web. 14 Aug. 2020.

³³⁸ Finley, Nina. "'To save a Forest You Have to Destroy a Nicer One': U.S. Marines Target Forest in Guam." *Mongabay Environmental News*. N.p., 08 May 2019. Web. 14 Aug. 2020.

to practice, is not worth it. Once destroyed, the character, essence, and beauty of a limestone forest are gone forever.”³³⁹ The U.S. Marine Corps advertises this acre-for-acre trade — one acre enhanced for every acre developed — as a positive for Guam’s ecosystem to mitigate the construction damage by “enhancing” 400 hectares of limestone forest elsewhere on Guam. Many see this plan as a bad trade-off for Guam and an ecological gamble.

The military also intends to use the nearby islands of Tinian and Pagan, for training, home to Chamoru as well. The military will acquire the northern two-thirds of Tinian and the entirety of Pagan for war simulation exercises, including high-impact bombardment, helicopter, and sea landings, and firing of mortars, grenades, rockets, and bombs. The proposal to turn these two islands into mock war zones prompted a lawsuit by Pacific Indigenous and conservation groups, who argued that the training would destroy native forests, coral reefs, and Chamoru lands.³⁴⁰ In a similar manner as with Litekyan and Apra Harbor projects, the groups accused the military of obscuring its cumulative impact on the Mariana Islands ecosystem. There currently is not any comprehensive document that shows all the areas where the military has proposed to destroy the forest and coral reefs and put in training areas, housing, and firing ranges. Without data and reporting that connects these experiences and impacts of the military relocation activities, it seems like an isolated and disconnected phenomenon, but they are all clearly part of the same relocation planning and development.

Military and colonial displacement of Indigenous peoples developed into the military framing itself as a custodian of the environment. As with the case of Litekyan, an ancestral Chamoru village turned “protected area” as the Ritidian Wildlife Refuge, the military works with

³³⁹ Ibid.

³⁴⁰ "Federal Judge Denies Motion To Dismiss Lawsuit Over Pagan, Tinian Training." *Earthjustice*. N.p., 13 Oct. 2017. Web. 14 Aug. 2020.

federal environmental policies to transform ancestral spaces to “protect nature and wildlife.” This reflects troubling patterns and narratives of environmental mitigation and preservation. Pushing for government control of Indigenous lands and waters to protect it, envisions indigenous peoples as improper caretakers of the land and is a familiar and dangerous trope of white savior complex, where white heroes swoop in to save and care for Indigenous peoples and their land. Once under federal jurisdiction, such as the Ritidian Wildlife Refuge, access and development in the area is determined by their rules. Analyzing how stakeholders think about and make decisions about protection of the environment, and how discourses of nature have been deployed, are important for the study of environmental inequality and understanding it as a social process involving and impacting many actors. According to Pellow, a Critical Environmental Justice studies approach “raises the question as to whether scholars and activists should look to the primary actors responsible for producing environmental injustices to offer remedies for those harms.”³⁴¹ Pellow’s insight here informs our understanding of the power of language when it comes to framing environmental protection in environmental policies. Environmental protection and stewardship language used by the military is imbued with ideas about race and patriarchy and has the power to appear environmentally friendly while actually operating a proven dangerous white savior complex ideology that is materialized through problematic environmental mitigation policies. Chamorus know language matters and many are critical of narratives that present the military or any outside entity as problem-solving stewards of their homeland.

On a day drive to Litekyan in January 2020, I tried to get a sense of what construction was already occurring. I was driving down the road of endless construction surrounded by barbed wire

³⁴¹ Pellow, David N. *What Is Critical Environmental Justice?* Cambridge, UK: Polity, 2018. Print.

on both sides with repeating signs that read “DANGER” “KEEP OUT MILITARY PROPERTY.” The road there already feels contaminated, polluted, and dangerous because of all the warning signs along the way. I pulled over to the side of the road, where I knew there was an opening to the construction site for military and construction trucks to enter and bring supplies. Still on the only public path that leads to Litekyan but parked to the side on the grass, my partner got out of the car to take photos, and within 15 seconds I saw a white truck that had driven passed us rapidly make a u-turn in front of us and pulled over on the opposite side of the road. Dressed in camouflage, he yelled at us, “What are you doing? What are you taking pictures of? I work here.” My partner responded, “I’m taking pictures of the construction. Do you know why the road is closed to Litekyan?” He asked. The military member sounding frustrated said he did not know why the road was closed ahead but advised us to keep driving. We got back in the car and drove out of the area as he followed us for 2 miles until we were back on the main street road. My experience demonstrates the hostility and surveillance happening around the build-up, evidenced by the fact that a simple photo would cause such a reaction from someone driving by. I later found out the Ritidian Wildlife Refuge and beaches were closed because of high tides and would reopen once the federal agency determined it “safe.” Creating parameters for safe conditions for swimming is

essential, but the federally protected area governance gives power and flexibility for them to cut off access to Litekyan and determine “unsafe” conditions when they deem it necessary.



Figure 3.15: Photo taken before we were stopped by military man telling us to leave the road to Litekyan and not take any more photos. Photo by Victor Sanchez.

Thus far, I have analyzed different “sacrifice zones” and “danger zones” that demonstrate how Pacific island communities and environments are perceived to be expendable and pollutable through the process of Wastelanding that are unique to coral and ocean environments. The most recent and pressing issues discussed by community members and organizers in Guam is turning Pagat into a firing range, protecting Litekyan from military build-up, protecting the Northern freshwater Aquifer from contamination and overuse, the dredging of Apra Harbor, and the surface danger zone. In 2018, the Army Corps of Engineers proposed creating a new permanent “surface danger zone” in the ocean area extending out from Litekyan that would extend the military’s base property off-shore. When the firing range at Finegayan is in use, boat traffic and public access would be cut off, with the commander of Naval Base Guam allowed to limit access ultimately depending on what they deem “safe.” The military intends to use this space as a “safety buffer”

from debris coming from the firing range above. “The surface danger zone has been included to ensure the safety of local fishermen and mariners, providing awareness so they can plan for when the range is in use,” the Navy said.” The proposal does not state how often the range will be in use. Access to Litekyan is already limited to the public when training occurs.



Figure 3.16: One of six boats off the coast operated by residents demonstrating against the proposed surface danger zone. Photo courtesy of Clynt Ridgell.

In 2019, the Army Corp of Engineers accepted public comment about the proposed surface danger zone and determined a public hearing “was not needed” despite residents and Senators demanding one. Recent demonstrations outside of the base construction near Litekyan reflected how the community received the news of the surface danger zone. They connected the danger zone as another military threat to Chamoru culture and land with signs that read, “Our home. Our history. Not your target practice,” “Ritidian: Death by firing range,” and “We demand our land back.” The women led grassroots group, Prutehi Litekyan (protect Litekyan) has played a central

role unpacking the military plans for Litekyan and explaining the impacts in accessible language with photos and calls to action which they share on their social media page.

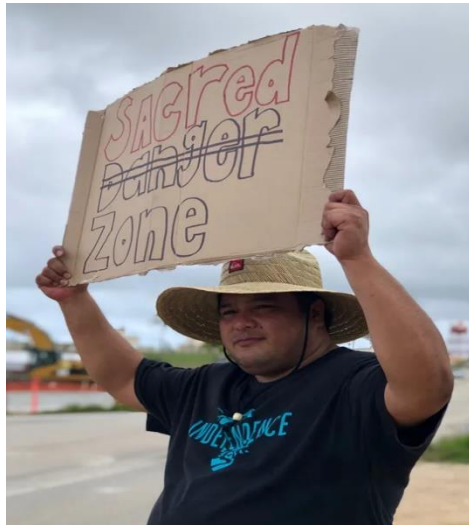


Figure 3.17: Jesse holds up a sign protesting the surface danger zone. His sign reads "sacred zone" with the word danger crossed out. Photo courtesy of Jasmine Stole.



Figure 3.18: Guam Senator Kelly Marsh Taitano and community members protest outside of Litekyan against the surface danger zone. Photo courtesy of Jasmine Stole.

Their strategies have proven effective to mobilize people for demonstrations and to raise awareness about the impacts in response to the military explaining their development plans in the frame of mitigating any impacts. Prutehi Litekyan initially organized around the base development at Litekyan and they were ready to quickly organize when news came of the surface danger zone.

An example of the military narrative and propaganda about the surface danger zone is illustrated in an informational video posted on the U.S. Navy's website for the Mariana Islands Training and Testing Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement (*EIS/OEIS*).^{342 343} In the video, an energetic and reassuring female voice states “Guam and the Mariana Islands are irreplaceable. The land, air and sea areas are important to those who call the Mariana islands home, including members of the United States military.”³⁴⁴ The video goes on: “military personnel share the sea and coastal areas with the community and recognize the importance of public access to these areas declaring they maintain access to residents “whenever possible.”³⁴⁵ It then displays victorious images of submarines and portrays quiet underwater threats such as foreign submarines, torpedoes, underwater mines, and missiles as a significant threat to global commerce and security. It goes into detail explaining the urgency of using active sonar and passive sonar to detect such threats. It pitches sonar alongside nurturing and scientific images of

³⁴² "Mariana Islands Training and Testing Supplemental EIS/OEIS Home." *Mariana Islands Training and Testing Supplemental EIS/OEIS*. N.p., n.d. Web. 14 Aug. 2020.

³⁴³ Pacific Island Times News. "Navy Signs Agreement for Firing Range: Guam Palau CNMI FSM News: Pacific Island Times." *Guam Palau CNMI FSM News / Pacific Island Times*. N.p., 28 May 2020. Web. 14 Aug. 2020.

³⁴⁴ "Mariana Islands Training and Testing Supplemental EIS/OEIS Home." *Mariana Islands Training and Testing Supplemental EIS/OEIS*. N.p., n.d. Web. 14 Aug. 2020.

³⁴⁵ *Ibid.*

military members caring for marine mammals through research and highlights their partnering with universities to secure their legitimacy.



Figure 3.19: Military flyer describing surface danger zone and why it is "needed." Photo courtesy of Nate Groff/Pacific Daily News.

The military video about the surface danger zone acknowledges there is little known about the effects of sonar on marine life and explains that's why they work with the Fish and Wildlife Service and use "mitigation measures" such as "monitoring for marine life before and during testing activities." The problem is, the military logic used says they will mitigate to protect the environment, marine life, and provide access to residents whenever they deem it is possible or necessary. In January 2019, a beaked whale was euthanized after becoming stranded on a reef twice on Guam's coast. A February 2020 study used sound recordings to document a significant

correlation between beaked whale strandings and navy sonar around the Mariana Archipelago.³⁴⁶

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The surface danger video continues to boast, claiming that today they have a “better navy compared to back then, a cleaner navy.” It calls out the Navy’s efforts to “minimize impact to coral reef by conducting pre-landing surveys for amphibious landings and participating in the coral reef task force.” The narrator stresses in the clip that a top military priority is to protect cultural and historical resources, committed to safeguarding the island's cultural resources and heritage. What we do here makes the United States, its territories, and the world safer.”

A recurring theme in Guam activism is the argument that ecological impact will be far greater than the scope of the impact outlined by the military. Ecological impact will be far greater than just the exact spot of construction because nature does not abide by artificial construction boundaries. Our environment is connected through natural processes that military EIS do not honor. There are consequences for disturbing nature and these consequences will be felt by Chamorus first and will impact future generations of Chamorus and non-human life on island. Another common theme, is that the military already has control of so much land, why did they not build new housing and training facilities on their existing base? We are Guahan, Prutehi Litekyan and community members at the IG meeting I attended all critique the military argument that additional land is needed to support military readiness and that the military did not have alternative places to build when they could have built on the existing bases. Another important theme is that

³⁴⁶ Simonis, Anne E., Robert L. Brownell, Bruce J. Thayre, Jennifer S. Trickey, Erin M. Oleson, Roderick Huntington, and Simone Baumann-Pickering. "Co-occurrence of Beaked Whale Strandings and Naval Sonar in the Mariana Islands, Western Pacific." *Proceedings of the Royal Society B*. N.p., 19 Feb. 2020. Web. 14 Aug. 2020.

³⁴⁷ Researchers compared acoustic recording and naval records with eight stranding events. The effects of long-term exposure and marine life are unknown however 49% of populations of marine life have declined on average from 1970 to 2012. Sonar and explosive devices are so defeating they cause whales to abandon their normal feeding grounds & migration. The powerful sonar blasts destroy their hearing and even cause their brains to hemorrhage.

the people participating in the grassroots activism I observed and participated in carried over from group to group. The same person would be present within multiple groups, and family members would span various concerns on island. There would be familiar faces at diverse demonstrations on island because their activism understands the interconnected nature of their struggles.

Guam's primary source of drinking water is the Northern Guam Lens Aquifer. In 2018 I attended community meetings at the University of Guam, where residents met to share information on the military impacts and strains to the aquifer. They gave out giant maps of the aquifer that showed how the natural elevation and curves of the land and flows of water come together. The participants stressed the interconnection of the aquifer's health with land activities and how precious and fragile this resource is because it is connected to so much on the island. Many residents argued bullets, materials, and toxins from military training have already and would continue to contaminate this supply with increased development and population. Prutehi Liteykan found 6.7 million bullets are shot a year over or near the Northern Lens Aquifer.

In January 2020 I attended additional community meetings on Guam held in local coffee shops where Chamoru senators, community members, and representatives from local water monitoring agencies such as the EPA and the University of Guam were present to share research studies on the vulnerabilities to the water source from pollution, plastic, and the military. Not only

does the military toxicity and pollution harm native species and endemic plants, but these harms also threaten their freshwater and Guam's ability to be self-sufficient with their island resources.



Figure 3.20: Community meeting at Siesta cafe to discuss threats to the northern lens aquifer and environment issues on Guam. Personal photo.

One community meeting at the Siesta coffee shop stuck out to me. This meeting focused mostly on how island water consumption is already maxed out because of local business needs such as breweries, and restaurants, and highlighted that many local people are afraid to drink local water because of perceived threats it is contaminated from the military which leads to an increase demand for bottled water shipped from off island. Those who test the water from the University of Guam provided a short list of the contaminants they do test for as well as the ones they do not test for and the room gasped in shock that while the water is safe to drink based off of minimum standards, there is no testing for a host of other potential contaminants and pollutants used by the military that people do not know what to test for. It was clear the aquifer cannot support their residents in terms of capacity and because of risks it is polluted that drive consumption and increase Guam's reliance on importing more bottled water and plastic to meet their needs.

According to the EPA, military plans to increase personnel and development on Guam would “exacerbate existing substandard environmental conditions”³⁴⁸ including public health, the island’s sole aquifer, sewage systems, air quality, trash collection, coral reefs and other marine life. A growing population means more strain to sewage treatment facilities and water systems. This means more sediment from rainwater runoff and sewerage swept onto reef flats that can smother and kill coral and promotes excessive growth of algae. Thus, Guam’s freshwater aquifer and water systems directly impact coral reef health, and military development is causing immense strain on an already fragile water system.

The status of higher elevation limestone near Litekyan and the aquifer will directly impact lower elevation coral reefs. The higher elevation limestone jungle environments in the north currently impacted by military development will result in changes to the environment that will increase run off of soil and pollutants that will flow to the lower elevation waters and ocean and impact live coral reefs. Nature shows us how disturbances to one part of an island ecosystem impact another part. No matter how hard the military tries to paint a picture of isolated and disconnected environments Chamorus use the natural characteristics of the islands topography, water, and ocean to show their activities have ecological and human impacts beyond the scope they present to the community in their reports.

The case of the Northern Lens acquire demonstrates how decisions made by the military that prioritize national security over local interests threaten to transform Chamoru connections to the land, water, and ocean by limiting their ability to interact and access their natural resources in

³⁴⁸ United State Environmental Protection Agency. "EPA Comments on the Draft Environmental Impact Statement (DEIS) for the Guam and CNMI Military Relocation." (2009): n. pag. Print.

a healthy state. Without a safe and stable fresh water source, how can a community respond to climate change or other threats without relying on foreign or military aid?

Another example of how military presence impacts Chamoru capacity to use their natural resources is how it impact traditional healers when harvesting herbal medicine from the land. Recently, women of Guam and traditional healers have worked to gather medicinal plants from areas earmarked for military development, including areas of the base build up at Litekyan, because they will lose access to important sites where certain plants are known only to grow. In 2016 in preparation for the base build-up, the Marine Corps invited traditional healers on base to search and harvest for plants to transport them to another location, knowing that the vegetation in question would be destroyed. Before accessing the naval base, traditional healers known as *suruhanus* and *suruhanas* must undergo a background check and training to identify unexploded ordnances as well as endangered and protected species.³⁴⁹

Ecofeminism³⁵⁰ as a lens brings attention to the disproportionate experience of violence and harm³⁵¹ to Pacific women and environments and how Indigenous women experience climate justice challenges exponentially. In Chamoru culture, women have traditionally led their families and communities in decision making, known as the *maga'haga*, and are still leading struggles for environmental justice and Indigenous rights to determine resource management. Matrilineal systems guide many Pacific island communities.

It is essential to introduce the Mariana's creation story here, and the importance of Fo'na, the protagonist of the Chamoru creation story. In the story, Fo'na and her brother Pontan, worked

³⁴⁹ Ancient Chamorros called upon the makâhna and kakâhna who were believed to possess the powers to cause or cure illness by calling upon the spirits of the ancestors. They implored upon supernatural powers to heal sicknesses, but also to foresee future events, bring rain, allow good fishing, and take away problems.

³⁵⁰ Mies, Maria, and Vandana Shiva. *Ecofeminism*. London: Zed, 2014. Print.

³⁵¹ Gaard, Greta. "Ecofeminism Revisited: Rejecting Essentialism and Re-Placing Species in a Material Feminist Environmentalism." *Feminist Formations* 23.2 (2011): 26-53. Print.

together and used their bodies and spirits to create life on Earth. Fo'na used her spirit to transform Ponton's body parts to create the Earth and heavens, then brought to life flora and fauna.³⁵² After Fo'na sparks life, she gives her body to the Earth and transforms into what is now a sacred rock, Fouha Rock. Chamorus say the first humans sprouted from this rock. This creation narrative of the universe explains how ancient Chamorus viewed the world and how they valued the interdependence of humans and nature. The active role of Fo'na and the more passive role of Ponton conveys the leadership role women have played throughout history and Chamoru culture. Ancient Chamorus believe that women gave birth to the land and the sea and this translated to kin belonging to their mother's clan. Wealth, name, and status became inherited through the woman's side, and it was matrilineal clans that guided Chamoru politics. Women were heads of households and decision-makers for the family.

This gender dynamic made men a target for colonial violence as colonizers aimed to restructure the power dynamics of island relations. Chamoru feminist scholar Anne Hattori notes, "the privileging of women in both the colonial and Indigenous histories in Guam "works to emasculate the island and to validate a male-engendered colonial intervention. The historiographical erasure of Chamorro men enables historians to fill the gap, so to speak, with stories of valiant colonial men who came to Guam to rescue its beleaguered females."³⁵³ "Saving" Pacific women was a theme of navy colonizers and a military strategy for the depopulation of the Indigenous population. Hattori says Chamorro women became the "very agents of life and death".³⁵⁴ Through a women and development perspective, military control over the Chamoru

³⁵² "Fo'na Mother of the Chamorro People." *Guampedia*. N.p., n.d. Web. 14 Aug. 2020.

³⁵³ Hattori, Anne Perez. *Colonial Dis-ease: US Navy Health Policies and the Chamorros of Guam, 1898-1941*. Honolulu: Center for Pacific Islands Studies, School of Hawaiian, Asian, and Pacific Studies, U of Hawai'i, 2004. Print.

³⁵⁴ *Ibid.* pg 93.

people has restricted women's capacity to build their futures according to their own cultural and sustainable agendas.

I first learned of Chamoru traditional healing practices and medicines (amot) from my grandma and namesake, Olivia Quintanilla. She was born and raised on Guam and raised pigs on her family's farm. She met my grandfather, Gregorio Quintanilla, when he would go to her house as part of his family's laundry service. They would later get married and move off island through my grandfather's job working for the Navy, traveling to Chicago and eventually moving to San Diego where my father was born. They moved back on island for several years before permanently moving back to San Diego. According to my family, he was a top cook for an admiral and loved what he did. The military stole/forced my grandparents to sell their land for a ridiculously low amount. I now know after researching and talking with researchers and using the MARC family archives, that the land they had is now the Anderson Airforce Base.

Many healers are troubled by the military's approach to mitigation when it comes to *amot*, or medicine. Guma Yo'amte president and co-founder Zita Pangelinan describes the distinction between Chamoru and military perspectives on mitigation and resource management: "In their minds, it (medicinal plants) can grow somewhere else...But there's a reason it grows there. This is their natural environment. It thrives without us."³⁵⁵ Zita argues the effectiveness of the *amot* is not the same when you take it and plant it elsewhere. According to Zita, this discrepancy has caused tension and a dilemma for healers when dealing with the federal government because the harvest to transplant mitigation method goes against their principles, beliefs, and undermines everything they stand for. Ancient Chamoru traditional knowledge and healing practices are still used today, despite wars and attempts to disrupt the cultural activities of the Chamoru people. Both the church and the military attacked, regulated, and tried to eradicate Chamoru healing practices.³⁵⁶

³⁵⁵ Celis, Tamar. "Traditional Healing on Guam Makes a Comeback." *Pacific Daily News*. Pacific Daily News, 28 Nov. 2018. Web. 14 Aug. 2020.

³⁵⁶ With the implementation of Christianity and the breakdown of Chamorro traditions, the *makâhna/kakâhna* who once played important roles in the lives of the Chamorros lost considerable influence. The people were instructed in the Catholic faith, their children were baptized and they were led to believe that some of their traditional practices, such as ancestral worship, were no longer good practices." Although the *makahna/kakahna* did not survive in Chamorro culture, the most intact survival of pre-contact Chamorro is the herb doctor or *suruhâno/suruhâna*.

These practices pass on through oral traditions and the unwritten method of apprenticeship learning.

Coral reefs also hold hope for healing through its genetic resources with proven medicinal potential and are considered the medicine cabinets of the 21st century.^{357 358 359} Coral reefs could hold answers to help and heal Chamorro health ailments and diseases caused by disruptions to their traditional lifeways. Before World War II, Chamorus relied on traditional herbal medicine instead of western medicine. Protection of coral could also lead to a resurgence in younger generations' connections to reefs, building on Chamoru rich histories in natural healing strategies. Surhana Bernice Nelson said many of Guam's plants can treat common ailments, such as diabetes, cancer, and dementia. Her focus at her non-profit, Amot Farm Inc., is cultivating local medicinal plants, researching their effects, and educating Chamorus about them. The military has already transformed and continues to impact Chamoru relationships between medicine, traditional practices, and culture, and coral reefs. As we learn more about the potential health benefits present in coral reefs, it will be critical to protect Chamoru access to land and waters that host these biodiverse ecosystems. It is also vital Chamoru researchers that study genetic resources and traditional medicine have access and resources to conduct research that investigate coral reefs' medicinal clues.

Natural resource management, including climate justice, is the catalyst for Indigenous survival of culture, language, and land.³⁶⁰ The further encroachment of the military on Chamoru

³⁵⁷ Coral reef plants and animals are important sources of new medicines being developed to treat cancer, arthritis, human bacterial infections, Alzheimer's disease, heart disease, viruses, and other diseases. See https://oceanservice.noaa.gov/facts/coral_medicine.html

³⁵⁸ National Oceanic and Atmospheric Administration. "What Does Coral Have to Do with Medicine?" *NOAA's National Ocean Service*. N.p., 01 Mar. 2014. Web. 14 Aug. 2020.

³⁵⁹ "Value of Corals: Coral Reef Systems." *Scripps Oceanography*. N.p., n.d. Web. 14 Aug. 2020.

³⁶⁰ Pellow, David N. *What Is Critical Environmental Justice?* Cambridge, UK: Polity, 2018. Print.

lands that host traditional medicines and plants creates another obstacle for Chamorus to train new *yo'amte* apprentices and pass down sacred knowledge of traditional healing to new generations. A considerable threat to Guam's amot is land loss and the militarization happening up in Litekyan. The military build-up threatens the island's freshwater aquifer, ancient Chamoru cultural sites, traditional plants and herbal medicines, ocean health, marine life, and coral reefs, which all impact the ability of Chamorus to sustain and pass on their culture over time.

In the field with the traditional healers in 2018 at Guma Yo'amte, the island's first traditional healing center, I learned from the women about their fears the military will cut off access to the areas of jungle and cliff they know well. It takes someone to know the landscape intimately and be able to identify specific plants, jungle versus coastal plants, and, most importantly, be able to make the long hike through sometimes slippery and hard to navigate limestone jungle that is physically demanding. They confided their worry that they would not be able to make the trek much longer to teach others where the plants are because of their age and physical abilities.

There are certain times of year that are best to harvest plants they need, and they worry the military will cut off access during these peak seasons. The title of *suruhanu* or *suruhana* requires an intricate environmental knowledge of whether plants should be picked only at sunrise, within the hours of four to five in the afternoon, or at other specific times, which affects the restorative potency of the plants. Plant gathering stops at this time out of respect because this is the time when the *taotaomona*, or *ancestral spirits*, are most active. And they don't just go and take medicine and leave. Removing plants from the land requires much prayer, and asking ancestors for permission and expressing gratitude for the medicine. They told me how they go with their friends who have military I.D.s to gain base access and gather plants, just one way they get around needing

“official” access. They are working on training younger generations on how to identify plants, create traditional remedies, and learn the routes they inherited from their ancestors. They insist on the cultural necessity to pass this environmental knowledge on to future generations.

Chamorro women like Zita, Bernice, and Victoria, are leading the fight for clean water, healthy and safe environments, anti-militarization, decolonization, self-determination, access to ancestral sites, and protection of coral reefs. Leadership is defined as actions that lead a group of people or an organization. Good leaders motivate behavior, build teams, motivate their teams, develop ideas with their teams, and communicate clearly and effectively. Leadership is about having a vision and sharing it with others. Good leaders connect vision with values to drive action. Chamoru women lead the fight for recognition of Indigenous rights, for care for coral reefs, for the protection and preservation of Chamoru culture, and of a healthy island environment through these strategies. These women lead by proactively sharing traditional and environmental knowledge with the community. Good leaders ask good questions. They ask good questions by juxtaposing connections between non-human natures and humans in their calls for environmental justice and Indigenous rights. Leadership is fighting for alternative visions of Guam that do not center military strategy and instead prioritize sustainability. They assert the sacredness and interconnection of all life, human and non-human, and with attention to the sea and marine life. Their leadership demonstrates how multiple forms of inequality inform Chamoru and Pacific Island experiences of ecological injustice and how community can work together to identify those injustices and demand change.

Of further importance to understanding how questions of sovereignty and self-determination will impact Chamorus capacity to have power over island affairs and decisions about the environment is the recent question before a panel of U.S. appeals court judges: Should native

residents of Guam have a say in the territory's future relationship with the United States? Guam resident and non-Chamoru Arnold Davis filed a federal lawsuit challenging a plebiscite law designed to shape the future of Guam's political status. Davis accused the law of violating the fifteenth Amendment's prohibition on racially restrictive voting laws because it limited the vote to "native inhabitants" that was designed to give ancestral Chamorus power over determining their political status. Davis argued his inability to register on the Guam Decolonization Registry is a violation of his 5th, 14th, and 15th amendment under the U.S. constitution and rights entitled to him through the Organic Act of Guam and the Voting Rights Act.³⁶¹ The case has far reaching implications for the future of Guam's self-determination efforts if non-Chamoru residents get to vote. The plebiscite voting rules were designed to be a tool of decolonization to center Chamoru desires through voting. Attorney Julian Aguon represented Guam in the case. Aguon argued that decolonization is not a right that applies to all. Aguon says, "it is a remedy to restore a right that was taken away. This cure is meant for a particular harm that was inflicted on a particular group of people."³⁶² In this way, the law can be interpreted as *inafa'maolek* in action, an effort to make good and right and restore balance.

The 2019 ruling *Davis vs. Guam* concluded it is unconstitutional to exclude voters simply because they "do not have the correct ancestry or bloodline"³⁶³ even though Guam has a long history of colonization and its people have a right to determine their political status with the United States. The ruling cites a 2000 U.S. Supreme Court decision, *Rice v. Cayetano*, that allows non-Native Hawaiians to vote in elections for the Office of Hawaiian Affairs trustees. "Hawaiian,"

³⁶¹ Barnett, Samantha Marley. "Challenge to CHamoru Self-determination: Davis v. Guam." *Guampedia*. N.p., n.d. Web. 14 Aug. 2020.

³⁶² *Ibid*.

³⁶³ Lawrence III, Charles R. "Davis v. Guam." *Harvard Law Review*. N.p., 10 Dec. 2019. Web. 14 Aug. 2020.

according to the state's law, encompassed persons descended from people inhabiting the Hawaiian Islands in 1778. Guam appealed the ruling.

Julian Aguon a native Chamoru of Guam, writer, poet, activist, and lawyer. Aguon's poetry³⁶⁴ indexes Indigenous Chamoru life and engagements with similar topics he covers through his legal practice. His role in the Prutehi Litekyan case is just one example of his larger work to defend vulnerable communities from pressing issues in the Pacific region. It is through Aguon's work and a presentation he gave to a Chamoru Studies class I took in Guam in July 2018 that I learned he works at the intersections of climate justice in many ways. Aguon's projects include working with the Marshall Islands to seek redress for harms of nuclear testing and non-consensual medical experimentation and developing legal strategies to hold countries and corporations accountable for their contributions to climate change.³⁶⁵

Aguon studied law in response to learning how the law was used to disempower Chamorus in Guam and he wanted to versed in the colonial language to use it against the military. His work as an attorney is grounded in the Chamoru value of reciprocity. He started Blue Ocean Law with that value in mind. Blue Ocean Law is an international law firm based in Guam, specializing in human and Indigenous rights, self-determination, and environmental justice. Blue Ocean Law takes a holistic and human rights-based approach to the practice of law and is the first of its kind that focuses on human rights issues emerging from the Pacific region.³⁶⁶ Their areas of practice cover the precise topics of this dissertation and include climate change, nuclear legacies and militarization and resource governance. Aguon is a founding member of We are Guahan and help represent their group in the Save Pagat lawsuits from 2010 – 2018.

³⁶⁴ Aguon, Julian. *Just Left of the Setting Sun*. Tokyo: Blue Ocean, 2006. Print.

³⁶⁵ "Attorneys - Blue Ocean Law." *BlueOceanLaw*. N.p., n.d. Web. 14 Aug. 2020.

³⁶⁶ *Ibid*.

As of August 2020, Aguon and Blue Ocean Law are now representing Prutehi Litekyan and other community groups in a new international court filing to stop the military construction at Litekyan, now 25% complete. In a first of its kind filing that details a long history of rights violated by the U.S. against Chamorus, Prutehi Litekyan is seeking support from the UN through an office that examines the rights of Indigenous people. Blue Ocean Law has been at the forefront of international Indigenous rights and pushing for the right to free, prior, and informed consent. Prutehi Litekyan has exhausted all available options to get the military to pause development while newly discovered ancestral artifacts and remains were uncovered during construction.³⁶⁷

Currently, the military response to the “discoveries” has been to remove the artifacts to a “safe location” and then they will be returned to the University of Guam. The community is appalled at the military’s mitigation plan for ancestral findings. They argue it is unacceptable that the military thinks it is acceptable to remove human remains and cultural artifacts out of their original locations where they were meant to be forever.

The submission to the Special Rapporteur is specific to the ongoing human rights violations under U.S. colonization and militarization and “the continued disregard for the Chamoru people’s right to free, prior, and informed consent in regard to the transfer of thousands of military personnel and the construction of the live-fire training range complex and other installations on sites of great significance to the Chamoru.”³⁶⁸ Aguon says the women of Prutehi Litekyan have been powerfully leading the way in recent years and he is honored to stand with them. Aguon’s choice to center the leadership of Chamoru women reflects Chamoru values of respect for women in charge of family

³⁶⁷ Sablan, Jerick. "Prutehi Litekyan: Save Ritidian Seeks Support from United Nations." *Pacific Daily News*. Pacific Daily News, 07 Aug. 2020. Web. 14 Aug. 2020.

³⁶⁸ *Ibid.*

and island affairs and centers *maga'haga* leadership. President Barack Obama's foundation recently recognized Aguon as a leader in the Pacific.

The decision of these court will determine the ways that Chamorus can make decisions that about their political future which will impact their power over environmental management and capacity to respond to climate change. The Davis vs. Guam decision illustrates the changing landscape of the island and makes the stakes even higher for Chamorus to fight against the military annexing more of their land and ocean for bases, experimentation, and pollution.

Climate change will exacerbate the spread of infectious diseases in many ways. The Earth Institute at Columbia University and the World Health Organization declared the spread of disease would increase because some viruses are climate-sensitive. Also, food scarcity will lead to some communities to consume more risky meats, and deforestation causing animals to flee forests and increased interaction between humans and virus-carrying animals. Pacific islands such as Guam are experiencing the consequences of *pandemic militarism* as a result of serving as a military base strategic hub without the ability to say "no" as an unincorporated territory. I define pandemic militarism as the use of military bases for health, climate, and human rights "crises" and "natural disasters" and the use of military service members as first responders to these events. Because the U.S. military resides on so many Pacific islands, the local populations become intertwined and at risk when bases become hospitals and emergency response hubs. Pandemic militarism is an example of climate injustice.

Currently unfolding, the world is experiencing an unprecedented pandemic from Covid-19. The Chamoru experience of Covid-19 and the U.S. military were closely intertwined. The U.S.S. Theodore Roosevelt warship anchored at Apra Harbor after the Captain of the carrier sent an infamous email that leaked to a San Francisco newspaper and made worldwide headlines. He

called for an emergency evacuation of the non-sick sailors in fears those who already tested positive would spread the virus on board. As of April 12, 2020, over 550 onboard have tested positive for the virus and batches of sailors showing no symptoms had been moved off the ship to Guam's Tumon hotels under orders not to leave the room. This decision angered locals as photos circulated on social media of the quarantined sailors disobeying quarantine orders and playing around on Tumon's beaches and restaurants, directly putting Chamorus at risk, and especially our *manamko* (elders). And in June 2020, the military is pushing for "safe harbor" designations for their carrier ships to dock in the event of sickness so their members can enjoy guaranteed rest and relaxation without pushback.

The lack of security for islanders against the sick military members is ironic. Given the massive investments and infrastructure directed towards making Guam "secure" for the rest of the U.S., the military's access to the island puts its community at risk. The reality that Chamorus become unsafe through military presence counters popular military mythmaking that argues we need increased spending on weapons and war-making to improve safety and security. Security for who? The media has so far focused almost exclusively on the virus impacts on the sailors of the ship and not the Indigenous Chamorro people.

On April 1, 2020, 7 local women and community organizations recently penned a letter to the *magahagga*, governor of Guam, asking her to take immediate action and tell the military no, they cannot house their sick on Guam's only land remaining. Local critiques of the carrier's presence have centered around the theme that the military already has stolen so much land for military bases and housing, why don't they house their sick there instead of putting locals at risk? A recent article addressing the pandemic on Guam offered a telling quote from a local health care worker on the historical positioning of Chamorus to deal with pandemics of the present:

A westernized diet means that diabetes and other non-communicable diseases are already a major challenge for Guam's hospitals...and the increase in coronavirus infections could lead to more fatalities among existing patients...You have to go to the root of the problem and look at why we have such levels of diabetes, through the introduction of colonial foods like Spam. We used to have a good diet: people farmed, we fished, we had taro and breadfruit.³⁶⁹

My grandma lived a full life in San Diego and eventually passed leaving Bingo at Barona Casino. Asian Americans and Pacific Islanders have had a long history of accepting gambling as a community and family recreational activity. Growing up in San Diego with a plethora of Native American Casinos just 20 minutes away, Barona, Sycuan, Viejas, among others, I grew up going to the casino for birthdays and weekly dinners with my aunties. They got "comp" or free dinners and hotel rooms because of their high-level playing cards loaded with points. With most of our families living in smaller houses or multifamily households, the casino was a fun gathering place that could fit everyone.



Figure 3.21: My grandma holding me as an infant. Personal photo.

Our family found peace in the fact that my grandma passed after playing her favorite game with her daughters. While comfort comes from knowing she was enjoying her time beforehand, the ways that my grandparents died brings different emotions for me. Alcoholism and gambling became embedded in Chamoru culture, along with what Craig Santos Perez writes about, gastrocolonialism, the seeps processed, fatty, and otherwise unhealthy and foreign food practices into traditional food traditions causing health issues and erasure or transformation of culture food practices. Spam is a good example of this intestine intrusion. Spam was in my cupboard all my life growing up and was consumed all around me, but I

³⁶⁹ Fong, Timothy W, and John Tsuang. "Asian-americans, Addictions, and Barriers to Treatment." *Psychiatry (Edgmont (Pa. : Township))*. Matrix Medical Communications, Nov. 2007. Web. 14 Aug. 2020.

refuse to it. Not because of the taste, though I do find it gross. It is because of the principle. I wonder how my grandparents would have passed had they stayed on island. I wonder how our futures would be different had they not been (re)routed off-island through the Navy.



Figure 3.22: My grandma smothering me with kisses at my high school graduation.

I lived with my parents and my grandma during my early years, and my grandma took my mom in when she was pregnant. My memories are full of Chamoru conversations in the kitchen and my grandma talking to my mom about her life on island. My grandma would teach my mom her favorite recipes, including my favorite, for banana donuts. I reminisce on the smells and the sounds of their shared cooking and banter. My memories of my grandma include sweet chamoru whispers in my ear, mixed with the sound of her kissing and smelling my check and neck, whispering to me to “stay in school.” I’ve kept my grandma’s wish and have never left school, still. My grandma would always carry double mint gum in her purse, and she would drive us almost everyday to get her favorite Mcdonald’s Fish Filet sandwich. Then we toured the commissary gathering food for the house. My grandma was my best friend. My protector.

The Hawaiian Islands are also experiencing *pandemic tourism*. Tourists, excited about cheap flights to the islands, booked trips to vacation while most of the world stayed home to quarantine. To their surprise, as of March 25, anyone flying into Hawaii was forced into a 14-day mandatory quarantine at their hotels, though this still put the hotel and hospitality workers at increased risk.

At the same time, these strategic visions are being implemented, the Pacific is facing epistemological threats because of changing environment and climate conditions that the U.S. and its Department of Defense is also responding to and incorporating into its planning. As I have

showed in this chapter, Guam faces its own unique military and climate scenario specific to its coral reef ecosystems, topography, elevation, and unincorporated territory status. The times of Covid-19 show us we need to recenter the conversation about U.S. militarism and climate change around those who are most impacted.

A recent March 11, 2019, Facebook post by the Micronesia Climate Change Alliance³⁷⁰ based in Guam illuminates the nexus of connections among environment, coral reefs, militarism, and Indigenous rights that I have laid out thus far and illustrates themes of Indigenous critiques to the military development and treatment of the environment.

In light of the many, many reports concerning climate change and small island nations, we should be working towards building a stronger and more resilient #Guam in the face of our changing climate. At the ongoing rate of the military's actions against our environment, it is concerning how much our island may suffer because of this.

The warming of our oceans leads to deoxygenation and sea level rise resulting from the expanding seas as they heat up. The effects from this alone have destroyed breeding grounds for marine mammals, seabirds and fisheries.

We are on track to entering dangerous territory, planetary conditions that are unknown to any human beings before us and uncharted territory for our survival. The #militarybuildup denies our ability to fight against #oceanacidification #risingseas and #warmerwaters - it only weakens the fight back against natural disasters as the use of #sonartesting and #explosives will continue to pose serious risks to our Marine life and our reefs.

Guam's biodiverse reefs and marine life not only provide sustenance and income for some residents here. They are also a huge attraction for our tourism industry. Military build-up and testing compromise our land, our waters and our capacity to work on mitigation and adaptation efforts. How can we work on restoring our reefs and marine life with active sonar testing and the use of explosives?

Coral reefs provide a buffer, protecting our coasts from waves, storms and floods. We saw #TyphoonYutu make catastrophic landfall in the #marianas - these storms will only worsen. We need to become more resilient. We need our coral reefs. We need our marine life. We need our land.

³⁷⁰ "Micronesia Climate Change Alliance." Facebook. N.p., n.d. Web. 14 Aug. 2020.

In the end, there will be no wars to fight except for the struggle to survive if we do not contribute to efforts mitigating #climate change effects. There will be no need for training when the seas rise and our waters are poisoned. There will be no military on a dead planet.

Through my research, I learned many Pacific Islander coral reef climate justice efforts aim to reform existing laws and seek new litigation against polluters to safeguard marine environments and work with local and international stakeholders to reduce environmental stressors so that reefs can rebuild. Indigenous Chamorro perspectives on coral reefs matter for environmental mitigation, resource management, indigenous rights, environmental law, military planning and presence, and tourism development.

Climate plans and military plans that cite the need to take over management of a natural resource or environment to “protect” it from climate degradation deserve careful review. To introduce foreign “conservation” efforts, or to build new “ecofriendly” developments, it is crucial to consider the local and indigenous histories and desires that may counter such plans because it goes against traditional environmental knowledge or strips away local agency to manage their own resources and assert sustainable futures.

How do Chamorro define climate justice? Climate justice is involved in everything discussed so far in this chapter, and more. Climate justice is environmental justice, yet it is attentive to challenges and outcomes that are specific to anthropogenic climate change, displacement, and the future of our planet’s health. Examining the environmental injustice experienced by Pacific island communities alongside coral reefs gives us insight into the factors that drive their shared climate justice efforts. Coral reefs give us insight into the past, present, and future of climate changes while asserting radical hope for a healthy and balanced world. Working for environmental justice is hard work, it is messy, it is nuanced, and it overlaps with all kinds of other struggles for

social justice, health, and safety. Specificity and intersectionality matter when articulating overdue justice and necessary changes to stakeholders and decision makers. Coral reef climate justice brings attention to the specific details and connections among our human, environment and non-human life words that must be urgently highlighted to save our world.

Pacific island communities are protecting coral through observing, collecting, and reporting environmental data. These efforts articulate coral reef change to the public and policymakers from a Pacific island perspective to implement precautionary and corrective measures into law. Julian Aguon once wrote that “stories of ordinary people fighting extraordinary battles against military colonialism are to be cherished as much for their pure wealth of information as for their subtle announcements of the presence of beauty where it has survived brutality.”³⁷¹ Building from Aguon, in this dissertation and in this chapter in particular, I tell the story of everyday people fighting extraordinary battles to center the presence of life-making, resilience, and hope for the future. To conclude, I found community involvement in marine and natural resource management enables critical conversations and actions that inform coral reef protection. For Guam, I found the diverse environmental justice struggles shape their perspectives and capacity to respond to climate change, and that climate justice is and will continue to be the catalyst for Indigenous survival of culture, language, and land.

³⁷¹ Broudy, Daniel, Peter Simpson, and Osamu Arakaki. *Under Occupation: Resistance and Struggle in a Militarised Asia-Pacific*. Newcastle upon Tyne: Cambridge Scholars Pub., 2013. Print.

Chapter 4: Deep Sea Narratives

This chapter provides new tools to analyze the life of the deep sea. I offer alternative perspectives to the rhetoric, images, and storytelling about the deep sea that has already disseminated and continues to emerge through the deep-sea mining industry. I look to several ways the deep-sea is socially constructed and the material impacts of oceanic discourses of development, law, identity, and hope. I center deep-sea mining industry impacts on deep-sea coral reefs, Indigenous rights and culture and climate change. In this chapter, I will examine the deep-sea narratives and environmental impact statements emerging around the DSM industry that pivot on different understandings of deep-sea life and environmental impact. The interconnected nature of the extraction process is a central focus of this chapter and connects to previous chapters.

Coral reef lives in deeper waters, too. Some coral actually thrive in the conditions of the deep-sea. Lush gardens of deep-sea coral that live in the depths of the sea do not need sunlight to function. They get their energy and nutrients from tiny organisms that pass through from currents. There are nearly as many deep-sea coral as shallow-water species.³⁷² Technological advancements for deep-sea explorations have helped uncover new species of deep-sea coral and more information about how they survive in such unique conditions. Because they do not rely on sunlight, they can live in diverse environments around the world.

In previous chapters, I analyzed processes of wastelanding that were unique to *islands* and coral reef atolls, and here, I show how wastelanding processes develop around deep-sea mining in

³⁷² Ocean Portal Team. "Deep-sea Corals." *Smithsonian Ocean*. N.p., 18 Dec. 2018. Web.

ways that are unique to the ocean environment and seafloor. I argue the DSM industry is using Pacific islands as guinea pigs for the rest of the international community and operates an “out of sight out of mind” logic to gain support. Ideas and narratives about the ocean are applied to the deep-sea mining industry through logic that frames Pacific island seafloors as isolated, devoid of life, and distanced from human communities as a way to legitimize and downplay ecological impact.

In the 1960s, mapping of the ocean floor and underwater mountain ranges led to new interest and exploration of the ocean floor. Increased investigations led to new scientific data about the sea-floor that contributed to new ideas about the life of the deep sea. The deep-sea was portrayed as a place of extreme darkness and unknown alien-like creatures, hosting “strange” marine life and “dangerous” hostile environments. New underwater photography capabilities produced images of never before seen marine life that seemed more like science fiction than resembling animal life in which the public was familiar. New technological developments in camera systems that could withstand the pressure of deep waters, and robotic vehicles, are documenting that the deep sea, once thought to be remote, desolate, and void of life, is absolutely beaming with *so much life* and new species. We only know a small fraction of what exists in our deepest waters.

Oceanic trenches are the deepest parts of the ocean and are found in every ocean basin on the planet, with the deepest points found in the Pacific. Trenches form through tectonic activity and create some of the most unique and elusive habitats on Earth, with its intense pressure, lack of sunlight and frigid temperatures. The Challenger Deep at the Pacific Mariana’s Trench lies deep inside the Pacific Ocean near Guam and is the deepest trench in the world.³⁷³ These deep-sea

³⁷³ National Geographic Society, The. "Ocean Trench." *National Geographic Society*. N.p., 09 Oct. 2012. Web.

canyons were known as “deeps” and identified as “trenches” after World War 1 when trench warfare popularized the term for a long, narrow, deep canyon. Because of its extreme depth and distance from human habitation, scientists argued in 1972 that the Challenger Deep is the “perfect place” to dispose of toxic and nuclear waste.³⁷⁴ The scientific argument is that the waste would melt into the Earth’s mantle at the subduction zone, essentially erasing the problem of toxicity by blending it into the Earth.³⁷⁵

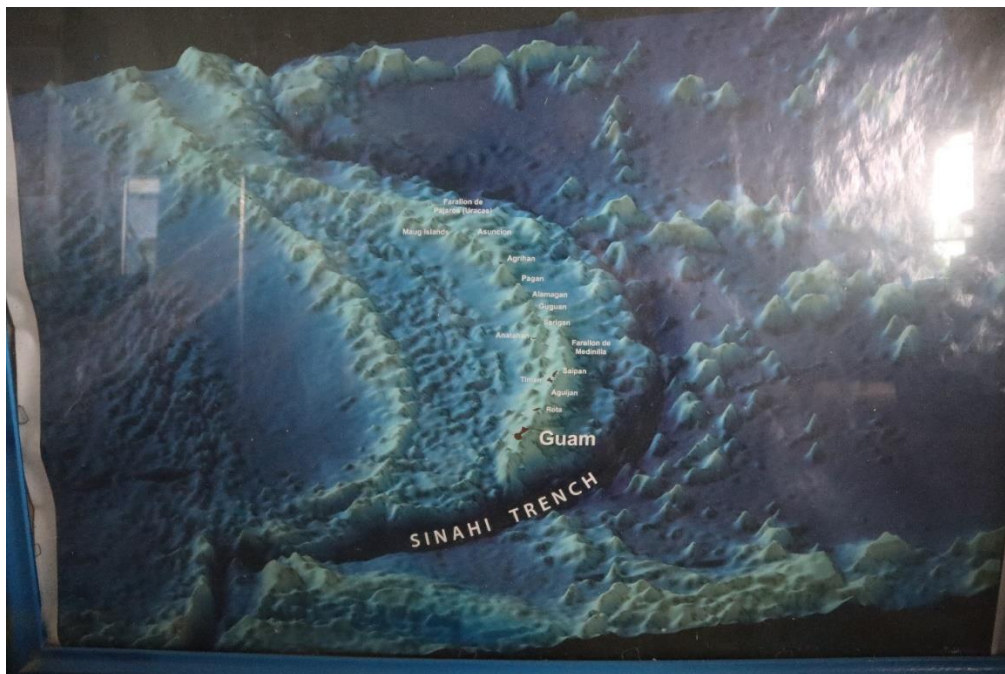


Figure 4.1: Photo of Mariana Trench or "Sinahi" in Chamoru. Personal photo taken at the Chamorro Culture Center.

³⁷⁴ Rogers, Kenneth H., and Marvin G. Kingsley. *Calculated Risks: Highly Radioactive Waste and Homeland Security*. N.p.: Ashgate, 2007. 75-76. Print.

³⁷⁵ The London Convention international agreement currently makes this proposed method of trench dumping of nuclear waste illegal. www.nationalgeographic.org/encyclopedia/ocean-trench/

In May 2019, a U.S. explorer completed the record for the deepest ever submarine dive and found a plastic bag and candy wrappers on the sea-floor along the Mariana's Trench.³⁷⁶ Humanity's impact on deep ocean space is evident with this discovery of plastic pollution, and it is only the third time humans have reached the ocean's extreme depths. This deep-water excursion was part of the Five Deeps expedition – an attempt to explore the deepest points in each of the world's five oceans.³⁷⁷ These journeys to the “the deepest, harshest, area of the ocean” illuminates renewed interest in demystifying and exploring the deep ocean and sea-floor by private equity investors, scientists, and Hollywood. Actors in these industries have packaged and promoted the deep sea through rhetoric, images, and storytelling as one of the last frontiers on the planet.

The deep sea-floor has “opened up” to scientists in new ways thanks to submersibles and remotely operated vehicles sending specialized laboratories to sample the deep ocean. This has led to a rapid increase in marine bioprospecting and “blue biotechnology.” The Global Ocean Commission defines marine bioprospecting as “the search for novel compounds from natural sources in the marine environment.” Blue biotechnology is concerned with the application of molecular biological methods to marine and freshwater organisms. This “blue economy” centers the ocean in a market-driven approach and deepens the reach of the economy and shifts market boundaries in new ways. Deep-sea reefs that were previously off-limits are now being tapped as potential resources.

The U.S. Geological Survey says the deep-sea, which covers around half of the Earth's surface, contains more nickel, cobalt, and possibly rare-earth metals than all land-based reserves

³⁷⁶ The first dive to the bottom of the Mariana's Trench took place in 1960 by U.S. Navy lieutenant Don Walsh and Swiss engineer Jacques Piccard in a vessel called the bathyscaphe Trieste. The latest descent, which reached 35,849 ft beneath the waves, is now the deepest dive by 11 meters.

³⁷⁷ As well as the Mariana Trench in the Pacific, in the last six months dives have also taken place in the Puerto Rico Trench in the Atlantic Ocean, the South Sandwich Trench in the Southern Ocean, and the Java Trench in Indian Ocean.

combined. The deep ocean has unique features that set it apart from surface and coastal waters. “Numerous deep-sea habitats such as seamounts, canyons, hydrothermal vents, and methane seeps are hotspots of biodiversity and biomass, concentrating photosynthetic or chemosynthetic energy and sometimes providing essential commercial resources.”³⁷⁸

DSM is usually based around areas of metallic nodules, or active or extinct hydrothermal vents, which carry valuable metal deposits. These “nodules” can contain nickel, manganese, copper, and cobalt all set to soar in demand over the next ten years. DSM shares similarities with land-based mining but is unique to sea-floor ecosystems and potentially more catastrophic in terms of environmental impact. The seabed is a site of extraction that is a “surface of earth below a surface of water.”³⁷⁹ DSM blows up, dredges, and then sucks up thousands of mineral-rich nodules from the sea-floor then sends them up a pipe to a ship to be sifted and sorted. As coastal resources become depleted, humans have begun to move deeper in search of new sources of food and energy. The so-called “gold rush” for seabed minerals has sparked a rush to secure licenses for seabed exploration. Rising demands for precious metals along with increased difficulty securing rights and access to land-based minerals prompted a surge in the exploration of resources on the sea-floor. A new report released in July 2019 published by those against DSM say the Pacific Ocean is the scene of a new wild west.³⁸⁰

³⁷⁸ Pidcock, Roz. "Deep Ocean: Climate Change's Fingerprint on This Forgotten Realm." *Carbon Brief*. N.p., 25 Feb. 2016. Web.

³⁷⁹ Childs, John. "Greening the Blue? Corporate Strategies for Legitimizing Deep Sea Mining." *ResearchGate*. *Political Geography* 74:102060, Oct. 2019. Web.

³⁸⁰ Mining Campaign, and The Mining Watch Canada. "Why the Rush? Seabed Mining in the Pacific Ocean." *Deep Sea Mining out of Our Depth*. N.p., July 2019. Web.



Figure 4.2: Underwater mining vehicles used off the PNG coast for taking rock samples. Photograph: Nautilus minerals.

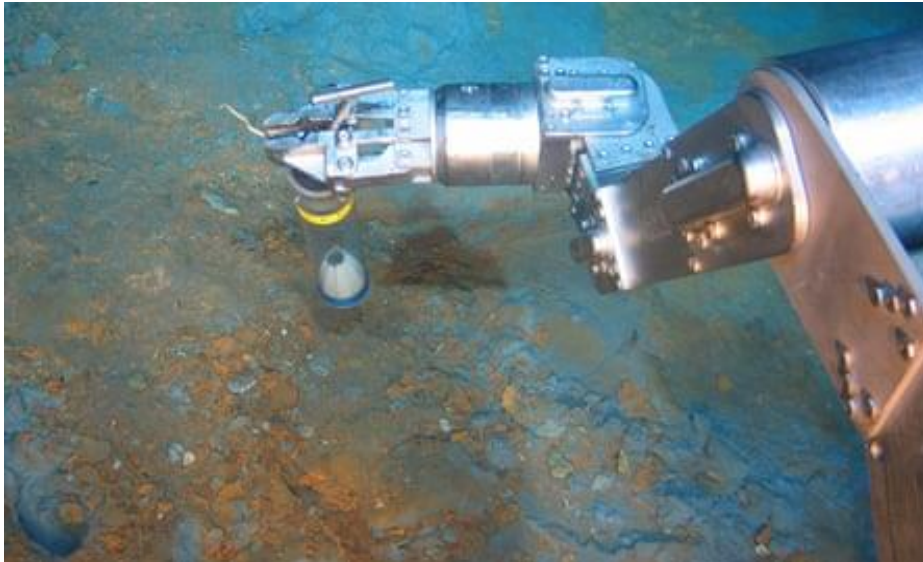


Figure 4.3: Machine taking sediment samples as part of deep-sea mining operations off the PNG coast. Photograph: Nautilus minerals.

One way mining of the ocean floor threatens our coral reefs is through further destruction of ocean ecosystems. The most significant impact to deep-sea corals comes from commercial bottom trawls, which use heavy gear to harvest deep-sea fishes and, in the process, damage structures that grow on the sea-floor, such as deep-sea corals. This type of fishing has devastated large areas of deep-sea reefs in both national and international waters. Deep-sea corals are often

found in areas of oil and gas operations, so there is potential for damage from drilling muds and oil spills. According to the U.N. Convention on the Law of the Sea, the deep seabed and its mineral resources beyond national jurisdiction are the common heritage of mankind, and do not belong to any one country.

Another way mining can harm coral reefs is through further warming and acidification of our ocean. Over the time we have been industrializing, the oceans have absorbed about a third of the carbon dioxide that has gone into the atmosphere.³⁸¹ The deep-sea is not untouched from climate change and, in fact, plays a major role in storing carbon and regulating the temperatures of our oceans over exceptionally long timescales. DSM excavations create underwater destruction caused by sediment plumes, discharge of tailings and waste, and alter natural processes of deep-water carbon sequestration. Through DSM activities of dredging, extraction, and blowing up hydrothermal vents, it releases carbon stored in deep sea sediments and can disrupt the processes which help scavenge carbon and deliver it to those sentiments.³⁸² These impacts cause potentially irreversible habitat manipulation, and because this is all so new, no one really knows what the consequences will be or the scale at which impacts will occur.

A recent policy brief published by the Deep Ocean Stewardship Initiatives, a union of experts from across disciplines and sectors formed to develop new ideas for sustainable use and management of deep-ocean ecosystems, concluded that seabed mining will exacerbate changes already occurring to the oceans and ocean floor as a result of global warming and could add to

³⁸¹ Pidcock, Roz. "Deep Ocean: Climate Change's Fingerprint on This Forgotten Realm." *Carbon Brief*. N.p., 25 Feb. 2016. Web.

³⁸² Gronewold, Nathaniel. "Seabed-Mining Foes Press U.N. to Weigh Climate Impacts." *Scientific American*. Scientific American, 16 July 2019. Web.

greenhouse gas concentrations in the atmosphere by disturbing carbon stores in addition to disturbances of microbes and removal of deep ocean animals.³⁸³ The potentially catastrophic climate impacts from DSM could exacerbate existing and forecasted climate concerns, including forced migration. Climate policies and social behavior that reduce carbon dioxide emissions, benefit the deep-sea, and influence the application and effectiveness of climate migration and mitigation efforts.

Some of the most controversial mining projects on the planet are the gold and copper mines started on the island of New Guinea in the 1960s.³⁸⁴ West Papua was forcibly incorporated into Indonesia in 1963 while the native population resisted as they did with their former Dutch colonizers.³⁸⁵ Their resistance was met with programs of forced assimilation and military violence. The military occupation and forced removal of native peoples in mineral-rich areas have been called “economic development.”³⁸⁶

In 1975, the eastern half of the island achieved independence from Australia and became PNG. The western half of the island, known as West Papua, had been earlier invaded and annexed by Indonesia. “Copper, gas, oil, nickel, gold and silver and especially space to settle its huge surplus population are some of the attractions which led Indonesia to colonize West Papua.”³⁸⁷ This is an example of island slicing, that draws distinct political boundaries across an islandscape. In the case of New Guinea, this split the island in half. This practice resembles ocean slicing that occurred when cartographers created superficial lines around ocean space and island communities

³⁸³ Deep Ocean Stewardship Initiative, The. "The Ocean Conference | Science for Deep-ocean Sustainability." *United Nations*. United Nations, 2018. Web.

³⁸⁴ Gedicks, Al. *Resource Rebels: Native Challenges to Mining and Oil Corporations*. Cambridge, MA: South End, 2001. 91 Print.

³⁸⁵ *Ibid.* pg 93.

³⁸⁶ *Ibid.*

³⁸⁷ *Ibid.* pg 95.

in ways that do not reflect natural movements of ocean water or Pacific peoples. These strategies of slicing islands and ocean works to separate the appearance of island communities and connections. Many Pacific Islands reject the framing of being “Micronesian” or “Polynesian” for these reasons. The ocean and Earth’s natural systems remind us Pacific peoples are connected in ways that precede and live outside such parameters. Ecological impacts of mining do not follow the rules of the island of New Guinea’s artificial national boundaries either. The ecological impacts of DSM will not be confined to the isolated areas of the deep sea and will impact all communities near the mine sites regardless of political status.

In 2011, Papua New Guinea (PNG) granted the first deep-sea mining license to lease out the use and exploitation of deep-sea minerals to Canadian based company Nautilus Minerals Inc.³⁸⁸ Deep-sea mining (DSM) is a mineral retrieval process on the ocean floor. Nautilus described DSM as “the next big disruptive technology.” The DSM industry has heralded the rock it can extract from the deep sea as “the future” and this has local island communities concerned that the DSM industry will target their seafloor resources for wastelands. Mining companies like Nautilus argue the sea-floor unlocks the secret to satisfy the growing demand for metals used in batteries and clean energy technologies and ultimately towards a transition away from fossil fuels.

In 2014 the PNG government took on a 15 percent equity stake in the venture with Nautilus, but repeatedly delayed payments as its politicians and citizens protested the environmental impact of the project, as well as the substantial cost to taxpayers. The media in PNG is controlled by the state and stories that are not good for the government or for DSM do not receive circulation. With the key decision makers in PNG invested in DSM and DSM companies investing major money in pro-DSM campaigns, anti-DSM activism must work creatively and collaboratively to raise their

³⁸⁸ In 2017, Japan became the first country to successfully mine its seabed, off the coast of Okinawa. See Blueoceanlaw.com

voice and spread their perspective of DSM impacts. Pacific Island epistemologies inform the rejection of the extractivism that DSM represents. Anti-DSM activism produces their own research, analysis, stories, and content and publishes them through social media instead. Social media has played a key role in raising awareness for locals and the international community about their concerns over DSM. Social media has also helped in getting other organizations and groups to support their efforts to ban DSM such as Mining Watch Canada and Mining Watch New Zealand and use their own social media platforms to raise awareness.³⁸⁹



Figure 4.5: PNG youth smile as they stand with banner calling for DSM ban to defend land and sea. Photo courtesy of Solwara Warriors Facebook.

³⁸⁹ Atrakouti, Amal. "PAPUA NEW GUINEA: 'If We Allow Seabed Mining Everyone Is at Risk!'" N.p., 17 Feb. 2020. Web. 12 Aug. 2020.



Figure 4.4: Alliance of Solwara Warriors activism to ban DSM. Photo courtesy of Solwara Warriors Facebook.

The race to harvest mineral deposits on the sea-floor, the largest ecosystem on the planet, has raised new and urgent concerns regarding the translation of Indigenous rights to underwater terrains as minerals needed for existing and emerging technology, pharmaceuticals, and raw materials are increasingly sought after in “uncharted” and “unprotected” territories. “Seabed mining in the Pacific Ocean remains a speculative and experimental activity driven in large part by commercial and geostrategic competition.”³⁹⁰ Because most people do not have access to encounter the deep-sea physically, the public and policymakers rely on narratives, images, videos, and stories that make the “remote” and “invisible” sea-floor “visible” in particular ways. The surface of the moon, Mars, and even Venus have all been mapped and studied in much greater detail than our deep seabeds.³⁹¹ Still today, our knowledge of the deep seabed remains extremely

³⁹⁰ Copley, Jon. “Mapping the Deep, and the Real Story behind the ‘95% Unexplored’ Oceans - Exploring Our Oceans Mapping the Deep, and the Real Story behind the ‘95% Unexplored’ Oceans - Exploring Our Oceans.” *Perma.cc*, 2014, perma.cc/U8F8-QSJP.

³⁹¹ *Ibid.*

limited. This creates the conditions for those in power to reify dynamics and narratives that suit their interests and communicate new science in a biased form.

The DSM industry is something PNG communities had never heard of until 2009 after learning about the DSM license proposal. The Indigenous islanders of the Bismark Sea of PNG, Papuans, had to quickly organize themselves as a community to protect their sea-floor resources and ocean ecosystems. Nautilus targeted PNG's sea-floor for hydrothermal vents, 4,000 – 12,000 feet below sea level, and home to unique and diverse life forms. People of this area have been fighting hard to keep their culture and ways of life intact, and deep-sea mining would make these efforts even more difficult.³⁹² In this newest round of invasion to their islands and Oceania, the tropical waters of PNG are slated to be the next world's ocean mine. PNG residents want to ensure the sustainable management of deep-sea mineral activities in PNG and share their lessons learned with other countries so they can develop policies and legislation to protect their deep-sea resources. Whatever happens in PNG will serve as a model for the deep-sea mining industry.

The DSM industry asserts a disregard for non-human life on the sea-floor and the consequences of altering the biodiversity of these rich and unique ecosystems. Active prospecting for DSM includes modern underwater surveillance technologies, including remotely operated electric vehicles, explosives, and robotics. The machinery resembles something created when military meets science fiction robot, using giant grinder wheels to destroy the rock on the ocean floor to get valuable metals up to the surface ship.

Before being granted their license, Nautilus commissioned environmental impact studies and their results argued their project would be less destructive than land-based mining, as if these devastating activities are unavoidable. Opponents to the project argued these EIS were biased,

³⁹² During the first World War Australia set up plantations and gold mines on PNG.

misleading, and warned that this would be a major project experimenting with unknown and not-yet tested technology, with unknown consequences. In Nautilus' animation marketing videos, they depict the excavation process as a neat and effective way to "provide the world with the minerals it requires." The animation also conveniently emphasizes the machinery and minimal marine life, a few fish, in their depictions of deep-sea life.

Nautilus' "green argument" for DSM says that it is a "safer" and necessary alternative because it will avoid problems associated with land mining such as deforestation, displacement of communities, waste dumps and child labor. Still, without a rigorous risk assessment these experiments will only produce new problems. Nautilus emphasizes "the placelessness and remoteness of the deep-ocean by claiming its operations 'have no human impact' despite the presence of proximate small island communities."³⁹³ The deep-sea contractors mobilize the geophysical properties of the deep ocean to narrate DSM as a more sustainable option than terrestrial mining – such as – a resource-rich untapped place, deep below the surface, watery, lightless, and mostly lifeless.³⁹⁴ This mobilization conceptually distances the deep-sea from humans.

In Nautilus' environmental impact studies, they ignore the interconnected nature of the extraction process. Nautilus notably focus on the extraction phase of their Solwara 1 ocean mine and emphasize the small size of the extraction site compared to many terrestrial land sites to belittle its spatial footprint. "Rather than focusing uniquely on the extraction phase, a mining project should be conceptualized as taking place over much longer time scales and through more extensive spatial dimensions including its afterlife."³⁹⁵ Thought about in this way, a deep sea mine

³⁹³ Childs, John. "Greening the Blue? Corporate Strategies for Legitimizing Deep Sea Mining." *ResearchGate*. *Political Geography* 74:102060, Oct. 2019. Web.

³⁹⁴ Ibid.

³⁹⁵ Ibid.

‘timescape’³⁹⁶ as projected by Nautilus incorrectly, but not obliviously, recasts time as functioning in isolation, and leaves out the central role of ocean currents. The focus should not be just about the space of the mine site, but the interconnected nature of the extraction process that intersects with water columns, currents, and extends over time, beyond the exact moments of mining. Nautilus uses discursive strategies to rearticulate time and nature as linear and vertical functions only as an attempt to shift responsibility away from itself and ‘onto nature’.³⁹⁷ The ecological impacts function non-linearly, in all directions, and over years and years.

PNG activists and those who oppose DSM assert water’s agency by highlighting how understanding DSM through a spatial basis alone is misleading. The characteristics of the deep ocean environment and its functions, create the conditions for natural resistance to DSM. “The things which deep-sea environments ‘do’ – its agency and violence (expressed through underwater volcanic eruptions, extreme pressure and the temporal dimensions of geology) – comes together to mollify resistance to DSM practices.”³⁹⁸ Once the deep-sea materials are sucked up to the surface, it moves to land to be sorted, processed, and transported elsewhere and exchanged. Therefore, seabed mining is a cross-cutting horizontal process that differs from the vertical characteristics of land-based mining. The description of the mining activities as only occurring at the extraction site, and during a short period of time (the actual extraction time) is not accurate because there are so many other processes and spaces involved that take more time. Accounting for volume, water’s fluidity, and ocean ecosystems flow and interconnections with other non-human life forms over time are critical to a more accurate and ethical analysis.

³⁹⁶ Ibid.

³⁹⁷ Ibid.

³⁹⁸ Ibid.

As a society, decisions are being made as to where the minerals will come from to supply global consumers' non-stop appetite for cheap and new technology. As Klein observes, "running an economy on energy sources that release poisons as an unavoidable part of their extraction and refining has always required sacrifice zones – whole subsets of humanities categorized as less than fully human, which made their poisoning in the name of progress somehow acceptable."³⁹⁹ A technology hungry culture and a mentality of disposability, in which wealthier nations consume and dispose freely without consideration for the environmental impact of their behavior, fuels the DSM industry and showcases the unintended consequences of what consumers want such as technology minerals.

Even "green" technologies rely on environmentally destructive practices. Minerals gathered by DSM technologies would likely be processed on land in less developed countries. "Though the extent of resultant environmental harm has yet to be quantified, a race to the bottom by developing states to attract onshore processing opportunities is foreseeable. While this may generate small short-term revenues for developing countries, it will impose far greater environmental burdens, even as rich and industrialized nations reap the benefits of harvested deep seabed minerals."⁴⁰⁰

Wastelands that target resources near Indigenous communities is transpiring all over the world to fuel demand for minerals and technology. DSM is touted as the "final frontier" to get new mineral resources and because of its grave impacts to climate change. Environmental justice activists push for communities to identify "alternatives to green-washed capitalism that can truly confront climate change" and fight against "eco-exploitation" as the mining industry cloaks itself

³⁹⁹ Klein, Naomi. *This Changes Everything: Capitalism vs. the Climate*. Toronto: Simon & Schuster, 2015. 153. Print.

⁴⁰⁰ Development, Harvard Law. "Broadening Common Heritage: Addressing Gaps in the Deep Sea Mining Regulatory Regime." *Harvard Environmental Law Review*. N.p., 21 Feb. 2019. Web. 12 Aug. 2020.

“in the façade of sustainability, promoting the large-scale extraction of one finite natural resource to replace another.”⁴⁰¹ Minerals are used to make the technology we use everyday from laptops, cellphones, and solar panels. Production of cobalt, a leading metal used for electric car batteries, is almost entirely reliant on the Democratic Republic of Congo, where child labor for mining is common. And in the “lithium triangle” spanning Argentina, Bolivia, and Chile, the largest and most accessible reserves of lithium, or “white gold,” a key component for the batteries of “green” electric vehicles, is hurting indigenous Andean communities through groundwater mining.

After aggressively seeking funding for its flagship Solwara 1 deep-sea mining project set to begin in 2019, Nautilus ran into financial troubles and failed to make payment on their ship. Their deep-sea mining vessel was sold to another company and Nautilus filed for bankruptcy. It first secured a 20-year license to mine roughly 193,000 square miles of the Bismark Sea in 2011, becoming the first project in the world to gain deep-sea mining rights within an Exclusive Economic Zone (“EEZ”). The ship in question was bought by an Indian firm, EDL Energy, and is also planning to engage in deep-sea mining explorations on behalf of the Indian government. DeepGreen Metals Inc., a new deep-sea mining venture founded by Gerard Barron, an Australian entrepreneur who was also the first financial backer of Nautilus, is exploring mining possibilities off the shores of Nauru, a nearby Pacific island, with its own tragic history of phosphate mining and controversial refugee detention centers.

DeepGreen is slated to be the “new pioneer” of deep-sea mining in the South Pacific. DeepGreen has three sponsoring Pacific Island states: Nauru, Tonga, and Kiribati. These islands are also experiencing climate-change related stressors and coral reef vulnerabilities, as well as

⁴⁰¹ Schwartz, Charlie, and Volume 22. "No Comemos Baterías: Solidarity Science Against False Climate Change Solutions • SftP Magazine." N.p., 27 Mar. 2020. Web. 12 Aug. 2020.

already significantly harmed by terrestrial and sand mining. Illustrating the corporate perspective and narrative of a life-less deep ocean, a DeepGreen spokesperson said on the topic of land-based mining versus ocean mining that, “the ocean floor, on the other hand, is a food-poor environment with no plant life... We can’t avoid disturbing wildlife, to be clear, but we will be putting fewer organisms at risk than land-based operations mining the same metals.”⁴⁰² Many of the largest mineral corporations in the world have launched underwater mining plans. On the west coast of Africa, the De Beers Group is using specialized ships to drag machinery across the seabed in search of diamonds, extracting 1.4 million carats in 2018. Their newest vessels promise to dredge the bottom twice as fast. DSM is expensive, and those against DSM hope to institutionalize regulations before DSM becomes more affordable and faster.

Many critics of DSM, including the Alliance of Solwara Warriors, made up of communities of the Bismark sea and PNG that stand to ban DSM, have praised Nautilus’ financial fall, stating they are glad they went bankrupt before they could “bankrupt the sea.” During the Pacific Islands Leaders Forum held in Tuvalu, Pacific Island leaders called for a 10-year moratorium on DSM to pause and delay any activities until proper studies are conducted to determine the potential impacts on the environment, marine life, and human communities.⁴⁰³ The Alliance of Solwara warriors says a moratorium is useful but they are calling for more ambitious action and a total ban on DSM.

Mining companies are most excited about accessing international waters, which cover more than half of the global sea-floor and contain more valuable minerals than all continents combined.⁴⁰⁴ Regulations for ocean mining have never been formally established. “There are

⁴⁰² Alberts, Elizabeth Claire. "Deep-sea Mining: An Environmental Solution or Impending Catastrophe?" N.p., 17 June 2020. Web. 12 Aug. 2020.

⁴⁰³ Atrakouti, Amal. "PAPUA NEW GUINEA: 'If We Allow Seabed Mining Everyone Is at Risk!'" N.p., 17 Feb. 2020. Web. 12 Aug. 2020.

⁴⁰⁴ "The Mining Code." N.p., n.d. Web. 12 Aug. 2020.

treaties on climate change, biodiversity, migratory species and even waste management of organic chemicals, but there is no international mechanism to govern how mineral supply should be coordinated.”⁴⁰⁵ Mining can be legal in a country’s coastal waters but is not currently legal in international areas, prompting international discussions on how to define and regulate this industry that has already begun to operate. The United Nations (U.N.) has given that task to a mysterious organization known as the International Seabed Authority (ISA), which is “housed in a pair of drab gray office buildings at the edge of Kingston Harbor, in Jamaica. Unlike most U.N. bodies, the ISA receives little oversight.”⁴⁰⁶ Their assignment is not to prevent mining on the sea-floor but to mitigate its damage—selecting locations where extraction will be permitted, issuing licenses to mining companies, and drafting the technical and environmental standards of an underwater mining code.”⁴⁰⁷ DSM is being accelerated in the Pacific region through alliances between companies like Nautilus and DeepGreen and there are concerns published in a new report that members of the UN’s ISA cannot uphold the interests of local communities when determining seabed regulations because of similar compromised alliances that would favor government or corporation interests.⁴⁰⁸

DSM highlights new concerns for island nations’ rights in “international waters” by limiting the power of island nations to allow, control and monitor deep-sea operations and to declare “no mine zones” for seabeds in jurisdictions of Pacific island nations. This resurgence and

⁴⁰⁵ Ali, Saleem H., Damien Giurco, Nicholas Arndt, Edmund Nickless, Graham Brown, Alecos Demetriades, Ray Durrheim, Maria Amélia Enriquez, Judith Kinnaird, Anna Littleboy, Lawrence D. Meinert, Roland Oberhänsli, Janet Salem, Richard Schodde, Gabi Schneider, Olivier Vidal, and Natalia Yakovleva. "Mineral Supply for Sustainable Development Requires Resource Governance." N.p., 16 Mar. 2017. Web. 12 Aug. 2020.

⁴⁰⁷ "The Mining Code." N.p., n.d. Web. 12 Aug. 2020.

⁴⁰⁸ London Mining Network, The, The Deep Sea Mining Campaign, and The Mining Watch Canada. "Why the Rush? Seabed Mining in the Pacific Ocean." *Deep Sea Mining out of Our Depth*. N.p., July 2019. Web.

hunger to map the sea-floor for minerals is regenerating systems and processes that *map out, map around, or map through* Pacific island communities' coasts and sea-floors and is of grave concern. With new technological abilities to map the sea-floor, and with what we know from generations of Pacific islanders being *mapped out* of their own homelands and waters, what can be done to challenge, resist, and reverse underwater mapping for DSM to protect Pacific island sovereignty as it relates to the underwater industries? The protective and offensive legal measures launched by Indigenous PNG communities against the DSM industry mirror challenges for Pacific island peoples across Oceania fighting for increased voice and rights in other areas of environmental justice.

Legal action has since been launched regarding the Nautilus Solwara 1 project, becoming the first legal case against seabed mining. The primary concern of the project is its unknown and projected environmental impact. The Alliance of Solwara Warriors launched a legal case in PNG's courts against Nautilus and the government of PNG to stop the project. So, although Nautilus's bankruptcy was celebrated as a win by opponents, now the PNG government and people are tied to repayment of this experimental project. Residents also accuse the PNG government of withholding key documents about the initial approval of the DSM license for the project, and that under the PNG constitution affected residents had a right to the information. Here, they are fighting for transparency and the right of free, prior, and informed consent.

Environmental lawyers and activists in the Pacific reframe the deep-sea narratives offered by Nautilus and the PNG government to center local and Indigenous epistemologies. They reframe stories about deep-sea life to center questions around how Indigenous rights and concerns will be incorporated into deep-sea industries and how these negotiations will impact ongoing Indigenous and human rights struggles and future laws. PNG communities and activist groups seek to show

how their connections to nature and the deep sea take on spiritual connections. New Orleans-based Freeport McMoRan, together with the world's biggest mining company, Rio Tinto, runs the world's largest gold mine and the third-largest copper mine worth \$60 billion, Grasberg, situated in West Papua. The open pit mine was carved out of a snow-capped mountain, considered sacred by the native people.⁴⁰⁹ In the context of ocean space, spirits are thought to inhabit the deep sea and influence the deep-sea resources and even the currents. They have a direct relationship with those spirits, and so they can communicate with the spirits that control resources in the sea and on land. They are not separate from the deep sea; they are one. Because copper mined from the seabed is effectively constituted by these spirits, as copper "resurfaces" in objects and technologies, it also carries a spirituality from the region where it originated.⁴¹⁰

Chamoru lawyer and activist, Julian Aguon and his partner Julie Hunter of Blue Ocean Law, undertake the work of reframing deep-sea narratives offered by the DSM industry. In their framing of DSM issues, they write legal scholarship that articulate DSM as a contemporary form of invasion that is creating pressure to reconfigure understandings of common heritage and sovereignty of the deep sea dangerously fast and without crucial information required to make informed and sustainable decisions. Further, they argue that DSM shares many features of past resource scrambles, "including a general disregard for environmental and social impacts, and marginalization of Indigenous peoples and their rights." This can be attributed in part to DSM's original 1960s "common heritage" framing, which focused primarily on mineral exploitation and excluded consideration of other benefits, as well as externalities resulting from extraction. Based on a limited technical study of the seabed that existed at the time, Maltese statesman Arvid Pardo

⁴⁰⁹ Gedicks, Al. *Resource Rebels: Native Challenges to Mining and Oil Corporations*. Cambridge, MA: South End, 2001. 92. Print.

⁴¹⁰ Childs, John. "Deep Sea Mining Threatens Indigenous Culture in Papua New Guinea." *The Conversation*. N.p., 30 Apr. 2020. Web. 12 Aug. 2020.

presented “a fantastical portrayal of almost inexhaustible mineral resources to the First Committee of the United Nations (“U.N.”) General Assembly in 1967, deeming “1.5 trillion tons” of nodules a “conservative” calculation.”⁴¹¹ The initial “exploitation” framing posited by Pardo and others has continued to dominate the deep-sea narrative.

The key argument for Aguon’s team at Blue Ocean Law is that Nautilus did not give PNG residents “free, prior and informed consent” about the project, leaving them with no control. Also central to their argument against DSM is “broadening Common Heritage” in the DSM regulatory regime. DSM’s wide-ranging environmental impacts are also likely to impact indigenous peoples disproportionately. Residents argue that DSM would have negative impacts to marine life and affect the livelihood of fishing communities on PNG, that provide 1/6 of the world’s tuna fish, and potentially destroy the deep oceans irreversibly and pose a grave threat to climate regulatory seabed functions and species extinction. DSM methods would produce large sediment plumes and involve the discharge of waste and tailings back into the ocean, significantly disturbing sea-floor environments. In Tonga, “large DSM prospecting vessels have overrun prime fishing waters, disturbing fish populations and curtailing traditional fishing routes. In PNG, villagers have reported a high incidence of dead fish washing up on shore – including strange deep-sea specimens hot to the touch – as well as a sharp decline in water quality, with traditional fishing waters grown excessively dusty and murky.”⁴¹² Craig Santos Perez warns, “deep-sea mining is one of the most terrifying new extractive industries here in the Pacific.”⁴¹³

⁴¹¹ Development, Harvard Law. "Broadening Common Heritage: Addressing Gaps in the Deep Sea Mining Regulatory Regime." *Harvard Environmental Law Review*. N.p., 21 Feb. 2019. Web. 12 Aug. 2020.

⁴¹² Ibid.

⁴¹³ Wild, For The. "Craig Santos Perez on Habitat Threshold /183." *FOR THE WILD*. FOR THE WILD, 20 May 2020. Web. 12 Aug. 2020.

The politics of the deep-sea is being formed by many factors, including the geology of seabed, Indigenous concerns, and non-human life forms and spirits. Since DSM began, sharks have been absent from their traditional habitat, preventing indigenous communities along PNG's New Ireland coast from engaging in the customary practice of shark calling."⁴¹⁴ Shark calling is an old customary practice where sharks are caught by hand through chanting and bravery. Papuans view the sea as their garden where they catch fish to feed their families and believe that DSM will destroy everything, especially the ability for future generations to continue shark calling. In opposition to western logic and the narratives promoted by the DSM industry that bolster the idea that the land/human are separate and disconnected from the sea/non-human life, I follow PNG communities to argue the sea-floor is intimately connected with humanity. In these ways, DSM threatens Indigenous culture in PNG by disrupting Papuans understandings of who they are, and these connections demonstrate a meaningful way DSM impacts the environment and humans.

DSM may also disproportionately and negatively impact the human environment, especially for coastal Pacific islanders on the front line of pollution and debris and resembles past and current struggles protecting Pacific island resources and Indigenous rights in times of colonization, war, and climate change. Aguon argues, "international Indigenous rights law posits a need for obtaining the free, prior, and informed consent ("FPIC") of indigenous peoples over development activities which could adversely impact their lands, territories, and resources, or their rights over the same. Given the documented impacts on numerous Indigenous communities, indigenous concerns and rights must also be incorporated into any regime positing control over seabed resources." For these reasons, Aguon potently warned everyone and especially Pacific islanders to "have a healthy disrespect for the law."

⁴¹⁴ Development, Harvard Law. "Broadening Common Heritage: Addressing Gaps in the Deep Sea Mining Regulatory Regime." *Harvard Environmental Law Review*. N.p., 21 Feb. 2019. Web. 12 Aug. 2020.

Pacific islands have deep histories of being prospected differently because of their geographic location, demographic, terrain, coastal seascapes, and now, ocean resources and minerals. Our future tech and power electronics currently depend on minerals that deep-sea mining is after and fueling conflict at the bottom of our ocean. We cannot ignore DSM. The emergence of regimes to protect and conserve the environment, as well as the development of bodies of Indigenous and human rights law, have drastically altered the assumptions upon which DSM was first premised.

The resurgence of indigenous rights protections and awareness assert that special considerations must be made for the social and cultural impacts of DSM. This is the first opportunity in which regulations can be written to govern exploitation activity before it begins. This is a historic case, not just for PNG but globally, as communities try to understand the legality and potential impacts of the world's first commercial deep seabed mine. Whatever happens in the PNG case, dozens of projects are likely to follow and set new precedents for deep-water industries. They are triggering new areas of international, environmental, climate change, indigenous rights, and ocean law as islands, states, and nations decide whether to include DSM in their jurisdiction.

By highlighting the overlapping and simultaneous processes and experiences of occupation, displacement, and targeting of island specific and ocean specific resources, I reorient an analysis of deep-sea mining from a conversation focused on assessing the deep sea for commodified potential, towards critical ocean studies for the Anthropocene from a Pacific island perspective. This Pacific-centered approach centers indigenous culture, values, and sustainability of environmental activities while at the same time amplifying interconnections of all life, human, non-human, spirits, ancestral, and future generations.

Ideas about the underwater world and ocean life can be traced back to the U.S. military and their interest in securing submerged lands off the coast of territories they control. While some reefs are visible in shallow waters along the coast, much of the reef lies in deeper waters accessible by diving. Submerged land struggles are complicated for a militarized islands where the military can challenge local rights to land. Under the “paramountcy doctrine,” the United States has paramount authority over the submerged lands of coastal states and territories seaward of the low watermark. This authority can be transferred to a state or territory, but such a transfer requires a “clear, express and unequivocal Congressional enactment.” According to a 2011 U.S. House of Representative's report:

In 1974, Congress passed the Territorial Submerged Lands Act which gave Guam, the U.S. Virgin Islands and American Samoa jurisdiction over submerged lands out to three geographical miles; however, the Act was enacted before the Commonwealth of the Northern Mariana Islands (CNMI) was granted territory status. The CNMI legislature passed legislation in 1979, 1980 and 1988 asserting that the CNMI had exclusive jurisdiction over submerged lands and offshore marine resources. However, the U.S. federal government's position on the submerged lands surrounding CNMI has been that the submerged lands were not transferred to the CNMI under the Covenant and remain under the jurisdiction of the U.S.⁴¹⁵

The government strategically sought to use a loophole to gain control of the CNMI's submerged lands which demonstrates their immense interest in rights to underwater terrains. In 2004, the CNMI sued the U.S. in District Court under the Quiet Title Act, asserting its claim of jurisdiction over oceanic submerged lands and marine resources from its coastline to a distance of 200 nautical miles. The District Court ruled that the U.S. has “paramount authority over those lands and resources as a necessary and retained element of its national sovereignty.”⁴¹⁶ The President withheld the transfer of submerged lands adjoining two islands of Tinian and Farallon de Medinilla

⁴¹⁵ H.R. 670--A Bill to Convey Certain Submerged Lands to the Commonwealth of the Northern Mariana Islands in Order to Give That Territory the Same Benefits in Its Submerged Lands as Guam, the Virgin Islands, and American Samoa Have in Their Submerged Lands." *House Report 112-162*. N.p., n.d. Web. 14 Aug. 2020.

⁴¹⁶ *Ibid*.

where U.S. forces conduct military training and three islands in the Marianas Trench Marine National Monument until “coordinated management plans” can be developed to protect the military training areas.

According to a 2007 U.S. Navy Guam Submerged Lands Management Plan: “The Navy’s submerged lands encompass approximately 67,500 acres and are located adjacent to two general areas of Guam: near Ritidian Point (34,110 acres) and near Apra Harbor (33,320 acres). The Navy’s submerged lands comprise approximately 30 percent of the total submerged lands surrounding Guam and account for approximately 32 percent of Guam’s coastline (46.1 miles).⁴¹⁷ The primary uses of Navy submerged lands around Guam are “vessel berthing and associated functions in Apra Harbor, military training, designated ecological reserve areas (ERAs), and recreation by both military and civilian personnel.”⁴¹⁸

These Pacific military case studies should serve as a lesson learned for how the military could potentially use lesser known loopholes, or create new ones, in order to gain access or control over deep ocean space and sea floor areas where valuable minerals are identified. Such minerals would be extremely valuable to the military as they are forced to reckon with climate change pressures to reduce their carbon footprint and transition to more “ecofriendly” technologies that will still use an immense amount of rare minerals. In addition, national governments interpret the metals and minerals extracted through DSM are a key part of the “resource security” debate whereby the supply of resources and the halting of acquisition by other governments become part of a series of “sovereignty games.”^{419 420}

⁴¹⁷ The geographic extent encompasses submerged lands from the mean high tide line out to the three geographical mile limit, including estuary, near-shore and deepwater environments (>5,400 feet depths).

⁴¹⁸ Guam and CNMI Military Relocation, The. "Volume 2: Marine Corps – Guam." *Www.guambuildupeis.us*. N.p., 2010. Web. 2010.

⁴¹⁹ Childs, John. "Extraction in Four Dimensions: Time, Space and the Emerging Geo(-)politics of Deep-Sea Mining." *Taylor & Francis*. N.p., 2016. Web. 12 Aug. 2020.

⁴²⁰ Hannigan, John A. *The Geopolitics of Deep Oceans*. Cambridge, UK: Polity, 2016. Print.

The Republic of the Marshall Islands also commenced public consultations on deep-sea mining in 2015 with a focus on the draft national Deep Sea Minerals Policy.⁴²¹ DSM could bring substantial income and benefits to the RMI, which makes it an attractive industry on the surface. However, given the environmental violence, toxicity, forced migration, health, and economic impacts to the archipelago, and climate change vulnerabilities, the last thing the RMI needs is another extractive and manipulative industry creating new conditions of dependency and environmental harm. The RMI, or any island nation, should not need to depend on the DSM exploitative industry to find self-sufficiency and well-being. This is the fallacy. One of the greatest threats with DSM is that the industry will target islands that desperately need new revenue sources because of histories of occupation and resource exploitation and swoop in to swoon the local government and communities with promises of undersea riches. How the DSM corporations attempt to legitimize their activities should be examined with the highest level of scrutiny.

The postcolonial nature of the debates over DSM is noteworthy. In the previous chapters, I demonstrated how the U.S. military imposed environmental harm to coral reefs and analyzed different strategies used by activist communities to combat exploitation. There are economic stakes for independent nation-states to participate in the DSM industry, which cause tensions and division in local communities. Colonial and military occupation created the conditions for PNG communities to be in poverty today, and local people are eager to work. Locals supporting DSM creates a challenge for anti-DSM activism and raises the stakes for effective communication about DSM risks. The DSM industry promises jobs and economic stability in ways not currently available to PNG residents.

⁴²¹ Suva. "Marshall Islands Consults on Deep Sea Minerals." *The Pacific Community*. N.p., 2015. Web. 12 Aug. 2020.

Across the cases of environmental harm I have discussed in the Marshall Islands, in Guam, and Papua New Guinea, and for island and Indigenous communities across the world, there are similarities in the assertion of the interconnected nature of ecological impact and high valuation of the worth of protecting and preserving environments in their natural state. This valuation is informed by Pacific Island epistemologies, traditional environmental knowledge and stewardship practices, a belief in the importance of balance and harmony with nature and non-human species and prioritizing the ocean as knowledge producer. Much of the activism I analyzed engaged legal challenges, critiques of environmental impact statements, public demonstrations using traditional canoes and seafaring symbolism, and direct action. What is different in this chapter is the postcolonial mechanisms used to transfer environmental exploitation that Pacific Island communities have experienced on land and in shallow waters and extend wastelands process to deep ocean space. This presents a great challenge, to make visible harms that only well-funded researchers and sea-floor scouts get access to, and to communicate ecological impact through a new industry where little information is available.

Globally, national governments and corporations are moving to increase research⁴²² and facilitate DSM as a viable industry.⁴²³ DSM signals a change in the nature of geopolitics and its strategies as “projecting downwards, upwards, and outwards” to a more multi-dimensional and voluminous world that accounts for time as well...deep-sea mineral resources ‘become’ political by being ‘constitutive of and constituted within arrangements of substances, technologies, discourses, and the practices deployed by different kinds of actors.’⁴²⁴ The deep sea and earth

⁴²² Bridge, Gavin. "Territory Now in 3D." *Political Geography* (34): 55-57, n.d. Web.

⁴²³ Childs, John. "Extraction in Four Dimensions: Time, Space and the Emerging Geo(-)politics of Deep-Sea Mining." *Taylor & Francis*. N.p., 2018. Web. 12 Aug. 2020.

⁴²⁴ Richardson, Tanya, and Gisa Weszkalnys. "Introduction: Resource Materialities." *Anthropological Quarterly* 87.1 (2014): 5-30. Print.

systems will be taken more seriously as the DSM industry and geopolitics continue to tout DSM relevant minerals as resources of the future.

In conclusion, the dynamics and geophysical properties of the deep sea already inform PNG activism and will continue to influence geopolitics. In this chapter, I have demonstrated how coral reef as knowledge producer and lens of analysis extends to deep ocean space and charted some of the key human and non-human actors relevant to DSM. This focus sheds light on the importance of understanding the politics and agency of the ocean to understand how geopolitics will be influenced by ocean ecosystem functions. Humans will both influence and be affected by the seawater of the ocean and its multidimensional flows. It is still unclear how such dynamics and recognition of deep ocean life will impact the DSM industry long-term.

Insights from my research show DSM concerns from Pacific Island nations have motivated island advocates to get the deep-sea more attention on the world's stage and spurred inter-island collaboration, knowledge sharing, and coalition building to protect deep-sea resources and indigenous rights. Papuans advocacy work demonstrates how Pacific islands are working together to manage opportunities and impacts of this emerging industry. I am hopeful their advocacy and activism will result in more conversations, planning, and policies that treat the deep-sea and its resources ethically and in line with the priorities of the indigenous communities and the spirituality of the people the DSM industry may impact.

My research revealed nations need to plan for mineral scarcity through strategies that do not exploit the resources or communities of other nations. Pacific Islands must plan for global mineral scarcity to put new pressure and threats to their islands and resources by proactively working with their communities to legislate protective measure that are culturally sensitive and hold enforceable weight. Further, greater transparency among nations which could include sharing

of geological data and mechanisms to protect mineral deposit “finds” much like we protect intellectual property.⁴²⁵

DSM does have human impacts and far greater ecological impact than existing studies reveal. DSM should consider the spirituality and culture of the people their work effects. It should also honor Indigenous people’s rights to free, prior, and informed consent and put forth rigorous transparency when it comes to geological studies, mapping, and consultations with communities. Future conversations on DSM need to be understood in the context of Pacific relationships with ocean and not only focus on speculative economic return. Culture and ocean is key in understanding environmental impact and environmental politics.

⁴²⁵ Ali, Saleem H., Damien Giurco, Nicholas Arndt, Edmund Nickless, Graham Brown, Alecos Demetriades, Ray Durrheim, Maria Amélia Enriquez, Judith Kinnaird, Anna Littleboy, Lawrence D. Meinert, Roland Oberhänsli, Janet Salem, Richard Schodde, Gabi Schneider, Olivier Vidal, and Natalia Yakovleva. "Mineral Supply for Sustainable Development Requires Resource Governance." N.p., 16 Mar. 2017. Web. 12 Aug. 2020.

Conclusion

In conclusion, I found Pacific Island activism I analyzed, witnessed and participated in during this study emerging from Guam, the Marshall Islands, and PNG, implemented some or all the following methods in pursuit of climate justice.

Frame Information: Shine light on issues (development, policy, activities, behavior, discourse) that impact the experience of climate change consequences. The challenge for communities represented in this research is how to present issues to the public in a way that would mobilize constituencies to take concerted action.

My research found that Pacific islanders seeking climate and environmental justice push back against the idea that their islands are already completely wastelanded, or too far in the process of wastelanding from climate change, and instead, demand a reframing that centers hope and their claims for ambitious action and resources to support the regeneration of their environment.

I found that climate justice from a Marshallese perspective must center environmental justice from nuclear testing and current military impacts on their environment. The news media and international climate change discussions have centered the figure of the Pacific island climate refugee, images of their bodies, of their coral, of their rising tides, their stories, excerpts of their calls for change, and snippets of their testimonies for articles, to provide proof to the world that climate change is already happening. Their embodied experience of serving as the truth of climate change should not stand in to legitimize the “other” and serve as a performative call to action for global elites to do something. Instead, their invitations to tell their story must center their dignity and capture the nuance of their experience and their dreams for the future.

Interconnections: Make connections between less obvious non-climate/non-environment related phenomenon (poverty, gender, race, class, citizenship) and climate change.

The health and well-being of coral reefs are indicative of the well-being of Pacific island people, culture, and future generations. This is why coral serves as a method and model, and why Pacific peoples are fighting to protect coral and employing diverse techniques of care for coral in their efforts. Climate justice from a decolonial Pacific island perspective recognizes the pursuit of indigenous sovereignty in the same breath as the pursuit of healthy environments. Climate justice from decolonial Pacific island perspectives pursues the right to make decisions about land, water, and life without any military or foreign nation's approval. Climate justice from Pacific island perspectives seeks recognition of past environmental harms and demands specific plans as to how past violence will not be repeated or redesigned in new environmental policy proposals. Climate justice from a Pacific island perspective argues the details matter. Climate justice from Pacific Island perspectives pursues peace, health, and sustainability and equally prioritizes those things for non-human species and the environment.

Interspecies and non-human: Make connections between how experiences and impacts of non-human species and non-human world (spirits, ancestors) impact human society and how human society impacts the non-human.

I found through activist testimony and activism practices that Pacific Island perspectives on climate justice connected the health of the deep-sea and deep-sea coral with its capacity to impact stored carbon and the health of our oceans, land environments and resources, and connection to ancestral spirits. Further, the activism of Guam, PNG, and the Marshall Islands argue in their own ways that healing the planet/slowing down/reversing global warming coincides with

achieving diverse forms of social justice and protecting human rights. It is only through reconnection and recalibration with nature that justice of any form can be realized.

Coral Reefs as Knowledge Producer: Contend that protecting coral reef (shallow, fossilized, submerged, deep-water, healthy and deteriorating) is critical to climate justice by way of maintaining ocean health locally and globally that protect their islands from impacts of climate change (rising tides, salt-water intrusion, bleached reefs, acidification of reefs).

There are many parallels between coral reefs and Pacific life and lessons to be learned from their resilience and capacity to regenerate. I found that care for coral reefs was tied to an awareness that the status of coral reefs was reflective of the status of these island communities, their culture, and their future. They fought for the protection of coral reefs through responsible and sustainable development practices, for the inclusion of coral reef vulnerabilities and needs in international and local environmental policies, and for recognition that coral reef data is telling humans important insight about how human behavior needs to change.

Indigenous rights and Free, Prior, and Informed Consent: Demand free, transparent, and accessible information on military and industry activities, development, and funding related to the environment so that local communities can understand information, give consent, and contest if necessary.

The legal cases spearheaded by Julian Aguon and Blue Ocean Law highlighted the overlapping themes of Indigenous rights to free, prior, and informed consent. In the case of the Marshall Islands their communities were not given comprehensive information about the true human and ecological impacts of the nuclear testing and therefore, could not give informed

consent. In the case of Guam, the military is denying Chamorus of their rights of free, prior and informed consent when it comes to the military buildup and continuing to desecrate sacred lands and ancestral remains. I found activism emerging from PNG against DSM was deeply rooted in claims for Indigenous rights and free, prior, and informed consent and complicated by the PNG government's stake in the DSM industry. The activism I analyzed used Indigenous rights of free, prior, and informed consent to articulate their concerns and desires about the future of their islands, resources, oceans, and coral reefs.

My research showed that respect and recognition of Indigenous rights to self-determination and sovereignty are imperative for Indigenous peoples to make decisions about their island and environment that address climate change and impact climate justice. What is missing in the island cases I analyzed is the existence of legal structures that can be effectively used by native peoples to assert sovereignty over land and natural resources to oppose destructive development and mining projects. I found climate justice as a frame provides the opportunity to link Indigenous rights, sovereignty, and self-determination to environmental issues in a powerful movement.

Another insight gained from this research is the role of transparency in data and science. Exploration and data collection about the ocean and deep-sea are typically conducted by scientists and military scientists with major funding to back expeditions, training, tools, and expensive equipment. New mapping of ocean space and the seafloor will likely emerge from massive funding dollars and it is imperative that data is shared with local communities and made as accessible as possible. Opening up research and exchanging knowledge can support more equitable interactions among Pacific islands and other industries and give Pacific researchers more tools to conduct their own research according to their culture, values, insights, and priorities. Knowledge sharing can lead to more long term planning and thinking on policy actions when Pacific researchers and

communities are involved, developing research questions, and determining outcomes. Transparency in climate and marine science can assemble more informed and equitable policies and work towards justice.

Demilitarization: Belief that a healthy and safe environment, ocean, and community can only exist through demilitarizing the island and Pacific region, and that this restructuring can restore Indigenous control and power to determine environmental stewardship practices and reallocate funding to demilitarize and address climate change and injustice.

From my conversations with community members in Guam I found that a prerequisite to engage meaningfully with climate justice goals as an unincorporated territory and higher elevation island, such as to protect coral reef from pollution, sedimentation, bleaching, and dredging was to engage with demilitarization and self-determination activism. Their logic pivots on this tension - How much progress can be made on the climate and environmental front when a community does not have control over decisions about their natural resources and environment because the military claims those rights as a matter of national security? How can Chamorus organize for a sustainable society and sustainable energy when their rights under a U.S. framework are shunned because they live on an island deemed a strategic military hub? People all over the world are demanding climate action. Guam shares tensions with the Marshall Islands, both heavily militarized and portrayed as evidence of both a strong United States (through military presence and build-up) and as the “truth”/embodied evidence of climate change impacts (drowning islands and bleaching coral). While the Marshall Islands has sovereignty in theory, the military’s use of their environment for bases and continued testing reveals holes in their experience of free choice and political will. Guam and the Marshall Islands have participated in demilitarization activism and continue to be active

in demilitarization movements that articulate the desire to reclaim land stolen by the military that led to forced displacement. The role of the military in the further development of their island communities will impact their capacity to respond to climate changes and influence their ability to be self-sufficient.

Pause and Delay Strategies: Use government, colonial, and military policies and rules when possible to pause, delay, or stop environmentally harmful activities. Work outside of the state when it is not possible to use such policies to the benefit of the community.

I found the Marshall Islands used grassroots activism through Operation Homecoming to force the military into negotiations with their communities over land payments. They paused and delayed military actions and stopped them from continuing their original plan. They also use climate justice activism and poetry to communicate the challenges of climate change to the public in hopes their stories will bring awareness with dignity of climate change consequences. Through their climate justice actions they are working to delay and stop their islands from continuing to experience disproportionate impacts of global warming. They work to stop the erasure of their islands and communities.

In the case of Guam, community groups like We are Guahan and Prutehi Litekyan are using international law and environmental impact statements to critique and legally challenge further military desecration of their ancestral lands. They have mobilized grassroots activism to protest outside of bases, in the streets, and used social media to raise awareness of their situation and gain solidarity across Oceania and the world. They also articulate desires for land reclamation. They have been successful in pausing, delaying, and rerouting military plans and with their newest court filing they seek to stop the buildup for good.

Communities in PNG are also using the site of EIS to critique faulty science and assumptions about the ecological impacts of DSM offered by DSM corporations. They call for new EIS to be developed outside of DSM corporations that can study the true interconnected impacts DSM would cause to deep sea ocean environments, local communities, and how it would impact climate change consequences. The Alliance of Solwara Warriors and their supporters call for both an immediate delay in DSM activities through a proposed 10-year moratorium and a ban for DSM altogether.

Challenge for equity: Challenge preexisting conditions that create disproportionate experiences of climate change consequences and challenge debates about discourse, terms, and options to address those conditions.

There is no greater imbalance than one between natural life/earth processes and capitalist-driven extractive and environmentally harmful industries. As a result, we are witnessing what happens when centuries of colonization, militarization, and environmental injustice collide with decades of globalization, natural resource extraction, and climate change. Social changes and youth of color organizing to address contemporary environmental challenges have ushered in a new era of climate leadership borne from environmental injustice and deep Indigenous traditional environmental knowledge that is leading the way to model how we rebalance relationships to nature.

Indigenous problem-solving in the climate change context is emerging from new generations of climate justice leaders. They challenge hegemonic decision-making processes that assess climate impacts, identify risks, and calculate loss and assert Pacific centered praxis, method, theory, and everyday knowledge.

Create Space through Creativity, Collaboration, and Community: Maximize time, resources, reach, and impact through collaboration among island, inter-island, and transnational networks of solidarity on issues related to climate justice and human rights.

I found Pacific Islanders create space for discussion and debate that centers on the health and well-being of the island environment, ocean, and community members aimed at the general public. Pacific Islanders actively create space for themselves against all odds and especially in the face of intergenerational erasure. Climate justice, from decolonial Pacific Island perspectives, knows the Pacific does not need to be saved to experience justice. It is urgent that we respond to change critically, creatively, and collaboratively to ensure we do not reproduce hierarchies of knowledge and power that have proven destructive forces in the Pacific and around the planet.

This dissertation research illuminated the importance of creating space for Pacific Island communities in leadership positions and empowering those leaders across sectors and especially in law, environmental policy, and natural resource management. When Pacific Island perspectives are represented in formal leadership roles, it increases the probability that new activities and policies will reflect the needs and priorities of communities that have been historically disenfranchised and marginalized.

A final takeaway from this dissertation is the power of centering the agency and resilience of Pacific Island communities and non-human life. This move recognizes legacies of ancestral wisdom and living in relation with nature that provides vital insight into what we as humans need to do to begin to heal our communities and the earth. By centering the capacity of Pacific peoples and coral reefs to regenerate and persevere if given enough time and the right conditions, we gain a much-needed dosage of optimism that is not blind to real vulnerabilities and obstacles of our

moment. Climate justice from Pacific Island perspectives infuses the existential threat of climate change with problem-solving that departs from a record of recovery and potential to recover. This lens can guide global decisions and human behavior change goals to shape the future of Pacific Islands. There *will be* Pacific Island futures. In our moment of uncertainty, let us look to Pacific leaders for guidance as we navigate new currents of change today, tomorrow, and always.

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