

UC San Diego

UC San Diego Electronic Theses and Dissertations

Title

'Saved Forever?': An Eco-Ethnography of Trestles' Surfscapes

Permalink

<https://escholarship.org/uc/item/27f1g4k5>

Author

Iatarola, Briana Marie

Publication Date

2018

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA, SAN DIEGO

‘Saved Forever?’: An Eco-Ethnography of Trestles’ Surfscapes

A Dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy

in

Communication

by

Briana Marie Iatarola

Committee in charge:

Elana Zilberg, Chair
Richard Carson
Brian Goldfarb
Cary D. Lowe
Keith Pezzoli
Fernando Dominguez-Rubio

2018

Copyright

Briana Marie Iatarola, 2018

All rights reserved.

The Dissertation of Briana Marie Iatarola is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

2018

DEDICATION

For G and Z: I love you. For my supportive family, kind friends and thoughtful colleagues: Thank you.
For Trestles: Your waves are sublime.

EPIGRAPH

“A Ledge”

Tomorrow I'll be out in the water
When dawn descends bringing
The quiet reminder of immortality
There I live, I survive, I balance on a ledge
Wobbling always, I wait for time to go by
I fall off
I swing back up
I completely overshoot it
I don't know if it's balancing
Or falling
Or living
Maybe that is best
Just nothing, just now, just here
Just being

Terrence E. Dunn

TABLE OF CONTENTS

Signature Page	iii
Dedication	iv
Epigraph.....	v
Table of Contents	vi
List of Terms & Abbreviations	viii
List of Photographs	ix
List of Figures	xi
Acknowledgements.....	xiii
Vita	xv
Abstract of the Dissertation.	xvi
Introduction.....	18
Chapter One: Producing the Surfscapes	45
Bathymetry: How Trestles’ Waves Work	46
Indigeneity: A Reminder of Trestles Cultural Legacy	54
When Indigenous Land Becomes Property.....	61
When Recreational Space Becomes Militarized Property	69
Subjectivities: A White Woman’s Take on Surfing Trestles	75
Racializing Lowers	81
Environment: The Visible Impact of Contests	87
Chapter 2: The ‘Save Trestles’ Campaign	95
‘Pro Toll Road’ Stakeholders	97
‘No Toll Road’ Stakeholders.....	107
Additional Environmental Concerns	119
Legal Exchanges and Uphill Victories.....	125
Endless 241 Toll Road Re-Articulations.....	131
Chapter 3: Trestles’ Rotting Ecology: An Interruption.....	137
Dead Sentinels Part I: A Gray Whale at Lowers	141
Miramar Landfill’s ‘Whale Cemetery’	154
Reflections on Hacking and Dumping a Whale Carcass	158
Dead Sentinels Part II: Sea Slug and Tuna Crab Die-Offs at Trestles	161
Chapter 4: Eco-Ethnography as Experimental Method	167
Urban Tides Objectives	171
Becoming an Urban Tides Citizen Scientist.....	174
Assessing the Limitations of Citizen Science.....	185
Other Ways of Knowing	196

Conclusion	204
Works Cited	216

LIST OF TERMS & ABBREVIATIONS

CCC	California Coastal Commission
CEQA	California Environmental Quality Act
CoSMoS	Coastal Storm Modeling System
EHL	Endangered Habitats League
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
F/ETC	Foothill/Eastern Transportation Corridor
F/ETCA	Foothill/Eastern Transportation Corridor Agencies
NRDC	National Resources Defense Council
JBMAN	Juañeno Band of Mission Indians, Acjachemen Nation
MPO	Metropolitan Planning Organization
NRDC	National Resources Defense Council
OCTA	Orange County Transportation Authority
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SDRWQB	San Diego Regional Water Quality Board
SSOC	Save San Onofre Coalition
SIO	Scripps Institution of Oceanography
SLR	Sea-Level Rise
SONGS	San Onofre Nuclear Generating Station
SOSB	San Onofre State Beach
TCA	Transportation Corridor Agencies
UCPP	United Coalition to Protect Panhe
Toll Road	241 Toll Road/extension; Toll Road 241; Foothill South Toll Road; TCA Toll Road; SR 241; SR-241 extension; alignment

LIST OF PHOTOGRAPHS

Photograph 1.1: A day of small waves still makes for a picturesque surfscape. 30

Photograph 1.2: The circulation and transport of sediment coupled with cobble substrate help produce Trestles’ sandbars, which influence the shape and style of each surf break’s waves. 51

Photograph 1.3: On a small day of surf, a lone surfer navigates the famous cobblestones of Lower. 52

Photograph 1.4: San Onofre’s “Fish Camp” along the newly constructed Pacific Coast Highway foreshadowed the economic potential of surf tourism before World War II. Image reproduction courtesy of Don Craig and the Huntington Library. 64

Photograph 1.5: In a contest held at San Onofre in 1941, competitors were required to pin their numbers to the bottom of their bathing suits. 65

Photographs 1.6: These photos are featured as a spread in John H. “Doc” Ball’s famous 1946 book *California Surfriders*. Ball’s writes: “General view, contest day, 1940. The competition was keen, the spills were frequent, and the spectators roasted on the beach. The boys come from within a hundred and fifty-mile radius to participate in this activity.” 66

Photograph 1.7: San Onofre surf pioneer Mary Ann Hawkins frequented the surf with her friends, subverting the misconception that women were too weak to hold or paddle the heavier surfboards shaped during the 1930s. Here, she surfs with E.J. Oshier and friends on February 27, 1937 68

Photograph 1.8: After the U.S. Marine Corps assumed control of Rancho Santa Margarita y Las Flores, the once-public beaches of San Onofre became a site for the U.S. Marine Corps’ amphibious training exercises during and after World War II. 70

Photograph 1.9: A bluff is leveled to house the controversial San Onofre Nuclear Generating Station, which began operating on June 17, 1967 and shut down permanently on June 7, 2013, only ten days shy of its 46th anniversary. 72

Photograph 1.10: Lower plays host to the surfarazzi. Here, a photographer gains perspective from the bushes..... 76

Photograph 1.11: A 5.9-foot high tide on September 19, 2016, inches closer to the banks of the railroad tracks passing through San Onofre State Beach. 82

Photographs 1.12: These five images depict the residue of white supremacy, a global gender order and localism -- all which blight Trestles’ material environment. 85

Photograph 1.13: For \$25,000, Surfing America rented Lower to host the Annual Surfing America USA Championships in June 2016 88

Photograph 1.14: Preparation for the Hurley Pro at Trestles took more than a week. The long- and short-term environmental impacts of the crowd size and construction materials have not been disclosed 93

Photograph 1.15: A view from the water. Photo courtesy of Surfline.com. 94

Photograph 2.1: A serendipitous encounter with Trestles supporter Dave O’Neill during a walk near Cottons at San Onofre State Beach on July 28, 2016. A ‘Save Trestles’ sticker is also strategically placed along the rusted guard rail near the Cristianitos exit fronting the Panhe Trail.114

Photograph 2.2: No Toll Road opponents gather outside O’Brien Hall at the Del Mar Fairgrounds to voice their opposition to TCA’s proposed toll road extension. Photo courtesy of SaveSanOnofreCoalition.com archives accessed 2014. Photographer unknown.....123

Photograph 2.3: The famous wind-battered sign along Cristianitos Road reminds visitors what can happen to the land fronting Trestles.136

Photographs 3.1: A dead gray whale that reaches nearly 40 feet in length rolls ashore at Lowers in April 2016. Photographs courtesy of Jim Pruitt.144

Photograph 3.2: A hydraulic excavator begins dismembering Gray’s tale.....148

Photograph 3.3: Military and police personnel stand captivated by the spectacle.....150

Photograph 3.4: Pieces of the whale were later transported by truck to the Miramar Landfill in San Diego County.....152

Photograph 3.5: The Miramar Landfill is projected to reach maximum trash capacity by 2030. Dead whale not pictured.....154

Photograph 3.6: Dead sea slugs dot Trestles’ coastline in May 2016.....162

Photograph 3.7: The May-June 2016 tuna crab die-off stretched from Newport Beach to the U.S.-Mexico border.165

Photographs 4.1: The Panhe Trail, also referred to as the ‘Nature Trail’, eventually leads to Trestles....178

Photograph 4.2: Northbound traffic stalls at the San Clemente Border Patrol Station for U.S. Customs and Border Protection.181

Photograph 4.3: Capturing the tidal lines at Middles on March 24, 2016.182

Photograph 4.4: An Urban Tides photo of Lowers at low tide on October 26, 2016.187

Photograph 4.5: An Urban Tides photo of Lowers at low tide on October 26, 2016.205

Photograph 4.6: An Urban Tides photo of Lowers at low tide on October 26, 2016.206

LIST OF FIGURES

Figure 1.1: “Under the Trestle” 16”x20” McClelland Collection. Reproduced image courtesy of San Diego State University’s Special Collections and University Archives. August 2016.....	23
Figure 1.2: A model showing how the methodology of “eco-ethnography” can work.	34
Figure 1.3: A comparison of famous Trestles artist-surfer Kevin A. Short’s “Afternoon Reflecting Upon The Session” with my photograph of a late-winter swell. Short is known for his paintings that capture the aesthetics of Southern California’s landscape and surf culture	45
Figure 1.4: The California State Parks’ kiosk near the Panhe Trail depicts all five surf breaks that comprise contemporary Trestles.	48
Figure 1.5: Three creeks originating from the San Mateo Point watershed empty into Trestles.....	49
Figure 1.6: This map of San Onofre State Beach has appeared in the California State Parks visitor brochure.	55
Figure 1.7: Presumably this is a historical painting of two Acjachemen infants who were baptized in 1769 near what is now known as Cristianitos Road. Image reproduction courtesy of Casa Romántica.	57
Figure 1.8: This map delineates San Diego County from the future Orange County, established in 1849. Pio Pico passed down the land to Don Juan Forster, who eventually sold it to James Flood in 1863 after going bankrupt. Image reproductions courtesy of Don Craig and the Huntington Library.	60
Figure 2.1: A rendering of the proposed 241 Toll Road extension that appeared in the <i>Orange County Register</i> between 2007 to 2008.....	99
Figure 2.2: A ‘No Toll Road’ campaign sign designed by documentarian, surfer and environmental activist Matt Melin.....	111
Figure 2.3: This map of the Foothill Transportation Corridor – South’s listed species distribution in 1999. Image reproduction courtesy of Dan Silver of the Endangered Habitats League.	120
Figure 2.4: This 2012 map depicts the Transportation Corridor Agencies’ 241 Tesoro Extension, a re-articulation of the SR-241 extension. Image reproduction courtesy of TCA.	129
Figure 4.1: An example of a completed Urban Tides record for March 24, 2016.....	177
Figure 4.2: A surf report from March 4-6, 2016, indicates wave size, predicted winds, tide information and weather. Image reproduction courtesy of Surfline.com.	179
Figure 4.3: A snapshot of Surfline’s high-resolution wind forecast for 11 a.m. on March 15, 2017. Winds from the west-north-west were expected to blow between 6 to 10 knots heading toward San Onofre State Beach.	184
Figure 4.4: A series of plotted coordinates from my Urban Tides photos of Lowers. Mapped image courtesy of Any O’Neill and USGS.....	188

Figure 4.5: CoSMoS flood projections for the Del Mar area in San Diego County, based on 200 cm SLR with a 100-year storm event, inundate the Del Mar Fairgrounds (circled in yellow). Both mapped images courtesy of USGS.197

Figure 4.6: CoSMoS flood duration storm-scenario projections for the Del Mar Area in San Diego County, based on 200 cm SLR with a 100-year storm event, in which the flood is expected to last more than 18 hours in some parts of the beach town, including the Del Mar Fairgrounds.197

Figure 4.7: This swell model appears in *The weather surfer: a guide to oceanography and meteorology for the world's wave hunters*. Image reproduction courtesy of the San Diego State University Surfing Special Collections.....200

ACKNOWLEDGEMENTS

This project arose out of my desire to disrupt dominant narratives about Trestles and the cultural and ecological impacts of surf tourism in Southern California. It evolved as I discovered the political utility of citizen science; mourned the death of a gray whale that washed ashore at Lowers in April 2016; camped several times at the San Mateo Campgrounds, alone and with my son; and spent several months in the archives at San Diego State University. For more than fourteen years I have surfed along Southern California's coast, sometimes with friends, most often alone. Trestles is a seductive yet contradictory site that complicates insular conceptions of surfing, landscapes, ecology and nature. The limitations of my theoretical and methodological frameworks are simply invitations for productive critiques and future collaborations.

Many individuals, some of whom I will forget to acknowledge, have aided in the writing process. I am extremely grateful for my chair, Dr. Elana Zilberg, who encouraged me to pursue a doctorate. Gracias por todo el apoyo and challenging me to write better literature reviews, abstracts and academic analyses. You carved out immeasurable time, gave invaluable feedback, consoled and rallied me to the end. Thank you so much for your support. An enormous thank you to my powerhouse dissertation committee: Dr. Keith Pezzoli, Dr. Fernando Domínguez Rubio, Dr. Brian Goldfarb, Dr. Cary Lowe and Dr. Robert Carson. Your critiques, provocative discussions, thoughtful questions and kaleidoscopic analyses encouraged me to experiment with a methodology and style of writing that concedes to science but embraces celestial uncertainties and wonder.

Dearest Mesa 'Rents (Yelena Gluzman, Matt and Aurora Dewey, Sara Solaimani, Nick Bell and Brooke Kiel) my life is fuller because of our balcony chats. Thank you for providing a compassionate network of support for Zane and me. Judy Bauerlein, Sam Mitchell and Max Mitchell: I would not have graduated without your help, emotional support, career advice and home-cooked meals. Angela Pierce: Forever appreciative for those days and nights when you helped with Z. John Stultz, thank you so much for taking my son on adventures so that I could focus and get this done. Many thanks to Dr. Lisa

Auslander and Dr. Sylvia Cartwright for showing me how to find my locus of control. Your advice and guidance healed many deep wounds so that I could finish this project. Amy O’Keefe, Lisa Ho, Stephanie Gómez Menzies, Jahmese Fort, Monika Sengul-Jones, Jason Magabo Perez, Cristina Visperas, and Christina Aushana: Your hugs, laughter, snacks, e-mails, serendipitous encounters and committed writing sessions made this exhausting marathon less painful. Dr. Michaela Walsh and Dr. Andrew Whitworth-Smith: From the start, you told me to stay strong; for the most part, I did. Joe Castro, you are an IT superhero; thank you for all your help when technology failed me. Gayle Aruta, Melanie Lynn and Jen Smith: I will never forget your unrelenting encouragement and pick-me-up conversations. Thank you.

The gratitude for my family (BaBa, Teece, Mar, Frankiy, Joyce, Kodi, Gabes, KK, Sof, Bella, Tori, and Kevin) is more massive than the Catalinas. Thank you for providing a refuge for writing and help with parenting. That uninterrupted alone time was invaluable. Wherever your spirit flies, Pops, know that I am happy you introduced me to the world of science and told me to keep with it. Sagan’s candle in the dark burns brightly for you. A heartfelt thanks to Robert Ray, Adam Burkhart and the rest of San Diego State University’s great crew of archivists for assistance in handling the Surfing Collection’s photos, poems, essays, cartoons, maps, trading cards and other fascinating paraphernalia about this coveted surfscapes.

Finally, mom and Zane: If I could turn every thank you card on this planet into kisses and hugs because of your resilient love and hopeful smiles, I would.

VITA

- 2003 Bachelor of Arts in Journalism with honors, Arizona State University – Barrett Honors College
- 2010 Master of Arts in Latin American Studies, University of California, San Diego
- 2010 – 2018 Teaching Assistant, Department of Communication, University of California, San Diego
- 2015 – 2017 Graduate Student Researcher, Department of Communication, University of California, San Diego
- 2018 Doctor of Philosophy in Communication, University of California, San Diego

FIELDS OF STUDY

- Major Field: Communication
Professors Elana Zilberg, Keith Pezzoli, Fernando Dominguez-Rubio, Brian Goldfarb
- Ethnographic Methods
Professors Elana Zilberg, Brian Goldfarb, Fernando Dominguez-Rubio, Keith Pezzoli
- Environmental Economics
Professor Richard Carson
- Environmental Law
Professor Cary Lowe

ABSTRACT OF THE DISSERTATION

‘Saved Forever?’: An Eco-Ethnography of Trestles’ Surfscapes

by

Briana Marie Iatarola

Doctorate of Philosophy in Communication

University of California, San Diego, 2018

Professor Elana Zilberg, Chair

The creeks of the San Mateo Point watershed empty into the Pacific Ocean at the intersection of San Onofre State Beach, Marine Corps Base Camp Pendleton, and a famous group of surf breaks called Trestles in Southern California. This site brings into view several transecting borders: **land/water**, **public/private**, **human/non-human** and **recreational/militaristic/environmental**. This dissertation explores the disjunctive intersection of these borders in the production of what I term “Trestles’ surfscapes.” The

term reworks Appadurai's "globalscapes" with Lefebvre's "production of space," and the more recent calls for an "amphibious anthropology" by René ten Bos. This dissertation is an ethnography of "Save Trestles," a campaign to save San Onofre State Beach and its world-famous surf breaks from the development of an eight-lane, sixteen-mile toll road extension. The campaign demonstrates sophisticated social-change networking and advocacy that considers the coupling of human-natural systems. Social actors include the Juaneño Band of Mission Indians, Acjachemen Nation, scientists, surfers, the global surfing industry and transportation agencies. In 2016, a legal settlement prohibited any future transportation projects through the state beach/park; stakeholders celebrated, declaring Trestles "saved forever."

I employ a transdisciplinary methodology to show how the political ecology of Trestles' surfscapes reveals an elaborate web of relationships between (non)humans and their lived environments, past and present, local and global. My methodology is rooted in the ocean literacy I acquired as a surfer, as well as data-gathering techniques I learned as a citizen scientist for the Urban Tides initiative. This dissertation calls into question the success of the campaign given that rising sea levels remain Trestles' ultimate threat. Furthermore, the push to build a toll road near San Clemente continues, and climate change science is under assault. This case study is organized into four chapters. The first chapter provides a historical overview of the production of Trestles' surfscapes. The second chapter focuses on the campaign to "Save Trestles." Chapter 3 looks at the contemporary surfscapes as an abject anthropogenic space. The last chapter turns to the Urban Tides Initiative and concerns over the impact that sea-level rise will have on Trestles' economic future.

Introduction

This project was born out of a bittersweet love-hate-love for surfing. San Onofre State Beach beckons surfers like me with waves. Its world-famous surf breaks, known as Trestles, crash against 20 acres of beach, 174 acres of park space between Los Angeles and San Diego and within proximity to 65,000 residents. They are considered among the best on this planet -- a reoccurring theme in surf magazines, news articles, blogs, books, surf videos, documentaries and interviews. A rich coupling of economic, sociocultural and ecological attributes makes Trestles a dynamic and alluring site to conduct research. The site is integrated into the city of San Clemente and San Onofre State Beach's tourism industries. It is a space saturated with politically powerful indigenous and recreational histories. Moreover, Trestles' recreational value emanates from its natural features. Those features have long been commodified. Trestles' waves generate between \$8 million and \$13 million in revenue per year because their rideable rhythm remains steady each season, enlivened and sustained by global swell activity. As such, Trestles has become a coveted space for surf tourism and surf industry events in Southern California.

These attributes contribute to the production of what I, borrowing from Arjun Appadurai's typology of 'scapes, term Trestles' "surfscape." This surfscape is a complex land-sea interface that uses surfing as a primary means through which to explain and analyze the "production of space" (Lefebvre) -- a term I borrow from Henri Lefebvre and upon which I will elaborate at length later. It is also a fluid space produced from nature's "raw material" (Lefebvre 1991, 84).¹ These are the political and social products of surfing that emerge from economic, technical and strategic spaces Throughout my dissertation, I treat the surfscape as an object of analysis -- a political, ecological and common (public) good -- that provides a multitude of benefits for humans and non-humans. It draws into stark view the vulnerabilities of human-nature relations in how we conceptualize, create and use space and place. But

¹ Sociologist and philosopher Henri Lefebvre describes raw material as "products of an activity [e.g. surfing] which involves the economic and technical realms, but which extends well beyond them, for these are also political products and strategic spaces" (1991, 84).

Trestles is under a multilevel attack by: the intrusion of an eight-lane toll road; the surf culture industry; the endangerment of marine life from global warming; and sea-level rise. Trestles, and all that it sustains, is at risk, vulnerable to cultural, infrastructural and ecological changes that can forever alter its ecosystem functionality and services, as well as its historical and cultural legacy.

In 1981, a controversial toll road project was proposed in the *Orange County Master Plan of Arterial Highways*. That proposal has faced three decades of resistance, and revised versions of it have been re-introduced in various long-range transportation plans, undergoing re-articulations as SR-241 extension, 241 Toll Road and Tesoro Extension.² I first learned about the project in 2006 from an online survey sent by the Surfrider Foundation, an environmental nonprofit founded in 1984 in Malibu, California. The organization focuses on water-quality initiatives, environmental activism and ocean politics. Surfrider recognized the challenges ahead and sought ways to quantify Trestles' economic value as a recreational space for political ammunition against the toll road project. In doing so, it successfully linked environmental, recreational and economic interests -- an otherwise unlikely set of bedfellows.

The survey preceded the Foothill/Eastern Transportation Corridor Agency's (F/ETCA) 2007 controversial request for a permit from the California Coastal Commission. If approved, construction would move forward for a sixteen-mile, eight-lane toll road extension. The structure would cut through a public recreational space that encompasses 3,000 acres of land between the Santa Ana Mountains and Pacific Ocean, and ultimately run alongside the surf breaks. The plan provided an additional connection between counties and "[...] improvements to the transportation infrastructure system that would help alleviate future traffic congestion and accommodate the need for mobility, access, goods movement, and future traffic demands on [Interstate 5] and the arterial network of existing roads connecting with I-5" (Gutiérrez 2008, 2).

The first of thirty-eight questions in Surfrider's survey asked why I chose "to surf Trestles today." Among five options, the leading answer stated: "Trestles has better surf conditions than other places." I

² SR-241 Toll Road extension, toll road, TCA Toll Road and SR-241 Tesoro extension are terms used interchangeably throughout this dissertation.

hesitated to claim this was true, as I had not yet visited the breaks. When I did finally surf Trestles a decade later, I was enamored with the waves as a surfer. Yet, as a researcher, I was acutely aware of the thorny political, social and environmental issues at play in the rise and potential demise of this magnificent surfscapes. While, as the epigraph to this dissertation suggests, surfing can be a transcendental merging of body and sea, each time I visited San Onofre State Beach, I experienced dissonance and disjuncture in the knowledge of the site's history of violent dispossession and future threats of toll roads and sea-level rise. Following a major legal settlement in November 2016, Surfrider rejoiced the surf breaks were "saved forever."³ But were they? From the vantage of my research, the victory against the toll road is tenuous, further complicated by the destructive effects of sea-level rise and El Niño.⁴

The coastal population is now grappling with these ominous environmental phenomena. Throughout 2016 inland and coastal communities across the region endured widespread flooding, mud flows, landslides and wind gusts up to 60 mph for four days. San Clemente lifeguard and local Frank Harwood noted during an interview five months later that San Onofre State Beach lost nearly 50 beach-side parking spaces.⁵ The destruction begs the question: Can Trestles really be saved forever? Though stakeholders can (and should) celebrate the legal victories, focusing the fight primarily on the toll road is not going to stop El Niño or undo the existing coastal damage resulting from sea-level rise. Given that the attacks against Trestles are multi-level, the fight to protect it must be as well. Moreover, as recent history shows, the threat of yet another proposal for the toll road is never far off.

In this dissertation, I present a case study that includes a story about: (1) government, militaristic and corporate agendas colliding with the interests of local place-based organizations; (2) inconsistencies

³ See Stefanie Sekich-Quinn's "Trestles Saved...Forever." *Voice of Orange County*, December 6, 2016; Dan Weikel's "Settlement ends the threat of a toll road through San Onofre State Beach." *Los Angeles Times* (November 10, 2016).

⁴ NOAA reports: "[Global] sea level continues to rise at a rate of about one-eighth of an inch per year." See "Is Sea Level Rising?" on the Ocean Facts page. The National Oceanic and Atmospheric Administration describes El Niño as a rise in ocean temperatures in the Equatorial Pacific due to the lack of trade winds, which generally cool the sea temperature. This oscillation phase lasts between three to seven years and has an impact on Pacific marine ecosystems. See "El Niño" on the Pacific Marine Environmental Laboratory's page: www.pmel.noaa.gov/el_nino/faq. Wildfires are also a threat to Trestles' ecosystem functionality.

⁵ Harwood's interview occurred on May 26, 2016.

and inequities in planning and decision-making; (3) complex social change networking and advocacy that considers the coupling of human-natural systems in the operation of infrastructure and built environments; and (4) an undervaluing of the beneficial uses of natural assets in ways that undermine sustainability and justice. Various groups (environmental, cultural, indigenous, scientific) consider Trestles a sacred space nestled within a globalscape of similar spaces under attack from market and political forces that gain ascendance over the public good. My dissertation addresses these threats but also emphasizes the ecological dimensions of Trestles that distinguishes the controversy from a typical land-use dispute. Since 2007, ongoing efforts to stop the toll road have worked, in part due to effective networking between environmental, scientific and cultural stakeholders.

My research suggests that social science scholars who write about and analyze spatial politics must also address existing local, state and federal regulatory frameworks already in place to protect ecosystem services. It is worth analyzing the social impact that laws such as the California Coastal Act and agencies such as the California Coastal Commission have on preserving public access to beach space and protecting ecosystem functionality. This legal infrastructure shows how a land-sea interface becomes politically activated through the global flows of recreational, militaristic and scientific activities. In addition to surveys and models, it is also necessary to detail through ethnographic approaches (i.e., observations, interviews, embodied practices) the effects that sea-level rise will have on Trestles' beach and cultural economies. Underlying this diversity of knowledge is concern and hope for Trestles' ecology, at risk because of competing economic and socio-cultural interests over the use of public space. In the following section, I break down Trestles' layered meanings to create a foundation for producing the surfscape.

Trestles as Place and Space

In the material sense, Trestles is a bridge made of steel, concrete or timber that supports heavy rails for trains so that they can cross valleys, rivers, marshes, estuaries and other geographic features. Its purpose is to facilitate the flow of people and goods to support the local and state economies. In the

symbolic sense, trestles are historical transgressions against undeveloped terrain and indigeneity; conduits of global transportation; and a means of cultural and economic exchange. Blomley's work explores the impact that indigeneity and violent dispossession by colonizing and capitalist forces have on producing places and spaces. I draw from his understanding of "property as enactment" (comparable to land use) to detail San Onofre State Beach's eventual transformation into a militarized, gendered, racialized and globalized space of recreation that also functions as an ecosystem service.⁶ Enactment is central to Trestles' existence, as it underscores how ownership and functionality are inscribed in space. It relies on structures of law to determine what is and is not land before assigning formal ownership and meaning to it. These layers are implicated in ecosystem functionality, highlighting the economic and recreational value of Trestles, as well as resilient ties to the surf culture industry.

In Southern California, Trestles is typically referred to as a place for surfing -- a permanent, concrete fixture tethered to experience.⁷ Trestles is not an enclosed place, however. It is also a "meshwork" shaped by historic events and compartmentalized, collective experiences that help produce memorable (or forgettable) places -- or, in this case, surf breaks (Ingold 2011). Trestles as an aqueous space comprises a beach and five surf breaks named after the bridge that cuts through San Onofre State Beach along the Pacific Ocean.⁸ During the spring and summer months especially, visitors flock to it like hungry seagulls, moving back and forth between land and sea. Trestles functions as a land-sea interface that binds intersecting trails of history, human and non-human bodies, culture, money and state power. Each path to reach the surf breaks is a reminder of their complex spatial, economic and ecological histories brought to life by an uncertain future.

⁶ Blomley notes geospatial technologies influence the production of property, writing: "Property is enacted on law's land -- and indeed, helps to produce the land -- in diverse ways. Maps must be drawn, surveys prepared, developments realized, fences built. And in these enactments a very particular and contingent vision of property is produced" (2002, 557). If cartographers work in concert with a property regime, their maps do not communicate important historical narratives through quantitative data and symbols.

⁷ Michel de Certeau captures the essence of places, describing them as "inward turning histories, pasts that others are not allowed to read, accumulated times that can be unfolded but like stories held in reserve, remaining in an enigmatic state, symbolizations encysted in the pain or pleasure of the body" (1984, 108).

⁸ In 2013, the wooden bridge underwent an \$8 million renovation. It is now made of concrete and steel to meet earthquake-safety standards.



Figure 1.1: “Under the Trestle” 16”x20” McClelland Collection. Reproduced image courtesy of San Diego State University’s Special Collections and University Archives. August 2016.

For surfers, Trestles provides an escape from the city into nature. It creates an illusion of freedom from the constraints of capitalism, industrialization and urbanity. But the perceived freedom that comes from surfing has been commodified as a homogenized “spatial practice” imbued with considerable economic value. Spatial practices are “movements” and performances in physical spaces that contribute to the production of a social space (Lefebvre in Zilberg 2011, 11).⁹ In Chapter 1, “Producing Trestles’ Surfcape,” therefore, I examine surfing as a performative act that, rather than a romantic escape from the world, embodies politics and power at local, state and global levels.

⁹ This dynamic sphere of embodied performances comprises “staged” and “non-staged” dimensions. Staged signifies intentional and constructed movements; non-staged encourages impulsive activity. The terms originate from Lefebvre’s representation of space, which he explains amounts to a static relationship of “inside-versus-outside” (1991, 173). Representation as a notion, Lefebvre writes, “supplants the concept of ideology and becomes a serviceable (operational) tool for the analysis of spaces” (1991, 45). The lines between ideology and knowledge blur as a result.

Drawing on Tim Ingold and René ten Bos, respectively, I view the surfer as a “terrestrial being” who is drawn to water (Ingold 2011, 151), and as an “ontological amphibian” a character deeply implicated in “terrestrial globalisation” across borders.¹⁰ Nonetheless, heeding the advice of ten Bos, “at least some reflection on water” is necessary to understand how a surfscape is produced, particularly if the underlying goal is to protect public space and public access to waves (2009, 74-75). After all, oceans cover 71 percent of the Earth’s surface and hold approximately 97 percent of the planet’s water (NOAA 2017). Yet our gaze is by and large directed at its shores. Moreover, I was first drawn to this site because surfing is deeply imbedded in my own habitus. I come to this topic as much as a surfer as I do a social scientist. Ten Bos writes: “An amphibian -- a creature who lives on ‘two sides’ -- always faces a decision about what kind of elements it opts for: air or water” (2009, 75). Like many surfers, I prefer oceans. In this dissertation, I attend to the global flow of swell activity, of which Trestles is frequently a magnet, from the vantage of the shore, observing shifts in tidal lines, beach erosion and the telling presence of dead sea life.

Ultimately, my reflections are driven by a nagging fear that one day surfing Trestles will no longer be possible. The transcendental practice is ultimately undermined by its economic value to global capitalism. This concern stems from on-the-ground observations of the surf industry’s consumptive contest culture.¹¹ The adage goes: Wherever there are surfable waves, the global flow of money, surfing and surfers generally follow. Economists, environmentalists and social scientists began accounting for surf-based revenue in research related to the Save Trestles controversy in 2007 (Nelsen 2012, 35). Chad Nelsen and Lindwood Pendleton proposed the term “surfonomics” as a quantitative means for assessing

¹⁰ Ten Bos’ ideas are rooted in the work of philosopher Peter Sloterdijk, who describes the human being as a “moving animal” in constant motion, sliding back and forth between terrain and sea, always with a longing “[...] to change elements and go somewhere else” (2009, 74). Surfers’ visceral desire to ride waves seldom fades when they are on land.

¹¹ I borrow Michel de Certeau’s on-the-ground method of observation to write against a “totalizing” view of Trestles from above, a top-down perspective ingrained in models and other quantitative representations of space. “Escaping the imaginary totalizations produced by the eye,” de Certeau writes, “the everyday has a certain strangeness that does not surface, or whose surface is only its upper limit, outlining itself against the visible” (1984, 93). Sometimes I seek that strangeness; other times it finds me.

the surf breaks' economic and social value as a commodifiable environmental good. Indeed, the local economy of the City of San Clemente is integrally tied to the global surf industry.

Furthermore, the U.S. Marine Corps owns the land bordering Trestles that comprises San Onofre State Beach, and the state park's lease ends in 2021. Trestles' proximity to the Marine Corps Base Camp Pendleton introduces the military as a powerful player in asserting issues of national security into the mix. On top of that, the beach shares a border with the San Onofre Nuclear Generating Station (SONGS), inserting energy politics and additional infrastructural problems. This only underscores Trestles is hardly a pristine site. Rather, it is fraught with unequal power relations, unveiling the challenges of managing a culturally, ecologically and economically complex space and making meaningful, justly accountable democratic processes all the harder won.

In Chapter 1, I explore how Trestles' surfscape is produced through the disjuncture of all these overlapping and contradictory dimensions: ecological, sacred, recreational and militaristic. The term "scapes" derives from the work of Arjun Appadurai, who sees landscapes as "the building blocks of [...] 'imagined worlds'" (1990, 297). Appadurai suggests cultural flow accounts for the capital, people, technology, images, ideologies and counter-ideologies that factor into the production of scapes. He introduces five specific dimensions: the financescape, ethnoscape, technoscape, mediascape and ideoscape. Each one, constrained by time, must account for "fundamental disjunctures between economy, culture and politics" (1990, 297). Given their global reach, I contribute to the literature on globalscapes by bringing forth the surfscape -- a land-sea interface. Surfing becomes the prism through which I explore how the surfscape is (re)produced, commodified, and threatened or destroyed.¹² The surfscape is thus an aqueous amalgamation of Appadurai's scapes, shaped by a collection of hegemonic and countervailing forces, images, contradictions and live(d) activity. Trestles' surfscape specifically considers a disjuncture

¹² I introduced this term as a concept in *Beyond the Waves* (2011).

between history, the environment and economy, accounting for political projects that maintain or jeopardize cultural and/or ecological stability across local and global scales.¹³

In Chapter 1, the economic impact of surfing calls attention to Richard Carson et al.'s theory and measurement of passive-use value. I incorporate this concept to guide my analysis of San Onofre State Beach's "submarine topography" -- that is, topographic features of the ocean floor and underwater canyons, also known as bathymetry (NOAA 2017). At Trestles, economic value is affixed to distinctive geological features, including the San Mateo Point watershed, cobblestones of the San Mateo Creek, fan-shaped deltas and an underwater reef. Chapter 1 explains how they help produce the famous waves of Trestles, becoming indispensable for San Clemente's surf tourism industry. In my analysis, I borrow Nelsen and Lindwood's surfonomics to account for cultural, social and ecological dimensions that boost the surf breaks' value. My subjectivities as a surfer provide evidence of how boundaries and power relations work at the subjective and ecological levels. As evidenced by the large crowds squeezed ashore Trestles during contest season, the commercialization of surfing generates environmental costs.

This chapter also extends the cultural impact that the initial 241 Toll Road extension would have on San Onofre State Beach by producing a historical narrative about San Clemente. I draw from displays and exhibits at the city's Casa Romántica Cultural Center and Gardens and the California Surf Museum in Oceanside. These institutional spaces emphasize routine narratives of colonization regarding Trestles' spatial history. Visitors learn about the ways in which waves historically functioned for the Acjachemen, an indigenous group now referred to as the Juaneño Band of Mission Indians Acjachemen Nation (JBMAN); the state-recognized tribe formed in 1978.¹⁴ Artwork, Acjachemen artifacts and preserved

¹³ The blurring of Appadurai's scapes is partly responsible for these disjunctures, which make reconciliation across various borders (economic, cultural and otherwise) difficult to achieve (1990, 282). Divisions between scapes create tension that is "deeply disjunctive and profoundly unpredictable" (1990, 282). Byproducts of this friction include counter-hegemonic, social and environmental movements. Appadurai's ideoscape informs and supplements my conception of the surfscape. He describes it as "concatenations of images" influenced by "the Enlightenment world-view," which consists of terms such as "freedom" and "sovereignty" (1990, 282). Surfing is a representation of freedom that enables individual social actors to capitalize on natural and human resources in pursuit of an economic destiny (1990, 282).

¹⁴ See details regarding a June 27, 2013, decision made by the Interior Board of Appeals of the United States Department of Interior regarding the Acjachemen Nation's request for federal recognition. According to docket no. IBIA 11-124: "The final determination concluded that the Petitioner [Acjachemen] did not satisfy four of the seven

mediums such as photographs, poetry and newspapers call attention to nostalgic stories of surfing's "Golden Age" at San Onofre State Beach, affectionately referred to as "San O" among surfers in the mid-1930s. Neocolonial narratives bridge the temporal gap between the epochs of indigeneity and California's burgeoning beach culture. I use Tad Beckman's work on indigenous groups of the western United States to detail consequences of Spanish "missionization" of the Acjachemen -- that is, a process of converting indigenous people into religious, civilized subjects (Beckman 2014; Olund 2002, 146). This type of spiritual violence affected more than the subjugated body; indigenous space was forced to change as well, undergoing a series of cultural and physical transformations until Trestles became federal property. In the 20th century, the Department of Navy utilized the legal tool of eminent domain to seize control of Rancho Santa Margarita y Las Flores, eventually building an amphibious warfare training ground for the Marine Corps at the height of World War II.

Indigeneity has been central to the production of the Trestles as a space, as well as campaigns against the toll road extension. Places that appease visitors with static narratives of Californian surf culture are not expected to highlight moments in which the Acjachemen have usurped power from their colonizers. Without federal recognition of sovereignty, the tribe continues to face relentless cultural, political and economic projects that subjugate or erase its historical ties to San Onofre State Beach.¹⁵ One of those is the 241 Toll Road extension. The potential destruction of the Acjachemen baptismal site and sacred Panhe Trail to Trestles led to the formation of the United Coalition to Protect Panhe (UCPP). Coalition members joined forces with other environmental and social justice groups that, by extension, included surfers. The network of support eventually expanded, leading to the creation of the Save San Onofre Coalition (SSOC).

regulatory criteria for [f]ederal acknowledgement: (1): that it was identified as an American Indian entity on a substantially continuous basis since 1900 (criterion (a)); (2) that a predominant portion of the petitioning group comprises a distinct community and has existed as a community from historical times until the present (criterion (b)); (3) that it has maintained political influence or authority over its members as an autonomous entity from historical times until present (criterion (c)); and (4) that its membership consists of individuals who descend from a historical Indian tribe or from historical Indian tribes which combined and functioned as a single autonomous entity [...]."

¹⁵ JBMAN reports there are more than 1900 Acjachemen blood descendants.

Chapter 2, “The ‘Save Trestles’ Campaign,” demonstrates that environmental justice is never fully achieved but must be pursued and sustained through ongoing assaults. Although “Save our State Parks” is a popular mantra against the toll road extension, Save Trestles localizes the controversy, even as it becomes a globally recognizable, discursive tool for stakeholders opposed to the project. The campaign draws specific attention to a one-mile, militarized, surf-only space technically considered part of San Diego County. (San Clemente and Orange County still claim ownership of Trestles, however.) I identify “No Toll Road” supporters in the ongoing battle over public space at San Onofre State Beach, and speak with leaders affiliated with the coalition, including executive director Dan Silver of the Endangered Habitats League, and senior attorney Damon Nagami from National Resources Defense Council. We discuss key factors that have distinguished Save Trestles from other campaigns opposed to coastal development. Part of its success derives from stakeholders’ long-term involvement.

As early as 2005, for instance, the San Diego chapter of Surfrider Foundation has opposed the 241 Toll Road project. Surf activists staunchly insist any extension built within or near San Onofre State Beach will increase the amount of urban runoff from Interstate 5 traffic and permanently ruin the shape of Trestles’ waves (Gutiérrez 2008, 22).¹⁶ They have queried civil engineers, whose geospatial technologies and analytics show that construction would disrupt the San Mateo Creek’s natural flow of sediment and alter the sea floor’s stonescape. The eclectic opposition that comprises the SSOC continues to derail plans for the toll road. I am interested in the dimensions of the campaign’s victory and its vulnerability to future shifts when San Onofre State Beach’s lease ends in 2021.

The case study undoubtedly parallels other land fights about development versus conservation and preservation. The difference here is the outcome as well as the public goods in need of protection. So far, TCA has failed to build the toll road extension, making the resilient Save Trestles campaign an interesting object of study. I detail the intersection of indigeneity, environmental politics and ecology,

¹⁶ See the Surfrider Foundation’s blog “savetsrestles.surfrider.org” for a July 2006 recording in which Todd Cardiff of the Coastal Law Group attends the San Diego chapter’s monthly meeting to provide a political and environmental overview of the toll-road issue.

shedding light on emergent, increasingly sophisticated forms of civic mobilization. I also identify “Pro Toll Road” stakeholders, interviewing Elisa Arias, veteran principal planner from the San Diego Association of Governments, as well as Heather Adamson, former senior regional planner, to describe communication between sister agencies involved in the 241 Toll Road project. The details that I extract from long-range transportation plans, for example, highlight the complexities in establishing a cohesive project description across county borders. Campaign materials show how this epistemological approach affects 241 Toll Road discourse (Forsyth 2008, 757-759).

Chapter 2 identifies several contradictions that underlie environmental advocates’ funding from corporate donors such as Billabong International Ltd., an Australian surf wear and accessories giant. Similar surf companies are complicit in the consumption of waves as a natural resource, which ultimately threatens their recreational viability. Still, members of the surf industry donate to the Save Trestles cause, funding anti-toll road efforts organized by environmental groups including Surfrider, which remains one of TCA’s most vocal adversaries.¹⁷ Their call for public participation and legislative action undermines the stereotype of surfers as depoliticized, cavalier sea jocks. Surfrider’s activists fight to ensure that the state recognizes the symbiotic and politically powerful relationship between surfing, public space, indigeneity and ecology. They view the Trestles controversy as a “moral and ethical imperative” that enabled activists to “reclaim the heart and soul of [California’s] environmental movement” (Dedina and Hernandez, 2008).

In Chapter 3, “Trestles’ Rotting Ecology: An Interruption,” my focus on the Save Trestles campaign and its successful outcome shifts to the havoc that El Niño wreaks on the California coast at the onset of 2016. The site’s ecological vulnerability becomes starkly visible through my encounters with a dead gray whale (*Eschrichtius robustus*), dead pelagic red crabs (tuna crabs), and dead black sea hares (*aplysia californica*). These die-offs, which occur toward the end of El Niño between the months of April

¹⁷ According to Surfrider Foundation’s Mission page: “[Thirty-one] years ago a group of surfers from Malibu, California, were concerned about the health risks associated with the environmental threats posed by escalating coastal development at their favorite surf spot. They took action.”

and June 2016, slow the momentum of the Save Trestles victory by calling attention to the effects of warming ocean waters on marine life and San Onofre State Beach's ecosystem. The causes of death for all species is unknown. Nevertheless, the die-offs are indicative of wider-scale environmental problems that the Save Trestles campaign itself does not address, which is why I turn to citizen science as a method of co-producing knowledge about the surfscape.



Photograph 1.1: A day of small waves still makes for a picturesque surfscape.

Chapter 3 changes the focus on saving the surf breaks from development to treating the beach as an anthropogenic site from which to view the ecological effects of El Niño.¹⁸ It is difficult to ignore the ways that climate change and global warming are remaking the surfscape, particularly when confronted with a putrefying body of a dead whale that rolls ashore at Trestles. City officials try to conceal it as quickly as possible in the Miramar Landfill more than 50 miles away. The landfill then must also be understood as part of the political ecology of the surfscape. Trestles' surfscape is, therefore, also an object

¹⁸ I am referring to the literature on the Anthropocene, which focuses on human action as the primary force of environmental devastation and climate change.

space where dead non-humans interrupt the surfers' paradise.¹⁹ Each die-off signals much more is at stake than stopping regional toll road that, in this case, is part of the global matrix of climate change.

The death of marine life during El Niño sets the stage for Chapter 4, "Eco-Ethnography as Experimental Method," where I attempt to make sense of the complexities of space through my multiple subject positions as a surfer, citizen scientist and academic researcher. I participate in the University of Southern California Sea Grant's citizen science project called the "Urban Tides Community Science Initiative."²⁰ Urban Tides is an example of citizen science that functions as a practice in and aspect of the production of a surfscape. I conduct an ethnography of the initiative as a different means of co-producing space and knowledge to move discourse at Trestles away from the toll road to resilience strategies for coastal communities. Sea-level rise appears a viable threat to San Onofre State Beach's economic and ecological vitality.

In my dissertation, citizen science at the most rudimentary level involves the participation of non-scientists in the process of collecting scientific data for large-scale spatial and temporal projects. In colloquial terms, citizen scientists may be thought of as "data bitches," once quipped feminist environmental scientist Max Liboiron during a "Designing Feminist Technologies" workshop.²¹ They are often described as volunteers who collect data for scientists who are conducting scientific research to broaden their understanding of human-environment relationships.²² Conceiving of citizen science as primarily data collection is a very limited and depoliticized understanding of the term and its history, however. I was drawn to Sea Grant's inherently political objectives. Its model promotes an efficient

¹⁹ Humans' treatment of dead non-human bodies at the beach leads me to extend the framework of political ecology into the realm of human-environment and human-nonhuman relations (Neumann 2005, 6-8).

²⁰ Sea Grant is a partnership between NOAA and participating universities (NOAA 2017). See: National Oceanic Atmospheric Administration's Sea Grant History: "Who We Are."

²¹ Liboiron offered her blunt assessment about the role of citizen scientists at the University of California, San Diego in April 2017.

²² Citizen science is not limited by its environmental objectives, however. It operates as a method of data collection in various disciplines in the social sciences (e.g. communication).

“transfer of science-based information” rooted in applied research, community-based knowledge, environmental literacy and communication.²³

In California, Urban Tides regionalizes and localizes efforts to conserve, preserve and protect coastal communities with the intention of actualizing governmental “strategies that will help the region adapt to the future impacts of sea-level rise.”²⁴ From January 2016 until January 2017, my role as surfer and academic researcher complicated my assumption that citizen science is simply a form of volunteer-based data collection. It is far more complex than that, evidenced by existing scholarship as well as my repository of photos, observations and situated knowledge as a surfer that capture the routine intersection of surfing, politics, ecology, capitalism and environmental activism. While documenting tidal lines, I found myself doing an ethnography of Urban Tides. This exercise led to the realization that I could cross-fertilize ecology with citizen science and ethnography as methodologies if I had a better understanding of their independent identities and theoretical intricacies. The approach also could widen the scale of my analysis to include ecology and humans/non-humans, forever intertwined at San Onofre State Beach, while yielding insight about why my experience as a citizen scientist was not what it could have been. Even so, it still serves a political purpose in leveraging fights against development in places prone to destruction from sea-level rise.

In Chapter 4, my ethnographic data open paths for discussing qualitative means to enhance standard models of citizen science for marine and coastal research projects. There are innumerable ways to collect and record environmental data related to sea-level rise. As Roderick Neumann reiterates in

²³ To increase ocean and climate literacy at the local levels, for example, outreach efforts included activities such as: educational beach walks; public workshops on data results from CoSMoS; presentations from public officials about sea-level rise guidance and adaptation strategies; and suggested lesson plans about king tides for elementary students.²³ Some scientists involved in the initiative also provided research updates via blogs. Ongoing media coverage about the initiative itself was one way the project generated discourse about sea-level rise. See: “Erosion Concerns” (KABC Los Angeles, November 28, 2016); “Wave of the Future: Strolling the Beach in Pursuit of Science” (*Los Angeles Daily News* December 18, 2015); “Citizen Scientists Learn to Document El Niño’s Impacts” (KPBS San Diego, January 21, 2016); National Oceanic and Atmospheric Administration’s feature story “Urban Tides Gives Rise to Community Resilience” (May 20, 2016); and *The Urban Mariner* “Urban Ocean Report” (Summer 2016). In the future, it is likely that other forms of Urban Tides’ “scientific contribution [will] include such items as numbers of papers published in peer-reviewed journals, size and quality of citizen science databases, and frequency of media exposure of results” (Bonney and Dickinson 2012, 25).

²⁴ Urban Tides Community Science Initiative home page.

Making Political Ecology, “certain concepts and analytics become central to explaining human-environment relations” (2005, 6-8). Each time I drove to Trestles to document wave conditions and tidal lines at Trestles, my impulse as an ethnographer was to assess my observations through the lens of political ecology. This fostered conceptual connections between Urban Tides, the toll road controversy, and the history and future of San Onofre State Beach. Political ecology also provided cultural context for static analyses of Trestles as a space. In my research, they intersect, and their entanglement helps me justify using eco-ethnography as an operative term in Chapter 4. The multi-scalar, activism-based approach helps researchers like me make sense of space. Eco-ethnography siphons energy from the ideas of Kristina Lyons. In “The Poetics of Soil Health,” Lyons asks how anthropologists “might work against the selective forgetting of [...] the soils’ [...] corporeal existence, limits and rights to flourish” (March 2016). This inquiry stems from her claim that, “Over the last decade, the concept of soil health has emerged as an alternative among scientists, international agricultural development agencies, and resource-management communities to unsettle dominant perceptions of soil as simply an economic growth medium for crops” (March 2016).

In the same vein, coastal health and resilience are poetics that appear in citizen science projects designed to help researchers who need expansive spatial and/or temporal data sets to produce scientific explanations about climate change and sea-level rise (Goffredo et al. 2010; Cox et al. 2012).²⁵ They blend science with activism to democratize the production of knowledge. USC Sea Grant’s initiative falls within this scope. Collecting data for Urban Tides enabled me to see their interconnectedness with Trestles’ political ecosystem. Chapter 4 unpacks the idea of eco-ethnography, exposing the challenges of creating different languages in scholarship with respect for the diversity and socio-ecology of knowledges. Urban Tides is designed to remain transparent in the production of environmental knowledge about sea-level rise in California’s coastal communities. Within the context of my research, political ecology remains a useful theoretical framework for critiquing whether this is, in fact, the case.

²⁵ Zuckerberg and McGarigal’s “Widening the Circle of Investigation: The Interface between Citizen Science and Landscape Ecology” (2012).

“Eco” is generally understood as a habitat or environment. Through the lens of political ecology, the meaning evolves because “structures of domination” shape the habitat/environment, as do politics (Clifford and Marcus 1986, 78). In this sense, eco is alive; it responds to stimuli and adapts or backslides accordingly. My use of “eco” as a prefix to ethnography assumes, therefore, the wedding of the political to ecology. “Ethnography,” argues Vincent Crapanzano, “is historically determined by the moment of the ethnographer’s encounter with whomever he is studying” (1986, 51). The human dimension is, of course, necessary, and “ethno” typically evokes race, people, cultural groups -- all of which humanize ecological spaces such as the ocean and beach. Ethnography at the most basic level is a method of studying how subjects interact with each other and their environment. Ingold describes it as a “communion of experience” between the ethnographer and participants that “establishes a baseline of sociality on which all attempts at verbal communication subsequently build” (2011, 314).

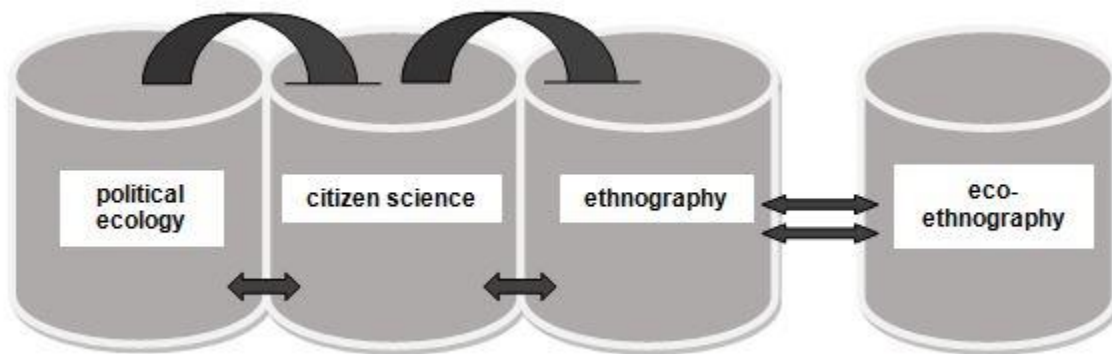


Figure 1.2: A model showing how the methodology of “eco-ethnography” can work.

But what happens when there is no one to talk to or observe? Or when sociality exists only between a citizen scientist and her ecological surroundings? What then? I spent many moments alone at San Onofre State Beach/Park, the sole visitor conversing with radioactive waves, clumps of tar and sand, cautious pelicans, dead sea slugs, dead crabs, a dead whale... Yet even the dead were alive to me because they were part of Trestles’ vibrant ecology. Many of the trips to surf breaks involved no interaction (verbal, visible and otherwise) with anyone. Conversations with myself made me question how citizen science affects and

shapes the way researchers do ethnography. Moments in which the two intersect are inevitable. At times, I serendipitously engaged with other surfers and park visitors, making casual comments about sea-level rise to gauge interest in the subject.²⁶ Those encounters arguably constituted a form of knowledge-exchange because my data for Urban Tides functioned as a “scientific literacy benefit” that was meant to drive “increased support for conservation efforts” (Dickinson and Bonney 2012: 25-26; Cox et al. 2012). I was, in other words, trying to help save both San Onofre State Beach and Trestles by calling on the political narrative from the toll road controversy to include sea-level rise.

It was difficult to build upon brief conversations with strangers once they ended. What did it mean to “people” my research site if I was the only person there (Fortun 2009, 178-179)? On quiet days, I assumed the role of an ethnographer who was essentially doing an ethnography of a case of citizen science, building a rapport with ecology while treating it as if it were an enigmatic friend and reliable research subject. I could count on it being at Trestles, even when I did not show up. It seemed appropriate to cultivate a relationship with ecology given the consistent lack of face-to-face interaction with fellow human beings. I had reservations, however. It would be difficult for scientists to envision ethnography as a methodological counterpart to citizen science or ecology as an ethnographic subject. These terms are subservient to the dominant language spoken in the sphere of scientific evidence-based research.²⁷ Furthermore, scientists occasionally reject the reliability, validity and relevance of citizen scientists’ data. Objectivity disappears in an implicit bias toward these nontraditional data sets. I asked myself repeatedly whether everything I was doing was pointless. What did “democratizing” environmental knowledge mean beyond citizen science, especially when “the use of nonspecialist volunteers is often criticized on the grounds that the information collected will be unreliable as a result of either insufficient training or lack of consistency from

²⁶ A few people were willing to discuss the impact that sea-level rise will have on coastal communities, San Clemente included, and identified visible examples of beach erosion. Others described the way Trestles “used to look,” how much more beach existed in the past. A few struggled to imagine how the surf would break twenty years from now.

²⁷ The scientific process is “often idealized as being fairly linear: researchers define a question based on prior knowledge and conjecture, make observations, form testable hypotheses, and conduct studies designed to potentially falsify these hypotheses” (Cooper et al. 2012, 99).

using large numbers of observers” (Goffredo et al. 2010, 2172)? More than volunteers, many are amateurs (i.e., self-trained scientists) rather than generic laypersons. Was not my socio-ecological and cultural knowledge just as valuable?

Cooper et al. recognize this potential outcome and recommend that citizen science “should be viewed as complementary to other methods that lend insight into ecological processes” (2012, 108). Still, I was not satisfied with the word “complementary,” which infers scientific and quantitative data are preferred forms of knowledge that ultimately shape public policies intended to protect the coast. Scientists have the power and technologies to draw conclusions from citizen science projects to justify “policy changes or representation in legislative processes” (Kimura 2016, 155). Yet “not all citizen science” is considered “the same,” which creates opportunities for using the eco-ethnographic method (Kimura 2016, 156). I wanted to insert my ethnographic findings and surfer’s knowledge into conversation within Urban Tides’ quantitative method of producing expansive temporal and spatial data sets about sea-level rise in Southern California. I was hesitant to do this.

Inspired by the work of cultural anthropologist Kim Fortun, however, I began to experiment. Fortun’s ethnography about community-based activism in India following the Bhopal Disaster in 1984 enables her to produce environmental narratives that show how ground-level interactions and observations about people and the environment can effect social and political change as well.²⁸ “Hesitations,” she writes, “[...] produce important openings for the kind of ethnographic encounter I want to help stage, encounters that would trouble established frameworks, facilitating slippage, so that new questions and idioms can

²⁸ Fortun argues in that the economic decadence of the industrial world relied on specific spatial arrangements of exploitable labor, natural resources and artificial geographic structures. In Bhopal, the plant Union Carbide, a chemical company and pesticide manufacturer, was located “at the northern edge of the old city, north of [two man-made] lakes” (Fortun 2001, 161). The firm’s headquarters were based in the United States, emphasizing the globality of economic power relations, as well as the global flow of capital and goods. When a large-tank storage system for methyl isocyanate leaked, the toxic gas killed more than 10,000 and injured at least 200,000 humans within several days. On a map of India’s economic terrain, Union Carbide was not imagined as “a complex tangle of remotely related parts” (Fortun 2001, 93). Rather, it was the name of a multinational company with a capital good strategically located in a city with adequate infrastructure that connected India to the rest of the world (Fortun 2001, xiv).

emerge” (2012, 454).²⁹ All four of my chapters draw from her framework to produce different readings of how stakeholders can re-imagine what saving Trestles means. As the ethnographer, I “set the stage accordingly” (Fortun 2012, 454). The design of an eco-ethnography confronts anthropocentric ideals while still regarding interviews, observations, archival ephemera and cultural artifacts as indispensable to understanding the production of the surfscapes. This method also legitimizes surfer’s knowledge, which can contradict coastal data produced by innovative technologies that scientists use for their citizen science projects. Furthermore, political ecological frameworks fertilize critiques and cultivate data-collection protocol, calling forth a Theory of Change that establishes and values a civic presence. This underscores the need for a regulatory framework already in place to protect an equitably accessible, regenerative and sustainable surfscapes from development. In the following section, I explain that before Trestles as a space exists, it must be produced. For this reason, I provide a theoretical overview of the production of space.

Spatial Framework

In my dissertation, I frame the production of space as a contested, social and technological process that shapes how and where humans and non-humans live and respond to their environmental and cultural stimuli. Geographer Doreen Massey argues the meaning of space always evolves because it “arises simply from the multiplicity of definitions adopted” (1994, 250). Her flexible lens is shaped by the concept of power-geometry, which lends a form of social and economic agency to space through placement and movement. In her discussion of spatiality’s meaning, Massey imagines a spectrum of descriptions that contain pro-political, neutral and anti-political energy. In this dissertation, I critique those that “effectively depoliticize the realm of the spatial” or consider space as “the sphere of the lack of politics” (Massey 1994, 251). Politics are understood here as human actions, activities, and discourse that affect the way people produce knowledge. They reveal various layers of distrust influenced by disparate ideologies of how the world should operate, what purpose public space serves, and who commands control of it.

²⁹ Bhopal is a forewarning, a worst-case scenario for Trestles’ future, in the event SONGS ever becomes a similar site of ecological disaster.

At Trestles, politics are visible in spatial practices (surfing included), technologies and phenomena that affect humans' relationship with ecology. They overlap with meanings of spatiality imagined "in a highly active and politically enabling manner" (Massey 1994, 251). Political theorist Chantal Mouffe writes that politics "refers to the ensemble of practices, discourses and institutions that seeks to establish a certain order and to organize human coexistence in conditions which are always potentially conflicting, since they are affected by the dimension of 'the political,'" (2013, 3-7). This term represents contested spaces for the ensemble, accounting for civic mobilization and the legislative power of the state and federal governments. Political in the scientific sense involves the actions, projects and environmental stimuli that shape the way data is collected and knowledge is produced.

The political helps form what Mouffe calls an "agonistic model" of political participation. In this regard, politics are not intended to be diametrically opposed to each other or representative of a dominant binary. On the contrary, they coexist and co-animate. Framing this model is a sense of helplessness or agony, which triggers a longing for reconciliation or justice. In other words, agony can transform into political action. Mouffe argues: "It is impossible to understand democratic politics without acknowledging 'passions' as the driving force in the political field" (2013, 6). In terms of the 241 Toll Road controversy, there are many competing passions that generate friction between stakeholders. These include the desire to defend public space for recreational pursuits; improve traffic conditions on Interstate 5; preserve JBMAN's indigenous legacy; create jobs; and protect endangered species. The SSOC warned that the toll road compromised the ecological integrity of south Orange County. TCA, however, argued the extension was in the best interest of national and environmental security in the event of a terrorist attack, tsunami or nuclear crisis. The competing arguments generated collective responses to the proposal and different environmental narratives.

Passions provide grounds for engaging in political society. The political does not (and cannot) happen only in the realm of the state; it also occurs in civil society, which comprises a private "ensemble of organisms" (Mouffe 2013, 6). In Save Trestles' case, for instance, environmentalists, surfers, members of JBMAN and similar cultural groups are forces of embodied activity that synergize antagonisms

between the state, public and private entities. They become part of a public ensemble that negotiates with the state. When Trestles' stakeholders contact local and state representatives or introduce legislation meant to protect natural resources such as the ocean, they are enacting the political. That is, they are transforming passions into action. When they sign petitions that reject other spatial practices along the coastline, such as illegal dumping, marine-wildlife poaching, offshore drilling, dredging, privatizing beach access and seawalling, these actions comprise the political as well.³⁰

In *Postmodern Geographies* (1989), political geographer Edward J. Soja explores what people do to safeguard space. Even with institutions in place meant to prevent destruction, he warns: "We must be insistently aware of how space can be made to hide consequences from us, how relations of power and discipline are inscribed into the apparently innocent spatiality of social life, how human geographies become filled with politics and ideology (1989, 6). Soja's themes, emerging from the "spatial turn" in critical theory in the 1980s, are visible in visual representations of San Onofre State Beach.³¹ Invisible, however, are the detailed sub-narratives that connect Trestles to its indigenous heritage and volatile moments of political vulnerability. Soja's work draws attention to ways that people construct knowledge about their environmental surroundings. They usually determine and articulate the Western concept of ownership. As a space, Trestles becomes inseparable from ownership, which ultimately establishes and differentiates the conditions of what private and public landscapes are.³²

I identify several strategies that stakeholders have used to thwart the development of the 241 Toll Road extension, borrowing Mouffe's notion of the political to problematize the assumption that a

³⁰ Mouffe explains what Gramsci (who adopted a more deterministic perspective than Karl Marx as he explored the meanings of culture) meant by civil society in her succinct discussion of agonistic politics and artistic practices. "The hegemonic approach to artistic practices and their relation to politics [...] takes place in the multiplicity of places where hegemony is constructed, bringing to light the political centrality of what is usually called 'civil society,'" Mouffe writes. "This is where, as Antonio Gramsci has argued, a particular conception of the world is established and a specific understanding of reality is defined – what he refers to as 'common sense', which provides the terrain in which specific forms of subjectivity are constructed. And he repeatedly emphasized the centrality of cultural and artistic practices in the formation and diffusion of common sense, underlying the decisive role played by those practices in the reproduction or disarticulation of a given hegemony" (2013, 89-90).

³¹ The spatial turn marked a historic transition of analysis in the field of geography in the mid-1990s as well.

³² To see how landscape as a noun has undergone various stages of meaning and interpretation, see, for example: Basso (1996), Blomley (2002), Cosgrove (1985), Ekers et al. (2012), Escobar (2008), Lefebvre (1991; 2002), Massey (1994), and Smith and Harvey (2008).

surfscape is depoliticized. Money makes depoliticization a pipedream. On the contrary, Mouffe argues its circulation can disrupt the “distinct set of social institutions and codes” that constitute political society, leading to public outrage, protests and campaigns (2013, 6; Mann 2013, 117). The rhythm of Trestles’ surfscape is subject to disruptions because of money. This tangible and abstract symbol of power is attached to the commodification and economic value of waves.³³ “Money is, among other things, the general equivalent, the social expression of value,” geographer Geoffrey Mann writes (2013, 117).

In the case of Trestles, money brings to life the spatial politics embedded in cartographies of the coast. Cartographic representations call for more critical assessments that antagonize the surf breaks’ “innocent spatiality” (Soja 1989, 53). Soja indicates in *Postmodern Geographies* that ‘Marxist geographers read space through a structuralist lens because it gave them an opportunity to problematize “spatial outcomes” from a framework that considered social relations and knowledge production (1989, 53). He encourages similar projects that are “consciously spatialized from the outset” (1989, 6). The surf breaks have geographical coordinates, which can be identified on a map when place is imagined as something static. Cartography, moreover, is understood as a politically neutral practice.³⁴ Spatiality assumes cartographic facts are unbiased rather than a product of violence, power and politics.³⁵ A dilemma arises with these orthodox perspectives, however. They neglect to account for embodied movement that deliberately circumvents boundaries and enclosures.³⁶ Violence produces a property regime at Trestles, which materializes through the establishment of property, laws and maps.

In my dissertation, oceanographers who are mapping the projected sea-level rise by 2050 do not have enough space to insert a more thorough account of the Trestles’ intersecting, violent histories -- even more reason for scholars to consider knowledge produced by an eco-ethnography. Succinct, abstract

³³ These components are bound to place and space, yet they permeate borders, thereby making them insidiously borderless. See Iatarola’s *Beyond the Waves* (2011) for a more detailed discussion.

³⁴ By this I mean that most information (labels, place-names and boundaries, for example) that exist on San Onofre State Beach’s map seem innocuous. See, for example: de Certeau (1984), Ingold (2011), Massey (1994; 1995), Sibley (2001).

³⁵ See: Harley (1989), Mouffe (2013).

³⁶ Ingold (2011: 152; 2007). Escobar et.al (2001), also dissect how environmental social movements embedded in local and global politics affect notions of place.

representations of land and property oversimplify the presence and absence of power in social relations, creating a misleading sense of spatial and cultural coherency at Trestles.³⁷ Cartographer J.B. Harley notes geographers in particular “tend to work from the premise that mappers engage in an unquestionably ‘scientific’ or ‘objective’ form of knowledge creation (1989, 1).”³⁸ But coastal models grounded in mathematical calculations, meticulous measurements and quantitative data reproduces a limited conception of spatiality that mutes pivotal moments of Trestles’ history. They also privilege a specific type of knowledge that excludes the diversity of other voices. The quantification of space occurs via spatial technologies, including remote-sensing, electronic distance-measuring tools, geographic information systems and the like.

On a state park map of San Onofre State Beach, for instance, as if by magic, colorful images, black lines and narrative text on the state park map conceal surveyors’ and cartographers’ ideology of space. Spaces for embodied movement are reduced to black tick marks and textual labels along the pale blue Pacific Ocean.³⁹ Its functionality, however, is treated as an independent variable -- one that presumes technology guarantees the map is an objective representation of space. These positive and negative responses do not negate each other. Rather, when conjoined they underscore a complex connection to state (political) power.⁴⁰ Recognizing there are risks to depoliticizing the map-making practice, in the

³⁷ To the passive eye, historical context is a moot point because a map is a map; it is meant to guide, not contextualize.

³⁸ This means they create cartographic representations from a neutral standpoint in which space is considered abstract. Lefebvre writes: “Abstract space is measurable. Not only is it quantifiable as geometrical space, but, as social space it is subject to quantitative manipulations: statistics, programming, projections – all are operationally effective here. The dominant tendency, therefore, is towards the disappearance of the qualitative, towards its assimilation subsequent upon such brutal or seductive treatment” (1991, 53).

³⁹ Qualitative space differs in that it evokes the human presence, suggesting that the spatial legacies of indigenous groups disappear altogether when space converts to a measurable, mapped form. In this way, abstract space “relates negatively to that which perceives and underpins it -- namely, the historical and religio-political spheres” (Lefebvre 1991, 50). In terms of surfing, this negative connection is tied to the cultural aftermath, which is called (g)localism. For a more detailed discussion of this social phenomenon, see Iatarola’s *Beyond the Waves* (2011).

⁴⁰ Mappers are agents of this power when they convert quantifiable data into abstract space. Harley notes that since the 17th century, these controversial personalities have been known more for compartmentalizing terrain to establish spaces of ownership than for engaging in aggressive practices that ultimately benefited colonizers who took possession of indigenous land.

words of Harley: “It is better to begin from the premise that cartography is seldom what cartographers say it is” (1981, 1). Similarly, the politics of the Save Trestles victory are not all they seem.

Points on Political Ecology

The political ecology of Trestles’ surfscapes lends insight into what participation and mobilization mean in an environmental and surfing context. In *Liberation Ecologies*, for example, Richard Peet and Michael Watts equate participation with environmental movements. When people recognize “threats to their livelihood,” at times an “environmental imaginary” impels them to act. Save Trestles animates such an imaginary, a notion opposed to “environmental determinism from early-modern geography” (1996, 37).⁴¹ It gives life to the term “liberation ecology,” which Peet and Watts consider a “discourse about nature” (1996, 37).⁴² Justifying their position, they posit: “The intention is not simply to *add* politics to ecology, but to raise the emancipatory potential of environmental ideas and to engage directly with the larger landscape of debates over modernity, its institutions and its knowledges” (1996, 37). The toll road calls into question state coastal laws, regional transportation planning processes and the meaning of public beach access. It also brings forth the challenges of holism (an interchanged, co-evolutionary understanding of social, economic and ecological interlinkages)” [...]” (Pezzoli 1997, 556).

Political ecology provides an activist framework that recognizes the challenges tied to community-building, empowerment and collective mobilization (Pezzoli 1997, 556). Groups were pressed to mobilize because the toll road project threatened San Onofre State Beach’s ecological diversity, cultural histories and social life. Using political ecology as a tool of analysis helps problematize the Save Trestles victory. Discussions regarding political ecology have been fruitful yet subject to ongoing questions and critiques about its meaning. Although scholars have produced myriad works that

⁴¹ Environmental determinism presupposes that the physical environment ultimately dictates and controls the ways in which individuals, societies and culture behave in response to development.

⁴² For an anthropological analysis of “the question of nature,” see Arturo Escobar’s “After Nature: Steps to Antiessentialist Political Ecology” in *Current Anthropology* (1999). For meanings of nature that intersect with political ecology, see: Smith (1984) and Heynen and Swyngedouw (2006). Heynen and Swyngedouw’s work on urban areas draws from Marx’s concept of “metabolism,” which integrates labor into humans’ connection with nature (Bellamy 2000, 157).

reference this conceptual term, its theoretical coherency remains an issue. Political ecology deviates from the “key areas of traditional ecology that [...] seem to have begun primarily from research looking at interactions between organisms and their environment with resultant insights into structural causality rather than beginning from explanations solely in terms of individual self-interested behavior” (Neumann 2005, 10; Greenberg and Park 1994, 4-5). Despite its flexible identity, nature-society and human-environment binaries often diminish the overall complexity of ecology.

The emergence of political ecology as an analytic tool coincided with a louder call in the United States in the 1970s to protect the planet as an (inter)national environmental movement made headway. The initial celebration of Earth Day on April 22, 1970, for example, reflected a “growing awareness and concern for living organisms, the environment and public health.”⁴³ In Hawai‘i, writes surf scholar Isaiah Helekunihi Walker, the “Hawaiian renaissance” was well underway (2011, 105). Surfers had formed an environmental group called “Save Our Surf,” which Walker describes as a “grassroots peoples’ movement that halted most coastal development and dredging projects proposed in Hawai‘i between 1960 and 1990” (2011, 105). Surfers had assumed a role as political actors who fought against military policies and the American colonization of the islands. On the mainland, daily exposure to polluted waters, smoggy air, toxic chemicals, pesticides and other health hazards brought to light the social and ecological effects of ongoing warfare and the Industrial Revolution. The demand for material goods and services from ecosystems increased exponentially alongside job creation and population growth from the eighteenth century onward.

In my dissertation, I use a political ecology framework to show how the ecological continuously moves across political binaries that are intended to separate the structure (i.e., the state) from stakeholders. This movement sparks conflict and instability between the two.⁴⁴ My analysis of the toll

⁴³ Text cited from “Earth Day: The History of a Movement.”

⁴⁴ The advent of spatial-analysis technologies such as Geographic Information Systems highlighted another dichotomy: geographers versus technology. Some scholars believed political ecology could be the conceptual and methodological tool to bridge the divide. Particularly since the 1970s, they have done this by using frameworks that engage political economy and nature.

road controversy captures traffic congestion as an environmental, transportation and cultural crisis. It acknowledges “the basic definition of political ecology as ecology plus political economy,” initially put forth by Piers Blaikie and Harold Brookfield in *Nepal in Crisis: Growth and Stagnation at the Periphery*, an earlier work undergirded by dependency theory (Neumann 2005, 6). Blaikie and Brookfield relentlessly critiqued the co-dependent relationship between market-based economies and the living environment. Their text places economic behavior in relation to environmental degradation and crisis (Forsyth 2008, 759). It is often identified as one of Blaikie and Brookfield’s key contributions to the field because it conjoins ecology and political economy with the production of knowledge and space. Since the 1980s, political ecology’s theoretical structure has evolved to support poststructuralist, feminist, antiessentialist, urban, and geographical frameworks, several of which I utilize to explain how Trestles’ surfscapes become a gendered and racialized site of recreational activity (Neumann 2005, 5). My approach thus highlights the volatile relationship between people and the environment, providing important historical, geographical and cultural context for litigious conflicts over public space in Orange and San Diego Counties.

Chapter 1: Producing the Surfscapes

Chapter 1 introduces the idea of Trestles as a surfscapes by attending to four critical components that enable its production. They include the economic value of bathymetry, the spatialized history of the Acjachemen, a surfer's subjectivities and the environmental effects of a commodified surf culture. Art historian W.J.T. Mitchell's conceptual structure of landscape as "a verb" brings into view the dynamic representations of Trestles' aesthetic and performative infrastructure (1994, 2).⁴⁵ The landscape of San Onofre State Beach, in other words, invites surfers to engage with space and use its resources which, in this case, are waves. Movement and rhythm are also part of the landscape's ethos. These components

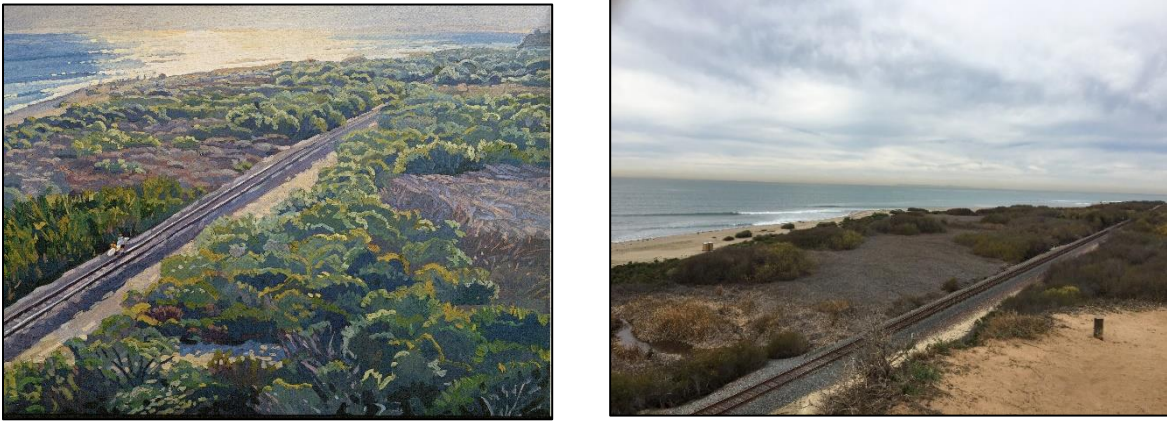


Figure 1.3: A comparison of famous Trestles artist-surfer Kevin A. Short's "Afternoon Reflecting Upon The Session" with my photograph of a late-winter swell. Short is known for his paintings that capture the aesthetics of Southern California's landscape and surf culture.

connect bodies to pathways that eventually lead to the ocean and its waves (Lefebvre 2004, 60; Mann 2013, 117). So often, however, surfers' relationship with Trestles' landscape is exploitative and destructive. This is evident throughout summer, when the surf industry sponsors major contests for professional athletes. The infrastructure needed to accommodate spectators compromises the landscape's ecological integrity. The global surf economy that San Clemente depends on for economic survival is, in fact, the very same force that threatens its existence. At Trestles, the ocean is a constellation of

⁴⁵ Literature that emerged throughout the 1990s from the field of history views landscape as an extension of land with a "performative character." Its "feelings" are embedded in a social psychology that shapes (non)humans' relationship to land. See, for example, Crouch (1990).

recreational energy affected by indigeneity, federal and state power, environmental policies and sea-level rise. This chapter provides a deeper analysis of each of these components that are central to the production of a surfscapes, beginning with bathymetry.

Bathymetry: How Trestles' Waves Work

In terms of geology, at Trestles the unique “depths and shapes of underwater terrain” -- that is, its bathymetry -- as well as its connection to the San Mateo Point watershed play an instrumental role in generating ideal waves (NOAA 2015).⁴⁶ This section details the geological effects of sediment transport and cobble substrate from three major creeks that flow into the Pacific Ocean. The underwater, cobblestone reef that forms as a result helps shape the surfscapes as a coupled human-natural framework that creates an ecosystem service with recreational value. Under these conditions, Trestles is considered an environmental good, and the constant reproduction of surfable waves is assumed. San Onofre State Beach qualifies as an ecosystem service because it attracts more than 2.5 million visitors per year and is one of the top five most visited state parks in California.⁴⁷

I utilize Carson et al.'s economic theory to show how the “passive-use value problem” connects Trestles' to a market-driven, consumption-centered, (g)local surf economy (2001, 102).⁴⁸ Chad Nelsen and Lindwood Pendleton extend Carson et al.'s work with their notion of “surfonomics.” Using Trestles as a case study, they employ this quantitative method grounded in econometrics and economic theory to assess the monetary and social value of the surf breaks as an environmental good. Given that the state beach attracts an ample number of visitors each year, its popularity invokes Lefebvre's bold claim that the beach is “the only space of enjoyment that the human species has discovered in nature” (1991, 384).⁴⁹ One reason rests on the body's relationship to its sensory organs. It is the corporeal connection between the land, coast, sea and its waves that that turns a human into an ontological amphibian. “As such,” ten

⁴⁶ See the National Oceanic and Atmospheric Administration's “Ocean Facts: What is Bathymetry.”

⁴⁷ California Department of Parks and Recreation.

⁴⁸ See James Koch and Uri Savir's “Glocalism and Our Networked World” (2011).

⁴⁹ I write “bold” because some people do not enjoy the beach and seek other spaces of nature for enjoyment.

Bos writes, “it never sticks to just one environment (e.g. Earth, the mainland) but experiences profound involvement with other environments as well (2009, 74).”

Arguably, the Acjachemen are Trestles’ pioneering ontological amphibians, a point I further explore in this chapter’s second section. More than 8,000 years ago, descendants from the Shoshonean Nation who lived along the coast or near the San Mateo Point watershed used their reed boats to navigate the currents of San Mateo Creek.⁵⁰ Once they reached the ocean, they surfed the waves of the river mouth, relying on their seafaring skills to trade with nearby indigenous villages during voyages to Catalina Island. Today the river runs dry throughout most of the year. Instead, at the dusty intersection of the old Pacific Coast Highway and Panhe Trail, slightly west of Interstate 5, there is a kiosk designed by California State Parks.⁵¹ The structure institutionalizes each surf break’s name that represent Trestles as a space: Cottons (occasionally called Cottons Point), Uppers, Loweres, Middles and Church(es). Their aquatic rhythm remains steady each season; thus, their waves are rideable on a near year-round basis. Attributes such as tide, swell direction, wave size, preferable wind direction, and type of ocean floorscape (sand and cobblestones, in this case) make Trestles a desirable space for contests and surf tourism in San Clemente, particularly during summertime. Southerly and southwesterly swells that originate from the southern hemisphere and fall within a window of between 170 degrees to 225 degrees clockwise typically arouse the surf breaks from their tranquil state.⁵² In concert with the right wind and swell combination, each one produces a rideable rhythm unique to its own coastal orientation and season.

⁵⁰ These geological landmarks are in south Orange County.

⁵¹ This agency is run through the California Department of Parks and Recreation.

⁵² See Sean Collins’ “The Mechanics of Trestles: A Scientific Look at SoCal’s Most Rippable Skatepark” on Surfline (September 16, 2010) for a visual explanation regarding the production of this surf break’s waves.

Trestles gained steady traction as a globally popular surf destination by the 1980s. The space revealed that surfing as a “quintessentially globalized sociocultural phenomenon” generated economic activity (Ford and Brown 2006, 47). Rideable rhythms were commodifiable and worth potentially millions in revenue; with this, the economic future of San Onofre State Beach and Trestles took shape. The surfscape, which emerges from a coupled human-natural framework that establishes an ecosystem service, is an important starting point for understanding recreational value provided as a service. I borrow from surf economist Nelsen (also the current environmental director and chief executive officer of the Surfrider Foundation), who writes they “are the benefits people obtain from ecosystems” (2012, 9).⁵³ In



Figure 1.4: The California State Parks’ kiosk near the Panhe Trail depicts all five surf breaks that comprise contemporary Trestles.

⁵³ Nelsen’s 2007 surfonomics study estimates that “expenditures to local businesses, including fuel and food, add \$40.16 per surfer per surf session to the coastal economy at Trestles. [...] [T]he annual surfer visits to Trestles in 2006 was approximately 330,000. [...] [A] range for the annual economic value of surfing at Trestles for the trips not accounted for by [...] survey respondents (224,000 visits) can be estimated. This results in an additional value that ranges from \$6.5 million to \$30 million per year” (2012, 51).

economic terms, exchange value is affixed to surfing because the reproduction of waves as a resource is assumed; therefore, the spatial practice translates into a reliable money-maker for San Clemente. The surf breaks are considered an environmental good, as well as a resource and ecosystem service with inherent social value in an emerging market of waves (Carson 2001, 98-99).



Figure 1.5: Three creeks originating from the San Mateo Point watershed eventually empty into Trestles.

In 1999 Carson et al. argued it was possible to determine whether passive-use values were “important for a given resource” “only empirically” (Carson 2001, 119). The emergence of surfonomics in 2002, however, provided economists with a novel way to determine the monetary and social value of waves.⁵⁴ Nelsen and Pendleton (former chief economist at the National Oceanic and Atmospheric Administration) formally introduced the term surfonomics in a 2002 case study that assessed the

⁵⁴ The economic valuation of coastal recreation in California is another way to describe this process.

economic value of Tres Palmas, a popular surf break in Rincón, Puerto Rico.⁵⁵ Real estate developers had planned to construct three high-rise condominiums along the coast, but lawmakers rejected the proposal by arguing the break was economically more valuable for tourism than projected revenues from the planned development. Their argument derived from an econometrics-based methodology that quantified the social value of a public ecosystem service with waves. Surfonomics generated quantitative and economic data that opponents utilized in arguments to protect surf breaks from potentially destructive projects like the condominiums.⁵⁶ Tres Palmas became a marine reserve instead.

Similarly, measuring and quantifying Trestles' economic value would be critical to its preservation and conservation when the 241 Toll Road controversy intensified. People visited and surfed Trestles to affirm its social value; however, the push toward commercializing and popularizing the surf breaks to recognize that value created ecological contradictions. The commercial shift was partially attributed to a post-World War II revolution in the design and mass production of surfboards. Shortboards, which allowed surfers to perform advanced maneuvers along the face of a wave because they were smaller and lighter, became a mainstay at surf breaks across the globe. Their size and weight made them easier to transport. Surf products that followed suit (e.g., leashes, boardshorts, wax, fins, board bags and wetsuits) were additional material evidence that surfing had veritable economic value, even if the cultural factors that boosted it were qualitatively, not quantitatively, assessed.

Surfing has manifested as a global industry partly due to deterritorialization. The global flow of surfable waves, money and surfers contribute to the globalization of surfing as a lifestyle and sport, as do popularized (neocolonial, male-dominated) narratives about globe-trotting surfers with(out) fancy equipment on the hunt for the next best break. Ford and Brown maintain that “from the late 1960s

⁵⁵ See Nelsen (2012): *Collecting and Using Economic Information to Guide the Management of Coastal Recreation Resources in California*.

⁵⁶ “Nelsen reports, “The National Ocean Economics Program database lists 31 papers and reports on economic valuation of coastal recreation in California dating back to 1993. Research on beach going (including beach-related water quality studies) represents the largest portion of the research with 14 papers and reports. [...] The beach recreation papers can be divided into two groups, those reporting on economic impacts (market expenditures) and those reporting on non-market values, with some reporting on both” (2012, 14).

onwards,” historical stories were grounded in “a series of tensions,” which included: “the interplay of four themes: soul surfing, competition, commercializing and crowding” (2011, 45). Environmentalism arguably was at the political core of each one.

One reading of environmentalism recognizes there are long-term ecological impacts stemming from surf tourism’s dependency on waves as a natural resource. Guaranteed public beach access produces heavier crowds, ecological disturbances and unwanted coastal development. Environmentalism also calls into question consumptive behavior tied to capitalistic logic and the rise of a global surf industry. Evolving board technologies, surf wear and innovative modes of transportation enabled experienced surfers to seek faster, hollower, bigger waves. They were aplenty at Trestles because of its bathymetry -- that is, the “depths and shapes of underwater terrain” -- and connection to the San Mateo Point watershed (NOAA 2015).⁵⁷ Three major creeks (San Mateo, Cristianitos and San Onofre) all nourished the watershed before reaching San Mateo Point’s rivermouths, which emptied into the Pacific Ocean. Upon converging “into small rivermouths on the coast,” they deposited sediment and rock from inland to create a composite delta structure, also referred to as an underwater reef, approximately a mile offshore from



Photograph 1.2: The circulation and transport of sediment coupled with cobble substrate help produce Trestles’ sandbars, which influence the shape and style of each surf break’s waves.

⁵⁷ See the National Oceanic and Atmospheric Administration’s “Ocean Facts: What is Bathymetry.”

Lowers (Collins 2010). This cobblestone reef “likely assumed its overall shape at the last glacial maximum, some 18,000 years ago, when sea level was approximately some 300 feet lower than it is today” (Crain 2011, 5).



Photograph 1.3: On a small day of surf, a lone surfer navigates the famous cobblestones of Lowers.

Two cobble deltas, as well as substrate and sediment transport, play critical roles in the formation of Trestles’ reef and waves. The large cobbles produce two fan-shaped deltas on the seafloor. The first, which is fed by the Cristianitos and San Mateo Creeks, “extend from just north of Cottons [...] to south of Uppers” (Crain 2011, 5).⁵⁸ The other is located south of Lowers at Church and sustained by the San Onofre Creek. The creeks’ circulation and transport of sediment coupled with cobble substrate help produce Trestles’ sandbars, which affect the shape of waves. The more pronounced the sandbar, the steeper and hollower the surf. The Oceanside littoral cell, within which Trestles is located, also factors into wave shape. This cell is a segment of the coast where sediment (i.e., rocks, pebbles and sand)

⁵⁸ Lowers was initially called “Middle” Trestles prior to the construction of the lifeguard tower.

circulate between La Jolla Point and Dana Point, each movement influenced by the creek beds, rivermouths, bluff erosion and storm activity (Crain 2011, 5; Collins 2010). “A season of heavy rains,” explained Sean Collins, the founder of the wave-forecasting service Surfline, “can radically change the breaks, but the flow of sand and rock generally keep all of [them] in pristine conditions” (2010). This geological setting has made Trestles a profitable swell magnet, drawing in millions of surfers, myself included. The economic success is not without major cultural repercussions, however. In the following section, I shift attention away from Trestles’ bathymetrical origins to its indigenous heritage. As the Acjachemen’s violent history reveals, colonization led to their subjugation, dispossession, and creation of property (a form of spatial order).⁵⁹ In an analysis of the relationship between violence and space, Blomley writes: “Western notions of property are deeply invested in a colonial geography, a white mythology, in which the racialized figure of the savage plays a central role” (2003, 124).⁶⁰ He acknowledges violent dispossession accelerates cultural erasure and creates possibilities of colonization and development, such as the missionization of land, which assumedly “civilized” the Acjachemen.

When extended to the social realm, dispossession describes the way the indigenous group has self-identified and been “othered.” It also constitutes a form of ecological erasure involving the annihilation of waves, which historically were a critical component tied to the Acjachemen’s economic livelihood. Today they are a fundamental resource for Trestles’ ecosystem functionality. Similar processes occur within the surfscape, where violence establishes aquatic territories and surf breaks become property. Both are inseparable from the Western concept of ownership, which ultimately sets conditions for what is private and public property throughout San Clemente and along California’s coast.

⁵⁹ See: *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Gerónimo Boscana's Historical Account of the Belief, Usages, Customs and Extravagancies of the Indians of this Mission of San Juan Capistrano Called the Acjachemen Tribe* (1976). *Native California: A Theoretical Retrospective* (1996). *History of California, Volume I* (1993). *Mission San Juan Capistrano: A Pocket History*. Alfred L. Kroeber’s “The Religion of the Indians of California” (1925). O’Neil Stephen’s *Handbook of the Indians of California* (2002).

⁶⁰ The idea of property varies based on political, economic and cultural ideologies. Equally, its creation has a violent connection -- to competing belief systems, the marketplace and (non)movement of bodies. For English philosopher John Locke, property and property rights are marks of the modern state, which by the 17th century had been fixed on establishing sovereignty over pieces of territory. The state is expected to be the protector of modern rights, and state subjects can be property-owning subjects. This creates an ultimate advantage for the nation-state, as property ownership transfers the identity of a subject from a locality to the nation.

Indigeneity: A Reminder of Trestles' Cultural Legacy

In this section, I show how textual and visual representations of Trestles' constellation of ownership are incomplete. I focus on World War II, explaining how this historic battle undermined the politically benign appearance of the surf breaks and set a dangerous precedent for property relations. Undergirding mapping, as well as San Onofre State Beach's spatial evolution of property, is the process of eminent domain. In the United States, eminent domain masks itself as a civil practice even as it displaces indigenous groups and landowners who reside in desirable spaces and have no power or legal recourse to thwart land seizure or development.⁶¹ The intrusive system of federal governance has profoundly shaped conceptions of property ownership in the United States via the American legal system.

Eminent domain emerged as a civilized alternative of land transfer and acquisition to violent seizures of indigenous land. It was integrated into the Fifth Amendment of the U.S. Constitution; the legal underpinnings rejected indigenous authority and deferred to federal powers. Though not always the case, eminent domain assumes the capitalization (or preservation) of land is necessary or inevitable. Although it helped erase historical relationships with San Clemente, two landmarks -- the Panhe Trail and a famous baptismal site -- have withstood shifts in ownership, memorializing the Acjachemen's indigenous existence. By the 21st century, these historical markers became central to campaign narratives against a toll road extension proposal, as did the future of public beach access.

To get to Trestles, many visitors use a map of San Onofre State Beach, one of which can be found in a California State Parks brochure. Without one, they may experience a sense of geographical dislocation: Where exactly is Trestles? How do they get there? A succinct visual representation answers these seemingly benign questions by providing names, trails, and spatial directions. These fixed notions of landscape oversimplify the social and cultural importance of Trestles, however. My totalizing view of San Onofre State Beach includes a naturalized, spatially fixed, territorial entity informed by

⁶¹ The first case of eminent domain reached the U.S. Supreme Court in 1876. At stake was whether the federal government could seize private property to construct a post office and custom home.

environmental, cultural, economic and political histories. Truncated and consolidated pieces of the state beach are trapped between the margins of a map on the back. Its intersecting lines, dots and uneven geometric shapes indicated a direct interplay of land use, power and resistance. A triangle of sandy tan encompasses the beach and park. Along the state beach's coastal zone, the bleeding-red-and-white trail of Interstate 5 connects global and local economies as it parallels the Pacific.

At stake is internal sovereign control, often negotiated or undermined by external processes of state-making and national defense. The map consequently consolidates various histories of the nation-state to project a truncated version that fit nicely within the margins of a state park brochure. Next to the ocean, a tea-green rectangle with splintering lines of red dashes signified a preserve area with unpaved



Figure 1.6: This map of San Onofre State Beach has appeared in the California State Parks visitor brochure.

roads. It separates the beach from a triangular mass of pastel purple, reserved for the militarized space of Marine Corps Base Camp Pendleton. Bordering the base to the west is Yuma'ykawichum Pompe

(Ancestors' Trail) and Pa'lvunia Po'oomagala (Peaceful Valley Trail), both linguistic nods to Trestles' indigenous heritage, as well as a reminder of who initially named the land. The Pa'lvunia Po'oomagala route meander across the terrain, and Pa'nxinga Moniivo marks the green-dotted hiking trail that lead to Panhe, the Acjachemen's sacred village, burial grounds and California's first baptismal site. Yet these representations diminish the presence and absence of power in social relations, a reoccurring theme at the California Surf Museum in Oceanside and Casa Romántica Cultural Center and Gardens in San Clemente.

I visited these sites of institutional memory in January 2014 and April 2016, respectively.⁶² Casa Romántica, a seven-bedroom mansion that once belonged to property magnate Ole Hanson, overlooks the Pacific Ocean as it stretches from the coastal bluffs. An archival gallery revealed that indigenous groups living in what is now southern Orange County territorialized their land, exercising force upon neighboring communities when goods were stolen. Southern California's climate shaped the architectural design and structure of their dwellings, as well as the timing of ritual steam baths. During winter, the Acjachemen constructed *kiitkas*, half-moon-shaped structures with shallow pits used to heat stones and create steam for the *temescál* (sweat house). "Following the steam bath, the men would run out [...] and plunge themselves into the ocean or a cold stream."⁶³ Woven baskets were central to material culture and daily practices such as cooking.

The Acjachemen also chipped stone into blades, and to fish they used an *ichilash* (fishhook) and *ichilash wiichut* (line and sinker). They ate deer, fish, rabbits, squirrels, berries, nuts and acorns from black and live oak. "Nearly half of the Acjachemen diet was derived from six of the eighteen species of oak native to California."⁶⁴ At Casa Romántica I was drawn to an untitled painting that features the baptism of an Acjachemen baby. A family awaiting this religious ritual huddles in distress, stark sadness frozen in the black eyes of the Acjachemen father. The brown and burnt-orange hues of paint accentuate

⁶² All culturally constructed knowledge about the Acjachemen that I present here is based on a visit to the Oceanside California Surf Museum in January 2014 and Casa Romántica Cultural Center and Gardens in San Clemente in April 2016.

⁶³Casa Romántica "San Clemente" display.

⁶⁴Casa Romántica "San Clemente" display.

the mother's eyes, cast toward her baby as an older child clings to the back of her leg. The painting's subdued mood alludes to a silenced history of colonization, an unexplored aspect in both spaces of cultural memory. Although Casa Romántica and the surf museum's muted portrayal of the Acjachemen incorporate indigeneity into Trestles' cultural narrative, their "anti-conquest" framework downplays, if not depoliticizes, the major consequences of Spanish colonization during the Mission period (1769 to 1833) (Olund 2002, 146). The conquest "reversed the expropriation of land and culture from Native people [...] and refigured it as a gift to [...] people whose 'Indian' history was coming to an end. It



Figure 1.7: Presumably this is a historical painting of two Acjachemen infants who were baptized in 1769 near what is now known as Cristianitos Road. Image reproduction courtesy of Casa Romántica.

became, then, a narrative of anti-conquest, one that helped erase colonialism from American liberal governance" (Olund 2002, 146).

Omitted in Casa Romántica's narrative are the details that produce place-names, boundaries of difference, and tension between the past and present.⁶⁵ Throughout the Rancho period (1833 to 1846), for

⁶⁵ For a more detailed history about the Acjachemen Nation, see: *Mission San Juan Capistrano: A Pocket History* by Alfred L. Kroeber (1907); "The Acjachemen in the Franciscan Mission System: Demographic Collapse and Social Change" by Philip Stedman Sparkman (1908); "The Religion of the Indians of California". *University of California Publications in American Archaeology and Ethnology* (1925); *Boscana, Gerónimo, O.F.M.* (1933); *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Gerónimo Boscana's Historical*

example, the “Spanish were neither understanding nor forgiving of ‘infractions’ against their rules and laws; the Indian who carried natural behavior into the Spanish world quickly learned how violent a disciplinarian the Spanish could be” (Beckman 2014). Kinship relations, diet, daily attire, and spiritual practices changed drastically under colonizers’ control. The landscape also underwent architectural alterations as mission complexes replaced Acjachemen villages. These were consequences of Spanish missionization. From 1769 until 1833, the social trails of Catholic missionaries, Spanish explorers and Acjachemen intersected near what is now part of the San Mateo Campgrounds (California State Parks 2010). Calling the Spanish “newcomers,” historian Tad Beckman writes, they “behaved as though the land was theirs and asserted their right to dictate events,” one of which included constructing Mission San Juan Capistrano (California State Parks 2010, 2).⁶⁶

The mission was a site of subjugated bodies, spiritual imprisonment and cultural oppression. Following its completion in 1776, Spanish priests committed an act of “self” dispossession by renaming the Acjachemen “Juañenos.” The name “Juan” signaled an expectation of loyalty to San Juan Capistrano’s ideological and religious underpinnings. This reading of “self” dispossession emerged from Harley’s critique of the role of cartography in spatial histories involving indigeneity. It humanized the social realm, underscoring the way the Acjachemen self-identified and were “othered” via place-naming.⁶⁷ The “taking away of a name” was a politically and racially violent way colonizers asserted their cultural and linguistic supremacy and commanded control of land and people (Harley 2002, 178-179).

Account of the Belief, Usages, Customs and Extravagancies of the Indians of this Mission of San Juan Capistrano Called the Acjachemen Tribe by Phil Townsend Hanna (1976); *History of California, Volume I* by Harry Kelsey (1993); *Native California: A Theoretical Retrospective* by Leslie Feinerg (1996); and *Handbook of the Indians of California* by Stephen O’Neil (2002).

⁶⁶ According to Amtrak’s “Great American Stations” project, the Spanish “did not establish settlements in California until the late 18th century when the Russian Empire began to take interest in the area.” Historical records show, however, that explorer Juan Rodriguez Cabrillo laid claim to California for the Kingdom of Castille in 1542.

⁶⁷ Harley examines the geographical implications of dispossession by analyzing a series of maps that reveal New England’s evolving cartographic landscape as early as the 17th century, when the worlds of indigenous groups and European settlers intersected. He argues that the intertextuality of maps suggests English colonists did not produce these cartographic objects themselves; rather, they relied on local knowledge to spatialize and name their surrounding environment. Yet a scientific type of cartography, which destabilizes the local forms (hand-drawn maps, for example), is often preferential for forming boundaries of power. When this Indian-settler narrative moves westward, Harley’s ideas retain their geographical significance.

Catholic missionaries engaged in this practice, naming “a point of arrival or a rest stop for the patron saint whose holy day coincide[d] with [the] time they arrive[d]” (OCBS 2012, 6). Spanish priests and soldiers heading into Alta (Upper) California during the Portola-Serra expedition in 1769 initially named one of their encampments after Saint Apollinaris.⁶⁸ Following California’s first Christian baptisms for two ailing Acjachemen infants, “soldiers referred to it as ‘Los Cristianitos’ or the little Christians” (OCBS 2012, 6). Eventually Cristianitos became a road that now runs parallel to the Panhe Trail (an indigenous space) and Camp Pendleton (a private, militarized space). The valuable stretch of real estate is also where visitors park their vehicles to access the famous trail to Trestles.

Throughout the 1840s, changes in land ownership resulted from Mexico’s independence from Spain in 1821. In 1841, Pio Pico, who served as Mexican Governor of California, and his brother Andres granted themselves Rancho Santa Margarita, one of six ranches comprising Mission San Luis Rey lands. They made money “mainly by slaughtering cattle to sell hides and tallow to [...] traders” (Harrison 1994, 5). Andres’ military aspirations drove him to sell his share of the ranch to his brother. Pico eventually lost the land in 1863 to settle gambling debts, and the private property was deeded to Pico’s brother-in-law Don Juan Forster, “an English shipping magnate who had made his fortune in Mexico during the 1830s.”⁶⁹ Forster’s investments helped him accumulate an estimated 200,000 acres of land, instantly distinguishing him from other landowners throughout Southern California.

Despite Forster’s success, he lived beyond his means during an unfavorable economic climate plagued by several droughts. He went bankrupt, and the land changed hands once again in 1863, when it was sold to James Flood, an entrepreneurial cattleman. Flood solicited the management expertise of Richard O’Neill to run the ranch. O’Neill eventually owned half of the land as compensation for his work and loyalty.⁷⁰ “After 24 years,” Steven J. Harrison writes, O’Neill “gained complete operating control,

⁶⁸ Other sites included Las Pulgas (now a road), Las Flores, Chappo, Horno, San Onofre (now a state park and beach), San Mateo (now a campground) and Vado del Rio.

⁶⁹ Amtrak’s “Great American Stations: San Clemente.”

⁷⁰ Marine Corps Base Camp Pendleton: “History.”

although the Flood family retained an interest” (1994, 6). When he died, his children inherited the property, and his son Jim assumed management of business activities and operations.

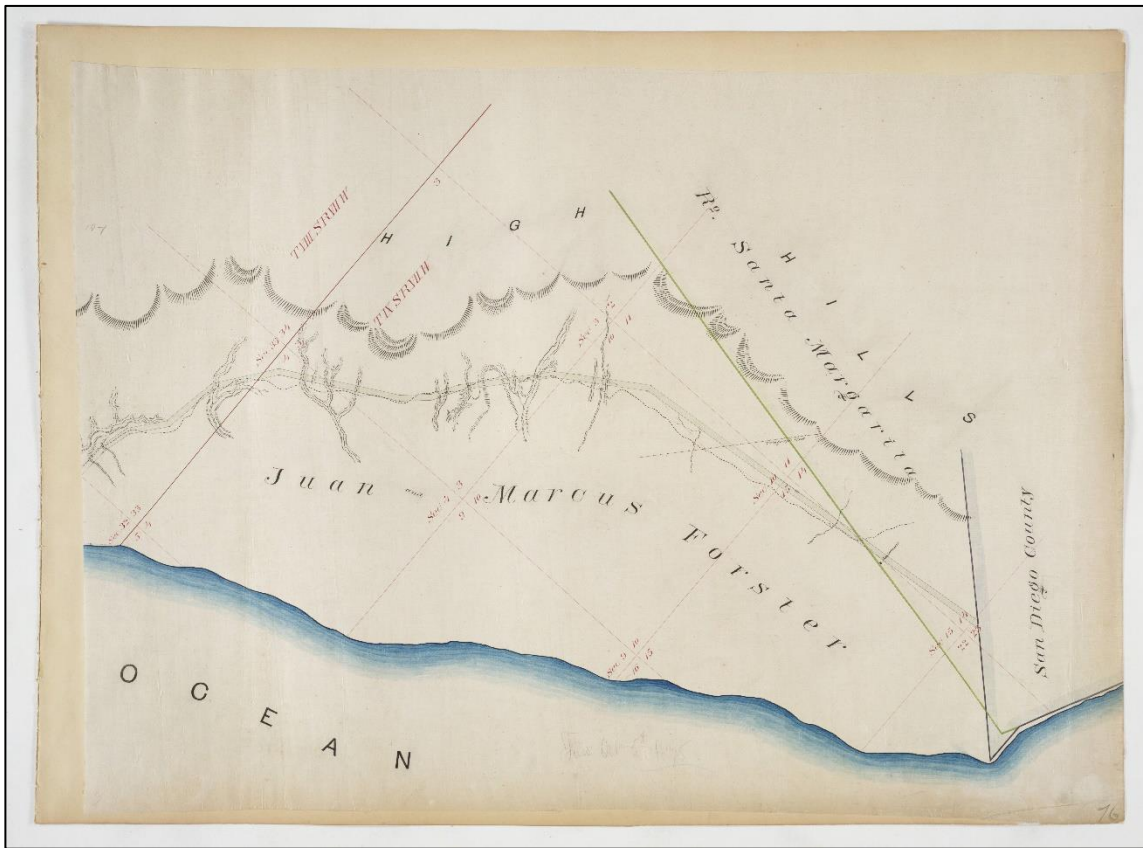


Figure 1.8: This map delineates San Diego County from the future Orange County, established in 1849. Pio Pico passed down the land to Don Juan Forster, who eventually sold it to James Flood in 1863 after going bankrupt. Image reproductions courtesy of Don Craig and the Huntington Library.

Construction of the “Surf Line” railroad in 1882 and establishment of Orange County in 1889 exposed the fertile land and rideable waves to American developers such as San Clemente’s Hanson. Historian Ronald Takaki provides important insight about the connection between railroads and indigeneity. He writes:

Behind the ‘resistless’ railroad were powerful corporate interests, deliberately planning the settlement of the West and the extension of the market. Railroad companies saw the tribes as obstacles to track construction and actively lobbied the government to secure rights-of-way through Indian territory. They pushed for the passage of the 1871 Indian Appropriation Act, which declared that ‘hereafter no Indian nation or tribe within the territory of the United States shall be acknowledged or recognized as an independent nation, tribe, or power with whom the United States may contract by treaty.’ Explaining the law’s significance, an attorney for a railroad corporation stated: ‘It is not a mere

prohibition of the making of future treaties with these tribes. It goes beyond this and destroys the political existence of these tribes.’ Armed with the 1871 Indian Appropriation Act, railroad companies rapidly threw attacks across America and opened the West to new settlement. All of this was seen by white settlers as the advance of civilization.” (2008, 95).⁷¹

For more than forty years, the landscape supported the state’s flourishing cattle, citrus, walnut and wheat industries.⁷² During this time, Harrison writes: “Cattle buyers could come directly to the ranch by train, make their selections from shipping corrals along the tracks, and have their purchases loaded right there” (1994, 6).⁷³ In 1885, commercialized Hawaiian surf culture took shape in the San Lorenzo river mouth near Santa Cruz, California. Surf scholar Ben Marcus (2001) writes in *From Polynesia, With Love*, three Hawaiian princes who attended a nearby military academy utilized coastal redwood to shape their surfboards.⁷⁴

Surfing became more popular throughout California in the early 20th century, partly due to demonstrations from famous Hawaiian athletes like Duke Kahanamoku and George Freeth, who captivated spectators’ interest with each wave they rode. The beach town’s surf scene burgeoned as a result. The real estate boom that took hold of San Clemente leading into the 1920s pointed to the cultural effects of privatizing land. The establishment of private property inscribed power into a bureaucratic process that produced (i)legal, landless subjects. Acjachemen descendants suffered long-term cultural and economic ramifications of Spanish colonization and American property rights, eminent domain included. Even as late as 2011, the Bureau of Indian Affairs denied JBMAN’s quest to be federally recognized as an official “historical Indian Tribe” (Scott 2011).

When Indigenous Land Becomes Property

⁷¹ Amtrak’s Surfliner, which began operating as a passenger rail service between Los Angeles and San Diego in 1976, is deeply rooted in the history of U.S. railroads. For additional details, see Dana Gabbard’s “History of the Surfliner, LOSSAN and a Look at Pending Legislation” (2012).

⁷² Amtrak’s “Great American Stations: San Clemente.”

⁷³ Harrison notes the San Onofre Nuclear Generating Station was built on a former cattle site (1994, 6).

⁷⁴ See: “From Polynesia, With Love: The History of Surfing from Captain Cook to the Present” (2001). For a brief discussion that questions the hegemonic narrative that surfing originated in Polynesia, see Iatarola (2011).

In 1925, Hanson secured property rights for an expansive tract of land named after “the most southern of the coastal Channel Islands.”⁷⁵ It was called “San Clemente,” an emerging coastal destination for wealthy Californians in search of second homes. Within six months, Hanson sold at least 1200 lots for between \$300 to \$1500. By June 1926, a \$100,000 Community Clubhouse was in the works, set for completion in eight months. The first schoolhouse opened in September 1927 as more families settled into the cadence of coastal life. Hanson’s contributions to the construction of public utilities included San Clemente’s water system, which he deeded with other amenities to residents before his death in 1940.⁷⁶

January 1927 marked a noticeable increase in the town’s population. This was partially attributed to Hanson’s infrastructural projects that were designed to lure property buyers from the East Coast and Midwest to the master-planned community. “Constructed at the center of the 3,000-foot public beach,” for example, “was a 1,200-footlong, \$75,000 pleasure pier, which extended into waters that boasted some of the best fishing on the Pacific Coast. With a fleet of fishing boats anchored in the harbor, nearly one million fish were caught [...] each year.”⁷⁷ “Ugliness,” Hanson said, would contaminate the town’s architectural aesthetics, thereby decreasing residents’ chances “to live intelligently and artistically.”⁷⁸ He and his business associate Hamilton H. Cotton took control of design guidelines, pushing for adherence to the Mission and Spanish Revival architecture of white stucco and red-tiled roofs.⁷⁹

Hanson’s masterplans crumbled after the Stock Market Crash of 1929, which led to an economic and population decline in San Clemente. Prior to the crash, nearly 1,000 people were residing in the town. The number dropped to 250 as the fiscal crisis unfolded. Hanson lost his home in 1932 due to the impact of the Great Depression, and the town’s architectural aesthetics changed with the eventual onset of urban sprawl after World War II. The town “lacked an industry to provide economic stability” to the region,

⁷⁵ Amtrak’s “Great American Stations: San Clemente.”

⁷⁶ Amtrak’s “Great American Stations: San Clemente.”

⁷⁷ Casa Romántica “San Clemente” display. The pier is technically 1,296 feet long, and “[l]egend has it that during Prohibition in the 1930s, bootlegged liquor was smuggled into the area by offloading near the pier” (Amtrak 2013).

⁷⁸ Casa Romántica “San Clemente” display.

⁷⁹ Several Ole Hanson-style homes still exist in San Clemente.

though it did not go completely bankrupt or lose public buildings and amenities.⁸⁰ Town attractions including the San Clemente Beach Club, a 132-acre municipal golf course, and professional-grade baseball park that the Seattle Indians of the Pacific Coast League used for spring training did not generate enough revenue. Given the bleak economic climate, the beach became a social space “[...] with a slower pace, a life closer to ‘nature,’ free from mechanization, responsibilities, commitments and drudgery” (Irwin 1965, 16). Typically, these elements characterized the city. Blomley described this site with private and public property as an ownership model “in which people live inside” (2004, 15). It contrasted sharply with the notion of the ocean as a public space “devoted to leisure activity” (Lefebvre 1991, 383-384).⁸¹ Foster argued historically individuals have been drawn to public spaces of leisure because of “alienation of humanity and nature” (2000, 74).⁸² These spaces included San Clemente’s public beaches.

Surfing as a spatial practice flourished at a series of popular surf breaks several miles south of the beach town.⁸³ The general wave zone was called “San Onofre” -- also dubbed “San O’”, “Sano,” “San O,” and “’Nofre.” It was the Spanish translation for Egyptian Saint Onuphrius as well as the name for a ranch of the San Juan Capistrano Mission. It appeared in land grant documents dating back to February 23, 1836, and May 10, 1841, respectively, and encompassed the Atchison Topeka and Santa Fe Railroad line connecting Los Angeles and Oceanside (Crain 2011, 4). By the 1920s, new transportation infrastructure along the coast, including the Pacific Coast Highway, brought people closer to the ocean.

The following decade showed a significant increase in the number of people riding the waves of San Clemente, in part due to the lack of employment opportunities resulting from the Great Depression. The town laid claim to San Onofre as a space of recreation, remote and difficult to access, but coveted by

⁸⁰ Casa Romántica “San Clemente” display.

⁸¹ Lefebvre argues the notion of leisure is tied to the alienation of labor. “[L]eisure is as alienated and alienating as labour,” he argues. “[...]n the shape of paid days off, holidays, weekends, and so on, leisure has been transformed into an industry, into a victory of neocapitalism and an extension of bourgeois hegemony as the whole of space” (1991, 383-384).

⁸² Foster writes: “The alienation of the workers in the large towns had thus reached the point where light air, cleanliness, were no longer part of existence, but rather darkness, polluted air, and raw, untreated sewage constituted their material existence” (2000, 74).

⁸³ The surf breaks bridge[d] the gap between” the ocean and “traditional spaces with their monumentality and their localizations based on work and its demands” (Lefebvre 1991, 385).

fishermen, surfers and beachgoers nonetheless (Elwell et al. 2007, 124). In an homage to San Clemente's surfing history, Casa Romántica notes: "The surfers deemed the eighty-mile stretch from San Onofre to Point Dume a surf haven. The dredging of Newport Harbor had forced them to abandon that popular break for the more consistent, long-running waves of San Onofre." Surf historian Matt Warshaw marks 1933 as the year surfers "discovered" the spot, although it had been a hotspot for fishing long beforehand (2010, 76; Crain 2011, 4, 9, 17). Three years later, a fish camp was built, attracting the attention of surfers on the hunt for waves (Elwell et al. 2007, 124).



Photograph 1.4: San Onofre's "Fish Camp" along the newly constructed Pacific Coast Highway foreshadowed the economic potential of surf tourism before World War II. Image reproduction courtesy of Don Craig and the Huntington Library.

Important dates in surf-lore are often determined by cultural artifacts such as writings, oral histories and/or photographs. Amateur photographer Emil Sigler found satisfaction taking pictures of friends riding waves at various breaks throughout Southern California in the mid-1930s. "San O'," as they called it, was one of their favorites (Aguirre 2007, 14-15).⁸⁴ At the base of its hidden cliffs, social

⁸⁴ See David Aguirre's *Waterman's eye: Emil Sigler – surfing San Diego to San Onofre, 1928-1940* (2007) for a more detailed biography about the surf photographer.

histories of pre-World War II surf culture in the 20th century were resurrected by Sigler's photographs, many of which were taken at a break called "Old Man's."⁸⁵ As surfing became more central to his daily



Photograph 1.5: In a contest held at San Onofre in 1941, competitors were required to pin their numbers to the bottom of their bathing suits. Image reproduction courtesy of San Diego State University's Surfing Collection.

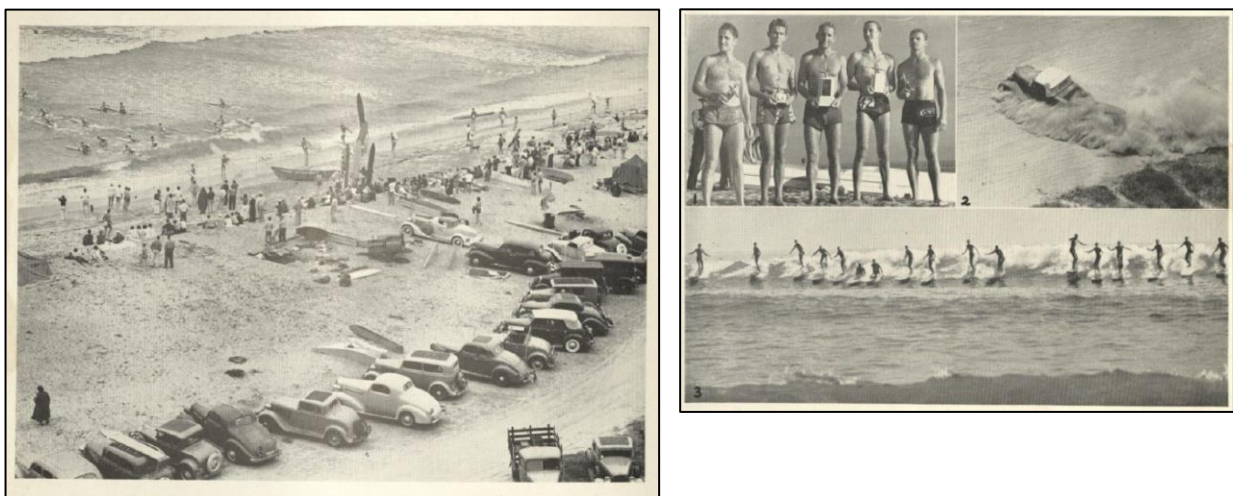
life, he focused his lens on the interplay between white bodies and the beach. His photographs captured the marketability of surfing's so-called "golden age."⁸⁶ This care-free era heralded men and women's desire and ability to play in the ocean, which was "viewed as an 'escape,' as something antithetical to civilization" (Irwin 1965, 13). It romanticized landscapes devoid of visible development and rejected the capitalist underpinnings of productivity.

The golden age also pointed to the racial and gender privileges inscribed in San Clemente's burgeoning surf scene. Standards devoted to whiteness and hegemonic masculinity shaped the visual

⁸⁵ Old Man's is currently considered part of San Onofre State Beach and Trestles' "historic district" (see Crain 2011, 3-4). A kiosk along the Panhe Trail, however, does not include Old Man's on the visitor map likely due to its southerly location.

⁸⁶ It is debatable whether the 1930s were really considered a golden age in American surf history.

foundation of American surf photography. White men and women drove cars on the beach, rode waves, kumbaya'ed with ukuleles and guitars around campfires, and pitched tents on the sand to keep festivities rolling into the night. Inklings of an industry were tied more to recreation, tourism and advancements in surfboard design rather than a global marketplace of goods, services, wave-predicting technologies and publicly traded surf companies. The scene was still localized, and “[m]ost of the surfers in this period (circa 1935) were organized into surfing clubs [... in] Santa Monica, Venice, Manhattan Beach, Hermosa Beach, Palos Verdes, Long Beach and San Onofre” (Irwin 1965, 7). Membership was exclusive; to join, surfers were required to meet a set of criteria, which included acceptable age (35 was considered too old), surfing experience, and place of residence (Irwin 1965, 7).



Photographs 1.6: These photos are featured as a spread in John H. “Doc” Ball’s famous 1946 book *California Surfriders*. Ball’s writes: “General view, contest day, 1940. The competition was keen, the spills were frequent, and the spectators roared on the beach. The boys come from within a hundred and fifty-mile radius to participate in this activity.” Image reproduction courtesy of San Diego State University’s Surfing Collection.

In a grander context, the establishment of surfing clubs was a harbinger for gender imbalance/inequality, surfing etiquette, localism and racism within and beyond San Clemente’s surf culture well into the 21st century. The swastika, for example -- a symbol of racial erasure and white supremacy -- appeared casually on material objects such as surfboards. Surf Systems created a “swastika

model” with “an emblem near the tail” that was later “chipped out” because of its hateful and violent connotations (Elwell et al. 2007, 84).

Similar social elements, arguably more subtle and implicit, characterized surf contests at San Onofre, where mainly white, young men competed on longboards for bragging rights and trophies rather than today’s million-dollar paychecks or corporate sponsorships.⁸⁷ From 1938 to 1941, San Onofre hosted the Pacific Coast Surfing Championships, which institutionalized surfing as a sport in San Clemente. The concept of wave priority did not exist, evidenced by ample contest photographs from the early 1940s that showed up to seventeen men riding one wave simultaneously.⁸⁸ Competitive events set a precedent for ideal surf breaks for contests, one of which eventually became known as “Lowers.” Sigler documented these boisterous, crowded events at San Onofre with his camera, establishing a precedent in the world of American surf photography. Interactions between humans, waves, the coast and land were “aspects of form in art” that became “aesthetically significant” (Ford and Brown 2011, 39).

The creative direction of surf photography evolved alongside shifting conceptions of female surfers. “Most of the female sex,” famed surf photographer John H. “Doc” Ball opined in his 1946 book *California Surfriders*, were more inclined to sit on the beach (85).⁸⁹ Even so, contests for women such as the Pacific Coast Women’s Surfboard Championships were held. White “surf Queens” participated, including Mary Ann Hawkins, “a talented swimmer with Olympic-level skills” who had been captivated by Kahanamoku’s demonstrations and personality (Crain 2011, 12).⁹⁰ Although raised in Costa Mesa as a teenager, Hawkins trekked south to surf San Onofre with her friends, occasionally becoming the subject of Ball’s lens. “In case you are in doubt that Mary Ann actually does surf,” he captioned for a photo in

⁸⁷ Winners for the contest, which began in 1928, were listed in John H. “Doc” Ball’s *California Surfriders* (1946). They included: Tom Blake (1928); Keller Watson (1929); Preston Peterson (1932); Gardner Lippincott (1934); Preston Peterson (1936 and 1938); Loren Harrison (1939); Cliff Tucker (1940); Preston Peterson (1941).

⁸⁸ For a more in-depth theoretical discussion about surfing as a sport, see Iatarola *Beyond the Waves* (2011). Wave priority suggests that the surfer who is closest to the breaking wave’s crest has the right-of-way to surf it without intentional interference.

⁸⁹ Ball hailed from Los Angeles and was a dentist who founded the Palos Verdes Surf Club in 1935. He is lauded in surf history books for his contributions to shaping the foundation of contemporary surf photography. He designed waterproof boxes for his camera, setting a precedent for action-based shots in the ocean.

⁹⁰ Originally quoted in the California Surf Museum’s 2010-2011 exhibit “Women on Waves,” which touted Hawkins as “California’s First Surfing Superstar.”

California Surfriders, “here is the evidence to prove that she is not just another dry land bathing beauty” (1946, 48).⁹¹ San Onofre was an ideal surf space for Hawkins to train for contests. Her athleticism and continuous victories in the Women’s Surfboard Championships from 1938-1940 set her apart from other female surfers.

Hawkins destabilized reductive assessments that suppressed the role of strong and prosperous women in San Onofre’s pre-World War II surfing history. At the same time, her body served as a “tool of commerce, her slender shape promising a kind of post-World War II male virility” (Bauerlein 2004, 8-9). Eventually she appeared in magazines such as *Life* and *Argosy*, in which her “girl-next-door good looks [...] opened doors in Hollywood” (Crain 2011, 12). After taking part in several movie projects, Hawkins moved to Hawaii in 1956. There, she taught infants how to swim and worked “at Waikiki’s Hawaiian Village to create a star-studded watershow” (Crain 2011, 12). Her new, permanent residence showed the



Photograph 1.7: San Onofre surf pioneer Mary Ann Hawkins frequented the surf with her friends, subverting the misconception that women were too weak to hold or paddle the heavier surfboards shaped during the 1930s. Here, she surfs with E.J. Oshier and friends on February 27, 1937.

tri-directional- cultural impact this spatial practice had between San Onofre, California and Hawaii.

Hawkins’ life as a nomadic surfer and successful competitor also signaled the potential economic

opportunities that surfing yielded for both privileged men and women who had the right means,

credentials and looks to prosper. The onset of World War II, however, would temporarily derail women

⁹¹ Ball’s comment provides historical context that sets a precedent for gender relations and “the internal gender order” in surf photography. On one hand, he is complicit in the unequal divide between men and women surfers (Ford and Brown 2006, 90). On the other, his own photographic evidence of Hawkins’ athleticism suggests men could no longer rely on the excuse that women did not know how to surf.

and men's dreams to surf for a living, particularly at San Onofre. In the following section, I explain how Trestles turns into a site of cultural contestation and militarized space where boundaries and power relations are inscribed in the landscape.

When Recreational Space Becomes Militarized Property

Following then-President Franklin D. Roosevelt's declaration of a national emergency on May 27, 1941, as well as the bombing of Pearl Harbor on December 7, 1941, the U.S. Marine Corps sought an environmentally dynamic space to train troops for air-, land- and ocean-based warfare. Rancho Santa Margarita y Las Flores, which encompassed San Onofre, caught the Department of Navy's attention in 1942.⁹² Using the power of eminent domain, the Marine Corps seized the O'Neill's land for a training facility, with the intention to return it after the war (Harrison 1994, 7-8). Public access to San Onofre was immediately blocked as a result, and amphibious craft and ships took over the surf breaks. The effects on the surfing community were swift and severe. Riding waves was no longer allowed at San Onofre, and war "precluded any possibilities of a contest from 1941 through 1946" (Ball 1946, 103).

Surfers, angered by the news, parked their cars along the old Pacific Coast Highway or hid them behind bushes, forging clandestine paths that passed through the San Mateo wetlands or down the coastal bluffs. Some of the wildlife trails led across the Atchison, Topeka & Santa Fe Railroad trestles, which enabled them to reach a series of breaks slightly north of their Old Man's stomping grounds. The general area they frequented became known as Trestles, an aquatic extension of San Onofre yet unique in its own geographical orientation, landscape and wave type. Surf-seeking adventures led to hostile confrontations with the Marine Corps, which was expected to reinstate public access to the beach. Instead, arbitration between the two factions led to a court battle, \$4.24 million legal settlement, and permanent change in property ownership (Harrison 1994, 8). Beach access remained privatized, providing ideological grounds for the emergence of surf activism in the United States.

⁹² The U.S. Armed Forces oversees the U.S. Marine Corps, which uses the resources of the United States Navy to protect national interests. Marine Corps Base Camp Pendleton: "History."

Fears of communism and an ongoing Cold War spatialized the Marine Corps' perceptions of the ocean in distinct ways. Militaristically, it was dangerous, a coastal zone of national defense. To "civilian"



Photograph 1.8: After the U.S. Marine Corps assumed control of Rancho Santa Margarita y Las Flores, the once-public beaches of San Onofre became a site for the U.S. Marine Corps' amphibious training exercises during and after World War II. Reproduced image courtesy of Marine Corps Installations West.

surfers, however, it was secure and liberating, a celebrated site of Western freedom. Undeterred by the circumstances and under the leadership of Barney Wilkes, they founded the San Onofre Surf Club in 1952, intending to negotiate a deal with the Marine Corps. They advocated for leasing a small strip of the beach from Camp Pendleton for \$1 a year (Crain 2011, 11). The Marine Corps conceded under the condition that club members were "tentatively allowed" to surf there. Within a decade, "25,000 feet had been reserved for access. All military personnel, both active duty and retired, their dependents and guests and bona fide club members of San Onofre Surf Club" were granted permission to use the surf breaks (Crain 2011, 11 via Camp Pendleton 1967 and 1968 Base Directory).⁹³

⁹³Racial effects of the exclusive surf culture became visible in the entertainment industry. Between the late 1950s and mid-1960s, as the number of surfers rose again, U.S. motion-picture companies tapped into California's white

Regulating San Onofre's surfing population set a dangerous precedent for localism, elitism and the militarization of Trestles' evolving surfscape. Civilian surfers sidestepped the Marine Corps' restrictions by bushwhacking through the Middle Trail. This led to the "Outer" Trestle, a break now dubbed "Uppers," which faces the mouth of the San Mateo Creek (Crain 2011, 3, 26). Violence camouflaged itself in the tension between surfers and the military. As hostilities intensified, violent encounters ensued, often exacerbated by the Marines' suspiciously errant bullets.⁹⁴ The relationship between the groups deteriorated once former President Richard Nixon, who required substantial security, took office in 1968 and bought "La Casa Pacifica" in San Clemente one year later. The estate, which news outlets called the "Western White House," sat atop a bluff overlooking what is now Cottons, Trestles' northernmost surf break located approximately one-quarter mile north of Uppers and named after Hanson's business associate.⁹⁵

Nixon was aware of the strife and critical of the lack of public access to the ocean. Attempting to improve social relations and "provide an endowment of park lands and recreational areas that [would] enrich [Americans'] leisure opportunities and make the beauties of the earth and sea more accessible to them," he proposed leasing San Onofre Beach to the California State Park system for 50 years (Crain 2011, 16).⁹⁶ With bipartisan support, Nixon and Congress also established the Environmental Protection Agency on December 2, 1970, to combat ecological issues (e.g. water quality, urban pollution, pesticide use) that were affecting communities, natural resources and wilderness areas across the United States, San

surf culture by creating "clean teenpics" for the big screen (Rutsky 1999, 12). Young consumers' desire to escape from a reality in which racial strife permeated everyday life spawned a series of commercial films such as *Gidget* (1959). The beach was "an exaggerated version of the suburban backyard" for "well-groomed, 'normal,' middle-class, surfing, singing, 'clean teens' – based largely on the image of lily-white youngsters" (Rutsky 1999, 12). See R.L. Rutsky's "Surfing the Other / Ideology on the Beach" for a more thorough analysis of why certain films, *Gidget* included, appealed to a white, teenage audience.

⁹⁴ Information based on Trestles exhibit at the California Surf Museum in January 2014.

⁹⁵ These encounters mimicked violent clashes between Zoot Suiters and the Marines during World War II. I would like to explore this cultural connection between surfers and Marines more in depth in my dissertation. In California, both social worlds are organized around the sea; the use of space, however, produces tension and conflicts. At stake is the notion of freedom and patriotism, which expands and contracts given historical and current social conditions as well as global warfare. See: Catherine Ramirez's *The Woman in the Zoot Suit: Gender, Nationalism, and the Cultural Politics of Memory* (2009); Maurizio Mazon's *The Zoot-Suit Riots: The Psychology of Symbolic Annihilation* (2002); and Eduardo Obregon Pagan's "Los Angeles Geopolitics and the Zoot Suit Riot, 1943" (2000).

⁹⁶ Crain attributes this quotation to Richard Nixon's *Press Statement*, delivered on March 31, 1971.

Onofre included. Merely three years prior, the San Onofre Nuclear Generating Station (SONGS) had been built.⁹⁷ The controversial nuclear powerplant located along the coast, slightly south of the border between



Photograph 1.9: A bluff is leveled to house the controversial San Onofre Nuclear Generating Station, which began operating on June 17, 1967 and shut down permanently on June 7, 2013, only ten days shy of its 46th anniversary.

San Diego and Orange Counties, contained three nuclear reactors. Environmentalists particularly were concerned about the possible effects that the structure and operations would have on marine resources, wildlife and the quality of life.⁹⁸

Under the tutelage of Nixon and then-Governor Ronald Reagan, through the Department of the Navy, the state reached an agreement with the Marine Corps that re-allocated 3.5 miles of Camp

⁹⁷ Three entities jointly own SONGS. They include Southern California Edison (SCE), San Diego Gas & Electric (SDG&E) and the city of Riverside. SCE retains 78.21 percent ownership; SDG&E at 20 percent; and Riverside at 1.79 percent (Crain 2011, 4). For a breakdown of significant events that led to SONG's permanent shutdown on November 30, 1992, see the San Diego Union *Tribune's* "Timeline of San Onofre plant's operations" (June 21, 2007).

⁹⁸ Ongoing concerns include SONGS' storage of nuclear waste, highlighted during a public meeting in Oceanside on April 1, 2016, when "speakers demanded that Southern California Edison remove tons of nuclear waste from a beachside bluff [...] even though the utility essentially is blocked from doing so by federal regulations" (Sforza 2016).

Pendleton's beach to the public.⁹⁹ It went into effect on April 3, 1971. In addition, a 3,400-acre parcel approximately 1.8 miles east of the Pacific Coast Highway included the future site of the San Mateo Campgrounds, an homage to the history of beachside camping at San Onofre at risk. Despite Nixon's tarnished presidential legacy, the 50-year lease, which cost \$1 per year, marked a victory for surfers, open-space advocates, and supporters of his progressive environmental agenda. Perhaps most significant was the state's decision in July 1971 "to designate part of the area as California's first public beach zoned exclusively for surfing" (Crain 2011, 17). Pulling off the lease was a rare political act that set a precedent for protecting public access to Californian beaches, reinforced by the formation of the California Coastal Commission in 1972 and passage of the 1976 California Coastal Act. Sensing victory, surfers flocked to San Clemente to enjoy the melodious waves that harmonized Trestles' contemporary surfscape. Surf contests quickly resumed in the 1970s following the state's leasing agreement with the Department of the Navy and Marine Corps.

To capture the nuanced politics of surfers' political maneuvers, in the next section, I use Lefebvre's "rhythmanalysis," referencing the power of the body in rhythmic spaces. Rhythm and rhythmic in this case are aesthetic means of distinguishing Trestles' surfscape from San Onofre State Beach's landscape. They capture the distinction between public and private beach access (best evidenced by the Department of Navy's takeover of the land and ocean as amphibious warfare training grounds for the Marine Corps). The eventual re-creation of a public space for surfing is a rhythmic form of depoliticization that fosters the formalization of a spatial practice with economic value. Rhythmic addresses a sensorial, affective component that unites sound, sensation and embodiment with money, politics and economics. In other words, rhythmic capitalizes off the waves of Trestles' spatial rhythms, which move in sync with surfing as a viable social and spatial practice.

Humans need not ride Trestles' waves to appreciate the idyllic space in which they find themselves when visiting, however. The convergence of living bodies with earth's resources and wildlife

⁹⁹ According to Crain, San Onofre State Beach contained "2,945 acres of land in three separate parcels, including 55 acres of beach and 24,000 feet of ocean frontage (2011, 4).

elicits a rhythm composed of the “essential elements of musicality.” These core components include sight, sound and tone, as well as their “properties and combinations” (Lefebvre 2004, 78). To maximize spatiality’s rhythmic potential, rhythm accounts for frequency, pitch, metric and measure -- all of which help produce “the triad ‘melody-harmony-rhythm’ [that] grasps musical life by heart” (Lefebvre 2004, 60). Curious about Trestles’ rhythm, professional and recreational surfers alike arrive and make a pilgrimage, a crowd manifesting when Trestles’ seasonal swell activity produces optimal waves. As the popularity of a space grows, more human and vehicle traffic follow suit, and San Onofre State Beach’s recreational value provided as a service increases.

I insert myself and other social actors into this relationship between bodies and the surfscape, analyzing recreational activity through a lens that assumes every mode of production produces its own kind of social space and subjectivities. What I see and experience in terms of race and gender, for example, is often invisible, nonexistent or unimportant to other stakeholders invested in Trestles. For two reasons, I find it necessary to highlight specific surfing experiences that I have with a San Clemente local named Jim Pruitt, and a semi-pro athlete named Jeremy Muta.¹⁰⁰ First, our interactions are part of Trestles’ social evolution from an indigenous space to a gendered and racialized space for capital accumulation. Second, my subjectivities contradict the word-of-mouth advertising and carefully crafted narratives and photography that continually reproduce a consensus that Trestles is democratic space where “everyone” is welcome to surf.¹⁰¹ I explore how those boundaries and power relations continue and are extended through subjective relations, as well as enacted and lived. To understand how this happens, getting into the water and experiencing these processes rather than observing waves is necessary.

¹⁰⁰ Muta’s name has been changed for privacy purposes.

¹⁰¹ For more than 80 years, this surf-centric discourse has played a pivotal role in shaping San Onofre State Beach’s recreational image. It is part of what Lefebvre calls a “spatial-verbal economy.” He writes: “This economy valorizes certain relationships between people in particular places [...], and thus gives rise to connotative discourses concerning these places; these in turn generate ‘consensuses’ or conventions according to which, for example, such and such a place is supposed to be trouble-free, a quiet area where people go peacefully to have a good time, and so forth (1991, 56).”

Subjectivities: A White Woman's Take on Surfing Trestles

In the water, Trestles' environment is not always inviting or peaceful. Many visiting surfers, regardless of their skill level, experience disharmony in terms of crowd factor and local vibe as the surfscape transforms into an aqueous "zoo, sometimes crowded even at night" (Mathieson 2017). In this section, I draw from my dialogue with Pruitt to expose the (dis)empowering constructs that gender the production of Trestles' surfscape, taking on the role of a critical academic researcher who surfs.¹⁰² I provide evidence of how those boundaries and power relations work at the gendered, subjective level. In my analysis of surfing with Muta, I contradict discourse that asserts Trestles is a site of ambiguous race relations, a multicultural, international surf space for anyone who knows how to ride a wave. I argue against its ethos as a democratic melting pot for surfers of color.¹⁰³ My cultural artifacts, including images of wax swastikas found in the port-o-potties at Middles, confront post-racial surfing ideology.¹⁰⁴ I describe the impact of racial supremacy at the breaks while surfing Lowers with Muta, who is also an athlete embedded in the political economy of the surfscape. My intention is to use surfing as an embodied practice to gain insight into a set of gender and race relations that would otherwise be invisible or ignored.

Walking down the Panhe Trail on April 20, 2016, I sighed as Trestles' rhythm arrested my senses, roused when birds murmured and whistled while the wind strummed tree guitars. Syncopated footsteps tapped against the asphalt path en route to the ocean, pausing for the Surfliner's horn blare and screeching wheels. Upon the shore, waves thumped into the sand like the deepest note of a bass. Booms

¹⁰² My mom introduced me to surfing through magazines, Technology taught me how to understand swell activity. These experiences run contrary to the hegemonic narrative that men usually teach women how to surf. This idea emerges in Ford and Brown's work. They suggest the "possible diffusing effect of social dominance through [...] surfing in that many women also talk about being introduced to the sport as a result of intense family involvement – and usually [...] this means fathers and brothers" (2006, 96). I call on surf scholars to expand this realm of analysis so that mothers and sisters are included in narratives and critiques. Women often seek solace in the ocean and are driven to surf resulting from the need to escape or confront intense disappointment that results from strained relationships with male family members, significant others and those in positions of unwarranted economic and political power.

¹⁰³ See: KPCC Wire Services "Proposed trail brings fears of more crowds at Lower Trestles surf spot" (2010); Crishana Haynes' "Lowers: The surf spot where everyone knows your nickname" (2015).

¹⁰⁴ For a thoughtful critique regarding the racialization of Trestles, see Julia Olson's "Is Localism the Newest Form of Racism" in *The Inertia* (July 2015).

of mortar fire and explosive munitions coming from artillery exercises at Camp Pendleton were on pause. Trestles' soundtrack captured the day's ephemeral moods, broadcasting songs from nature's independent radio, some on repeat, others seasonal or never heard of again. The Marine Corps' helicopter, a reminder of surveillance, property rights, urbanity and endless war, disrupted the peace with high-tempo backbeats that chopped across the sky. Waves doubled as oceanic chords that unified movement with the audible and visual.¹⁰⁵ Each of these rhythmic processes fused time, materiality, energy and bodies.

After documenting tidal lines at Cottons, I zoomed in on black globs of tar dotting the beach. They likely originated from the natural oil and gas seeps beneath the Santa Barbara Channel and/or the



Photograph 1.10: Lowers plays host to the surfarazzi. Here, a photographer gains perspective from the bushes.

¹⁰⁵ Lefebvre writes in his analysis of rhythms: “Watching waves, you can easily observe what physicists call the superposition of small movements. Powerful waves crash upon one another, creating jets of spray; they disrupt one another noisily. Small undulations traverse each other, absorbing, fading, rather than crashing, into one another. Were there a current or a few solid objects animated by a movement of their own, you could have the intuition of what is a polyrhythmic field and even glimpse the relations between complex processes and trajectories, between bodies and waveforms, etc.” (2004, 79). Considering his observations of waves, Lefebvre needed only add surfing to his visual equations to animate the embodied essence of a polyrhythmic field.

2015 Refugio pipeline near Santa Barbara.¹⁰⁶ Wherever the source, they stained the bottom of my shoes and smelled like freshly paved asphalt. During my trek from to Middles, I intentionally walked in front of every telephoto lens in my path at Lowers, annoyed and disturbed by the excessive number of white-skinned, sub-thirty-year-old (mostly) men monopolizing the sand with their expensive equipment. I called them the “surfarazzi,” capitalistic agents of surf photography born under the artful throne of Doc Ball, Emil Sigler and other deceased artists including LeRoy Grannis and Larry “Flame” Moore.¹⁰⁷

Various bodies interacted with waveforms shaped by the surrounding geography that included “the beach, the cliff, the banks” (Lefebvre 2004, 79). At Trestles, these geological features influence how people play with waves; ride them; assess them; sit near them; listen to them -- in essence, acknowledge them. Through every action, the body realizes “[t]hese waves have a rhythm, which depends on the season, the water and the winds, but also on the sea that carries them, that brings them” (Lefebvre 2004, 79). Yet to embody the same rhythm and polyrhythms, bringing these elements to a corporeal apex, watching was not enough: It was time to surf with Pruitt, who was patiently waiting for me in the ocean during a pleasant spring swell.

I had met the longboarder and retired fireman in March while taking pictures of Middles’ tidal lines. The San Clemente local was in his mid-60s, about six-feet tall, slightly balding, cheeks blushed by the sun. His strong build and goatee reminded me of my stepdad, who had passed more than two years ago. Our encounter came as a welcome interruption to my data collection for Urban Tides. It was difficult to build a rapport with anyone in the park. Interactions were ephemeral: quick glances, sweet smiles, flirty grins, cavalier glares, non-looks and suspicious assessments. No words. Just visual dialogue.¹⁰⁸ That changed the day Pruitt stopped to ask me what I was photographing.

¹⁰⁶ See Robin Tricoles of *The Atlantic’s* “Tar Balls, the Beach’s Fossil-Fuel Powers” (December 7, 2016); Laylan Connelly of *The Orange County Register’s* “Is oil popping up on O.C. beaches common or related to Santa Barbara Spill” (May 18, 2015).

¹⁰⁷ See Ford and Brown’s “Surf photography” in a discussion regarding the narrative history and globalization of surfing (2006, 33-42).

¹⁰⁸ To transcend the methodological challenge of knowing no one while doing ethnographic research in the state beach/park, I turn to Ingold. He writes: “[...] [T]his dilemma is readily circumvented by means of participation

As I discussed the environmental objectives of Urban Tides, he recollected his past involvement with the Surfrider Foundation, shedding light on the micro-politics within the organization that led to the ousting of Tom Pratte, a founding member and the first executive director (1885-1990).¹⁰⁹ He expounded in more detail during a formal interview on March 30, 2016, as he showed me a copy of his friend's memoriam while going through some papers. "See, there were three guys that founded it, [Pratte] being one of them," he said. "And he was a guy that lived at home, and he didn't accept any kind of monetary payment for being involved." Pruitt attributed the move to differing ideologies on how to do surf activism within a capitalistic framework. He noted:

Well, this is the part that politics always comes in [...]. I'm sure that there was somebody who saw the potential to make money. [...] It's kinda like [...] they look at it as a vocation rather than something to do for the benefit of people. [...] And Tom looked at it as very simple terms. And so they ousted him. I went to the meeting. It was really sad. [...] So from that point on I stopped being a member, you know what I mean.

Surfrider's membership, critical to the success of the Save Trestles campaign, only continued to grow under new leadership. It currently has more than 100 chapters across the globe and 60,000 members. In 2015, fiscal year-end reports show the non-profit spent approximately \$3.6 million on "environmental activities" (equivalent to 71.3 percent of program expenses). Administrative expenses accounted for approximately 7.7 percent of its yearly budget, relatively minor compared to other non-profits but still indicative of a corporatized approach to operations and management.¹¹⁰

After the interview, Pruitt and I agreed to surf Middles together. Three weeks later, I spotted the longboarder in the uncrowded water. The calmer setting contrasted sharply with the congested scene at Lowers, where human sounds from the sea resembled beeps in gridlocked traffic and guttural screeches from glam rock anthems. I set down my backpack on the edge of a semi-clean firepit and changed into my

observation which allows the ethnographer to access other people's way of perceiving by joining with them in the same currents of practical activity (1993, 222-3; 2011, 314).

¹⁰⁹ Pruitt mentioned he was involved with Trestles' first-ever beach cleanup. He also aided in the push to help create public access to "Barbed Wires," a break he considers "part of Cottons Point. The reason they call it Cottons Point is because there was a guy there, who lived there, and his name was 'Old Man Cotton,'" he said. "And that is where the Western White House is now. For additional historical context, see: "San Onofre's Trestles – The Countdown to Closure?" from the blog "Trestles Surf Crowd" (December 6, 2014).

¹¹⁰ See Charity Navigator's "Surfrider Foundation" page for more financial information.

wetsuit. With my board resting under my left arm, I waded across the “a round rock reef that teem[ed] with life, a black place, solid, unknown, foreign, even when only knee-deep” (Short 2007, 7). The boulders were big, and pillows of sand did not cushion my toes as they had when I surfed Cottons on a high tide. My feet slid across slimy rocks, disrupting the ecosystem by wiping out the delicate shells of microscopic sea life like a landslide. I stumbled, yelping as I nicked my ankle on a sharp edge in between one of the cracks. Checking for damage, a tiny streak of blood spilled from my minor wound. The fear of a shark attack flickered, then faded. Once in waist-high water, a dropping 4.4-foot high tide whisked my board and me away from the shore toward three- to five-foot waves. I was passing through the “limonoid state,” a body-mind ritual with the ocean that brought me one paddle closer to an intimate performance with waves.¹¹¹ New south-swell energy mixed with a fading west-northwest swell kissed my face. The winds were slightly onshore, building from the west and showing no signs of calming down.

My arms and shoulders found a steady rhythm paddling against the deep morning tide. It was less physically abusive than a brisk February day when I had surfed Cottons for the first time. There, the ocean had raged like a Slayer mosh pit, slamming against my body with fury and angst. The “enchanted sea” was angry, and the idea of experiencing what surf scholars Nick Ford and David Brown called the “dream glide” had turned into a brief drop and bumpy nightmare (2006, 17).¹¹² At Middles, however, I quickly caught my first ride, working the wave’s face, snapping off the top, cutting back and hacking the mushy foam. Throughout the moments, I experienced the wave as a “partner” in my performance (Bauerlein 2004, 6). My movements embodied the work of Bauerlein, who interweaves surfing and contact improvisation through what she calls “bodily texts” (2004, 1). She describes them as intellectual and emotional responses filtered by the body’s active force. “Surfing and contact improvisation organize

¹¹¹ “This relationship,” performance theorist Judy Bauerlein writes, “is manifested in a kinesthetic conversation or partnership between the living body of a surfer and the living body of a wave” (2004, 6).

¹¹² In relation to this experience, my perspective mirrored Shakespeare’s earlier plays (*The Winter’s Tale* and *The Tempest*), in which the “purely negative, stormy sea” drew me toward a site of “purgatorial suffering” and “cleansing” (Ford and Brown 2006, 10).

emotional, kinesthetic, and cognitive perceptions in a way similar,” Bauerlein adds. They do so through waves, “bodies in motion [that] have faces, lips, curls, hips, backs, and fronts” (2004, 4).

The salt-swollen waves were slow that day, more fit for longboarding but still fun with my shortboard, a 6-foot-0-inch Firewire Alternator. I had bought it for less than \$300 from the manufacturer’s warehouse in 2007, several months after my new one, advertised as “indestructible,” had snapped in half on a small wave. Nearly a decade later, the suggested retail price for similar Firewire models inched closer to \$900 after tax, an indicator of surfing’s inherent socioeconomic barriers. Without leisure time and the appropriate equipment, surfing Trestles would have been very difficult, if not impossible.¹¹³

Eight men (Pruitt included) between their early 20s to 60s chit-chatted among themselves, conversations pausing abruptly each time a rideable set rolled through the lineup. They were cordial, but not as outgoing as the men who greeted me at Cottons with, “Beautiful day, right? Catch some good ones?”¹¹⁴ Although there were no other women surfing Middles that day, I quietly rejoiced when I passed a small group of sun-kissed, younger females gearing up at Lower. Their collective presence at the high-performance break antagonized and de-territorialized gendered boundaries that historically perpetuated uneven power relations between male and female surfers. When alone in the lineup, I often rejected the male gaze with a poker-faced stare to assert my wave positioning.¹¹⁵ Younger, white, pre-pubescent boys seeking maternal guidance tested these boundaries, paddling too close to me, dropping in on waves they assumed I would not catch. A firm “Hey” reminded them to yield. My inclination to do this suggested “[r]elationships between femininity, masculinity and patriarchy center on the thematic of power” (Ford and Brown 2006, 85). The glare made many surfers, myself included, unapproachable, which translated into a fleeting form of female dominance when I surfed.

¹¹³ This point reiterates how surfing “is clawed back into cultural centrality by business” (Fiske via Ford and Brown 2006, 17).

¹¹⁴ These friendly interactions led me to agree with Ford and Brown, who argue that when surfing, “gender order from a relational perspective” varies on social factors. “For example,” they write, “many white, middle-class, able-bodied, heterosexual women tend to be less disadvantaged than women from working-class backgrounds, women from ethnic minorities, women with a disability or women with different sexual preferences, and so on” (2006, 85).

¹¹⁵ See Krista Comer’s *Surfer Girls in the New World Order* for a more thorough discussion of gender relations in various surf spaces.

With Pruitt a board's length away, however, I engaged with him and smiled. After open-heart surgery, he lamented his body "no longer worked" as it used to when he surfed Newport, Huntington Beach and Lowers. "Show me what you got," he challenged with a laugh. Pruitt's dare underscored the impact that proof-through-performance had on equalizing gender relations in the water. The value of my female surfing body would decrease if I did not live up to his expectations. Hegemonic masculinity -- that is "a dominant ideological construct that serves as the invisible core of this gender order" -- guided his innocuous comment (Ford and Brown 2006, 87). I did not hold Pruitt accountable; rather, I deduced it was an effect rooted in power relations that had "become inscribed onto and embedded into the body in the projected form of gendered practices, techniques and dispositional styles" throughout the decades (Ford and Brown 2006, 86).

Middles was an easy break compared with others that I had visited over the years. Apart from my unease with sharks, there was nothing harrowing or intimidating about the waves' mood that day. Pruitt announced he was cold and called it quits, waiting ashore with his friend and guarding my backpack as I reveled in the joy of having eight more waves to myself. Unless conditions were flat, such a scenario was nearly unimaginable at Lowers, which is one reason why we still had not danced together. An intolerance of surfboard traffic, entitled professionals and egocentric wave zealots could make surfing stressful and unpleasant. My disenchantment with Lowers came from watching waves on days that were "fair to good."

Racializing Lowers

Such conditions prevailed on September 19, 2016 with a trifecta of south-southwest, west-northwest and southeast-south-southeast swells. The complex combination produced knee- to chest-high waves of approximately two to three feet across the southern part of Orange County. At "standouts" including Lowers, however, five- to six-foot waves were the norm.¹¹⁶ Winds blew from the northwest around seven knots, and the possibility of isolated thunderstorms lingered into the late morning. I parked on Cristianitos at 9:06 a.m. and waited for my new acquaintance Jeremy Muta, a Black, semi-pro surfer

¹¹⁶Chris Borg Surfline report (September 19, 2016).

who was stuck in traffic about forty minutes away.¹¹⁷ I had met him while documenting tidal lines at Cottons for Urban Tides a few weeks prior and admitted Lowers was the only break I still had not surfed. *Time, time, time*, the internal voice warned. Summer would soon end, and the water temperature would drop. With contest season officially over, there were no more excuses. As an eco-ethnographer, I felt required to surf the break to make embodied assessments about the cultural dynamics at play. As a surfer, I would regret conducting research at Trestles for an entire year without ever stepping foot on Lowers' famous waves. "Let's go then," Muta said as the plan to surf together took shape. I agreed under the conditions that I would be collecting data for Urban Tides and my own research.

Muta and I had bonded over our interest in science, which led to his degree in human biology in 2012. He currently worked for a farmer who supplied organic produce to restaurants in Los Angeles.



Photograph 1.11: A 5.9-foot high tide on September 19, 2016, inches closer to the banks of the railroad tracks passing through San Onofre State Beach.

¹¹⁷ This name has been changed per the interviewee's request

Most of his duties began on the weekend, which left the weekday open for “nothing but surfing,” Muta said. This was one reason why he visited Trestles frequently; without traffic, heading south generally took him about 45 minutes, not very time-consuming, he noted. A car accident along Interstate 5 had delayed our surf session today, however. When Muta finally arrived, we walked to Cottons so I could take pictures of a 5.9-foot high tide at all three breaks by 11:23 a.m. Side-by-side, I was approximately two inches taller than him. “See how high the tide is today?” I asked, pointing to the darkened, damp sand and the train tracks behind the gray boulders that hid from the rising sea levels. “Look at where it reaches.” Muta nodded as the water thrashed the seawall near the Western White House.

We trekked to Middles in our wetsuits; the humidity made me sweat. Clouds that threatened isolated thunderstorms already had dissipated. Picture-taking was swift and my anticipation to surf intensified circling back to Lowers. Along the way, we discussed development, property rights, and the desire to see *Splinters*, a documentary charting the development of a nascent contest industry in Papua New Guinea. Finally, we reached the break that I had avoided surfing for more than nine months. “Why did it take you so long?” Muta asked. Shrugging my shoulders, I said I did not like crowds.¹¹⁸ It was not that I was out place or did not belong; surfing is what made Trestles a collective gathering space. Rather, I felt marginalized by what Ford and Brown describe as a “hegemonic gender power bloc” that reinforced a “gender order” (Ford and Brown 2006, 92). Considering I was not a local, it was easy to get trapped inside a patriarchal impact zone, where “hegemonic masculinities -- most often, white, English-speaking, middle class, heterosexual and able-bodied -- use other forms of masculinities” to assert their dominance (Ford and Brown, 2006, 92). I could try to subvert the gender order with my dismissive stares and subtle kick- and hand-splashes toward boys and men who positioned themselves too closely behind or in front of

¹¹⁸ In general, I preferred surfing alone. This was the alternative to the idea of “surfing’s mythology,” in which ideal waves are located only within an “isolated spot [...] with just a few friends. [...] “[T]he reality for most, particularly urban surfers,” surf scholar Mark Stranger writes, “is that their surfing is too often done in crowded conditions where participants are uninterested in any playful social interaction in the surf” (2011, 140).

me. My actions were by no means “frontal attacks” against them (Hoare and Smith 1971, 238). Instead, they were tactics derived from position politics.¹¹⁹

I wondered whether Muta, as a man of color, ever felt out of place in the water. I recalled a day when I opened the door to Middles’ port-o-pottie, where a white swastika waxed on the inner wall stared at me angrily. I snapped of a few photos of the hateful symbol of white supremacy. Then there was the encounter with WASP spray-painted along the Panhe Trail’s beaten curb. Overt racism, gender inequality, slithery rattlesnakes, dead sea life, damaged coral: These were the type of metabolisms that “produce[d] a series of both enabling (for powerful individuals and groups) and disabling (for marginalised individuals and groups) social and environmental conditions” (Swyngedouw and Heynen 2003, 911). “Do you ever feel out of place here?” I asked Muta. After a pause, he responded with, “Yeah... sometimes. Other times, everyone is like cool, bro, cool. No biggie.” We walked in silence with our boards toward the waves, paddling out to Lowers from the outside (slightly north of the main peak) on a maxed-out tide that shielded the bottom of my feet from sharp rocks.

The chest-high waves made the sound of a thousand wet towels being snapped into the air, mimicking the melody of water from buckets dumping onto a splash pad. There were only twenty surfers out, empty compared with other days of swell, but the energy was competitive and spiked with high-performance testosterone. Feeling rather generous, a trio of men hooted for me to take an oncoming wave, which I did gracelessly. My left foot slipped on old wax, and I fell, disappointed that my first dance with Lowers was so awkward. I tried again on the second wave a few sets later, but the results were equally embarrassing. A mixture of nerves and unfamiliarity with the surf break was affecting my performance. Using my fingernails, I scraped across the old wax to create more traction for my clumsy feet. My body relaxed atop my board with the third wave, a quick, unexciting zip across the face; several moments later, Muta began instructing me where to paddle and which wave to take. Each unsolicited suggestion aggravated me, feeding into my desire to surf alone. “Take that one,” he suggested, but I shook my head

¹¹⁹ I loosely apply ideas from Gramsci’s discussion regarding the state and civil society to show how militarized space and warfare affect behavior within Trestles’ surfscapes.

no. “That one.” *No.* “That one. *No.* “Just go for it,” he encouraged. I stared at him and half-chuckled. “I like to read the ocean at my own pace,” I said, minimizing the significance of the falls.¹²⁰



Photographs 1.12: These five images depict the residue of white supremacy, a global gender order and localism -- all which blight Trestles' material environment.

¹²⁰ Muta's advice underscores subtle ways that men antagonize power relations with athletic women. Offering advice without invitation reinforces "hegemonic masculine physical and narrative behaviors in the sporting arena" (Ford and Brown 2006, 20).

As the tide dropped slowly, Trestles turned into a militarized battle zone where surfboards were oversized weapons. Like a sneak attack, a crowd of wave soldiers suddenly doubled in size. Twice during my fight for more rides, two men reigned control of their boards, held back, and whooped for me to go. It was a privilege not afforded to Muta. I hit the lip of the expansive wave three times, did a cutback, floated along the foam and rode it until I was approximately 75 feet from shore. Paddling back out to the lineup, Muta shot me the “Shaka Brah” sign with his right hand. My smile was a covert dismissal of surf tips from a man ten years’ my junior. The experience surfing together, which lasted one hour and forty minutes, pushed me toward a different scope of analysis, more intersectional in nature but still limited. As a female surfer, my qualitative observations supported Ford and Brown’s argument that “many of these behaviors are nevertheless *authorized* because of the way they serve to reinforce actively hegemonic masculinities and the legitimacy of the white male, heterosexual vision of how [gender order] should be” (2006, 92). Between the two of us, however, I caught more waves, indicative not of skill level (we both had contest experience) but of our gender and race.

As the only white woman at Lowers for the first hour of the session, alongside Muta I held more power (which was very little, given I was a tourist and uninvited visitor). My wave rights were different than his based on my gender and race. I was given preferential treatment and wave priority on three separate accounts, something that seldom happened even at my home break in La Jolla. For Muta, however, men young and old dropped in on him left and right, forcing him to work the wave according to their positioning rather than his. Whether he realized my wave count was higher made no difference. It was tempting to argue that a racial hierarchy affected Muta’s number of rides, relegating him to the outside and inside of Lowers, rather than at its peak. That day, he was the only Black surfer among nineteen white people. Even so, I could not make this claim based on surfing Lowers only once. What I did know was that in a 2016 American Community Survey sponsored by the United States Census Bureau, only 0.6 percent of San Clemente’s population identified as “Black or African American”; 18.6 percent as “Hispanic or Latino (of any race),”; and 3.4 percent as Asian. These percentages paled in comparison with 86 percent of survey participants who considered themselves “white.” The skewed racial

percentages were comparable at Lowers, pointing to the fallacies of diversity in Trestles' local surfing population. They also suggested that coastal issues such as the 241 Toll Road controversy and sea-level rise disproportionately affected communities of color, particularly inland in places such as Mission Viejo city, where racial demographics shifted, the median value of housing dropped by nearly \$200,000, and per capita income decreased by almost \$7,000.

Had I spent more time surfing Lowers, perhaps my subjectivities would have shifted slightly, enough at least to account for insight from surfers who consider themselves racially ambiguous (defined as “of two or more races” in the American Community Survey). Ultimately, however, I felt powerless in terms of creating a more racially inclusive environment at Trestles, especially when tourism discourse appealed to the global surfing population and frequently contradicted my subjective experiences.¹²¹ Instead, I could shift attention to an issue that implicated the surf industry and remains more visible: the environmental impact of surf contests, particularly at Lowers. Doing so might better facilitate more robust conversations among researchers about the social costs produced by the commercialization of surfing, thereby creating stronger connections to race and racism at Trestles. In the following section, I focus solely on the environmental variable's role in the production of a surfscape because I am concerned about the future of sea-level rise at San Onofre State Beach, which eventually will affect Trestles as an ecosystem service.

Environment: The Visible Impact of Contests

San Onofre State Beach's contest season typically is in full swing by summertime. Such is the case on Thursday, June 23, 2016, with the International Surfing Association's (ISA) annual Surfing America USA Championships.¹²² “The institutionalization of surfing,” Ford and Brown write, “led to the creation of international associations, the most significant of which is probably [ISA]” in 1976 (2006, 97).

¹²¹ See: Crishana Haynes' “Lowers: The surf spot where everyone knows your nickname” (2015); Trestles Surf Crowd blog (2016); Josh Saul's “Surfin' USA: Waves Crowded as Number of Surfers Surges (July 23, 2016); Jade Bremner's “World's 50 best surf spots” (July 1, 2013).

¹²² The International Olympic Committee recognizes ISA as the “world-governing authority for surfing, stand-up paddling, prone paddling, bodyboarding and surfriding” (Surfing America, 2016).

White skin bronzed or boiled by the sun was the norm at the USA Championships.¹²³ Nine white tents were wrapped along the shoreline at Lovers, sheltering vendors and organizations from the summer sun. The “competitive surfing alliances” included: Hurley, Sunbum, Kind, Got Milk, Carver and the Surf Industry Manufacturers Association.¹²⁴ Competitors milled outside the tents while ten American flags perched atop a fence with a green, mesh windscreen blew in the southwesterly wind.¹²⁵ The contest was under control in the judges’ booth, where nasally commentary critiquing the performances of teenage boys in the 16-and-under semifinals blared from the loudspeakers. “He has so much canvass to work



Photograph 1.13: For \$25,000, Surfing America rented Lovers to host the Annual Surfing America USA Championships in June 2016.

with,” one judge said while the teen zipped along the wave’s wall. “Layback slash, rail wrap with a move out of the last turbulent section.” He paused while the other judge acknowledged the incoming tide. “The water’s been coming up higher than it’s been all week,” his partner said.

Indeed, a 3.8-foot high tide at 12:36 p.m. was quickly approaching, and it would eat up much of the beach. A strong south-southwest swell had mixed with a northwest windswell, generating slightly bumpy waves approximately five to nine feet high for the contest. Throughout the day, sets of shoulder-high to overhead waves peeled off the Pacific coastline for more than 100 yards in both directions due to

¹²³ See Surfing America’s 2016 roster of competitors and the team picture post-event.

¹²⁴ This term derives from the work of Ford and Brown, who outline the surf industry’s path to commercialization and identify “a range of global patriarchal ‘structures of organized sport that reflect and reinforce established patterns of gender inequality, as well as those of class, race and ethnicity’” (2006, 98 via Hall 1996, 32).

¹²⁵ In this state, Lovers was the space where surfing connected to a “global cultural flow” of ideas, objects, and all (non)living systems (Appadurai 1990, 297).

the direction and angles of the intertwined swells. The interval between each set sustained consistent, surfable conditions, predicted to fade heading into the weekend. More than 100 spectators speckled the beach, whistling and yelling in approval each time a trick was executed without fail. Despite the ideal summertime conditions and impressive surf talent, a significant section of Lowers was “closed” to “free surfers” -- that is, the surfing public. For \$25,000, Surfing America, an “ISA-recognized national governing body for surfing in the United States,” had rented “the cobblestone skatepark during prime season” for the USA Championships (Scheinbaum 2016).¹²⁶ Money commodified and regulated Lowers’ waves.¹²⁷ As the “social expression of value,” it also disrupted the summer rhythm of Trestles’ surfscape, giving the judge temporary control over private-public borders (Mann 2013, 117).¹²⁸ “Free surfers,” he yelled over the loudspeaker, “you’re creeping a little too far north. Please move south.”¹²⁹ His attention shifted back to the competitors, the air occasionally punctured by surf-tricks poetry: “vertical foam-climb,” “lip launch float,” “backside, throw-toe reverse,” “backside air,” “snaps it right there and becomes unstuck,” “gets hung up in the whitewater.”

A discarded flier for the US Performance Academy (USPA) caught my eye. Tuition for the full-year academic program was priced at \$12,100, which included up to six classes worth six academic credits. USPA student athletes in grades seven through twelve could help design their own “academic

¹²⁶ *The Inertia* contributor Chase Scheinbaum reports that the state parks’ Orange Coast District grants competition permits in bidding process. “[... A]mateur and pro-am comps must pay a minimum of \$30,000 per event at Lowers, though recent amateur comps paid just \$25,000. Professional-level comps must pay a minimum of \$100,000. Event organizers must also buy insurance and make a \$25,000 refundable damage deposit” (2016).

¹²⁷ In showing how money figures into the use of public space, an opportunity to explore the “materialization of hegemony” emerges (Mann 2013, 105). Gramsci found that the sphere of civil society was an important space for understanding cultural hegemony, which at San Onofre State Beach manifested via the surfscape. This was possible because hegemony “exercised” itself through property and its relationship with capitalism as an economic system, as well as the social bodies embedded in it. Hegemony was concealed in both space and money, and enacted through these bodies.

¹²⁸ Bringing a spatialized perspective to Gramsci’s discussion of hegemony, Mann argues the power that money exerts in civil and political society is overlooked. Yet in the geographer’s eyes, it is their “the common terrain” and “defines capitalist space, plain and simple. [...]” (Mann 2013, 119). As such, it ensures that “bourgeois state space” remains stable, and civil society responds accordingly. Bourgeoisie in Marxist terms signifies the social class that owns the means of production in a capitalist society (Mann 2013, 119). Members of this class may be involved with the state as a way of ensuring hegemonic order is established and sustained. The state beach/park system exemplifies how the bourgeoisie retains control over the use of certain politically public spaces.

¹²⁹ See Iatarola (2011) for a more detailed discussion about this process.

plan” with “learning coaches.” These individuals worked with the college counselor, virtual instructors and tutors to ensure learning outcomes were achieved. The private, educational service was marketed toward young surfers who had the financial means to enroll in the program. The yearly cost of being a self-educated, student-athlete surfer was steep, however, and there were no academic or professional promises upon graduating. The ad called for a discussion on the socio-cultural and economic impact that privatizing education had on student surfers. I craned my neck to watch four teenage surfers prepare for the 18-under female semifinals. The aquatic stage was set with two Hawaiians versus two Americans, an orthodox pairing for the U.S. contest scene.¹³⁰ As the air horn blasted to start the heat, bland voices from the speakers crooned today’s greatest hits and yesterday’s classics. No hip hop, salsa or merengue. Just boring, white surf music.

Destructive feet lumbered across the stones and rocks; tent poles impaled the sand; board wax melted atop stones; and tourists covertly peed into the bushes despite access to nearby port-o-potties. The environmental impacts seemed insignificant compared to the World Surf League’s “Hurley Pro at Trestles,” a competitive event that ran from September 7 until September 18, 2016.¹³¹ It was the Championship Tour’s “only stop on the U.S. mainland” and drew crowds too sizeable to adequately measure, though a minimum of 1500 spectators per day was a modest estimate.¹³² Contest attendees boosted the recreational value of the beach, a claim supported by a 2016 public records request from digital surf magazine *The Inertia*, which reported “the World Surf League shelled out \$150,000 (total per year) for the last few years running, to run the men and women’s Championship Tour events [...]” (Scheinbaum 2016).¹³³ But spectators also left ecological footprints. Acknowledging this in 2011,

¹³⁰ Ford and Brown conceptualize the term “world gender order” as “both a product and a reciprocal part of the globalization process” of surfing (2006, 96).

¹³¹ Per Steve Long’s 20-year-old “rules governing contest season” at Lowers: “Events can run only nine hours each day” and only “one day per weekend; the other day is left for the public” (Scheinbaum 2016).

¹³² This estimate is based on the prospective number of travelers per car parked along the old Pacific Coast Highway, which Crain notes “can accommodate up to 500 cars” (2014, 15). Before the Association of Surfing Professionals became the World Surf League, the contest was known as the “Lowers Pro.” See the *Orange County Register*’s “Pro event at Lower Trestles ends 24-year run: A lack of sponsorship derails the ASP Prime contest known for showcasing best surfers.” The contest was restored in 2014 under the sponsorship of Hurley.

¹³³ Nelsen writes, “The recreational value of a beach is proportional to attendance” (2012, 116).

California State Parks had expressed a desire to “reduce attendance -- asking sponsors to host webcasts or alternative ways to spectate” (Crain 2011, 5).

Such a goal seemed far-fetched, if not abandoned, as I took pictures of workers erecting a two-story structure with steel beams and planks on August 31, 2016, (one week before the Hurley Pro began). The heavy frames sat atop the sand, weighing into the earth and blocking the bushes’ view of the ocean. The dirt service path between Lowers and Middles was still passable for state park vehicles; massive construction materials engulfed the rest of the beach, however. Lowers’ temporary state exposed tension between basic tenets of environmentalism and the commodification of surfing. At the fore was sand depletion, beach erosion, sea-level rise and the future of Trestles’ shrinking beaches. During a week when 5- to 6-foot high tides were the norm, these concerns took center stage for contest organizers, who could no longer ignore that the space between the Hurley Pro headquarters and Lowers’ waves is shortening.

Over time, erosion will limit the number of beach visits to Trestles, thereby reducing its recreational value (Nelsen 2012, 117, 151). A subsequent decrease in contest spectatorship will hinder surf tourism revenue for the city of San Clemente and California State Parks. “[T]hose losses,” Nelsen argues, could be “significant. For example, a 50 [percent] decrease in width of San Clemente beaches [could result] in an annual loss of over \$8 million in consumer surplus and over 100,000 fewer beach visits” (2012, 117).¹³⁴ Given the sizeable crowd watching the Hurley Pro in 2016, beach width seemed hardly an issue that demands immediate attention. High, encroaching tidal lines at Lowers, however, eventually will force the discussion, calling into question the success of the Saves Trestles campaign. Toll road or not, Trestles’ beaches are eroding, and sea-level rise challenges the idea that this surfscape can be saved forever. The commercial shift toward artificial wave pools is as much of a threat to public accessibility to free waves as is sea-level rise. Ultimately, large-scale events such as the Hurley Pro endanger the ecological and cultural resources that environmentalists and surfers are trying to protect.

¹³⁴ By consumer surplus Nelsen means “the economic value associated with the use of a public resource” (2012, 2). These projections are based on a “random utility model” that estimates the economic impact of beach attendance in response to sea-level rise (2012, 117).

Perhaps this is one reason why in November 2017 the World Surf League announced it has relocated the longstanding Hurley Pro and Swatch Women's Pro at Lower to famed surfer Kelly Slater's Surf Ranch, a "new man-made wave hundreds of miles away from the coast" (Connelly 2017).

The intention of this chapter was to introduce and analyze four key variables tied to the production of a surfscape: Trestles bathymetrical advantages; its rich but violent history of colonization; the subjectivities of a female surf scholar; and the visible environmental impact of the surf industry's contest season. Each variable is integral to the surfscape's formation, as is the establishment of borders via the missionization, commercialization and militarization of public space. The city of San Clemente has been able to affix economic value to surf breaks because of Trestles' unique bathymetry, which conjoins with three main creeks that aid the flow of sediment, stones and rocks from the San Mateo Point watershed into the Pacific Ocean. The rhythms of these natural resources create waves, which attract a global population of surfers and tourists. Surfonomics, as Nelsen and Pendleton explain in their study, quantifies Trestles' social value. The issue with economic data, however, is that it often diminishes the cultural intricacies of San Onofre State Beach. For this reason, deconstructing cultural artifacts, power relations and human agency is a necessary intervention (Harley 1989, 1-3).¹³⁵

Since the 1970s, Trestles has been on the global radar for surf tourism, its depoliticized aura drawing visitors from around the world. The flow of bodies and money is not without cultural and environmental consequences, however, evidenced by the surf industry's exploitative contest season. Until accessibility to Trestles is fully compromised or the ecosystem service collapses indefinitely, many surfers will continue overlooking the impact their spatial practice and consumptive behavior has on their ecological surroundings and social relations -- both of which factor into the production of a surfscape. Materiality and development are central to surfing's existence, yet they also compromise or destroy waves as a reproducible resource.

¹³⁵ See Harley's *The New Nature of Maps: Essays in the History of Cartography* (2001).



Photograph 1.14: Preparation for the Hurley Pro at Trestles took more than a week. The long- and short-term environmental impacts of the crowd size and construction materials have not been disclosed.

In the following chapter, I explain how the 241 Toll Road proposal has threatened the functionality of Trestles as an ecosystem service, bringing to the fore several perspectives from social actors involved in the controversial project. Protecting public recreational space from privatization and development demands time, money, labor and legal resources. When all are readily available, the potential for sophisticated forms of civic mobilization increases, as seen with the formation of the SSOC. In Chapter 2, this unlikely coalition of forces, which include environmentalists, local and global surfers, JBMAN members, scientists and elected officials, come together to stop the toll road. I focus on collective activity and responses from stakeholders invested in the Save Trestles and Save Our State Parks campaigns. My principle interest lies with Save Trestles, as the surfscapes become a space where the

seemingly divergent politics of these alliances of forces congeal in opposition to the state highway system and developers.



Photograph 1.15: A view from the water. Photo courtesy of Surflines.com.

Chapter 2: The ‘Save Trestles’ Campaign

In the previous chapter, I examined the history of San Clemente and multiple forces at play in the production of Trestles as a surfscapes. Chapter 2 focuses on the toll road extension as an ongoing threat, irrespective of the November 2016 historic legal settlement that prohibits it from being built through San Onofre State Beach, the San Mateo Creek Watershed, and the Richard & Donna O’Neill Conservancy. Despite the victory cries of “Trestles Saved Forever,” plans for the toll road are malleable and being re-conceptualized as I write. The Orange County Transportation Authority (OCTA) still categorizes SR-241, with a current terminus at Oso Parkway, as a regional highway in need of infrastructural improvements that are expected to extend from Cow Camp Road near the Ortega Highway to Interstate 5 (OCTA 2014, 42).¹³⁶ The relentless toll road plans have given birth to and sustained two overlapping circles of opposition, which I am calling “Pro Toll Road” and “No Toll Road” stakeholders. This binary is useful for creating a basic paradigm of dissent.¹³⁷

The Save San Onofre Coalition (SSOC) has been a powerful voice against the toll road for more than a decade. Coalition members continue to closely monitor long- and short-range transportation plans that affect Orange and San Diego Counties, particularly projects that can or will compromise the landscape surrounding Trestles. SSOC draws from twelve heterogeneous groups of advocates, activists and wildlife ecologists fighting for environmental justice, preservation of open space, public beach access and conservation of wildlife (including endangered species). Coalition members have teamed up with social justice groups that are fighting to improve park access while creating more democratic, livable spaces for inland and inner-city residents. SSOC also has joined forces with indigenous leaders from the Juaneño

¹³⁶ The *Orange County Master Plan of Arterial Highways* still includes the toll road extension. OCTA is also expected to update the *Outlook 2035 Long Range Transportation Plan*, initially released in 2014, in 2018. The toll road is listed as necessary infrastructure in multiple long-range transportation plans. Interstate 5 will be referred to as I-5 in all subsequent references.

¹³⁷ The terms “pro” and “no” can be misleading; there are groups that support certain aspects of development (creation of a casino, for example) provided that a landscape’s environmental integrity is maintained. Equally, groups that fall under the pro-development category in the Save Trestles case study may reject specific projects that compromise the environmental integrity of other landscape(s) under consideration. There is room for fluidity between these two dominant categories.

Band of Mission Indians (JBMAN), as well as indigenous rights groups such as the United Coalition to Protect Panhe (UCPP), to build a stronger base of Native Americans against the Transportation Corridor Agencies' (TCA) toll road plans. SSOC's counter-attacks against the extension have included: engaging in public protests, attending board meetings for water-quality and planning agencies, submitting public comments against projects that resemble SR-241 extension plans, lobbying local and state officials and, of course, rallying supporters for the Save Trestles campaign.

SSOC and its allies have successfully thwarted TCA's plans for a toll road thus far, marking a series of important and unlikely political victories in California's history of environmentalism and development. Arguably, however, the Save Trestles victory would not have been possible without the support of the Department of Navy and the United States Marine Corps, who ultimately own the land that has become known as San Onofre State Beach.¹³⁸ This chapter addresses the countervailing forces that come together to defend San Onofre State Beach and Trestles as a public good. I intertwine Trestles as a surfscape in my analysis of the controversy. This chapter also explores how, despite different social objectives and ideologies, stakeholders' strategic shift toward an environmentalist project, as well as their rapid, cohesive mobilization against TCA, has been effective at the local, state and federal levels. A unique set of circumstances draw in disparate groups that assume responsibility for ensuring tenets of the California Coastal Act of 1976, "which delineates enforceable policies and seeks to balance the right to develop with strong policies to protect natural resources," are upheld, and recreational interests with cultural value are protected (Surfrider 2009, 60).

At the same time, researchers must not neglect to understand how the surfing industry and surfers dominate the headlines, co-opting the other forces into these interests. I attend to the role of surfers in the Save Trestles campaign, as they were among 3,000 activists who convened outside of the Del Mar Racetrack in San Diego County in February 2008 to protest the toll road. Building on ten Bos' proposal for "amphibious anthropology," I argue that surfers' "escape to the sea can be seen as a form of

¹³⁸ The official name of California State Parks is the California Department of Parks and Recreation.

resistance” (2009, 83).¹³⁹ In other words, their relationship with land and water influences their participation in terrestrial and aquatic politics, as well as their positioning against projects that threaten their recreational livelihood. This chapter draws on interviews with seven stakeholders. Collective activity against any future plans for the SR-241 extension have not abated, nor will they anytime soon. The Save Trestles outcome remains tenuous because San Onofre State Beach’s lease with the Department of Navy ends in 2021. As this chapter will show, the military is an unreliable ally.¹⁴⁰

‘Pro Toll Road’ Stakeholders

This section presents TCA as the principle supporter and mastermind of the 241 Toll Road. An overview of the public agency is needed to explain the innerworkings of the toll road system in Southern California, and from where and how this controversial plan originated. It is not my intent to demonize TCA, particularly because interviews with agency representatives are absent in this dissertation.¹⁴¹ Rather, I provide a synopsis of its leading role in the controversy, drawing on publicly available documents such as letters to federal officials and “debunking” materials (2007) to create the Pro Toll Road position with historical and discursive context. The trails of communication between partnering agencies and governmental officials are useful because they underscore the environmental and financial complexities of intercounty transportation-planning. Agenda items, resolutions, public comments, Environmental Impact Reports (EIRs), consulting documents and letters also reveal how the toll road becomes part of public discourse and collective consciousness. My conversations with planners from the San Diego

¹³⁹ Ford and Brown note “[t]here has always been [...] a thread of ecological concern running through the surf media, and the surfing world does contain some substantial ecologically oriented bodies, such as Surfers Against Sewage in the UK and the Surfrider Foundation in the USA (2006, 51-52).”

¹⁴⁰ Reflecting on TCA’s proposed alignments, Major General Anthony L. Jackson and Colonel Nick Marano wrote in 2010: “Marine Corps Base Camp Pendleton first became aware of Orange County’s vision of building a toll road through the Base’s property in 1984, 26 years ago. The Marine Corps initially opposed the Orange County, and later, TCA proposal. However, the Marine Corps did offer the possibility of accommodation in mid-1998 when the Commandment of the Marine Corps stated that on-base routing might be possible, but only if the toll road could be located on an area of the base that did not negatively impact Camp Pendleton’s training mission. [...] The Marine Corps has never wavered on its position regarding a potential Camp Pendleton alignment of the toll road during its [ongoing] history with this project.”

¹⁴¹ The weakness in my model of communication in this case study is that neither TCA nor individual toll road supporters have an equal opportunity to respond or contextualize past discourse or planning processes.

Association of Governments (SANDAG), “a public planning, transportation and research agency,” are meant to show how miscommunication with TCA and mismatching regional transportation plans during the early 2000s ultimately heightened public awareness about the future of Trestles as a surfscapescape *and* popular ecosystem service.¹⁴² These points of interest lay the groundwork for coalition-building and environmental resistance that provoke federal intervention, eventually resulting in a major legal victory for No Toll Road stakeholders.

In Orange County, California, toll roads are built under the authority of two joint-power authorities: Foothills/Eastern Transportation Corridor Agency (F/ETCA) and San Joaquin Hills Transportation Corridor Agency, both established in 1986 by the State Legislature.¹⁴³ Together, they form the TCA, which is governed by locally elected officials who oversee financing, construction and operation of Orange County’s 67-mile public toll road system. Anticipating opposition, TCA, the driving force behind the proposal to build through “320 acres of San Onofre State Beach’s ecologically sensitive habitat,” formed an alliance of 241 Toll Road supporters (Tempest 2005). The agency’s network of support included city councilmembers from among Orange County’s 34 incorporated cities, as well as private and institutional investors who buy bonds to fund public infrastructure. Bond debt has plagued the toll roads’ long-term financial situation, with development leading to an accumulation of outstanding debt over time. TCA depends on development fees and future tolls to repay monies owed. Although the agencies help create public highways, in the case of the 241 Toll Road extension, private funds would have supplied the infrastructure. Critics of the agencies have long argued that the funding structure makes

¹⁴² See www.sandag.org “About SANDAG.”

¹⁴³ F/ETCA members include the County of Orange, Rancho Santa Margarita, San Clemente, Dana Point, Irvine, Anaheim, Lake Forest, Mission Viejo Orange, San Juan Capistrano, Santa Ana, Tustin, and Yorba Linda. SJHTCA also comprises the County of Orange, San Clemente, Dana Point, Irvine, Mission Viejo, San Juan Capistrano, Santa Ana, Laguna Hills, Laguna Woods, Laguna Niguel and Newport Beach.

privatizing public transportation possible and too susceptible to outside interests.¹⁴⁴ They consider toll roads a threat to public space rather than “valuable, congestion-free alternatives to local freeways.”¹⁴⁵

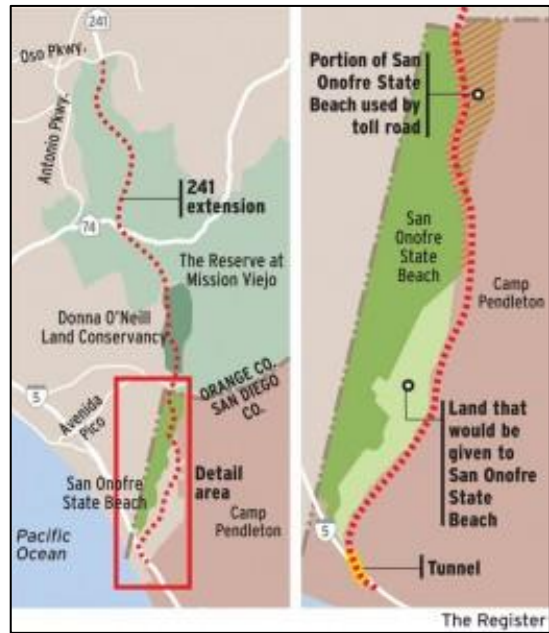


Figure 2.1: A rendering of the proposed 241 Toll Road extension that appeared frequently in the *Orange County Register* between 2007 to 2008.

A powerful contingent of more than 100 elected federal, state and local officials approved of the project. U.S. Republican Representatives Darrell Issa (Oceanside, Vista, and Encinitas) and John Campbell (south Orange County), as well as Republican State Senators Dick Ackerman (inland Orange County) and Mark Wyland (north San Diego and south Orange County), were among them. Other proponents included twelve Chambers of Commerce throughout both counties, along with a multitude of

¹⁴⁴ No Toll Road groups took major issue with TCA’s outstanding debt. TCA’s financial situation is one way in which the agencies become “integrated into the political” (Lefebvre 1991, 32). Lefebvre acknowledges the effects of this spatial-political combination when he writes: “Focused zones exert influences in all directions, and these influences may be ‘cultural’, ideological, or of some other kind. It is not political power *per se* that produces space; it does reproduce space, however, inasmuch as it is the locus and context of the reproduction of social relationships - - [...] for which it is responsible” (1991, 32).

¹⁴⁵ See details of TCA’s response in “241/ Foothill-South.” The toll road system then functioned as a symbol of private-public economic domination in what Lefebvre calls “representations of space.” This idea underscores how “a certain type of artist with a scientific bent” -- such as an urban planner, architect or developer -- gains control of her surroundings via structures (Lefebvre 1991, 38). Some of the resistance toward the toll road stemmed from a desire to save endangered wildlife and nature, whose “space is not staged” (Lefebvre 1991, 70). Staged in this sense signified being urbanized for industrial productivity; engineered for domination; arranged by corporate interests; or choreographed for mass transportation

State Assembly members and mayors.¹⁴⁶ In 2005, Rone Tempest of the *Los Angeles Times* explained: “Public support for the project [was] strongest in south Orange County, where Interstate 5 is clogged by as many as 220,000 trips a day by motorists.” Supporters believed the toll road, which became institutionalized in California and Orange County’s transportation discourse as early as 1981, was a viable solution for unclogging the arterial network (Ott 2007, 6).¹⁴⁷

But Orange County’s master plan as well as TCA’s toll road extension proposal failed to anticipate how integral surfing would be to San Clemente’s economy, despite signs in 1954 that San Onofre was “fast turning into another Waikiki.”¹⁴⁸ Planning and transportation agencies also dismissed the cultural significance of the Panhe Trail and 9,000-year-old Acjachemen baptismal site, located in the sensitive corridor that straddles both San Diego and Orange Counties. If constructed, the toll road would destroy these landmarks. Even so, supporters saw it as a multipronged solution in the works for more than 20 years that would help fix the state’s commuting and financial woes. TCA prioritized the new infrastructure’s economic benefits, arguing it would create additional employment opportunities in Orange County’s transportation sector, which had generated \$1.2 billion in ocean economy wages by 2004. This line of reasoning appealed to supporters, even more so two years later as signs of a slowing economy emerged. Although California’s unemployment rate remained steady at 4.9 percent throughout 2006, at the onset of the subprime mortgage crisis and global economic slowdown of 2007-2008, jobless

¹⁴⁶ For an exhaustive list of project supporters, see the City of Solana Beach’s October 2007 Staff Report. More than 100 names of elected officials, appointed officials and organizations are listed.

¹⁴⁷ In an Environmental Impact Statement dated April 26, 2004, “a conceptual alignment for the transportation corridor facility” became part of Orange County’s *Master Plan of Arterial Highways* in the final EIR. See *Atherton v. Orange County Board of Supervisors* (Aug. 22, 1983) for a legal history of the original report, which points to early resistance against what was then called the “Foothill Transportation Corridor.” Trestles and the toll road are entrenched in what Doreen Massey calls a “capitalist system. She argues this type of system “gets worked out in people’s lives in the detailed specificity of a vast variety of local situations. What is really happening *is* actually very varied,” as demonstrated by the multitude of documents tied to the controversy as well as stakeholders involved (1994, 82).

¹⁴⁸ See: *Los Angeles Times* news item (Monday, Aug. 30, 1954).

levels fluctuated between 5 percent and 8.9 percent.¹⁴⁹ The weakened job market coincided with the state's demand for a more efficient flow of goods between Orange and San Diego Counties.¹⁵⁰

As is the case with many plans for development, economic growth and job creation superseded the protection of public park and beach space. Cities throughout Southern California jumped on board, and political support for the project steadily grew. Former Mayor Carolyn Cavecche of the City of Orange, for instance, endorsed the toll road, as did the cities of Carlsbad, Corona, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, Mission Viejo, Rancho Santa Margarita, San Juan Capistrano, Tustin and Villa Park. In San Diego, SANDAG included the toll road in the *1996/2020 Regional Transportation Plan* (RTP) with the total cost initially estimated at \$265 million (SANDAG 2000, 75). Within eight years, it skyrocketed to \$407 million, with the first phase ideally built by 2007 (\$223 million) and the second (\$184 million) by 2015 (SANDAG 2004, 1-2).¹⁵¹

Critics quickly pointed out that the mushrooming costs and TCA's debt overshadowed the potential economic benefits of the project. To counter this argument, TCA solicited the services of consulting firm LeCG to show through quantitative data and economic studies how the toll road helped save businesses money and "improved access to some of the region's recreational and commercial areas with direct benefits for visitors" (LeCG 2006, 5-8). Additional LeCG data suggested the impacts of traffic on I-5 increased emission levels, which TCA framed as a significant environmental problem that called for more efficient ways to alleviate congestion. The agencies argued that the 241 Toll Road extension would "accommodate the needs of the traveling public" and improve most vehicles' fuel efficiency (LeCG 2006, 5-8). TCA also reminded critics it had collaborated for six years with the U.S. Fish & Wildlife Service, Camp Pendleton Army Corps of Engineers, National Marine Fisheries Service, Federal

¹⁴⁹ The unemployment rate steadily increased from 5 percent to 6 percent, eventually reaching a high of 12.2 percent by 2010; jobless rate data provided by the United States Department of Labor's Bureau of Labor Statistics.

¹⁵⁰ See the Governor's Office of Planning and Research for more information on local general plans and climate-change initiatives at the local and state levels.

¹⁵¹ In SANDAG's finalized *2030 Constrained RTP: 2006 Update*, the cumulative cost of a six-lane toll road was \$6.2 billion if built by 2020 (2006, 55-56). SANDAG describes this document released in February 2006 as a technical update to the *Mobility 2030 RTP*, approved and adopted by the Board of Directors on March 28, 2003.

Highway Administration and the Environmental Protection Agency to produce the “most environmentally sensitive road possible” (Ott 2007, 6).¹⁵² As such, OCTA’s “long-term plans assume[d] that the 241 will be completed” with the help of metropolitan planning organizations (MPOs) such as SANDAG and the Southern California Association of Governments’ (SCAG) (Ott 2007, 6).

SCAG comprises a region of six counties that include: OCTA; Ventura County Transportation Commission; Los Angeles County Metropolitan Transportation Authority; San Bernardino County Transportation Commission; Riverside County Transportation Commission; and Imperial County Transportation Commission. SCAG’s role in the 241 Toll Road controversy is important because its region would house “the majority of the [...] facility” (SANDAG 2005, 11). MPOs provide an original transportation plan every four years. They emerged from the Federal-Aid Highway Act of 1962 as a mandated means of bringing local government officials into conversation with transportation agencies and governmental representatives about new and existing transportation policies and projects in growing urban areas. Elisa Arias, a principal planner who has worked at SANDAG for more than 22 years, describes the association as a “single-county MPO” that works in “close collaboration” with “sister agency” SCAG.¹⁵³ “For us, it’s basically coordination with SCAG [...]” that ensures transportation-improvement projects move along and are realized, she said. Explaining how the 241 Toll Road extension became part of the original *Orange County Master Plan of Arterial Highways*, Arias added: “The way it works with MPOs in Southern California is that you have a transportation commission. OCTA prepares their own county long-range plan that they then submit to SCAG as the MPO. [...]” Riverside, Imperial

¹⁵² On October 9, 2007, then-City Councilmember Mark Murphy, who represented the City of Orange, called the extension “the most environmentally friendly of all alternatives” that would not result in “hundreds of homes and businesses being demolished” (2007, 8). Murphy based his claims on TCA’s argument that “widening Interstate 5 would cost more than \$2 billion, which no funding [had] been identified for, and [...] require moving more than 800 homes and 300 businesses” (TCA 2007, 12). The commission’s approval would have enabled construction of the corridor based on the lack of affordable alternatives to improve traffic conditions on Interstate 5. The following day in Solana Beach, San Diego, sentiments shifted, however. The City Council voted to publicly oppose the SR-241 extension, instructing staff “to return [...] with a formal resolution” that outlined the discussion regarding the recommendation (Solana Beach 2008, 1). Oceanside (San Clemente’s southerly neighbor) also rejected plans for the toll road. The cities’ stances pointed to fractured support in north San Diego County, setting the stage for future intercounty fighting over regional transportation planning, land use and development.

¹⁵³ My telephone interview with Arias occurred on May 6, 2016.

and Los Angeles Counties, which are under the purview of SCAG, provide their long-range development plans as well. SCAG then “aggregates those plans into a metropolitan transportation plan,” she said.

My interview with Heather Adamson, who served as former senior regional planner at SANDAG from 1998 to 2012, points to the complex channels of communication that MPOs navigate to develop regional transportation networks. Adamson describes her past involvement with the association “at the high-level coordination as it related to long-range plans. Some of the work that I did there,” she said, “I coordinated with [OCTA] on joint studies on the I-5 corridor and what happened at the county line.” A part of that coordination involved determining how many lanes the toll road would have. Between 1996 and 2003, the number fluctuated in regional transportation plans, which gave environmentalists grounds for amplifying the ecological impacts based on the project’s final design. On December 10, 2004, TCA proposed amending SANDAG’s *Mobility 2030: The Transportation Plan for the Region of San Diego* (2003), referred to here as the *2030 RTP*, to change the facility from six lanes to eight, two of which would be used for High Occupancy Vehicles (HOV) (2005). In the *2030 RTP*, SANDAG listed six lanes total, which did not match project descriptions included in SCAG’s plans. Describing the inconsistencies, Adamson, who was the project manager for the amendment process, said:

Well, so back and forth -- there’s always back-and-forth about how many lanes the full build-out of the project was going to be. So back in our [*1996/2030 RTP*], it identified the project as an eight-lane facility that would actually be six freeway toll lanes, plus two HOV lanes, [meaning] three full lanes and an HOV lane in each direction.¹⁵⁴ [...] So, it basically went from an eight lane to a six lane to an eight lane in three of our consecutive updates. And then we updated the cost as well. That’s what the amendment that we did in early 2005 included.

SANDAG’s Board of Directors recommended approving and adopting the revisions “to properly identify the SR 241 toll road as an eight-lane facility, consistent with TCA’s plans” (SANDAG 2004).

Both the association and TCA agreed that amending the *2030 RTP* was needed for consistency purposes

¹⁵⁴ Agenda Item No. 05-05-1B states: “The previously RTP adopted in 1996 defined this facility as an eight-lane facility.”

regarding air quality conformity, but that the ecological effects were negligible.¹⁵⁵ I asked Adamson if she could recall any of the association's reservations about making amendments, and she responded:

Well, we kind of felt that it was not really our project. A very, very small portion of it came through San Diego County, and so it was a lot of -- to amend the document was something that SANDAG had never done before. SANDAG had never amended its [regional transportation plans], and so to amend it for a project [...] that wasn't necessarily a San Diego area-sponsored project -- that was a lot of work on our part. But we did need to do it for consistency purposes, mainly for the air quality conformity.

The board indicated that it was outside SANDAG's jurisdiction to resolve any additional findings that showed detrimental, environmental impacts from the toll road (2005, 2). This strategic positioning enabled the association to sidestep any in-depth conversations about the future of San Onofre State Beach, Trestles and the Acjachemen baptismal site.

Amendments in the *2030 RTP* during 2005, however, signaled ongoing discrepancies between agencies about the number of lanes and total project cost, which increased to \$552 million without a clear explanation why (SANDAG 2007, 6-29). SANDAG asterisked the project as "privately funded," opening the doors of hostility from public space advocates including The City Project, California State Parks and Recreation Commission, and the Center for Law in the Public Interest. HOV lanes also disappeared from the previously amended plans altogether, thereby creating a simple eight-lane facility that TCA claimed would better facilitate traffic and improve water quality affected by urban runoff and inefficient stormwater mitigation. On Friday, January 28, 2005, SANDAG's Board of Directors held a public hearing to give a "State of the Commute," in which members unanimously expressed their support to pass and adopt the amendment. The association's resolution concluded: "No comments made in the public hearings conducted by SANDAG or any additional information submitted to SANDAG have produced new significant information requiring recirculation or additional environmental review under [California Environmental Quality Act] guidelines" (2005, 2).

¹⁵⁵ According to SANDAG transportation committee's agenda report: "An addendum to the Final EIR is appropriate and adequate since there are no substantial changes to the plan that will require major revisions to the Final [Environmental Impact Report] due to new significant environmental impacts or a substantial increase in the severity of impacts identified in the Final EIR" (2004, 1).

Inconsistencies in regional transportation plans, however, fed into public distrust toward TCA. Despite growing resistance to the SR-241 extension, a 30-day comment period passed without written opposition to the *2030 RTP* amendment (SANDAG 2005). TCA, on the other hand, “[...] received over 6,000 comments and [were] working to respond to them” (SANDAG 2005, 11). On February 25, 2005, merely a month after SANDAG ratified the amendment, Chuck Lungerhausen, self-identified as a “member of the public,” attended the public hearing and asked SANDAG senior planner Rob Rundle “how adding two lanes has no significant impacts when there will be an impact to San Diego County from this freeway” (SANDAG 2005, 12). His question pointed to a slow sprawl of interregional skepticism over TCA’s environmental claims. In addition to the economic benefits, TCA argued the new infrastructure would minimize impacts to endangered species including the Pacific Pocket Mouse; create four wildlife crossings; and help restore native habitats. Defending the project, Rundle responded that EIR “does identify impacts with the entire program and acknowledges impacts with this facility,” but that quantified “impacts of each individual corridor” were in “subsequent documents. Only three [out of 10 proposed] alternatives have portions within San Diego County,” he added (SANDAG 2005, 12). SANDAG assured there would be another public hearing to discuss and respond to planning and environmental concerns.¹⁵⁶

The following section elaborates on those worries, detailing how incompatible ideas about land use amplified tensions and triggered reactions from advocates for open space and public beach access. Twelve environmental groups also lambasted TCA’s toll road extension proposal, including: California State Parks Foundation; Defenders of Wildlife; Endangered Habitats League; Laguna Greenbelt Inc.; Sierra Club California; Surfrider Foundation; Sea and Sage Audubon Society; Audubon California; Orange County Coastkeeper and Wildcoast/Costasalvaje. Together they formed Save San Onofre Coalition (SSOC), drawing

¹⁵⁶ In November 2011, SANDAG adopted the *2050 Regional Transportation Plan*, in which the 241 Toll Road extension was still included.

extensive support from other toll road opponents who included recreational beach- and parkgoers, scientists, then-California State Treasurer Bill Lockyer and former state Senator Christine Kehoe.¹⁵⁷ Surfers and the global surf industry voiced opposition and mobilized as well. These overlapping, entangled and competing interests ultimately underscore what makes Save Trestles unique, bringing stakeholders into a time-specific and place-specific coalition. Their interests and positions align and coalesce just enough to stop the toll road and defend a fragile space.

Yet the campaign still has its own internal politics and misalignments, which become visible with the co-optation of the Acjachemen baptismal site and Panhe Trail into the Save Trestles narrative. These cultural landmarks surely serve the surf industry and global surfing population, but I argue very little is done in return to help JBMAN, particularly with the indigenous group's quest for federal recognition. I draw from interviews with five No Toll Road stakeholders to parse out how these forces came together to shape a campaign that, though effective, is not devoid of ideological incoherencies or inequities in economic and political power. My reason for incorporating No Toll Road perspectives is to provide reflective responses to TCA's historical arguments for building a toll road. The stakeholders explain how and why SSOC formed and No Toll Road campaigns have been effective so far in defeating the proposed alignment.¹⁵⁸ Save Trestles' most publicized role in fighting the toll road obviously comes from surfers and the surf industry, which is wed to capitalist ideology and a neoliberal enterprise. This coupling produces interesting tension. The Save Trestles campaign is not just about environmental justice or everyone coming together harmoniously to defeat TCA's extension proposal. Contradictions abound because in the end, the surfing industry and TCA are equally complicit in the demise of the surfscape.

¹⁵⁷ Kehoe represented the 39th District of San Diego from 2004 until 2012.

¹⁵⁸ Our conversations preceded a significant turning point in November 2016, when TCA resolved five lawsuits spearheaded by the California Attorney General and SSOC; they pertained to 2006 and 2013 approvals of the Foothill-South and Tesoro extension projects.

‘No Toll Road’ Stakeholders

Political tension ignited in San Clemente on November 3, 2005, when a public discussion regarding the SR-241 extension proposal ended on a foul note between the No and Pro Toll Road contingents. By November 19, 2005, the controversy expanded to a public meeting in Tahoe City, where “[...] the State Park and Recreation Commission urged [Governor] Arnold Schwarzenegger to block the controversial 16-mile project” (Tempest 2005). California’s governor had neither confirmed nor denied his support for it. Brittany McKee, a representative for the grassroots environmental organization Sierra Club, presented “1000 letters and postcards addressed to Schwarzenegger asking him to stop the project” (Tempest 2005). As TCA’s efforts ramped up, opponents urged then-Attorney General Bill Lockyer to file a lawsuit to stop the toll road. The power of the state became more visible through Schwarzenegger, Lockyer and the commission, which was chaired by Bobby Shriver (a Santa Monica City Councilmember and Schwarzenegger’s former brother-in-law).¹⁵⁹ Remaining members included: Paul Junger Witt, Gail Kautz, Caryl Hart, Joseph Cotchett, Sophia Scherman, Acquannetta Warren, Phillip H. Tagami and Vice Chair Clint Eastwood, the famous Hollywood actor.

Eastwood chaired the discussion due to Shriver’s familial conflict of interest. Reflecting on his relationship with Trestles, he said at the meeting: “I used to surf down there in San Onofre in the early 1950s. [...] I don’t find the idea of putting a highway through a state park very appealing” (Tempest 2005). The commission’s “Annual Report to the Governor on the California State Park System 2005-2006” called the Foothill South Toll Road “inconsistent with the protection of the park’s resources.” It advised stakeholders to pursue “adequate alternatives to the proposed route through the State Beach” (2005-2006, 6). The State Park and Recreation Commission’s stance against the toll road congealed with the political interests of surfers, who were also in Tahoe City to address Trestles’ future, which they believed that the toll road would doom. At the meeting, James Brown, former chief engineer for TCA,

¹⁵⁹ Appadurai argues that ideoscapes make room for “state ideologies” and “counter-ideologies of movements explicitly oriented to capturing state power or a piece of it” (1990, 282). Appadurai’s notion of this specific scape accounts for the impact that politics and political involvement have on humans’ relationship with the (built) environment.

argued there was no foundation for claims that the transportation project would destroy the surf breaks. “The project will be no closer to Trestles beach than the existing Interstate 5,” he argued (Tempest 2005). Senator Dick Ackerman (Irvine) agreed, adding: “Those who claim it will destroy the beach and parkland are crying wolf” (Tempest 2005).

Brown and Ackerman’s arguments were grounded in data from consultants including Geosoils Inc. and RBJ Consulting, whose studies aimed to show there would be “no effect in sediment movement” from the project (Ott 2007, 7). William J. White and Kevin Bundy of environmental law firm Shute, Mihaly & Weinberger LLP disagreed, taking turns to invalidate geological findings in TCA’s Skelly Engineering reports. The attorneys argued sediment composition, not just volume of the sediment, shaped the formation of Trestles’ surf. The reports neglected to address how the toll road affected the surfscapes’ “mouth morphology” and “San Mateo Creek watershed processes,” central to the production of Trestles’ famous waves (White and Bundy 2006, 33; Philip Williams & Associates, Ltd., Jan. 11, 2006). White and Bundy also maintained that “increasing sediment to transport-limited streams alters the *composition* of the sediments transported, increasing fine sediment delivery and causing increased deposition of coarser sediment” (2006, 34).

Arguably these objectives outlined in the toll road proposal demonstrated different environmental conceptions of ecosystem functionality. People who considered San Onofre State Beach and Trestles as a cultural treasure and ecologically vibrant refuge from the city rejected TCA’s plans for reconfiguring the sparsely developed space. News about the controversy spread widely, echoing across the globe in media outlets including London’s *The Telegraph* and Zagreb-based *dalje.com* in Croatia.¹⁶⁰ In San Diego, television news stations KFMB Channel 8 and KNSD (NBC’s virtual channel 39) ran stories as well.¹⁶¹

¹⁶⁰ See: *The Telegraph*’s “Legendary Beach Boys’ breakers threatened by road project, surfers claim” (October 15, 2006) and *dalje.com*’s “Surfers Win First Round Vs California Toll Road” (February 8, 2008, English edition).

¹⁶¹ Reflecting on the media’s coverage of toll road controversy, surf activist Matt Melin said: “In 2007, going in 2006 and 2007, I believe the media was a little bit more responsible than they are now. We did get television coverage. KFMB to be specific -- channel 8 here in San Diego -- was very good about it. KNSD had a couple of things. If I’m not mistaken, KD TV, but not so much. In my opinion, KFMB led the way, I mean, really, as far as responsible reporting on it. Since then, it’s kind of fallen by the wayside.”

The proposal angered JBMAN, The City Project in Los Angeles, and the Native American Heritage Commission. They argued the route, which included a five-mile segment through San Diego County, would destroy the sacred ceremonial site, further annihilating any signs of San Clemente's rich indigenous history. Recognizing what was at stake, the Acjachemen formed a grassroots alliance called the United Coalition to Protect Panhe (UCPP).

UCPP and the Center for Law in the Public Interest "submitted opposition to the toll road extension to the California State Parks and Recreation Commission because the project raise[d] serious legal and policy issues limiting public beach access" (García and Baltodano 2006, 170). The organizations based their argument on Section 30210, which was designed to protect public access, property rights and natural resource areas (CCC 2008, 170). Section 30220 stipulated the "protection of certain water-oriented activities" that did not occur at "inland water areas" (CCC 2008, 170). The Center for Law and Public Interest argued that if a toll road were to cut through a recreational space, costly barriers to beach access and recreational opportunities eventually would follow. California State Parks Foundation and Sierra Club specified the 241 Toll Road extension would compromise accessibility to San Onofre State Beach, which they considered "a critical site for providing access to open space and recreational resources for underserved communities" (Dedina and Hernandez, 2008).

Writing on behalf of the SSOC, White and Bundy addressed a letter to Macie Cleary-Milan of F/ETCA, providing comments on an "existing state law whose specific purpose is to ensure that" San Onofre State Beach "remains a park in perpetuity" (White and Bundy 2006, 35).¹⁶² The firm represented SSOC in Foothill South lawsuits against TCA.¹⁶³ The attorneys noted that building a toll road broke this law and terms of the Department of Navy's lease, which "prohibits the granting of any easements or rights of way that would interfere with the park's improvements" (White and Bundy 2006, 35).¹⁶⁴ If TCA's extension proposal passed, the California State Parks Department would lose rights over San

¹⁶² These comments appeared in the "2005 Final Supplemental EIR and related findings for the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP)."

¹⁶³ See Shute, Mihaly & Weinberger LLP "Practice Areas." Accessed September 20, 2017.

¹⁶⁴ White and Bundy also wrote: "The FEIR fails to analyze cumulative air quality impacts" (2006, 18).

Onofre State Beach while the agencies simultaneously violated Section 11011.7 of the Government Code. The Code reiterates that Camp Pendleton's former property must be "used solely for park and recreation purposes [...]" (White and Bundy 2006, 35).

One surf activist intent on ensuring Trestles and San Onofre State Beach remains publicly accessible for future generations is Matt Melin, also an independent filmmaker who lives in Pacific Beach, San Diego, and owns a company called Resulting Impact Film Productions. Melin began surfing in 1983 and became more involved in coastal politics regarding public access to Tourmaline Canyon in north Pacific Beach. "Some history that took place in Pacific Beach [...] kind of led the ground work for the importance of coastal preservation, and coastal access preservation, and led to the creation of the Coastal Protection Act of 1972," he said. Melin has "a long history of going to San Onofre" and camping at the San Mateo Campgrounds -- another cultural and recreational landmark that 241 Toll Road extension would have destroyed. He first heard of the "rumblings [...] to pave over 'Trestles' state park" in 2006.¹⁶⁵ "I have a lot of friends in the Hawaiian Surf Club and San Onofre Surf Club," he said, "and we knew that this potential project had existed, but that's when we started to realize that there was a formation of a much more organized effort, and that we didn't know the specifics at the time."

Melin sought more details from sources such as Surfrider, the *San Diego Union Tribune*, *Surfer Magazine*, *Surfing Magazine*, *Los Angeles Times* and the *Orange County Register* to familiarize himself with the controversy. The more he read, the more outraged he became. San Onofre State Park is "the last bastion of coastal topography left in Southern California," he said.

You don't designate state parks and then take them away. I don't believe it's a viable situation, and I was just outraged at the effect it would have on the entire area. [...] I think there's intelligent growth that [...] you can do on the north side of San Clemente and San Juan Capistrano. There's other ways to figure out how to do this, and you don't need to destroy a state park in order to make it happen. [...] I believe it's a false narrative to say that, 'This is to alleviate traffic,' when in fact you have study after study that shows new toll roads or new freeways actually increase traffic because they increase development, so, I mean it's a false argument.

¹⁶⁵ The interview with Melin occurred on July 12, 2016.

Melin noted his anger grew when he discovered the toll road would desecrate “an ancient village,” adding:

I mean, that goes back *thousands* of years. How could, how could we just blow over that, you know, and put a toll road there mindlessly too, nonetheless. And then that was coming in 2008. I was very actively involved with the California Coastal Commission, and with trying to lobby them to side with us on protecting our state park.¹⁶⁶



Figure 2.2: A ‘No Toll Road’ campaign sign designed by documentarian, surfer and environmental activist Matt Melin.

I asked Melin whether he thought the Save Trestles campaign overshadowed the Acjachemen’s arguments against the toll road. A long pause followed as he considered the question before offering:

I believe they complemented each other. I don’t think one overshadowed the other. I think you [...] just have more people in the Save Trestles camp than you did in the

¹⁶⁶ This “quasi-judicial state agency” promotes the value of “environmental and human-based resources” along the state’s coast. Several state entities, including the governor, appoint all twelve voting members to it (California Coastal Commission: Program Overview).

Acjachemen, but I don't think that was in opposition or reflects negatively on the Acjachemen at all, per se. I believe the one hand washed the other -- that they strengthened each other's the argument. I mean [...] it kind of gave more credence to the sanctity of the place. It's not just a surf spot. [...] When you go there, it's transcendental. [...] It changes your life somehow in a positive manner, and you don't have to surf to know that. There's a spirit to certain places sometimes. San Onofre and Trestles is one of those very places, and there's a reason there's that much history going back thousands of years, you know, so I guess that's why I think that the two complement each other. I don't really feel like they overshadowed, but you just have more people in one camp -- or more outspoken people. And more outspoken white people, to be honest with you, as sad as that is to say.

Melin's racialization of the campaign reflects the cultural politics embedded in San Onofre State Beach's surf scene, a point he later expounded upon as he discussed his views on localism at Trestles: "There's not a tremendous amount of racial diversity," he admitted, "but [...] it's one of the most welcoming places that I've ever been to. [...] There's always [...] just a lot more tolerance and acceptance at those places," he said, stopping short of calling the demographics of Trestles' lineup culturally diverse. Curious as to how a racially homogenous surf community garnered multilateral support from groups such as UCPP and The City Project, whose work addresses the needs of indigenous and low-income populations, as well as communities of color, I asked Melin what made Save Trestles different than other campaigns to protect waves.

I think people like myself reached out to others outside the surf community. The surf community organized within itself very, very well. I think *Surfer Magazine*, *Surfing Magazine* had a great deal to do with that. *Surfer's Journal*, the coalition of surf clubs in California, for one thing. And it's, like I said, it's an area that's near and dear to a lot of us, and there's a great deal of history going back within surfing's history with San Onofre and Trestles. I [...] think we were successful in our outreach because you don't have to be a surfer to appreciate the openness and the beauty of the area and, you know, be kind of shocked and appalled with the over-development that's going on. There's a great deal of communication amongst each other: e-mail chains, articles, really well-written articles, Facebook posts that went out. I wouldn't say it was in its infancy, but it wasn't as proliferate or as prevalent as it is right now.

SANDAG's former regional planner Adamson believed the Save Trestles campaign effectively increased awareness about toll road plans. She said:

People that maybe wouldn't have been talking about [the toll road] because it wasn't necessarily a San Diego project, but you know they kind of made it a San Diego project -- or at least got the word out to other people to say: 'Hey, this might not be something that is actively being developed by a city or a county or an agency within San Diego, but you know it's something that [...] is] happening to the north of us and [...] affects us.' So, I

think they brought it out to a larger audience that maybe [...] others wouldn't. They may not have known that this was going on because if they kept it all -- you know, if it was only in the Orange County newspapers and it wasn't coming out at San Diego newspapers or in the media -- I think that was a way for them to be effective with just simply getting the word out from a communications perspective.

Environmental organizations such as the Endangered Habitats League (EHL), Wildcoast/Costasalvaje and National Resources Defense Council (NRDC) became part of the surfer activist network of communication with the support of fellow SSOC member Surfrider. Dan Silver, executive director of EHL, learned of the toll road project in the late 1990s before group members mobilized as a coalition to protect San Onofre State Beach and Trestles. "These were people who became involved and interested," he said.¹⁶⁷ "Whoever self-selected had a strong interest. At some point, we were in communication with each other. Then there was outreach." I was curious about the broad range of stakeholders who had different strengths and capabilities and were less surf-focused, including NRDC, which was fighting to protect the California gnatcatcher and stop related toll road projects. The Save Trestles and Save Our State Parks campaigns were extensions of those battles. Damon Nagami, senior attorney and director of NRDC's Southern California Ecosystems Project, explained the social composition of SSOC, calling it a "unique" and "high-functioning coalition." He added:

It's not that all the groups are strong at everything. It's that we have a lot of different groups with different types of supporters that work with a lot of different types of users. Protecting parts, surfers in mind, bigger environmental, smaller, grassroots, lobbyists litigators -- all these different groups coming together in a common cause, pushing back, trying to secure a better future for this area. It's really been remarkable.¹⁶⁸

Serge Dedina -- cultural geographer, co-founder of Wildcoast/Costasalvaje and the current mayor of Imperial Beach -- credits Surfrider for blitzing the press, successfully lobbying state legislators, and tactfully distributing information to elected officials with reasons as to why saving Trestles is important,

¹⁶⁷ The phone interview with Silver occurred on July 26, 2016.

¹⁶⁸ The interview with Nagami occurred on August 15, 2016.



Photograph 2.1: A serendipitous encounter with Trestles supporter Dave O’Neill during a walk near Cottons at San Onofre State Beach on July 28, 2016. A ‘Save Trestles’ sticker is also strategically placed along the rusted guard rail near Cristianitos exit fronting the Panhe Trail.

not just to the surfing industry but also to individuals who appreciate the coastline. The foundation was effective at “mobilizing the masses and creating” Save Trestles, which Dedina called “the coolest marketing campaign in the history of the environmental movement” (2011, 107-108). Activists utilized social media, news outlets, television and blogs to promote the campaign, strategies that Silver believed were “effective.” Silver also noted “the enormous grassroots movement from social groups” was visible, and he “took two trips around the state meeting with Coastal Commissioners. It was enormously involved and time-consuming,” he added. To continue raising public awareness about the toll road plans, Surfrider released a collection of Save Trestles paraphernalia, including T-shirts and stickers, which popped up on everything from guard rails and car bumpers to stop signs and skateboards.

As consumptive behavior intertwined with conservation interests, the network of environmental opposition grew, producing No Toll Road campaigns that required significant funding. Silver saw money as the distinguishing factor between SSOC and other efforts against coastal development in California. “That, to me,” he said, “was a huge difference. I hadn’t participated in an environmental campaign that had the money, but this -- we could hire top attorneys and public relations. [...] That fact that we actually had some funding to mount a professional campaign and the commitment of involved groups were big.” Publicly traded surf companies donated funds to Surfrider specifically. In a letter to *OC Weekly*, Jim Moriarty, former executive director of the Surfrider, wrote that direct interest in Trestles coupled with the ethos of “corporate social responsibility” indicated the surf industry was “just starting to flex its political muscles” (Moriarty 2012). He reported that in 2006, \$300,000 of the nonprofit’s operating budget came directly from the surf industry, with Billabong leading the other publicly traded entities in funding donations. That same year “more than \$450,000 was given to 13 environmental organizations, several of which [were] involved in the Trestles fight” (Moriarty 2012).¹⁶⁹

Yet Billabong’s for-profit business model depends on large-scale manufacturing, marketplace logic and the global sale of consumer goods, which posed environmental contradictions. The company facilitated the global production and commercialization of surfwear and accessories. These labor processes consumed natural resources faster than they could be dually replaced, regardless of commitments to CSR practices. They also ran counter to the preservation of ecological diversity. Even so, surf firms like Billabong and Hurley were well-positioned to promote Save Trestles, persuading consumers to protect the ocean, water and waves -- the very same natural resources needed to sustain surfing as an economically generative spatial practice.¹⁷⁰ Stakeholders in the surf industry had money to

¹⁶⁹ Specific organizations remained nameless, and a donor privacy policy is currently unavailable on Surfrider’s website.

¹⁷⁰ The capitalist mode of production creates a notable contradiction between the surfing industry and its relationship to humans and nature -- both of which it continues exploiting to produce surf products for global consumption. This undermines the general understanding of sustainability and environmental/social justice, drawing attention to political and ethical ideas that have produced disjointed ideologies.

invest in the ecosystem services on which their business models depended. Supporting an environmental campaign that operated along capitalist logic preserved surf industry stasis.¹⁷¹

The surf industry's presence was not always so pronounced in earlier toll road articulations, evidenced by EHL's involvement in the Foothill North controversy, in which Bill Lockyer, who served first as California Attorney General and then State Treasurer, and the people of California had filed two lawsuits against F/ETC on March 23, 2006.¹⁷² Silver recalled there was "less mobilization" and fewer conservation groups enmeshed in the environmental dispute. Rather, the focus was primarily ecological, with arguments ensuing over the value of wildlife crossings, for example. Both environmentalists and TCA agreed new infrastructure would disrupt the movement and flow of animal traffic. Wildlife crossings as a solution were supposed to protect (endangered) species while mitigating the ecological impacts of development and transportation infrastructure. Silver offered his perspective about the structures given they were part of TCA's proposal for the 241 Toll Road extension. He described them as "partial mitigation" through the use of bridges and culverts, continuing:

We found that on the Foothill North they worked very badly. There was extensive mountain lion and deer mortality. We learned that TCA put up extensive fencing to keep the animals off the road. A whole host of connectivity and pacts would not be addressed by the crossing. [...] Good for some animals, not for others. We saw that the wildlife crossing was ineffective based on the Foothill North experience.

Even so, TCA touted their effectiveness against a statement from SaveSanOnofre.com, which described toll road counterpart Foothill South as "one of the most environmentally damaging projects in California" (2007, 12). Critical of the toll road, San Onofre State Beach stakeholders offered their own set of dire, environmental warnings. They argued the infrastructure would wipe out federally listed species such as the tidewater goby (*Eucyclogobius newberryi*), fairy shrimp (*Branchinecta sandiegonensis*), southern steelhead (*Oncorhynchus mykiss iridius*), arroyo toad (*Bufo californicus*), Pacific pocket mouse

¹⁷¹ The fine distinction between domination and exploitation virtually disappear when the surf industry entered the marketplace, where developable land and property rights near some of the world's best surf breaks benefit mainly the business elite.

¹⁷² See: *People ex rel. Attorney General Bill Lockyer and State Park and Recreation Commission v. Foothill/Eastern Transportation Corridor Agency et al.*, No. 06-GIN (S.D. Super. Ct.) and *Native American Heritage Commission v. Foothill/Eastern Transportation Corridor Agency et al.*, No. 06-GIN051370 (S.D. Super Ct).

(*Perognathus longimembris pacificus*) and Coastal California gnatcatcher (*Polioptila californica*), thereby imperiling other species' existence as an ecological consequence (Gutiérrez 2008, 22). The California Coastal Protection Network and NOAA advocated this position as well. The groups' comprehensive focus on endangered spaces and species, clean air and water, climate change and sustainable communities expanded the Save Trestles campaign's surf-centric, save-the-waves ethos. Their concerns, as well as those of surfers, regarding the ecological and sociocultural impact from building a toll road through the Richard & Donna O'Neill Conservancy, San Mateo Campgrounds and state park intersected with desires to save the Acjachemen baptismal site and Trestles' waves. Silver notes: "Fairly early these groups came together with the Save San Onofre Coalition and were obviously a lot more effective working together than working independently."

TCA faced ongoing resistance from state officials, beachgoers, JBMAN and the UCPP, environmental groups, scientists and a global network of surf activists, prompting the agencies to publish a 17-page document titled "Debunking Myths & Misinformation by Opponents of Completion of the 241 Toll Road." The fact sheets centralized Pro Toll Road discourse and supplied stakeholders with bullet-point answers germane to SR-241 project specifications. TCA's publication coincided with the California Coastal Commission's (CCC) 236-page staff report regarding a recommendation on consistency certification for the F/ETCA project.¹⁷³ Undeterred by the opposition, in March 2007, F/ETCA applied for the 241 Toll Road extension, requesting a consistency certification and coastal development permit from the CCC, the state's coast-management agency. This legal term defines the relationship between federal and state governments, "and the respect that the federal government has for certain state laws, especially ones that were passed by a vote of the public" (Spehn 2016). In the staff report, the commission detailed why it did not support the SR-241 extension and scheduled a public hearing in O'Brien Hall at the Del Mar Fairgrounds for February 6, 2008.

¹⁷³ The report was released on October 11, 2007.

A month prior to the showdown in Del Mar, Lockyer sent a letter to former CCC Commissioner Patrick Krueer, expressing “strong opposition” to the toll road.¹⁷⁴ In it, he wrote:

I urge the [CCC] to reject a finding that the project is consistent with federal Coastal Zone Management Act.¹⁷⁵ I understand Governor Schwarzenegger has expressed his support for the project in a January 15, 2008, letter to you. The Governor’s position deeply disappoints me [...] The project would have other impacts that, while not pertinent to the Commission’s deliberations related to the [Coastal] Act, are nonetheless significant and worth mentioning. Specifically, the toll road would run through the Donna O’Neill Land Conservancy in the coastal foothills and lead to development of the last undeveloped valley between central Orange County and San Diego (2008, 1).

Attempting to thwart the project, Lockyer charged the agencies with violating the California Environmental Quality Act (CEQA) and Public Resources Code section 5097.94. CEQA became a state law in 1970, making EIRs mandatory environmental studies that detailed and projected the ecological effects of development prior to breaking ground for each project (Surfrider 2009, 37). In his letter to Krueer, Lockyer described the lawsuit as a legal means of upholding “California’s important laws on environmental protection and preservation of sacred Native American sites” (Lockyer 2008, 1).

The Acjachemen’s baptismal site and the Panhe Trail became enveloped within the state’s environmental laws because they were part of the San Mateo Archaeological National Register District, “which is approximately 480,000 square meters and includes 6 sites including the Juaneño village of Panhe” (Meyers 2008). Environmental lawyers White and Bundy argued that TCA had sped through the public comment period and ignored CEQA guidelines, failing to seek critical input from JBMAN or the Native American Heritage Commission about the project’s impacts on archaeological resources. The commission categorized the state park under “Sacred Land” (White and Bundy 2006, 34). The Acjachemen’s call for protecting the baptismal site underscored the tribe’s strategic reconciliation with

¹⁷⁴ Lockyer’s letter is dated January 17, 2008.

¹⁷⁵ According to the 1999 Marine Life Protection Act: “The [CCC] regulates the use of land and water in a legislatively-designated coastal zone. The coastal zone varies between several hundred feet about mean high tide in highly urbanized areas and up to five miles in rural areas and extends to the state water offshore boundary. The jurisdiction extends into federal waters because of the federal consistency review responsibilities delegated to it under the Coastal Zone Management Act of 1972” (2008, 157). State agencies are responsible for determining the extent of a project’s impact on resources complying with the policies of the state’s coastal zone management program (2008, 157).

historical violence and acknowledgement of state and federal power. The Native American Heritage Commission expressed support for Lockyer's lawsuits, co-signing with SSOC the No Toll Road letters sent to the CCC.

Additional Environmental Concerns about the SR-241 Extension

In subsequent letters opposing the coastal consistency certification for the SR-241 extension, SSOC addressed the impact the 241 Toll Road would have on Environmentally Sensitive Habitat Areas (ESHAs). These areas are home to "rare or especially valuable" plant and animal species that are easily prone to extinction due to human disturbances (SSOC 2008, 8). The commission argued the SR-241 extension would destroy "over 50 acres of undisputed ESHAs in and around the coastal zone" (SSOC 2008, 2). This violated "numerous Coastal Act provisions and policies," including Section 30240(a), which "prohibits any significant disruption of the ESHA's habitat values" (SSOC 2008, 7). This portion in the Coastal Act legally required TCA to design projects that maintained the population and ecological health of federally endangered and protected species in these areas (SSOC 2008, 7). To argue against the Foothill South extension, SSOC drew from letters from the scientific community as well as short- and long-term studies on endangered plants and animals that live in San Onofre State Beach.

In correspondence with EHL's Silver, for example, the Conservation Biology Institute addressed the impacts of the infrastructure on wetland resources in the coastal zone. Senior Ecologist Michael D. White noted the willow riparian woodland, willow scrub and sycamore alluvial woodland were in the lower portions of San Mateo Creek and San Onofre Creek, which was most vulnerable to destruction.¹⁷⁶ He described the watersheds as having the "highest ecological integrity, as measured by the amount of land cover changes from development and roads. Ecological integrity refers to "the degree to which the

¹⁷⁶ The Conservation Biology Institute identifies itself as "a nonprofit organization providing scientific expertise to support conservation and recovery of biological diversity through applied research, planning, and community service" (White 2007, 1).

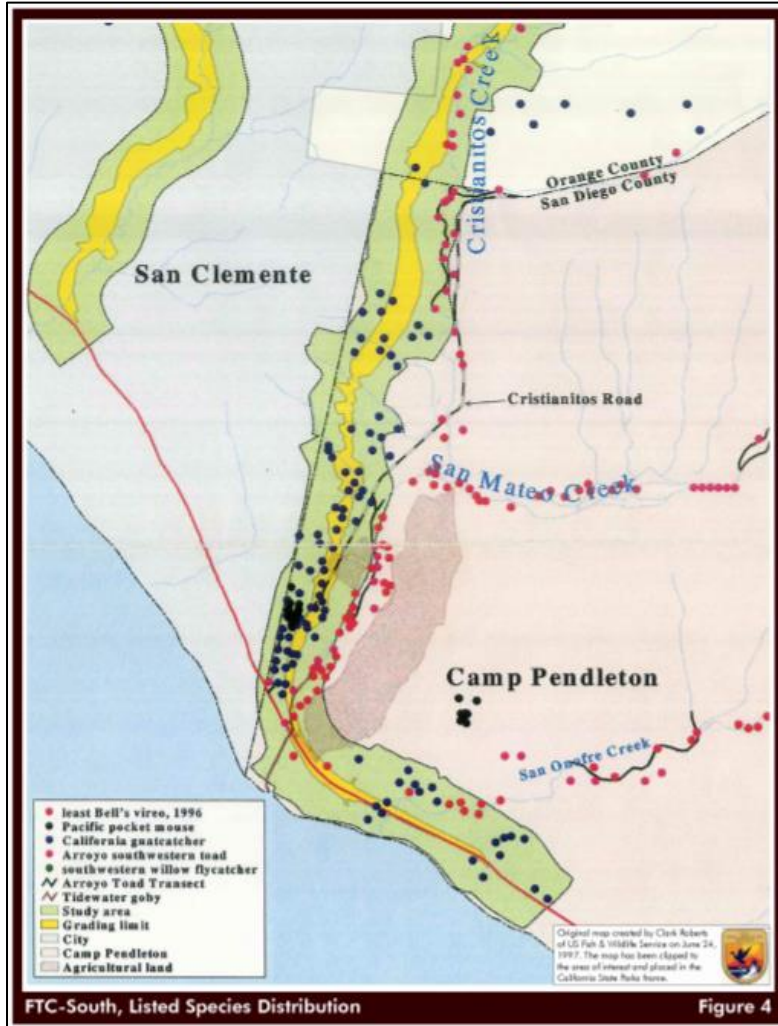


Figure 2.3: This map of the Foothill Transportation Corridor – South’s listed species distribution in 1999. Image reproduction courtesy of Dan Silver of the Endangered Habitats League.

natural characteristics and functions of the watershed are intact or unmodified by humans” (White 2007, 2). Kruer and fellow CCC members received a letter dated January 16, 2008, from consulting biologist Robert A. Hamilton in Orange County. He had mapped, evaluated, and conducted biological surveys that assessed the ecological relationship between the Coastal California gnatcatcher and coastal sage scrub (2008, 1). These processes enabled him to identify “approximately 27.4 acres of coastal sage scrub habitat within the proposed limits of grading” near Cristianitos and San Onofre offramps where the threatened

species thrived.¹⁷⁷ Robert Lovich, an expert on the arroyo toad, sent CCC a study that showed the impact the SR-241 extension would have on the specie's ability to reproduce once it disrupted "the gene flow between populations" (Lovich 2008). His research conflicted with TCA's assessment that the toll road would have minimal to no effects on the arroyo toad habitat in coastal zones.

Wildlife ecologist Paul Beier also addressed a letter to Shute, Mihaly & Weinberger LLP, voicing his concerns about the mountain lion habitat in the Santa Ana Mountains. He criticized TCA for failing to propose mitigation for habitat loss and provide quantitative evidence that "a variety of wildlife species use the crossing structures" (2006). There were no studies that showed Pacific pocket mice utilized them. Conservation biologist Wayne D. Spencer explained these "tiny creatures of open habitats [...] may be behaviorally averse to passing through tunnels and have never been documented to use undercrossings" (2007, 1). He also took issue with the methods that TCA used in the coastal consistency certification and analysis, arguing that they diminished the impact the toll road would have on the wetlands, coastal sage scrub, arroyo toads and least Bell's vireos (*Vireo bellii pusillus*). "This dissecting approach to the analysis," Spencer wrote, "provides no recognition of how the mosaic of ecological communities and processes operate together within this unique coastal area or how they relate to the larger landscape."

Correspondence between CCC and members of the scientific and legal communities indicated opponents were adamant that the SR-241 extension was not an ecologically friendly option, as it would inevitably lead to new, destructive development among existing infrastructure. SSOC called the "project's inconsistency with Coastal Act policies [...] unavoidable" (2008, 3). The project was a tough sell to stakeholders who were deeply invested in the legal underpinnings that protected wildlife and ecological resources such as the San Mateo Point watershed while simultaneously maintaining public access to San Onofre State Beach and Trestles. Frank Harwood, a San Clemente lifeguard and local, opposed the toll road because of the watershed's ecological fragility. I met Harwood one hot afternoon in early May 2016

¹⁷⁷ Hamilton describes the scrub in this area as "generally lowgrowing (roughly waist-high), but with [less than 95 percent] areal cover of native shrubs in most parts. California Sagebrush (*Artemisia californica*) -- the shrub species most frequently used by nesting California Gnatcatchers -- accounts for approximately 60 [percent] of the Evaluation of California Gnatcatchers in the Coastal Zone" (2008, 2-3).

while walking along the Panhe Trail toward my car, which was parked nearly two miles away on Cristianitos. Trestles had been crowded because there was swell. He was in his lifeguard Jeep and, noticing my surf board, asked how my session had fared on such a busy day. “It was worth the long walk,” I said. Harwood graciously offered to drive me to my vehicle; exhausted, I took him up on the offer. During the ride, I gave information about my academic background and research that I was conducting at Trestles. He revealed that he attended a Surfrider rally in Carlsbad during 2007 and had been involved in both the Save Trestles and Save Our State Parks campaigns, agreeing to a formal interview when time permitted.¹⁷⁸

Later that month, while riding shotgun with Harwood in his Jeep during his shift, I asked the longtime lifeguard why he opposed the SR-241 extension. He explained:

I was against it because it’s a natural watershed in that area and a very environmentally sensitive area, and I’ve seen what the I-5 north- and south-bound overpass has done to the watershed there, and how much trash and just debris alone from just the freeway itself over the years have polluted the watershed. And I didn’t want another roadway going through there, just creating more of a problem, and possibly cutting off water flow to the Trestles watershed.

BI: [...] Do you think in any ways the surfers’ involvement overshadowed issues that were tied to the whole fiasco?

FH: Yeah. I think surfers’ involvement definitely did help protect Trestles, but the main reason why it should be protected, from my understanding, is that it is a very environmentally sensitive area, being a natural basin that has two free-flowing rivers connecting right there. And what it does, when it does flow, it pushes out to the ocean and any buildup of debris and trash just having, just building that big of a structure is going to have an environmental impact, not just on the watershed, but [also] on the ocean itself with the steelhead trout moving out of the river right there. I think that’s an overshadowed thing. [...]

I asked Harwood to elaborate on the steelhead trout, as I was unfamiliar with the species’ dependency on the San Mateo Creek. “[...] They come from the ocean and swim up the river to spawn,” he said, “and the spawn flows back out, so if they don’t have a free-flowing watershed right there, I don’t know. [...] Our freshwater fish -- it’s just being depleted in Southern California. A colony of fish.”

¹⁷⁸ The interview with Harwood occurred on May 26, 2016.

The repercussions of a colony collapse on San Onofre State Beach’s ecosystem added to the list of reasons why environmental activists showed up for the CCC hearings to protest TCA’s proposal. Surf activist Melin credits the commission’s “intelligence in selecting an area that was large enough to accommodate people” and had ample parking. He said of the Del Mar Fairgrounds:

[...] I mean, everyone knows where it’s at: right off I-5. You accommodated everybody, and I think that had a lot to do with it, too. And I think that’s important, I mean, because it’s inclusionary, and you should include the people. And [...] I think that was very complimentary of the Coastal Commission to do so.



Photograph 2.2: No Toll Road opponents gather outside O’Brien Hall at the Del Mar Fairgrounds to voice their opposition to TCA’s proposed toll road extension. Photo courtesy of SaveSanOnofreCoalition.com archives accessed 2014. Photographer unknown.

At the CCC hearings on February 6, 2008, somewhere between 1,000 to 3,000-plus people rallied outside of O’Brien Hall at 11 a.m. as commissioners debated the fate of the extension proposal for eight hours. Some activists thrust “Save Trestles” and “Save Our State Parks” signs into the air alongside “Build the 241” posters, held by supporters clad in construction-orange T-shirts. *The San Diego Union-Tribune* reported that when the public comment period began after 7 p.m., “nearly 200 people registered their opposition to the project, while about two dozen voiced support” (Martinez and Jimenez 2008). One opponent included Deanna Spehn, who served as policy director for the office of then-Senator Kehoe of

the 39th district at the height of the controversy.¹⁷⁹ Her responsibilities “were to monitor environmental issues within the district or coastal issues because they were of significant importance to [Kehoe].” Spehn testified on behalf of the senator at the CCC hearing in Del Mar, recollecting that “almost all the environmental groups had representatives there” alongside “a lot of individuals,” who she believed impressed the commissioners.” “It certainly impressed the press,” she added.

BI: [...] Do you think people were surprised when it got to this point in 2008?

DS: I believe that to an extent people were surprised about the impact that was going to happen. You know, there’s always this point at which you have to decide should this project move forward? Because it’s going to benefit people because it’s a transit project or something that’s going to help people get from one place to another more efficiently with less impact on the environment, but yet you have to do development? I mean, you’re developing an area that may not have been developed before, and so everything is sort of a balancing act. But the most important precept is that people have a right to know what’s being proposed. So when they heard the extent of this project, I think that’s what [...] helped get so many people involved at so many levels. That hearing that took place at the Fairgrounds was on a work day, and there were people there on all sides of the issues involved. Protection of open space and the Trestles surfing area and, you know, versus or in comparison with concerns about the importance of building what some saw as an important element in the regional transportation system. And so there were a lot of feelings, strong feelings, by the participants in the hearing.

BI: Was there anything in particular that stood out during that hearing to you? Were there any significant moments or speeches?

DS: I think that what was impressive was, for the most part, there was a good level of respect for hearing, letting everybody have their say. It went on for hours and hours and hours and, um, you know, it was important that the people got their words out. And then the Commissioners spoke.

The crowd erupted around 11:20 p.m. when the CCC voted 8 to 2 to reject TCA’s permit request (Martinez and Jimenez 2008). Then-Commissioner William Burke of Los Angeles was one of two commissioners who voted in favor of the extension. According to the *Union-Tribune*, “[a]fter listening to hours of testimony,” he believed there was “merit on both sides,” and did not consider the park at risk (Martinez and Jimenez 2008). Reflecting on why 2008 campaigns against the toll road convinced remaining commissioners otherwise, Spehn said:

It wasn’t just surfers protecting a favorite surfing spot. It was people who remembered why they value the beach and why they value the coastline, and that believed that there

¹⁷⁹ The interview occurred on July 11, 2016.

was a better way to move people in vehicles or in transit than to just build another freeway, and in the process cut off an area that had had longstanding public access. It was just impressive the scientific basis on a lot of the positions by different groups, and using that and a love of the coast, and sort of framing positions, bringing together a lot of thoughts of what was important to people personally.

Echoing Spehn's thoughts, EHL's Silver noted another strategic weakness of TCA's was the number of people whom the project antagonized. "There are thousands and thousands of people who camped at the state park -- beach users, park users, camp users," he said. "This was more of the public at large rather than simply a few environmentalists coming together." For the most part, however, the media's spotlight remained on them as well as surfers and the U.S. Marine Corps.

Lifeguard Harwood offered a different take on why the toll road "probably would've happened" had it not been for the U.S. Marine Corps' involvement.

The military owns all the land. They lease the land to the state park that Trestles is in, and the military has the final say. I mean, that's one of their biggest training grounds for the Marines, and they probably don't want excess traffic going through that area where they're practicing live fire and doing all that stuff. They actually express a lot of concern on preserving that land because it is a big land preserve. Even though they're blowing stuff up and shooting a bunch of rounds, they're preserving like a good amount of our natural resources. And it's awesome that they're there. They give the real big relief to the congestion of Southern California.

Legal Exchanges and Uphill Victories

Despite the Save Trestles victory, SSOC knew "[...] TCA was going to appeal the Coastal Commission's decision to the U.S. Department of Commerce under the Bush Administration. We were preparing for that [...]," Nagami said.¹⁸⁰ As were The City Project and UCPP. Although some of the strongest lobbying came from SSOC and surfers, on May 22, 2008, UCPP allies reiterated the importance of Trestles' indigenous history during public comment periods. They submitted feedback to Carlos Gutiérrez, who served as U.S. Secretary of Commerce under former President George W. Bush from February 7, 2005 until January 20, 2009.¹⁸¹ Rebecca Robles, Robert García, and Angela Mooney D'Arcy

¹⁸⁰ Nagami joined NRDC in April 2008, two months after the CCC's initial ruling against the 241 Toll Road extension.

¹⁸¹ Additional 'No Toll Road' allies included: Anahuak Youth Association; Bernard Bruce Bruce's Beach; Chumash Maritime Association; Desal Response Group; Environmental Justice Coalition for Water; Environmental Justice Resource Center and Dr. Robert D. Bullard of Clark Atlantic University; Gabrielino/Tongva Tribal Council;

urged Gutiérrez “to uphold the Commission’s decision” and “reject the override request” (2008). They wrote: “At least one Commissioner explicitly concluded that the harm against the Acjachemen people is reason enough to deny certification. [...] There is a history and pattern of depriving [them] of their land, culture, sacred sites, and freedom of religion under state and federal law” (2008).¹⁸² The coalition also argued the toll road would disproportionately affect low-income individuals and working-class communities without the means “to pay tolls for commuter or recreational travel” (2008). These arguments, however, seldom made headlines in media outlets covering the controversy. Instead, the focus typically shifted to surfers, the environment or national security.¹⁸³ More than fifty headlines about the controversy in local and national news outlets between May and September 2008 for example, referenced surfers, the environment and national security (Rodgers and Lee 2008).¹⁸⁴ These framings frequently silenced or disappeared JBMAN and other organizations whose objectives diversified the scope of campaigns to protect Trestles and the state park from ecological and cultural destruction. Letter-writing activism, therefore, was a particularly important way for underrepresented and underexposed groups to reach a federal audience.

Five days later, Executive Secretary Larry Myers of the Native American Heritage Commission addressed a letter to Thomas Street of the NOAA Office of General Counsel for Ocean Services, advocating for the preservation of Panhe. NOAA (a division of the U.S. Department of Commerce) administers the Coastal Zone Management Act. This federal program enacted in 1972 incentivizes coastal states and Great Lake States to create implementable programs that help “manage and balance competing uses of and impacts to coastal resources” (Surfrider 2009, 58). Myers informed the general counsel that

Gabrielino/Tongva Tribe of San Gabriel; Mujeres de la Tierra; National Hispanic Environmental Youth Council; National Latino Congreso; Northern Chumash Tribal Council; Policylink; Santa Rosa Ranchera Tachi Tribe; Southern California Watershed Alliance; Save the Peaks Coalition; Social and Public Art Resource Center; The Praxis Institute; Ti At Society/Traditional Council of PIMU; William C. Velasquez Institute; Wishtoyo Foundation; and Womyn Image Makers (United Coalition to Protect Panhe 2008).

¹⁸² See: *Thompson v. U.S.*, 8 Ind. Cls. Comm. 1, 17, (1959).

¹⁸³ This perspective is based on browsing through headlines of the controversy dated between May and September 2008.

¹⁸⁴ See: “‘Save Trestles’ is surfers’ theme of the day,” *Los Angeles Times* (Sept. 22, 2008); “Surfers fight toll road,” *USA Today* (September 23, 2008); “Calif. toll road hearing focuses on security,” *Associated Press* (Sept. 22, 2008); “Toll Road Debate Turns from Environment to Security,” KNBC-TV (Sept. 22, 2008).

“Three Tribal Resolutions from the Juaneño Band of Mission Indians, Acjachemen Nation, have been passed supporting the Tribe’s full sovereign participation in any and all land and water use decisions likely to impact Village of Panhe” (Myers 2008, 2).¹⁸⁵ The same day, eight members of Congress sent Gutiérrez a letter expressing their “unqualified support” for the SR-241 extension.¹⁸⁶ They reiterated in writing:

Notably, not a single Member of Congress who opposes this important transportation project represents a neighborhood even remotely close to the desperately needed area of congestion relief it will serve. Moreover, nine of the signatories in the letter to you, originated by Congresswoman Susan Davis, represents districts at least 430 miles or more from the proposed road, and one of them serves motorists and “neighbors” 700 miles away. All the others live several hundred miles removed, or in communities untouched or remote from the impending nightmare of traffic chaos that will wash over us in the next decade (Miller et. al 2008, 1).

The congressional members also emphasized the toll road would enhance military base security measures and transportation infrastructure, creating new training opportunities and an improved route for deployment. Over the years, Spehn said she and Senator Kehoe had worked with representatives of Camp Pendleton “and knew, to some extent, the issues that were important to them as well,” such as environmental security; natural resources, wildlife, water resources and land management; conservation of archaeological and paleontological resources; and, perhaps most important, operation and training, as well as community planning.¹⁸⁷ “They valued the area,” said Spehn, “but they also used the adjacent area for training, and their concerns about extending the toll road down and how it would impact traffic was a general issue for the region because of the route that was being considered.”

To justify their request for the override, the congressional members wrote an eight-page letter that rejected No Toll Road supporters’ claims, calling for specific CZMA considerations, debating national interest and reviewing TCA’s historical relationship with the U.S. Marine Corps and Department of Navy.

¹⁸⁵ Myers references “a letter dated January 21, 2008, p. 3, 4 to CCC from Rebecca Robles, Robert Garcia and Angela Mooney D’arcy” (2008, 2).

¹⁸⁶ The congressional members included: Gary G. Miller, Ken Calvert, John Campbell, Ed Royce, Dana Rohrabacher, Darrell Issa, Duncan Hunter and Elton Gallegly.

¹⁸⁷ See: MCB Camp Pendleton’s Appendix P. “Natural Resources Management Structure.” *Organization and Functions Manual* (BO 5400.14H). 2016.

They repeatedly dismissed “so-called alternatives proposed by the opponents” (Miller et. al 2008, 7). Not once, however, did the congressional members acknowledge the Acjachemen baptismal site or JBMAN. Drawing from headlines that framed the controversy around surfers, I asked Nagami whether he believed the media focused too much attention on the 241 Toll Road as a threat to surfing at Trestles.¹⁸⁸ “There certainly were a lot of media outlets focusing on the surfing aspect,” he conceded. “Maybe because it was -- often surfers are the most visible and prominent activists at things like [...] the CCC hearings, the Commerce hearing. Surfrider was very effective in turning out activists and showing up at the hearings. [...]. It’s not surprising that the media picked up on that.”

Leading up to the U.S. Secretary of Commerce’s public hearing on September 22, 2008 at the Del Mar Fairgrounds, where *The San Diego Union-Tribune* reported “more than 1,000 people showed up,” Despite TCA and Pro Toll Road supporters’ compelling arguments, Gutiérrez upheld CCC’s decision on December 18, 2008. In his analysis of TCA’s consistency appeal, he acknowledged: [...] considerable weight is given to the views of the Department of Defense and other Federal agencies with national defense or other essential national security interests. [...] Indeed, the Marine Corps stated that “[it] does not agree that [the project] is necessary in the interest of national security (Gutiérrez 2008, 25).¹⁸⁹ Two years following Gutiérrez’s ruling, however, Major General Anthony L. Jackson and Colonel Nick Marano contradicted the former Secretary of Commerce’s position, writing: “Because this alignment almost met all previously expressed Marine Corps stipulations, the proposed routing through the State Park lease area are viewed as acceptable to Camp Pendleton. Ultimately, however, this proposed State Park alignment was denied by the California Coastal Commission [...]” (2010).

This straightforward message begged the question: What would have happened had coalition forces such as SSOC, JBMAN, surfers, environmentalists and public park advocates never mobilized or lobbied the CCC? The uncertain future and Marine Corps’ historical perspective of the toll road forced SSOC to remain hyper-aware of TCA’s ongoing project re-articulations -- that is, different names for

¹⁸⁸ See Jim Christie’s “Surfers win first round vs California toll road.” *Reuters*. (February 8, 2008).

¹⁸⁹ Two years after Gutiérrez’s ruling, however,

nearly identical alternatives. Gutiérrez indicated the state could identify or adopt alternatives that “would permit the activity to be conducted in a manner consistent with the enforceable policies of the state’s coastal management program” (Gutiérrez 2008, 13). In effect, the TCA could get its toll road -- just not the exact one it wanted.

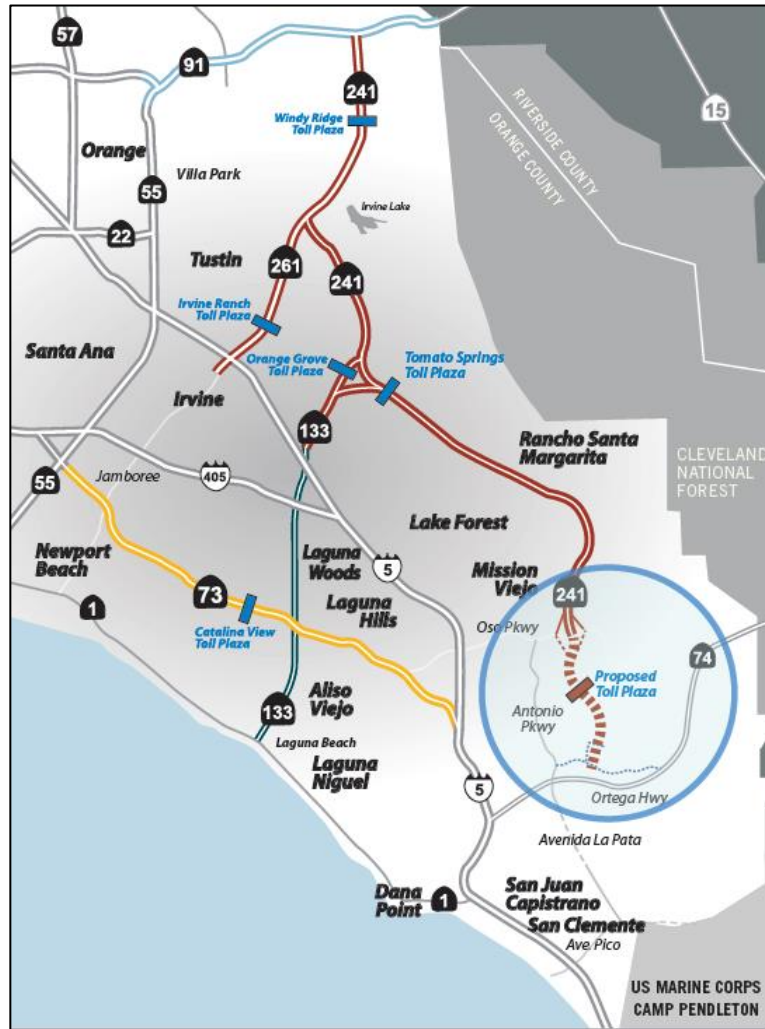


Figure 2.4: This 2012 map depicts the Transportation Corridor Agencies’ 241 Tesoro Extension, a re-articulation of the SR-241 extension. Image reproduction courtesy of TCA.

Central Corridor-Avenida La Plata (CC-ALPV), for example, became an attractive alternative based on two factors: feasibility and availability. Overall, it cost approximately \$106 million less to build than Toll Road 241, a price tag that the CCC considered “reasonable” (Gutiérrez 2008, 20). The alternative 8.7-mile-long route also bypassed the contentious coastal zone surrounding Trestles.

Furthermore, “[...] the CC-ALPV alternative did not intersect with I-5; rather, traffic traveling along the CC-ALPV alternative route would use existing arteries for several miles to connect with I-5.

Consequently, the entire route of the CC-ALPV alternative occurs more than a mile outside the coastal zone boundary” (Gutiérrez 2008, 15).

A quiet period between Pro and No Toll Road groups followed the legal victory. Nagami said the Coastal Commission’s decision “was terrific news for the campaign,” showcasing the diverse coalitional forces that led to its success. The ruling also underscored flaws in TCA’s proposed project design, interpretation of coastal laws and communicative efforts with the public. Silver believed the agencies’ “weakness strategically was going through a state park and violating the Coastal Act. I don’t think that can be over-emphasized,” he added.

TCA was a consortium of joint powers authorities of local governments, powerful legislators, private interests. We’re talking about a powerful group with access to funding, a revenue stream that gives virtually unlimited monies to campaign and advance their project. But they got what I think was bad advice, and they never really changed course. They thought they could push this through the Coastal Act. [...] TCA thought they could get the votes politically and make the arguments that were acceptable. What was effective here was the Coastal Act.

Furthermore, most commissioners were unconvinced the agencies were CEQA compliant or had fulfilled all legal requirements necessary for approving the consistency certification to begin construction. Melin has a slightly different take on TCA’s strategic weaknesses that draws attention to class-based issues undergirding civic mobilization. “I find that all the toll roads are somewhat elitist,” he said, elaborating:

I honestly believe that. [...] From the very first one that they started building in Orange County, I was shocked. I’m like, ‘Who wants to pay to use the freeway?’ That made no sense to me. I don’t know, just the concept of it didn’t make sense to me. [...] And the thing is these projects aren’t even profitable, profitably sustainable. All the money is in the development because that’s where they make all their markup; that’s where the cement contractors get paid over. There’s overages. [...] ‘Oh yeah, the project went over budget, went over budget, went over budget, went over budget.’ And then when it actually comes to the maintenance, you know, they didn’t even want to staff those things with people to take tolls. Now they have the [FasTrak] passes, and they’ve had those for quite a few years. But still, they didn’t even want to fully staff them to collect money.

I asked Melin why he found the ways in which TCA communicated the plans for the toll road problematic. “They tried to do it as covertly as possible. There was no transparency,” he answered with a skeptical laugh.

And they did it under the radar, or tried to do it under the radar as much as possible. Luckily, there are those astute activists that got wind of it and found out what was going on -- especially much more so in the later stages when they were dealing with the piecemeal thing because they [TCA] weren't even calling or referring to the project as 241. They were talking about the specific *extension* of whatever specific boulevard it was.

EHL's Silver clarified the origins of the SR-241 extension as “three toll roads in a way -- segments.”¹⁹⁰ The first one's in Laguna Beach, the San Joaquin Hills Toll Road,” he continued. “Then there was Foothill North. Foothill South, which is the extension of the North -- they're both called the 241.” In the final section, I describe how these constant re-articulations are germane and easy to overlook, often hidden behind endless acronyms representing regional projects in multiple cities' long-range transportation plans. The multi-level attack that continues against San Onofre State Beach and Trestles, one of which is driven by the desire to alleviate traffic congestion and stimulate economic growth, draws into view an important conversation about the future aesthetics and development of San Clemente. Where will the toll road go? Which communities within this robust yet quietly unique beach city will ultimately house the noisy transportation infrastructure? Provided Trestles, San Onofre State Beach and Camp Pendleton remain protected from more development, will the collective response be the same if the SR-241 extension ends up getting built in the backyards of low-income neighborhoods or communities of color? How will global warming, climate change and sea-level rise -- equally great threats -- specifically affect coastal transportation planning in San Clemente, if at all?

Endless Toll Road Re-Articulations

SSOC and No Toll Road stakeholders have continued to shine a light on TCA's efforts to circumvent the Coastal Commission and Department of Commerce's 2008 decisions. Still, as headlines

¹⁹⁰ The interview with Silver occurred on July 26, 2016.

warned in 2009, the 241 Toll Road battle is far from over, and members of SSOC remain active in the fight against building one through San Clemente.¹⁹¹ Nagami contemplated the progress TCA has made with SR-241 extension plans since 2008. He said:

The Foothill is still blocked from moving forward in the alignment going through San Onofre State Beach. Our coalition was very vocal about the agency's attempt, starting in 2011, to try to build a road in pieces. You know, you can try to spin it a certain way if you want. Our approach was to call it as you saw it. Build it in pieces and that's illegal. We started to say that in blogs and talking to reporters. We were glad the media picked it up that way. [...] You know, TCA has a right to go out into the media and try to spin it the way they want to.

After Gutiérrez's decision, TCA publicly pledged to join forces with stakeholders to find a transportation solution that met their diverse needs. They released a statement in which Jerry Amante, chairman of the F/ETCA said: "We have spent a lot of time and a lot of money to solve a problem -- and that problem hasn't gone away. [...] The population is expected to grow and with that will come families, commerce and traffic. [...] We intend to look into the future and find the traffic solution that the future needs" (TCA 2009). In July 2011, TCA sought economic feedback from another consulting firm, Beacon Economics LLC. Researcher associate Morris Chow conducted a study that analyzed indirect and direct economic impacts from a newly completed toll road. The executive summary suggested that the 241 Toll Road would create more than 3,000 jobs and accelerate the flow of goods between both counties, thereby generating "\$3.1 billion in economic output throughout the state" (Chow 2011, 1). Chow concluded Orange County stood to accrue at least \$2.3 billion of that total (2011, 1).

The following year, TCA announced plans for the "SR 241 – Tesoro Extension," which would "extend the 241 Toll Road from its current terminus at Oso Parkway to Cow Camp Road in the vicinity of the Ortega Highway" (TCA 2012). The agencies said San Clemente residents would benefit upon completion of Avenida La Pata (TCA 2012). They also argued current infrastructure was inadequate to meet transportation needs if SONGS ever were to experience a catastrophic event such as a tsunami or nuclear spill (Klein 2013). The key difference in the plan: Tesoro Extension was 5.5 miles long rather

¹⁹¹ See Mike Lee, *The San Diego Union-Tribune*. (December 18, 2009).

than sixteen. No Toll Road stakeholders took issue with the mileage because they considered the extension's reduction in length a sophisticated yet illegal form of "segmenting" -- that is, building a road in chunks. "I would like to think that they are being more solution-oriented now because we've been able to stymie them for so long," Nagami said.

They are no closer to building a road than they have ever been. We've been talking with TCA ever since 2008 for the first few years after the Coastal Commission's decision. They were trying to explain to us the need for improving mobility in general in South County, and we understand. We understand there are problems to address down there. At the same time, they're working on this plan to try and go around the Coastal Commission's decision by segmenting this road.

In early 2013, TCA applied for a Waste Discharge Requirement permit with the San Diego Regional Water Quality Board (SDRWQB), clarifying that the 241 Tesoro Extension would "not connect to I-5 near San Clemente" because it was "approximately 9.64 miles from the state park leasehold" (Telles 2013). Defending the project, Lisa Telles, TCA's Chief Communication Officer, wrote:

Since the Coastal Commission and Commerce decisions in 2008, TCA has conducted an extensive community outreach campaign and held over 300 meetings with both project supporters and opponents -- including two years of meetings with a coalition of environmental organizations -- to see if common ground could be found on a viable alternative to complete SR 241. [...] The 241 Tesoro Extension is a result of this effort (2013).

SDRWQB released the tentative order for public comment and "received several hundred form letters and over seventy non-form letters from private citizens, organizations, and elected officials in support of the Tesoro Extension Project and one letter against the Project" (SDRWQB 2013, 7). Despite the support, the board denied TCA the waste permit. Back-and-forth the bureaucratic battles went between the transportation agencies and No Toll Road groups. In 2014, The *Orange County Register* reported TCA withdrew notices to move forward with the alignment in San Onofre State Beach's contested coastal zone. In addition, they conceded environmental processes would be mandatory for potential "projects south of Cow Camp Road" (Cook et. al 2014). For a moment, it seemed Trestles had been saved once and for all, at least from the toll road. SSOC did not believe TCA had abandoned plans altogether, however. Past actions, said Silver, indicated "[...] an ongoing threat that the TCA has not given up, and that these regional transportation agencies still believe the toll road is part of the ultimate circulation system for the

region.” Re-articulations made their way into agendas, headlines and city council meetings, freshly titled as “241 Toll Road / 91 Express Connector Project.” Each year yields a new toll road name filed under the same, ever-evolving controversy.

As I have attempted to show in this chapter, the successful campaign to stop a toll road extension from going through Trestles depended on an unlikely set of partnerships that exposed several contradictions, which ultimately privileged the voices and interests of the military, surfing industry, and white surfers. The crusade to “save” the surfscape stemmed from raw, external power struggles among and between groups that could be allies for one cause yet enemies for another. The No Toll Road and Save Trestles campaigns emphasized the ecological impacts of TCA’s extension plans. Ideological dissension over the use of public space and long-term effects of coastal development was central to the controversy.¹⁹²

Wildcoast/Costasalvaje’s Dedina raised the important question whether activists “would have to mount similar campaigns for every effort to preserve threatened open space in Southern California” (2011, 128). For environmental advocates, the toll road proposal signified an undervaluing of San Onofre State Beach and Trestles’ ecosystem service. This prompted individuals to mobilize and turn to social-change networking and advocacy. Critiquing the success of Save Trestles, Dedina wrote: “The biggest lesson from Del Mar is that surfers cannot fight coastal battles on their own (2011, 107). SSOC’s membership reflected a diverse union of “Latino, African American, Asian-Pacific Islander and Native American organizations” all fighting to protect public beach access (Dedina 2011, 108). Once surfers and environmentalists secured the legal victory against the toll road in February 2008, the Acjachemen voice noticeably faded from media coverage, however. Dedina writes their involvement “only underscores the need for the environmental movement to dramatically expand its attempt to reach out to underserved communities and people of color” (Dedina and Hernandez 2008).

¹⁹²Ideological in this context refers to a system of beliefs about how development affects the environment. Parties generally agree upon the premise that there are effects. They disagree on the most effective way(s) to mitigate them, however. Arguably their ideological outlook on the environment derives from their class-based position in society.

TCA's framing of the project evoked environmental concerns such as how to manage urban runoff from existing inefficient transportation infrastructure and protect ESHAs. The SR-241 extension was supposed to successfully mitigate these issues while decreasing traffic congestion, particularly in south Orange County. TCA drew support from a powerful contingent of state legislators and congressmembers, who were quick to appeal CCC's decision, igniting a decade of ongoing local, state and federal government drama and intervention. Without the backing of Gutiérrez, however, the agencies faced a plethora of legal hurdles tied to CEQA compliance and the Coastal Act that continue to delay construction of the toll road. One minor lesson stakeholders came away learning from the 241 Toll Road controversy was that mismatching regional and long-range transportation plans was enough to cultivate a culture of distrust between Pro and No Toll Road stakeholders. How many toll lanes? Four? Six? Eight? And how much? The projected total cost of the toll road drastically varied over ten years. And where exactly? The lack of transparency continues to be a golden ticket to resistance. Simply having all transportation agencies on the same page for financials and project details was a good start to helping these contending sides find common ground. Even if all stakeholders could come together and produce the most environmentally friendly traffic solution that satisfied all parties, however, did it matter? Can Trestles be saved?

Despite former Gutiérrez's monumental decision on December 18, 2008, to reject TCA's SR-241 extension permit request, a decade later, San Clemente contends with a new set of toll road options that activists argue still undermine the Coastal Act and legal settlements meant to protect Trestles and San Onofre State Beach, as well as Camp Pendleton, the San Mateo Campgrounds, Richard & Donna O'Neill Land Conservancy and Acjachemen baptismal site (Swegles 2017). The military remains an unreliable partner. Given the surf industry's turn to manufacturing wave parks, its continued support is also in question. These conditions, combined with an assault on the Environmental Protection Agency and National Park Service under the Trump administration, suggest Trestles is not yet saved forever.



Photograph 2.3: The famous wind-battered sign along Cristianitos Road reminds visitors what can happen to the land fronting Trestles.

Chapter 3: Trestles' Rotting Ecology: An Interruption

In the previous chapter, my analysis of the defeat of the 241 Toll Road proposal asks us to look beyond Trestles as a recreational space of economic and cultural value. Chapter 3 shifts the focus on saving the surf breaks from development to treating the beach as an anthropocentric site of “necropolitics” from which to view the ecological effects of El Niño in 2016. Necropolitics here refers to power relations inscribed in death and the politics that surface at the beach when dead non-humans have no choice over how their decaying bodies are disappeared. Necropolitics also establish a hierarchy of death that prioritizes the life of some non-humans (in this case, animals) over others. At Lowers, my encounters with a dead, beached gray whale (*Eschrichtius robustus*), dead pelagic red crabs and dead black sea hares (*aplysia californica*) disrupt the production of San Onofre State Beach as a recreational space considered pristine, unspoiled and untouched. These words are frequently used to describe Trestles.¹⁹³ Each die-off during El Niño 2016, however, signals much more is at stake than building a regional toll road that, in this case, is part of the global matrix of climate change.

I draw from the work of Sue E. Moore, who sees “marine mammals as sentinels of ecosystem change” (2008, 534).¹⁹⁴ She argues the rapid pace of climate change in the past 40 years is affecting the behavioral ecology of animals -- that is, the ways they respond to environmental phenomena such as El Niño (2008, 538).¹⁹⁵ I am interested in her work on gray whales in the eastern North Pacific because ongoing studies show they are migrating south later than usual and searching for food in colder Arctic waters even during winter as sea temperatures rise. “[...T]o reveal the consequences,” Moore writes, “we must act now to both broaden and integrate our research approach, and one important way to do so is to

¹⁹³ See the *Los Angeles Times* “Trestles, San Onofre State Beach Saved: Toll Road Project Rejected” (December 18, 2008) and Jessica Kwong from *The Orange County Register* “After a 15-Year Battle, Trestles Surf Spot is Saved” (November 11, 2016). Both pieces use this term to describe the condition of the surf breaks and San Mateo Point watershed. Kwong writes of the toll road proposal: “That plan rankled many, including the surf community, as surfers came to believe one of the world’s most pristine breaks could be threatened by an extension of the toll road.”

¹⁹⁴ For more animal-based research that incorporates this concept, see: Aguirre and Tabor (2004); Jessup et al. (2004); and Bonde et al. (2004).

¹⁹⁵ One question Moore’s study did not pose is what dead, not living, sentinels can teach humans about the effects of climate change beyond the ocean.

use marine mammals as sentinels to ecosystems in transition” (2008, 538).¹⁹⁶ The Trestles case study extends the sentinel family of Eschrichtiidae to include species from the Crustacea subphylum and Aplysiidae family. Alongside gray whales, the sea slugs and pelagic red crabs are also “sentinels of hotspots in ocean production, changes to food webs, contaminant levels, and disease pathways” (2008, 535).

In 2016, extensive die-offs and dead beached whales are part of Trestles’ ecological history, underscoring the impact of El Niño and global warming on marine life. Visible changes in the sentinels’ behavioral ecology in Southern California occurred between April and June 2016, when I encountered their dead bodies at Trestles. The events corresponded with a decrease in sea surface temperatures in the eastern Pacific, likely due to La Niña.¹⁹⁷ Chapter 3 addresses El Niño an ecological event that disrupts the production of an economically viable recreational space. I use the dead sentinel, which I anthropomorphize by naming Gray, to fuse nature/society and animal/human relations into the production of Trestles’ surfscapes. Gray is a mixture of two absolutes: black and white.¹⁹⁸ I consider these colors metaphors for the human-animal dichotomy. Together they create a separate shade (a gradation of gray) that blends the absolutes. I call for a more critical assessment of how humans, myself included, use the animal/human divide to hierarchize the value of the bodies of dead marine life. Granted, my anthropocentric perspective, which includes spiritual overtones, provides an entry point for multiple critiques. Admittedly, the death of a gray whale affects me more acutely at the emotional level than die-offs of tuna crabs and sea slugs. The first subsection identifies and reflects upon the method of handling a dead whale that reinforces the nature/culture, ocean/land, animal/human and life/death divides, to which the whale’s massive, decomposing body draws attention.

¹⁹⁶ In her own research, Moore uses “the behavioral ecology of gray whales [...] in the eastern North Pacific and Arctic to illustrate the importance of ecological scale” (2008, 534). Arguably whales also exist as “individual agents” that traverse the ocean, communicating with other life forms before and after death (Tsing 2014, 224).

¹⁹⁷ This environmental phenomenon typically follows El Niño with “cooler than average sea surface temperatures in the Equatorial Pacific, which triggers changes in the atmosphere” (NOAA 2016).

¹⁹⁸ Naming the animal Gray reflects my anthropocentric desire to “emancipate the thing while leaving the ontology untouched” as the body transitions from water to land (Holbraad 2011, 7). From a post-human position, Holbraad argues rejecting the object/human dualism is a “starting-point” for emancipating things (2011, 10).

At Lowers, I interview bystanders while observing paid laborers mutilate the carcass with construction machinery, then dump the pieces into two trucks bound for the Miramar Landfill in San Diego. A hydraulic excavator that hacks Gray to bits merely emphasizes the power that humans yield in disappearing marine life after death. Several weeks after the hacking, I partake in a group tour of the Miramar Landfill, where Gray is buried. The landfill brings in the dimension of the surfscape as the extension of an abject site where the socio-ecological dimensions of political economy and animal ethics come into view.¹⁹⁹ Kathleen Stewart's ordinary affects and Lauren Berlant's notion of cruel optimism guide me across this abject extension of the surfscape, which houses a "Whale Cemetery." I heed Moore's call by integrating my research into discussions about the political economy of dead marine life.

Composting becomes a way that I imagine emancipating the dead whale and giving it an ecologically richer afterlife. My suggestion to turn late marine life into fertilizer takes into consideration the San Diego County Board of Supervisors' 2015 goal to reduce landfill-bound waste by 2040. Whereas officials from the California Department of Parks and Recreation and the cities of San Clemente and San Diego allow the ocean to metabolize dead sea slugs and pelagic red crabs at San Onofre State Beach (that is, "nature takes its course"), city officials quickly intervene when a massive dead whale rolls ashore and disrupts the daily flow of beach tourism.²⁰⁰

This chapter also incorporates Erik Swyngedouw's reading of metabolism, which posits that "this intermingling of things material, social and symbolic combines to produce a particular socioenvironmental milieu that welds nature, society and the city together in a deeply heterogenous, conflicting and disturbing whole" (2003, 899; Davis 1998; Swyngedouw 1996).²⁰¹ The Pacific Ocean is

¹⁹⁹ I see how the landfill "invests in object/scene with the prospect of the world's continuity while visiting the composting and recycling zones (Berlant 2011, 52).

²⁰⁰ Nature calls for a "labour process as the motive force" to dispose the body (Smith 1984, 19; Schmidt 1999, 52; Swyngedouw 2003, 904). Under these economic circumstances, destroying the whale's carcass sparks a "metabolic interaction" between humans and nature in "the environment of the city" (Swyngedouw 2003, 901).

²⁰¹ Swyngedouw explains, "Marx undoubtedly borrowed the notion of 'metabolic interaction' from von Liebig, [...] a theoretician of modern agricultural chemistry. In fact, the original German word is *Stoffwechsel*, which simultaneously means circulation, exchange *and* transformation of material elements" (2003, 905; Foster 2002). Heynen identifies several theoretical contributions of urban political ecology and an objective in later scholarship, which "has been working, in sum, to articulate urban metabolism as a dynamic process by which new

another site where a distinctly different and peculiar socio-ecological process takes place at Trestles, calling into question animal ethics when comparing modes of human intervention to remove the dead sea slugs and pelagic red crabs.²⁰² Human beings must consider how certain dead animal bodies are disappeared or metabolized at Trestles.²⁰³

My analysis of the comparable sea slug and tuna crab die-offs is rooted in Swyngedouw's reading of urban political ecology. He sees it as a useful platform for "for interrogating the complex, interrelated socio-ecological processes that occur within cities" (2003, 906).²⁰⁴ At the beach, a dead whale merits a different ecological response from humans than dead sea slugs and tuna crabs. To explore why this is the case, I draw from Susan Pearson and Mary Weismantel's theory of a social life. These scholars propose historical and ethnographic answers can unite human and non-humans (that is, animals), provided we are willing to examine why the life and death of some animals are valued over others.²⁰⁵ How do

sociospatial formations, intertwinings of materials, and collaborative enmeshing of social nature emerge and present themselves and are explicitly created through human labor and non-human processes simultaneously" (2014 599).

²⁰² Oliver argues animal ethics "requires rethinking identity and difference by focusing on relationships and response-ability" (2010, 270). Human beings, therefore, must recognize their similar approaches to life after death -- that is, how their bodies are disappeared. "An ethics based on response-ability," Oliver continues, "must acknowledge that all creatures on earth are blessed and cursed with the ability to respond" (2010, 270).

²⁰³ Drawing from the work of Peter Pels, Holbraad explores a "distinction between people and things (or humans and non-humans) in relation to agency that makes "the thing manifest," allowing it to "speak back" (2011, 2; Appadurai 1986; Latour 1993). This runs counter to Lacan's claim that non-humans such as "animals leave their tracks (which are used to identify and classify them according to their same schemata that separate instinct and agency, nature and culture, and man and animals), but because they merely *generate* these signs rather than [manipulate] them, animals are not their masters but their subjects" (Pearson and Weismantel 2010, 20). Under these circumstances, therefore, the animal being/non-human cannot speak back, underscoring the inherent hierarchy between humans and animals.

²⁰⁴ Arguably, social relations at Trestles emerge because nature, animals and humans are considered "social and historical from the very beginning" (Swyngedouw 2003, 903). Their entanglement produces a complex capitalistic space with "environmentally and socioculturally distinct urban ecologies" (Swyngedouw 2003, 901).

²⁰⁵ These scholars are responding to Bruno Latour's (2004) call to "challenge the traditional modernist epistemology that postulates a radical divide between human subjects and non-human objects" (Mouffe 2013, 80). Pearson and Weismantel also ask if the animal is considered a "historical being." They look to the cultural history of cannibalism and totemism, arguing that "in these practices, no single animal can be opposed to humanity, leaving us to conclude [...] that the category of *animal* does not exist" (2010, 21). Referencing totemism, they: "Some animals and some people -- but not all -- are kin. The line between species is less important, in other words, than the line between social groups that include both humans and nonhumans" (2010, 21). Using a Strathernian mode of analysis, Anna Tsing ignores this distinction by treating the fungal spore as an ethnographic subject. This method provokes a "debate that has interested anthropologists of late: are there many cultures and one nature or many natures and one culture" (See Latour 2002; Tsing 2014, 235). The multifaceted basis of animism is two-sided. "On the one side," Tsing writes, "animism is one cultural option among many for classifying what everyone knows as nature; on the other side, animism challenges Western classification systems by positing that animist perspectives on the personhood of animals are equally true" (2014, 235).

bystanders, for example, rationalize the animal deaths as nature taking its course? Were this the case, why does the dead whale's journey end at a landfill, not back under the sand on which it once rested? Or in the ocean, alongside dead sea slugs, tuna crabs and other marine sea life? In the following section, I describe how humans dispose of the dead whale that rolls ashore Lowers at the apex of El Niño in April 2016.

Dead Sentinels Part I: A Gray Whale at Lowers

The surfscape is home to sentinels of ecosystem changes. At Trestles, bottlenose dolphins (*Tursiops truncatus*), great white sharks (*Charcharodon carcharias*) and gray whales visit frequently.²⁰⁶ Dolphins are easy to spot when they ride waves, occasionally showcasing their athletic skills by leaping out of the brisk Pacific to perform aerial tricks. They live approximately a kilometer off shore between Point Conception and Ensenada, Mexico, although rising water temperatures during the 1982-83 and 1997-98 El Niño pushed them as far north as central California to San Francisco (NOAA 2001, 83). Sharks make headlines when they are seen breaching on Surfline's beach camera at Lowers.²⁰⁷ They prowl shallower areas (e.g. bays in continental coastal waters) and frolic in the surf, though perhaps not as gracefully as their bottlenose nemeses. A breaching great white, in fact, brought the Swatch Women's Pro (co-host with the Hurley Pro) "to a halt and kept surfers out of the water for just over a half-hour before the contest resumed" in September 2016 (Pursell 2016). In May 2017, at least 25 sharks, some allegedly 10 feet in length, loitered near the San Clemente Pier, forcing lifeguards to close the beach for the day.²⁰⁸ The robust great white population signaled shifts in ocean temperatures and residency patterns stemming from El Niño.

Although gray whales "tend to use nearshore habitats for breeding and calving lagoons" they can be difficult to spot at Trestles. They usually stay up north near the northern Bering and Chukchi Seas,

²⁰⁶ NOAA reports that "[i]n southern California, animals are found within 500 [meters] of the shoreline 99 [percent] of the time (Hanson and Defran 1993)" (2001, 83).

²⁰⁷ See Laylan Connelly's "9-foot shark breaches near surfers at Lower Trestles days after shark attack" (May 3, 2017) and "Shark jumps out of water near surfers at Trestles, south of San Clemente (April 10, 2017).

²⁰⁸ See Marisa Gerber's "Lifeguards Clear the Waters off San Clemente after Spotting 25 Sharks – Likely Great Whites – Near the Shore" (May 21, 2017).

which supply the Eastern North Pacific stock with food (Young 2003, 37). The steady, agile swimmers cruise beneath the water between 2 to 6 miles per hour, unless in danger, when they accelerate up to 11 miles per hour. Gray whales' migratory range exceeds 5,000 miles, including "waters off southeast Alaska, British Columbia, Washington, Oregon, and California" (NOAA 2015). When summer ends, the whales head south to breed in Baja California, Mexico. Between February and May, they return north with their newborn calves. The animals' use value changes upon exposure to different environments. In the Russian Federation near their Arctic food territory, for example, Emily Young writes a self-subsistent indigenous Siberian group relies on the animals for survival (2003, 37). They face serious exploitation by a transborder tourism industry, which profits from offering whale-watching tours during their southward migration to Mexico. "[...N]umerous other human activities (e.g., commercial fishing, merchant shipping, offshore oil and gas exploration, and coastal development)" threaten their existence, and breeding/calving habitats (Young 2003, 37).

Whales as sentinels of the ecosystem are dialed into Trestles' ecology and co-exist with humans. When a dead one rolls ashore, however, I, like many others, am caught off guard. Jim Pruitt, my acquaintance from surfing Middles, sends me pictures of the rotting animal at 8:43 a.m. on Monday, April 25, 2016. "Hi. Washed up at trestles," reads his first text. The first image shows an arched lump with strips of decaying blubber exposed to the late April air. The whale's erect fin points at the clouds as if pleading for help. I wonder whether it is covered in tar or rotting. "What kind of whale?" I ask Pruitt. He sends two more images, the last one zeroing in on a white underbelly with brown and gray streaks. "Grey – I think it's rotting. [...] 40' long grey whale –."

In one photo, Pruitt stands next to the creature, an impulse to capture the tangible immensity of the animal's death. He appears driven by an overwhelming urge to document and insert himself into the history of an ecological spectacle.²⁰⁹ This combination ends up triggering what some individuals may

²⁰⁹ Ruth Leys' critique of affect helps me make sense of Pruitt's actions. She explains: "[...] There is a gap between a subject's affects and its cognition or appraisal of the affective situation or object, such that cognition or thinking comes 'too late' for reasons, beliefs, intentions and meanings to play the role in action and behavior usually accorded to them" (2011, 443). The pull to participate in the ecological spectacle, in other words, is intoxicating. In

consider a grotesque response to the death of wildlife.²¹⁰ I wonder whether the whale has died of “natural causes,” but after sending the text, I reconsider this phrase.²¹¹ “Natural causes” absolves human beings of blame while simultaneously eluding discourse and knowledge about the impact of climate change, military sonar-testing, vessel-animal collisions, illegal whaling, commercial and industrial development, and (in)visible contaminants like (micro)plastics. These are merely a handful of human-created threats to the existence of marine animal beings, evidenced by global die-offs of whales, which were rolling ashore at an alarming rate, from Chile to the Eastern Seaboard.²¹² Was Gray part of a die-off or a victim of El Niño? Exploitation? Natural causes?²¹³ Why had the gray whale died? With lingering questions in mind, on Thursday, April 28, 2016, I depart from La Jolla for San Onofre State Beach/Park at 7:50 a.m. to see whether it is still at Lowers. News about the death has spread quickly across the internet. The *Orange County Register* invites readers to: “Watch time-lapse video of dead whale washing up at Trestles.” The Associated Press captures the way “onlookers marvel at size, stench of dead whale in California.” Most pressing is a question Liam Stack of the *New York Times* poses: “How Do You Move a 70,000-Pound (Dead) Whale?” I park along Cristianitos Road, unaware that the cities of San Diego and San Clemente, and California State Parks officials, have finally decided how to make the blubbery mass disappear.

Gramsci: Space, Nature and Politics, Alexander Loftus explains how Benedetto Fontana applies Gramsci’s philosophy of praxis to address environmental questions that assume “‘man’s interaction with nature’ is rooted in domination. An ecological consciousness is therefore seen to emerge from this relationship of domination” (2013, 181).

²¹⁰ Leys writes: “The result is that action and behavior are held to be determined by affective dispositions that are independent of consciousness of the mind’s control” (2011, 443).

²¹¹ It is socially constructed and “commonly employed to stress the role of representation, discourse and imagery in defining and framing our knowledge of nature and the natural” (Neumann 2005, 47). Leys’ “critical inquiry” takes into consideration the role of neuroscience in affect studies and calls into question the meaning of representation. She writes: “But the word *representation* is also used by the new affect theorists to refer to signification or meaning or belief, and so on, as if what is at stake in eschewing a representationalist theory of mind-world relations is not just a matter of rejecting a false picture of how mind and body interact but involves rejecting the role of signification, or cognition, or belief altogether” (2011, 459).

²¹² My entry titled “The Inevitable, Unbearable Heaviness of Being Wildlife” asks: What if nature has come to mean injecting waste, plastic and contaminants into built and unruly, uncontrollable environments?” See Brian Clark Howard’s “337 Whales Beach in Largest Stranding Ever” (*National Geographic*, November 20, 2015) and Joseph Mayton’s “Why are so many whales dying on California’s shores?” (*The Guardian*, May 16, 2015).

²¹³ Young explains exploitation occurs because “multiple users [are] operating independently of one another throughout the [whale’s] habitat range” (2003, 37). Consequently, the whales are sought for various (non)consumptive reasons that endanger its existence.



Photographs 3.1: A dead gray whale that reaches nearly 40 feet in length rolls ashore at Lowers in April 2016. Photographs courtesy of Jim Pruitt.

Recreational activity must resume as quickly as possible. With only several minutes to spare until low tide hits Cottons at 8:37 a.m., I aim for tidal line pictures first, then potential dead whale sightings.

Schaler Perry's surf report for South Orange County is uneventful. A mixture of swells originating from the west-northwest, northwest and south-southwest is increasing in size, producing waves approximately waist-to-chest-high at the better surf breaks and shoulder-high on sets at the "standout windswell focal points." Perry notes the ocean's shape is "pretty jumbled through the morning" and looks "to get worse in the afternoon." As I hurry along the paved portion of the Panhe Trail to the beach, an early-morning rain seasoned the asphalt with a hint of pepper. Springy squirrels and cottontails dart into the bushes. The sun bulges under the lingering rain clouds. Someone has slapped another banal surf sticker on a rusty trash bin near Cottons' port-o-potties.²¹⁴ I arrive at the break late and snap images of the low tide's water line before moving toward Lowers and Middles. Tension stalks my shoulders as I wonder how dead whales smell.

Inhaling the odors happens abruptly, their "invisibility" making it impossible to foil an olfactory attack (Marc Crunelle 2004; Zardini 2005, 303). The whiff of foul eggs smothered by rotting sarma seeps through my nostrils. Yellow barricade tape interrupts my trek, though the smell bypassed the flimsy barrier. Today, nearly a half-mile of San Onofre State Beach/Park is closed to visitors. Surfing at Lowers is also out of the question due to environmental and shark concerns. In the distance, it appears the tide and perhaps a bulldozer have pushed Gray to higher ground. The massive whale carcass decomposes between a pair of port-o-potties and trash cans -- literal shit and waste, and harbingers of the future resting grounds, which will become the Miramar Landfill. A mixture of expired meat, moldy cheese and damp washcloths spoil the air. Behind the caution tape and orange cones, the metal claw of a hydraulic excavator hovers ominously over the head of the creature. Is it male or female? How has it died? And why? No one seems to know, except perhaps marine biologists from NOAA, who allegedly "used knives

²¹⁴ I insert these details to demonstrate that I am immersed in a world of what Kathleen Stewart refers to as "ordinary affects" -- that is, "the varied, surging capacities to affect and be affected that give everyday life the quality of a continual motion of relations, scenes, contingencies, and emergences" (2007, 1-2). Such affects make the trek to Cottons peaceful -- yet uneasy. The death and rapid disposal of a beached whale temporarily disrupts the ordinariness of Trestles' daily encounters with wildlife.

to cut samples from the whale's hide for study in the lab" (Doh 2016). Their voices are inaccessible to me, protected by the barriers to communicate openly with the curious public.

With my notebook in hand, from afar I watch the metal claw begin to move, taking notes on the process. Standing on the boundary of Gray's hacking grounds, the resplendent shade of ugly materiality accentuates the metal claw descending on the blubber. My face contorts from queasiness. Not all spectators respond the same, however. The sight of the whale's death yields different expressions, some blank and unchanged, others fascinated, several visibly disgusted. Another day, another dead animal, this one bigger than usual.²¹⁵ "Officials at the scene said they wanted to keep the public at a distance because methane could build up inside the rotting whale's abdomen and cause it to explode, creating a biohazard," reported Anh Do of the *Los Angeles Times*. That is one possible outcome.²¹⁶ With Cinco de Mayo and Memorial Day on the horizon, the corpse also elevates shark fears, negatively affecting tourism; the stench may linger for weeks. Given humans' impulse to take selfies with dead whales, California State Park officials are concerned how they will treat the dead whale's body when no one can monitor their behavior.²¹⁷ To prevent further mutilation, the state park officials aim to get rid of the carcass as soon as possible. Tugging the corpse back out to sea with boats poses major challenges, however. Too often currents bring dead whales right back to the beaches where they wash ashore, explains Kendall, a seasonal lifeguard on duty. The 21-year-old biology student from Brigham Young University is on spring break and assigned a 6 a.m.-to-6 p.m. shift for the day. He is tasked with ensuring no one crosses the yellow police tape or enters the water.

City and state park officials have decided that dumping the dismembered body into two white trucks and driving to San Diego County's Miramar Landfill, fifty miles south of Trestles, is the best,

²¹⁵ Varying reactions demonstrate how "the ordinary registers intensities – regularly, intermittently, urgently or as a slight shudder" (Stewart 2007, 6).

²¹⁶ See Achim G O'Brian et al.'s "Float, explode or sink: post-mortem fate of lung-breathing marine vertebrates." *Palaeobiodiversity and Palaeoenvironments*. 92:1 (2012): pp. 67-81.

²¹⁷ See Veronica Rocha's "Decomposing whale carcass threatens to draw sharks to Trestles surfing area" (April 25, 2016).

fastest and most practical solution.²¹⁸ There, a 60-foot-deep hole in the “Whale Cemetery,” which awaits the mutilated pieces of methane-plagued wildlife. Kendall covers his nose and mouth with his blue jacket while I suffocate under the smell of whale stew as the tide rises. Bearing witness to the spectacle, efficiency dictates action, with Gray immediately becoming the disposable “other.”²¹⁹ The cities’ actions contradict a “secondary goal” put forth by the San Diego County Board of Supervisors in 2015 to significantly reduce landfill-bound waste by 2040.²²⁰ The situation is *deeply* anthropocentric, a term Peter Jacques uses to emphasize how “[...] the persistence of a ‘human/nature’ dichotomy has created environmental problems because people, in thinking mostly of themselves, do not see environmental problems or causes of problems because they do not see environmental conditions as foundationally important compared to their own wellbeing” (2009, 69).²²¹ Kendall and I talk for more than an hour before I finally ask if anyone knows the cause of death yet, my pencil grossly excited to write a reason down in my notebook. He shakes his head. “No, not yet,” he says through the jacket’s fabric. “I think marine biologists from NOAA took some samples, but no one has said anything.”

A high wall of verdant bushes hides Gray’s 5,000-pound tail from view as a hydraulic excavator stands guard, pausing with a metal claw cocked and ready for business.²²² I take several photos with the

²¹⁸ Eric Levenson identifies three methods to remove dead whales from the beach. They include: using explosives; allowing for natural decomposition; and burying the creatures at the site of death or alternative locations such as remote beaches or landfills. See: “It’s Really Hard to Get Rid of Dead Whales” (January 15, 2014).

²¹⁹ Marita Sturken and Lisa Cartwright argue spectacular effect “is one of the primary aspects of spectacle that [...] overshadows and erases the actual violence behind it [...]” (2009, 253). Although their units of analysis are images of the World Trade Center towers that fell on September 11, 2001, the idea they put forth influences how I see the dead whale. The hydraulic excavator and dump truck signify a violent yet common way that humans tame and maintain their ecological surroundings. Oftentimes the “disappearing” of wildlife with this machinery happens surreptitiously, without fanfare or awareness. This is not the case with Gray, however, in part due to the astounding size and destination for burial. The disposal becomes spectacular as it is “recorded by photographic, digital, and video cameras, and disseminated via television transmission, websites, newspapers, magazines, and e-mail” (2009, 253). These modes of communication present dismemberment as a solution to a dead whale conundrum, but they also demonstrate the need for more discussions about the connection between animal ethics and human-led burials for sizeable wildlife.

²²⁰ See: “San Diego County Board of Supervisors Contemplate Plans to Reduce Landfill Waste” (KPBS, April 26, 2017).

²²¹ Conversely, deep ecology (or ecologism) responds to this form of anthropocentrism by considering “nature in relation to man” (Wissenburg 1993, 5). Whiteside accounts for the animal being by referencing Luc Ferry’s “critique of ecology,” which addresses animals’ “right to life” in the sixteenth century (2002, 109).

²²² The political economy that shapes this setting resembles the work of Richard Tapper, who “argues that we should think of our relationships with animals as labor relationships” (Pearson and Weismantel 2010, 26). Man inscribes domination of animals through use of tools. Steve Netherby, a senior adviser to the San Onofre Parks Foundation,



Photograph 3.2: A hydraulic excavator begins dismembering Gray’s tale.

intention of using the visual to resurrect the memory of smell. The butchering commences while the ocean’s thumps overpowered the grinding growls of the excavator. *Hack, blub. SSW wind. 6 knots. Hack, blub, blub. Hack, blub. Hack, blub. Whale Jell-O.* My stomach occasionally lurches when Gray’s body jiggles like a taut waterbed. The wind changes directions, temporarily coming from the southeast and drawing the stench out to sea, then switching northwest and pushing it inland. Back and forth it goes, while Kendall and I gag-breathe. A man and woman walk along the shore near the water, pausing at the orange cones. “Can we go across?!” the woman shouts from the water’s edge. Kendall shakes his head,

demonstrates this point when he asks Do of the *Los Angeles Times*, “Why aren’t they using chainsaws? Wouldn’t that make this go faster?”

yelling, “No!” The pair shrugs and continues walking past the cones.²²³ They veer north toward the machinery, and the man quickly pulls out his camera. With one knee bent into a paparazzi-style lunge, he snaps a series of photos as Kendall radios the police. “We have two non-compliant walkers who want close-up shots of the whale,” he reports.

The police arrive a while later, too late to bust the rule-breakers. Instead, they stop to watch the whale get hacked. The small group of onlookers slowly grows as the morning unfolds. A woman named Carolyn approaches me, interested in the cause of death. “Do you know what it is?” she asks. I shake my head but suggest this is just one of the effects of El Niño on marine life. She eyes my gray notebook. “Working?” she asks as I nod yes. We bond over a love for surfing. For more than a decade, San Onofre State Beach/Park has been her wavetopia -- that is, haven for surfing (Iatarola 2011, 4). Today, however, it is a site of death, visual evidence that even if El Niño is not to blame, Trestles is still a home to dead wildlife. In this instance, the size of the animal determines the mode of removal and disposal.

The dead whale demands human intervention because the California State Parks system controls Trestles’ recreational space. Humans use a claw, which stabs the tail repeatedly behind the bushes. Carolyn films while grimacing. “The dead whale spoils the idea of Lowers as pristine,” I say abruptly.²²⁴ She pauses before responding, “I don’t know. If the cause of the whale’s death is plastic or something like that, then I see it as our fault. But if it died from natural causes, then that’s just life and nature taking its

²²³ In the spirit of Virginia Anderson’s analysis of “the presence of animals, imagined and real” in social spaces, Pearson and Weismantel argue that debating over whether animals have agency is impractical. Instead, they encourage scholars to identify “who the social actors are in any given situation” (2010, 27). Holbraad enriches the possibilities for a more inclusive analysis through a “Latourian” framework. He situates things within these situations and reiterates Latour’s conception of agency, which is “not the effectuation of a human intention [...]. It is a property of networks of relationships (hybrid ones, involving all elements that a modernist ontology would want to distinguish from one another),” Holbraad writes, “that emerges as and when the elements they involve make a difference to each other” (2011, 7).

²²⁴ Driving this comment is objective “to bring together what has been severed far too long by insisting that nature and society are deeply intertwined” (Swyngedouw 2003, 97)



Photograph 3.3: Military and police personnel stand captivated by the spectacle.

course.”²²⁵ I glare at the excavator, deducing that today it behaves like an industrialized serial killer intent on disposing the latest victim’s body and quickly ridding the crime scene of evidence because people want to surf, or walk along the beach unimpeded by dead animal objects, or not acknowledge the enormously visible environmental implications of El Niño. Who wants to admit that Trestles’ ecology is rotting? Or that its surfscape is experiencing the irreversible effects of climate change and irreparable

²²⁵ Theorizing the concept of social space, Lefebvre writes: “To say ‘natural’ is to say spontaneous. But today nature is drawing away from us, to say the very least. It is becoming impossible to escape the notion that nature is being murdered by ‘anti-nature’ – by abstraction, by signs and images, by discourse, as also by labour and its products. Along with God, nature is dying. ‘Humanity’ is killing both of them – and perhaps committing suicide into the bargain” (1991, 71).

harm from El Niño? To finish the job, the city of San Clemente has hired Perrault Corporation Trucking and Materials, a family-owned business and private contractor located in Bonsall, California, to remove Gray and strip “the top layer of sand from the area” for approximately \$30,000.²²⁶ There is a market for removing dead whales at the famous surf breaks if (and when) labor is available. Kendall notes the intestines of another have washed up at T Street, a surf break in San Clemente a few miles north. No similar actions to re-beautify the beach are taken, however. After Carolyn leaves, I mill around Kendall’s lifeguard tent.²²⁷ Eventually the hacking ceases. Nine seagulls fly overhead and circle back to assess. A small stream of curious observers flows across the sand, taking videos and photos of a metabolic process that fuses the city with nature. Five more seagulls, a total of fourteen, hover like kites in the sky, silent and composed, unlike the humans below them.²²⁸

Chopping activities slow from approximately 10 a.m. to 11:24 a.m. At this point, only the tail has been severed. Cutting up Gray is trickier and more laborious than expected. Between this hour-and-a-half, the wind constantly shifts, bringing and pushing toxic smells in multiple directions. The hack-fest resumes at 11:30 a.m.²²⁹ I record blunt comments from bystanders. “It’s gross. That’s why we came to see,” says bystander 1. Beside her bystander 2 chimes in: “How do you get that job? It’s like, ‘Hey, sir, boy, we’ve gotta job for you today. Ready to cut up some whale?’” They chuckle. A family of four sits down about fifty meters behind the lifeguard tent. Two kids pull out small, white buckets and begin to dig

²²⁶ Do of *Los Angeles Times* cites Perrault Corporation as the private contractor hired to transport the whale pieces to Miramar Landfill. The negotiation underscored the innerworkings of San Onofre State Beach/Park’s political economy. Alfred Schmidt analyzes the “Concept of Nature in Marx,” noting that “classical political economy of the eighteenth and nineteenth centuries represents the earliest practical recognition of social space[;] the concept of social space was not made explicit until the end of the nineteenth century” (Smith 1984, 75) Do creates a contemporary affective social space through interviews. She speaks with truck driver Ron Schultz, who “confessed to a ‘woozy’ feeling in his stomach when he learned that his job would be Thursday -- hauling chopped pieces of whale to a landfill somewhere in San Diego” Schultz also said he handled the “horrific stench” by using “liberal amounts of Vick’s Vapor Rub.” In addition, see: The Inertia’s “The Dead Whale at Trestles Has Been Hacked Up and Removed” (May 1, 2016).

²²⁷ Inside the tent, I place humans and animals together “within this active social world [...] to resituate them within an amplified understanding of social life” at Trestles (Pearson and Weismantel 2010, 32).

²²⁸ Through Whiteside’s “enlightened” lens of anthropocentrism, the non-human animals’ efforts to maintain their integrity – to maintain their bodies in being – [expressed] a degree of freedom not wholly dissimilar to our own. This freedom “[provided] a prima facie reason for respect for all beings” (Hayward 1998, 137 via 2002, 65).

²²⁹ Do writes “by lunchtime Thursday, the work had caused the excavator to blow a hydraulic line” (April 28, 2016).

in the sand. They remind me of Gray's burial containers, the huge, portable trash bins parked patiently in the sand next to the whale. Surrounding dialogue fills several pages in my notebook, ranging from best practices for removing dead wildlife to a call for more environmental awareness.

Throughout conversations, however, the dead whale is never “part of the story” even though the corpse is a reminder of its presence. Rather, it is an object that makes a recreational space appear abject. This status makes it difficult for me to “disrupt the nature/culture binary on which distinctions between



Photograph 3.4: Pieces of the whale were later transported by truck to the Miramar Landfill in San Diego County.

humans and animals [...] have traditionally rested” (Pearson and Weismantel 2010, 25). Othering and excluding a whale is easier than treating a dead one as anything more than non-human, particularly with economic interests at stake.²³⁰ Voices that puncture the air reinforce the whale’s role as a disposable object.

²³⁰ Examining the role of rights discourse in relation to animal ethics, Oliver argues, “Focusing on rights or equality and extending them to animals does not address more essential issues of conceptions of the animal man or human that continue to feed hierarchies not only among species but also among human beings, some of whom are figured as more like animals” (2010, 280).

Why not take it on a barge and bring it out to let the animals eat it? (bystander 3). Last time this happened, they burned the dead whale under the sand, and a bunch of sharks came around. Well, hey, if they did that here, maybe it wouldn't be such a bad thing. Would clear out the lineup (bystander 4, who laughed to himself). Where's the dead whale? I really want to see it (whiny child bystander 5, who subverted the claim that the "removal was likely to be [...] disturbing – especially to young children" (Do 2016). If we could leave a sign for gawkers, could it say: 'If everyone picked up trash, maybe there would be no dead whales'? So why is the trash can all the way over there?

Bystander 6, holding a white, plastic bag full of trash, huffs and points to the port-o-potties. Kendall turns toward her, acknowledging the political statement. "Just put up signs all around so people can't avoid them as they come see death," he says. Between comments, the bulldozer scoops up batches of soggy slop and dumps everything into the trucks' cauldrons. Each time, Gray's skin spills over the blade's cutting edge like a shredded and soaked parachute. The hacking appears more insistent now because Miramar Landfill closes at 4 p.m. Transport will take two hours. As the metal crunches and munches, I think of my son's picture book about an industrious garbage truck who teaches kids the letters of the alphabet by eating special pieces of trash. At Trestles, D is for Dead Whale.

Once Gray's body disappears completely from my view, I leave. The rotten smell fades as I walk north, weeping for the hollow conclusion to the creature's life. Except for writing a story, there is nothing I can do to preserve the history of the whale's death during El Niño. No one really cares, even if the animal leaves visible traces, which "are often erased, hidden, or disguised, either through ideology or through social geographies that separate humans and animals, consumers and laborers, urban and rural, pleasure and pain" (Pearson and Weismantel).²³¹ When a whale interrupts the flow of tourism at Trestles, it is a problem that demands an immediate, human-centered solution. Along the Panhe Trail, a man smiles and stops me for a moment: "Is it still there? The whale?" he asks with subdued excitement. I imagine him referencing a dead human instead and respond with uncertainty. Near the end of the dirt trail, as cars parked along Cristianitos come into view, a baby rattlesnake zips toward the parched bushes. Spring

²³¹ Pearson and Weismantel maintain that "such separations characterize certain historical periods and underwrite the ontologies that deny an animal is a social being" (2010, 24).

breeds life as much as it brings death. I reach my car at 1:46 p.m. and record the trip's last moments in my notebook: *More strangers talked to me today than they have in four months. It's amazing how the death of a whale, this mythical, massive creature, makes strangers talk to each other. Forces people to interact. Snakes on a path? [...] Today was certainly a day for wildlife. It's as if all the animals knew about the death of the gray beauty.* In the following section, the Miramar Landfill functions as a burial site for dead gray whales, as well as an extension of Trestles' surfscapes, where the size of an animal carcass influences where humans dispose of it once daily life contingent on surfing as generative economic activity is visibly disrupted.

Miramar Landfill's 'Whale Cemetery'

Less than a month after the whale's death, I receive an invitation to tour the Miramar Landfill as a graduate student researcher studying food-energy-water issues.²³² The timing is strangely serendipitous



Photograph 3.5: The Miramar Landfill is projected to reach maximum trash capacity by 2030. Dead whale not pictured.

²³² The San Diego Association of Government's 2030 Vision for public facilities states: "The region's waste management network is composed of landfills, transfer stations, material recovery facilities, recycling centers, composting facilities, and household hazardous waste collection facilities. Seven functional landfills exist in San Diego County. Of these, five of them accept municipal solid waste and the remaining two, Las Pulgas and San Onofre, only accept military waste. Of those accepting municipal waste, four are privately owned" (171).

and arrives after the dead whale's burial. Heading toward the landfill from La Jolla, the stretch of land to the north along State Route 52 looks innocuous with small, camo-green hills and bushes shielding trash-dumping activities. The topography makes it less of an eyesore, a trashed blight of humanity. To the unsuspecting eye, it can pass as an urban playground for dirt bikes and dune buggies. More notable are the Disneyland-like dips created by methane trapped under the state route's asphalt. The bouncy road eventually leads to an exit ramp and the landfill's entrance. Like the yellow tape surrounding Gray at Lowers, human-run booths enact a border between (un)acceptable smells.²³³ At the landfill, the Environmental Services Department developed a "Miramar Complex Odor Complaint Response Protocol" and "Odor Log" to "assess the nature and characteristics of the odor to determine if they could be associated with operations."²³⁴ Sites within the landfill are specialized, including the "Greenery," a green waste-sorting and composting zone where mulch, compost and wood chips are made available for purchase.²³⁵ It could be a potential space to compost dead marine life if it were bigger.

Eager to trace the whale's journey from sea to land and detail the production of the landfill as one of the surfscape's burial sites for monolithic marine mammals, I join a group of college students, community organizers and university administrators aboard an old bus at 9:07 a.m. on Friday, May 20, 2016. A tour guide named Valerie from the City of San Diego's Environmental Services Department recites facts. The landfill opened on December 7, 1959, she says. Each year nearly 446,000 vehicles pass through with trash. On weekdays, customers dump approximately 3,900 tons, or 7.8 million pounds, of trash into the landfill. I think about Gray's body, which is equivalent to approximately 32 tons. The west Miramar area is the only module in operation; the other two (north and south) closed in 1973 and 1983,

²³³ In Miramar's early planning stages, it was as though "the body's spatial requirements were to be determined by measurement of exhalations," (Corbin 1985; Zardini 2005, 304). Deeper breaths implied a comfortable distance from intolerable odors. The entrance booths created "necessary spacings [...] governed by the forms of sensory intolerance. Conversely, over the next few decades, this creation of distance was to entail increasing specialization; eventually, it was assumed, it would eliminate the confusion of smells that often reigned in both public and private space" (Corbin 1985; Zardini 2005, 304).

²³⁴ Miramar Landfill homepage.

²³⁵ In Lefebvrian terms, "[t]he raw material from which" the landfill was produced was nature (1991, 84). Miramar housed "products of an activity which involve[d] the economic and technical realms but which extend[ed] well beyond them, for there [were] also political products (e.g. dead whale) and strategic spaces (e.g. recycling center)" (Lefebvre 1991, 84).

respectively.²³⁶ To run the electrical generators, the Metropolitan Biosolids Center and North City Water Reclamation Plant uses the landfill's methane gas, which provides 90 percent of fuel (10 megawatts).²³⁷ "Flaring stations for collected methane create electricity by flaring off methane," Valerie says as the bus heads toward the Greenery. "The landfill's 'life' is expected to end between 2025 and 2030," she adds. "We currently divert about 67 percent of recyclables to increase its longevity. By diversion I mean keeping the recyclable material away from here and finding another life for it."

I know dead whales have methane, though unsure how much. "Do you ever find any dead bodies?" someone interrupts. "Very seldom," Valerie responds unfazed. The bus remains near the Greenery for more than 20 minutes while trucks unload trash onto colorful mounds of waste to the west of our informal parking spot. Coming from the east, a mild scent of coffee grinds, rotting bananas and spiced Eucalyptus bark permeate the air. Throughout the tour, she recites more landfill facts and fields questions from visitors as the bus chugs along the road toward the Miramar Recycling Center. Before reaching our last destination, the driver rolls to a stop so that Valerie can show us several creations crafted by independent artisans. She brings aboard a small tote made of silver packets of the drink Capri Sun, a ubiquitous object found in landfills across the United States, she says.²³⁸ The difference in the drink container's material "afterlife" suggests disjointed social relations between humans and animals.²³⁹ At the landfill, Capri Sun packets have a visible lease on life as material objects whereas dead whales at Trestles are disappeared.

As people pass around the objects, I ask Valerie about the dead whale, where it is buried, whom will talk to me about the burial process. My finger itches to draw an imaginary line across the stretch of

²³⁶ The statistical data and landfill's spatial arrangement reveals how "[t]he dominant tendency fragments space and cuts it up into pieces. It enumerates things, the various objects, that space contains" (Lefebvre 1991, 9).

²³⁷ Source of Valerie's information: City of San Diego's Environmental Services: "Miramar Landfill" information page.

²³⁸ See Joe Satran's "Capri Sun Criticized for Environmentally Harmful Packaging" (May 14, 2015). The packets are a product of urban metabolism, in which recycled materiality and human relation to nature derives from creative modes of labor (Foster 2000, 157).

²³⁹ Ted Benton notes, "The standard objections to animal rights do not call into question the status of *human* rights. They are aimed either at exhibiting morally significant differences between humans, and all non-human animals, or at demonstrating the paradoxical and counter-intuitive consequences of extending rights beyond the species boundary" (1996, 162).

open land with hills of trash in the distance. “Ahh, yes. That dead whale...” she starts. “So, we dug a separate hole out there behind that hill. And, unfortunately, the burial was done during a day when a school tour was occurring. The whale was immediately covered to mitigate the smell. It is not the only whale buried there. At least six, seven?” She does not know the final number, though it does not matter. “Welcome to the Whale Cemetery,” quips a woman several seats behind me, where the landfill coexists as a dried-up ocean full of discarded objects. There are several ways to envision a dead whale. Like the rusted box springs and melted toasters, it is an object, a thing, speaking back by decomposing in a landfill. Ontologically, however, Gray is a non-human being/animal, memorialized in my own anthropocentric whale narrative.²⁴⁰ The ocean helped push Gray to Lowers. Humans dumped the smelly carcass into a pit at the Miramar Landfill. Whether this is where the whale imagined its burial upon death is a question I cannot answer.²⁴¹

If Miramar Landfill is nearing maximum capacity, as Valerie had said, then assumedly the Whale Cemetery is, too. Where would future beached, dead gray whales be buried? How would the cities respond without ample space to disappear the ones that decomposed on the shore, disrupting the daily rhythm of other recreational spaces? Worst-case scenario: What would happen to the ecosystem if all the gray whales died -- that is, they went extinct? No landfill could accommodate that die-off. In the following section, I reflect on the disposal of the whale’s body to draw a comparison with how a die-off of sea slugs and tuna crabs elicits a different response from San Onofre State Beach and local governmental officials. This contrast brings into view the wider scope of El Niño as an environmental problem that eventually will affect the animal life and ecological vitality of Trestles’ surfscapes.

²⁴⁰ “In a tragedy,” Tsing consoles, “the death of the protagonist allows the reader to reflect on how the small force of one’s will is most often thwarted by the fates” (2014, 239).

²⁴¹ “In a detective story,” Tsing writes, “the death of the protagonist opens the mystery, stimulating a cascade of questions” (2014, 239). At the end of the tour, Valerie suggested I e-mail her to connect with a representative from the Environmental Services Department who could explain the process of receiving and burying dead whales. She attempted to facilitate communication by forwarding my message to the appropriate contact, but the e-mail remained unanswered.

Reflections on Hacking and Dumping a Whale Carcass

Watching Gray get hacked to pieces at Lowers was unsettling. Since childhood, I had an affinity, a sense of spiritual solidarity, with whales (and dolphins), thanks to Greenpeace catalogues, family-friendly movies like *Free Willy* and reruns of the 1960s TV series *Flipper*. These animals lived in water, my favorite natural element given I was trapped in the Sonoran Desert in Tucson, Arizona. They also were easy to draw in my school notebooks. I gave little attention to where or how they died. Their existence was supposed to be eternal. Moving into adulthood, my connection deepened one February afternoon as I, a disgruntled mid-twenty-year-old, surfed north of Crystal Pier in Pacific Beach, San Diego, recalling how the explosive burst of cold water-air startled me. Less than 50 meters to the west, a gray whale tipped its oblong, speckled body slightly to the side before sinking back under the murky water like a retired submarine. It was “spyhopping.” Our first time surfing together strengthened the spiritual solidarity I once felt as a child. Echoing Bron Taylor’s deconstruction of surfing as a spiritual spatial practice:

These experiences, and the subcultures in which people reflect upon them, foster understandings of nature as powerful, transformative, healing, and even sacred. Such perceptions, in turn, often lead to environmental ethics and action in which Mother Nature, and especially its manifestation as Mother Ocean, is considered to be worthy of reverent care. [...] Surfers’ deep feelings of communion and kinship with non-human animals they encounter during their practice, which sometimes takes on an animistic ethos, can also lead surfers to discrete political action on behalf of particular species and individual animals” (2007, 925).²⁴²

This was certainly the case at Trestles, where my affective connection with Gray led me to call dead wildlife-management practices into question. Now in my mid-thirties, my eyes prickled under salt and dirt when I accepted that all whales die -- and afterward, some explode or get hacked to sloppy bits. Aligned with Giorgio’s Agamben’s character of ‘the anthropological machine,’” I am “not so much concerned with” the whale itself or its penchant to spontaneously self-combust, but the animal ethics of disappearing a dead one with a hydraulic excavator (Pearson and Weismantel 2010, 19). Urbanity and

²⁴² Taylor also notes “[t]his produces a holistic axiology that environmental ethicists label biocentrism or ecocentrism” (2007, 925).

industrialization have altered the way humans interact with whales, particularly dead ones. During the early nineteenth century, for example, whales were hunted and made into commercial products such as whale oil, spermaceti, baleen and ambergris. The whaling market was risky but rewarding.²⁴³ Though market demand and environmental laws changed over time, surely in the 21st century Gray's body had some more environmentally sensitive utility?

In September 2016, for instance, a 43-foot whale carcass was legally composted into fertilizer at a farm in Gorham, Maine, where a couple named Eddie and Rebekah Benson have been “turning lobster carcasses, dead sea urchins and other ‘seafood waste’ into nutrient-rich compost” (Miller 2016).²⁴⁴ The body of the federally endangered North Atlantic right whale, which was found dead off Boothbay Harbor, decomposed within five weeks.²⁴⁵ Was Gray's carcass too contaminated with pollutants for composting?²⁴⁶ Perhaps the body been exposed to too many harmful environmental agents, such as nuclear waste from SONGS, and pollutant levels were dangerous. Would it matter, then, if scientists could sink the carcass to the bottom of the ocean, where extremophiles, “organisms that dwell in the deep and rely upon their austere surroundings,” could feast on the skeletons for ““many years, maybe even hundreds of years””? (Victoria Orphan via Litman-Navarro 2017).²⁴⁷ Perhaps that was too expensive. Even if that were the case, as an affected academic researcher, ethnographer and surfer, composting or sinking a dead whale seemed more “natural” and ecologically beneficial than dumping its carcass into a

²⁴³ New Bedford Whaling Museum website: “Overview of North American Whaling.”

²⁴⁴ See Kevin Miller's feature story in the *Portland Press Herald* (November 18, 2016).

²⁴⁵ See Jed Diamond and Ann Meyer Maglente's young adult book *Composting Abbie: A Whale of a Story*, based on an actual community near Fort Bragg, California, whose residents learned how to turn a 72-foot-blue dead whale into compost for schools and community gardens.

²⁴⁶ Pearson and Weismantel “call for a materialist study of animals as tools; as energy sources; and as concentrated, heritable, and reproducible forms of wealth” (2010, 22).

²⁴⁷ For a fascinating assessment of scientists' ongoing attempts to feed nutrition-deprived extremophiles that live in seafloor sediment, see Kevin Litman-Navarro's “Why Scientists Drag Dead Whales to the Bottom of the Sea.” Kevin Litman-Navarro explains how researchers from the Monterey Bay Aquarium Research Institute collaborated with the Coast Guard and Department of Fish and Wildlife “[t]o plant a whale carcass on the bottom of the ocean, creating what microbiologists call a ‘whale fall’” (Litman-Navarro 2017).

landfill that “naturalized” material culture with dirt pits full of objects that were rotting into the earth’s soil.²⁴⁸

I thought of the picture in which the flipper appeared to be reaching toward a celestial afterworld, a scientific reaction to death with my imposed spiritual overtones.²⁴⁹ It was hard to imagine a decomposing whale would vitalize the Whale Cemetery’s contaminated soil beneath human-produced trash.²⁵⁰ At the end of the journey, however, the Miramar Landfill awaited dead marine animals like Gray.²⁵¹ Still, a different approach to handling the body might reconcile what seemed so cruel about hacking a whale to bits with an excavator.²⁵² Ultimately Gray was a spectacle and object.²⁵³ In effect, San Onofre State Beach was its own landfill -- or rather a foreboding junkyard full of diseased Oak trees, terminally ill creatures, lurking sharks, dead bunnies, drought-stricken creeks, homeless encampments,

²⁴⁸ Whiteside argues intrinsic-value theorists press humans to “respect” nature. She writes: “Moderate anthropocentrists then urge us to ‘regulate’ our activities so not to destabilize delicate equilibria identified in systems ecology. Both are, in a sense, insufficiently self-conscious about what [nature] is and about how human beings have come to perceive it as such” (2002, 108). Nordhaus and Shellenberger argue: “The idea that we should respect Nature implies that Nature has a particular single being (or dream) to be respected. If we define *Nature* as all things, then it is not clear *which natures* we should respect and which we should overcome. We are Nature and Nature is us. Nature can neither instruct our actions nor punish them” (2007, 142-143).

²⁴⁹ Beyond science, “asking whether the thing can speak, then, was to ask for it to speak on its own terms – in its own language [...]” (Holbraad 2011, 10). I did not, however, speak or understand “Dead Whale” to discuss the ecological ramifications for burying this animal in a landfill. In addition, ethnographic answers were not extensive enough to “work in thinking about more-than-human landscapes” (Tsing 2014, 234). I doubted language could provide a direct answer, especially when there is resistance toward a system that “has long been used to distinguish humans as the sole possessors of culture, thereby regulating all other animals to the realm of nature” (Pearson and Weismantel 2010, 18).

²⁵⁰ This logic justified the cities’ decision to Other the whale “as a means of preserving the integrity of [...] ecosystems if only for prudential ecological and anthropocentric reasons” (Lucardie 1993, 33).

²⁵¹ Furthermore, a spiritual/religious response, Kelly Oliver maintains, “merely returns us to the realm of religion for any hope of stopping the machine through which deadly oppositions are produced, without acknowledging the fact that religion has been, and continues to be, used to justify some of the most violent acts against both animals and humans” (2010, 277)? See Ted Benton’s “Animal Rights and Social Relations” in Dobson and Lucardie’s *The Politics of Nature* (1993). Under utopian circumstances, a collective, public gesture to honor the life of a dead, beached whale would blur the nature-society divide, harmonizing the dissonance between human and non-human beings.

²⁵² The affective impact of the hacking equates to “the form of a beat or a shift in the air that transmits the complexity and threat of relinquishing ties to what’s difficult about the world” (Berlant 2011, 51). The mundane method of handling the whale felt cruel to me, with cruelty being “the ‘hard’ in a hard loss,” or that indigestible, acidic fullness of the throat (Berlant 2011, 51).

²⁵³ Holbraad addresses the “ontological division between humans and things” and reiterates a key ideological difference between humanism and posthumanism. Rather than dividing these approaches, he unites their theoretical underpinnings to “move from emancipating things by association, i.e. by letting some of the light of what it is to be human shine on them too, to emancipating them as such, i.e. showing that they can radiate light for themselves – though in a way that [...] is not altogether satisfactory” (2011, 4). Through this lens, things such as animals have agency because of their involvement in the human world (Holbraad 2011, 4; Danny Miller 1987).

broken bicycles, tar balls, chipped golf balls, calcified Mattel toys and plastic bottles.²⁵⁴ As uncouth as my human language was, I felt like shit bearing witness to this urban practice of disappearing dead, monolithic wildlife at Lowers. Scientists from NOAA never publicly confirmed the cause of death, for anyone who cared enough to follow up and pester for answers. Carry on, carry on, as many humans tended to do.

Dead Sentinels Part II: Sea Slug and Tuna Crab Die-Offs at Trestles

On a melancholy Cinco de Mayo, one week after the dead whale is removed, I return to Trestles, arriving slightly late again. It is cloudy and cool, and the waves are about three to four feet, waist- to chest-high, high tide hitting 4.8 feet at 8:59 a.m. I am already nine minutes behind. “Summer focal points,” including Lowers, continue to “pull in shoulder-high+ sets,” according to Schaler Perry’s report. This equates to more surf traffic in the ocean. Southwest swell activity has eased as a minor NW swell moves in. Winds do not look favorable, however, “giving way to a light-to-moderate onshore west-southwest/west flow in the afternoon.”²⁵⁵ As I shuffle along thick sand above the tidal lines, a lump exhales under my shoe. Absentmindedly, I kick the small mass toward the water and trudge forward, eventually reaching a few piles of the invasive seaweed (*sargassum muticum*). Tossed like slimy croutons in the sea’s green salad are black sea hares (*aplysia californica*) some beyond dead, others gasping for their last breaths of life. I crouch down and pull apart some seaweed, where three sea slugs are entangled in the brownish strings. Dead, dead, dead – and more dead ones all around me. I stop counting when I reach fifty. It is a dead sea slug fest. Many of the bloated corpses dot the sand between Lowers and Uppers, also a hotbed for dead wildlife.

²⁵⁴ The insistent traces of “material culture” and animal objects that wash ashore point to the “urbanisation of nature,” in which San Onofre State Beach functions as the border between the global, circular flow of disposable goods and a wasteland with recycling and composting potential (Holbraad 2011, 2; Swyngedouw and Heynen 2003, 902). They are the moving parts of “interacting trajectories, within and beyond the individual, within and beyond the species” whose “patterns, ecosystems and worlds” are designed “without central administration” (Tsing 2014, 231).

²⁵⁵ Surfline report: May 5-7, 2016.

“What are they?” a passerby asks, immediately answering her own question. She bends over to pick up a sea slug and looks at me. “Aren’t the lives ones cute?” she asks. I glance toward their brethren and arch my eyebrows. “See, you can touch them,” she says. “Here.” The wheezing slug in her hand



Photograph 3.6: Dead sea slugs dot Trestles’ coastline in May 2016.

feebly recoils from the timid stroke of my index finger. The term “live” is relative. To me the dying creature is on display at a natural museum.²⁵⁶ The tide surges and a few dead sea slugs roll back with the rescinding waves, pausing when they reach the water’s edge. The die-off is a job fit for a clean-up crew, hundreds of softball-sized organisms ready to be scooped and dumped into the landfill. Estimated price for removal, maybe \$10,000? Yet the dead sea slugs warrant no such economic negotiation. They are small and easy to disappear. The tide is too high for a bulldozing endeavor anyhow. Apart from the route for emergency vehicles, state park trucks and bikes, the ocean has swallowed almost the entire beach, which smells of the usual saltwater and kelp, not whale decay. In time, it will begin digesting dead sea slugs -- oceanic metabolism at its finest.

²⁵⁶ Stewart describes the process of dying in various scenarios. I am drawn to the image that the body of a dead creature is “pointing always outward to an ordinary world whose forms of living are now being composed and suffered, rather than [...] riding a great rush of signs to a satisfying end” (2007, 7). In this case, a human being disrupts an ailing sea slug’s journey to die, placing the body in her hand for viewing.

I finally reach Lower, reluctant to take photos of tidal lines among the crowd of surfers. Life at Trestles no longer pauses for the dead whale. It is back to surf business as usual. In the clearing by the bushes where Gray once laid, a slightly tan man changes into his wetsuit, each casual movement of his body performed to draw attention. Once suited, he stretches his right quadricep while looking through the invisible border between land and water, as though nothing dead ever rolls across it. On display myself, I document the tidal lines amid a few inquisitive stares, then return to the sandy bank by the port-o-potties to write down notes about the shrinking beach and bloated surf population, in which approximately 40 surfers are out, not accounting for those on the beach. The whale's dead space has become a temporary parking lot full of bikes. The carcass' massive imprint is still damp and yellowed, a hint of moldy washcloths seeping from the ground. The walk to Middles is uneventful, and I return to my car, arriving back in La Jolla by 12:21 p.m.

The first sign of a tuna crab die-off along San Onofre State Beach/Park's shore makes the beach look as if it is bleeding. Small lines of pelagic red crabs splinter and splatter across the sand like broken blood vessels. I deliberately skip my Urban Tides duties on June 3, 2016 -- thirty-six days after the dead whale's dumping -- to surf Uppers during a solid southwest swell that promises four- to six-foot waves, shoulder-high to a foot overhead.²⁵⁷ There are more female surfers than usual, a reassuring sight among routine displays of hegemonic masculinity.²⁵⁸ My attention shifts to the patches of dead crustaceans. While stretching, I watch seagulls peck at the colorful, crunchy batches of tuna bites. One moves stealthily as the soldier whom I had seen in combat gear, tiptoeing through the bushes that separated Camp Pendleton's training grounds from Interstate 5.

Five days later, I return to Trestles to take pictures for Urban Tides. As I approach Cottons, a family of three standing approximately 30 meters ahead waves at me. I wave back, reaching to remove my headphones. A thick blackish body with yellowing rings slowly slithers across the asphalt of the

²⁵⁷ In an entry titled "Urban Tides Burnout," I write: "Gotta say there was a ton of hype behind this swell, but so much of it is closed out. The wind is picking up." See Surflife report: June 3-5, 2016.

²⁵⁸ See Ford and Brown's "Gendering the waves: Surfing in the gender order and the gender order in surfing" in *Surfing and Social Theory* (2006, 83-118).

Panhe Trail. There are three or four thick knobs on the rattle. The western rattlesnake's (*Crotalus viridis*) slightest green-blue sheen mesmerize me. I wait for the poisonous creature to pass as it makes sweeping S's with its strong body, slipping up the concrete curb and disappearing into the drought-stricken bushes behind the barbed-wire fence. I wave goodbye to the family and head toward the water. At least the snakes are alive. Chris Borg of Surfline forecast small surf in the one- to two-foot range, "with standout breaks approaching waist-high sets on the right tides in the afternoon."²⁵⁹ A northwest windswell scrambles with a weak south-southwest swell, which is expected to increase slightly in size over the next several days. With nearly two hours until the high tide reaches four feet at 1:19 p.m., I head south, passing under the coaster tracks and cutting across small dunes leading to Uppers. I reach the water. The latest ecological spectacle before me shows more small piles of dead and dying tuna crabs; the beach is bleeding streaks of pink-blood-orange.

May to June 2016 marks the second year of a tuna crab die-off in Southern California, which scientists attribute to warming ocean currents from El Niño.²⁶⁰ "The crabs are typically concentrated in Mexican waters off the southern and central Baja Peninsula, but warming currents periodically carry the crustaceans farther north and closer to the shore" (Reuters 2016). The die-off stretches from Newport Beach in Orange County to Imperial Beach near the U.S.-Mexico border in San Diego County. A few tuna crabs on their deathbeds slice and click their tiny pincers into the air for the last time; others writhe against the sand, bemoaning their fate. From a distance, the pink-blood-orange patches look like petals sprinkled across a brown, endless comforter. Sidestepping as many crustaceans as possible, I pass Lowers, where six surfers wait for waves in wind-pickled water, finding it difficult to ignore the broken bodies that litter Trestles' surfscapes. The dead whale had ended up in the Miramar Landfill, but the dead

²⁵⁹ Surfline surf report: June 8-10, 2016.

²⁶⁰ See: "Red tuna crabs carpet Southern California beaches again" (May 17, 2016).



Photograph 3.7: The May-June 2016 tuna crab die-off stretched from Newport Beach to the U.S.-Mexico border.

sea slugs and tuna crabs do not. Is the Whale Cemetery a space where determining “human fault versus natural causes” serves little purpose? Is there any point in knowing to what extent El Niño is to blame for all three events? Even if humans know the scientific reasons why gray whales, sea slugs and tuna crabs were dying off throughout 2016, the dead animals’ bodies still are disappeared differently. In the whale’s case, this dichotomy reinforced a rigid approach to “othering” the animal to maintain Trestles as an ecosystem service while upholding marine animal hierarchies within nature/society relations.²⁶¹

Dividing human beings and animals/non-human beings is a conventional exercise in upholding dualities because dead wildlife affected the operability of ecosystem services. But within the context of ecosystem survival, are not we all interrelated, part of nature, dependent on each other and interrelated?²⁶²

²⁶¹ Pearson and Weismantel captured similar sentiments by arguing that “[i]f we fail to consider animals’ material lives, [...] our understanding of these emotional relations remains incomplete” (2010, 23).

²⁶² In the spirit of Holbraad and Ingold, all bodies theoretically can be “submerged on an equal ontological footing in ‘an ocean of materials’” (Holbraad 2011, 9; Ingold 2007, 7). To describe nature, Ted Nordhaus and Michael Shellenberger draw from the perennial text *Silent Spring* by Rachel Carson, whose “fable, like most environmental accounts of Nature, imagines Nature to be something essentially harmonious and in balance” (2007, 132). John

What makes the human activity of cutting a whale into pieces with a man-made machine natural if nature is “generally seen as precisely that which cannot be produced; it is the antithesis of human activity” (Schmidt 1984, 32)? Nature contained by parameters of space stimulate creative yet often gruesome forms of labor, demonstrated by the work of the dead gray whale’s clean-up crew. As an alternative to mutilating oversized, dead marine life (e.g. gray whales) and dumping their bodies into the Miramar Landfill, I encourage fellow scholars to research the possibilities of composting them, perhaps an idealistic intervention, but seemingly more environmentally sensitive compared with the current method. In the words of Oliver, “We cannot stop treating other people like animals until we stop treating animals like animals, until we rethink what it means to be human or animal” (2010, 280).

The ways that humans negotiated the massive die-off of marine life during El Niño produces an unsettling vision of Trestles’ ecological future, particularly regarding the surfscape’s aesthetics and ecosystem functionality. Those who believe the surf breaks have been “saved forever” based on the defeat of the 241 Toll Road proposal will have to prepare for and adapt to the onslaught of environmental challenges that are linked to climate change, sea-level rise being one of them. The threats against Trestles’ are multi-dimensional in scope; therefore, people who want to protect the surfscape from destruction must be open to different modes of imagining how this can be done before the ecological and environmental disruptions are too big to handle.

Bellamy Foster notes in *Marx’s Ecology* that “Marx always treated nature, insofar as it entered directly into human history through production, as an extension of the human body (that is, ‘the inorganic body of man’” (2000, 73).

Chapter 4: Eco-Ethnography as Experimental Method

In the previous chapter, I demonstrated how the painful presence of dead marine wildlife at San Onofre State Beach points to the limits of the Save Trestles campaign and disrupts claims that Trestles has been “saved forever.” I framed the deaths of these sentinels of ecosystem change as visible signs of environmental trauma, brought on by the warming of ocean waters. Another observable effect of climate change at San Onofre State Beach is sea-level rise (SLR). SLR is a pressing issue that the University of Southern California’s National Sea Grant College Program (USC Sea Grant) is addressing through its ongoing “Urban Tides Community Science Initiative.” In December 2015, program organizers issued a call for citizen scientists concerned about SLR and the effects of El Niño along California’s coast to join the initiative. Using Google maps, researchers geo-referenced a list of beaches in need of data about “current tidal lines, beach erosion, and coastal flooding.”²⁶³ San Onofre State Beach was one site of interest.²⁶⁴ Given my concerns about the impact of SLR on the beach and the tenuous outcome of the Save Trestles campaign to stop the 241 Toll Road extension, I gladly answered the call. I was also keen to see how incorporating the initiative’s research methodology alongside my own would alter, amplify or change my own ethnographic gaze and surfer’s sensibilities, and vice versa.

Urban Tides is yet another activist intervention into the fate of sites such as San Onofre State Beach. Participation is voluntary and provides a way for people to engage in the multi-level fight to

²⁶³ See: Urban Tides Community Science Initiative advertising flier.

²⁶⁴ Organizers turned to social media, newsletters, newspapers, television stations, radio programs, science blogs, scientists and educational institutions including Scripps Institution of Oceanography to recruit citizen scientists. Some scientists involved in the initiative also provided research updates via blogs. Ongoing media coverage about the initiative itself was one way the project generated discourse about sea-level rise. See: “Erosion Concerns” (KABC Los Angeles, November 28, 2016); “Wave of the Future: Strolling the Beach in Pursuit of Science” (*Los Angeles Daily News* December 18, 2015); “Citizen Scientists Learn to Document El Niño’s Impacts” (KPBS San Diego, January 21, 2016); National Oceanic and Atmospheric Administration’s feature story “Urban Tides Gives Rise to Community Resilience” (May 20, 2016); and *The Urban Mariner* “Urban Ocean Report” (Summer 2016). In the future, it is likely that other forms of Urban Tides’ “scientific contribution [will] include such items as numbers of papers published in peer-reviewed journals, size and quality of citizen science databases, and frequency of media exposure of results” (Bonney and Dickinson 2012, 25).

“save” -- or, at least, prolong -- the ecological vitality of their favorite beaches (e.g. Trestles).²⁶⁵ Building upon this perspective, I use Urban Tides as a case study of citizen science and another form of producing space and knowledge about space.²⁶⁶ It became one of my methodologies by which to view how Trestles as a space is produced, understood, interpreted and negotiated. As I took pictures of high and low tidal lines at San Onofre State Beach for Urban Tides between January 2017 and January 2017, I quickly realized that cross-fertilizing citizen science with the knowledge I derived as an ethnographer and surfer could widen the scale of my analysis. These three methods, if you will, intertwined for me at San Onofre State Beach, and their entanglement leads me to use the operative term “eco-ethnography” to describe my hybrid knowledge. While citizen science broadened my scale of analysis in certain respects, it also limited my observations. I found myself drawing on the other two ways of knowing to provide cultural and ecological context for more unidimensional spatial models that informed how I gathered data, and what data I gathered for Urban Tides. What follows then is an experiment in this cross-fertilization of mixed methods. My eco-ethnography responds to Bonney and Dickinson’s call for “new language to talk across the disciplines, new models for understanding project design and project results, and new tools to bring people, nature, and computers together in meaningful ways” (2012, 26).

To make sense of and navigate these spatial complexities as a citizen scientist, academic researcher and surfer, I conducted an eco-ethnography of Urban Tides, within which a citizen scientist functions as one more agent, and citizen science as yet another practice deployed in the production of the surfscape. It should be noted that I am not making general claims about citizen science in this chapter. Rather, my comments are directed to the strengths and limitations of citizen science data-gathering

²⁶⁵ Urban Tides is framed as a citizen science project that benefits from the “[people]-power needed for scientists to gather baseline ecological information” at large spatial and temporal scales (Cox et al. 2012 and Silvertown 2009).

²⁶⁶ Some scientists ask the public for help with their research projects for several reasons. They include: community outreach efforts; budget constraints; difficulty reaching desirable research sites; and limited government resources, which drive their requests for unpaid labor from people invested in the scientific process (Goffredo et al. 2010, 2184). These individuals are typically referred to as “citizen scientists.” Bonney and Dickinson explain the data they collect for citizens becomes part of larger, ideological projects “driven by a research question or monitoring agenda that fits clearly within the sponsor’s scientific or conservation mission” (2010, 22).²⁶⁶ Citizen science appeals to many scientists because of its pedagogical and educational outcomes.

models I used for this specific initiative. There is a broad range of practice that falls under the term citizen science. Critical literature points to poles of this spectrum where citizen participants have greater or lesser substantive involvement in determining research questions and design; access to data and the potential to participate in analysis; and a say at the table in terms of how findings are used and disseminated.²⁶⁷

Although Chapter 4 incorporates these themes, it does not analyze whether Urban Tides is a case study of citizen science “done right.” This would be difficult considering the initiative is an ongoing, socially minded, educational and ideological project. Rather, it emphasizes a dialectical and methodological exchange between a novice citizen scientist and social scientist with an ethnographer’s and surfer’s habitus, mindful of the difficulties in “democratizing” the production of knowledge (Ottinger 2010).²⁶⁸

My engagement with citizen science then was as a “citizen scientist” driven by the desire to explore new means of co-producing knowledge about Trestles and San Onofre State Beach. Here, I borrow the meaning of co-production from Jyldyz Kasymova and Tia Sherèe Gaynor, who describe it as “the sharing of information from residents to city administrators” in their study on civic participation in environmental issues (2014, 14). The landscape of social actors involved in Urban Tides is far more complex than I can render here, as is the network of knowledge-exchange. I situate my work on Trestles along the spectrum that “citizen science has also begun to push the frontiers of understanding with regard to how people learn and how they begin to think scientifically across geographic regions and cultures” (Bonney and Dickinson 2012, 26).

All these caveats aside, I myself felt inhibited by the methodology and found myself drawing from my own ethnographic and surfing knowledge about Trestles. I also found myself questioning the

²⁶⁷ Much like the debates on community-based participatory research (CBPR), some citizen science is great, and some has been co-opted as a means of exploiting the labor of citizens, appropriating genetic information, legitimating the power of researchers and their corporation sponsors and other similar themes. For example, Rick Bonney and Janis T. Dickinson provide an overview of the public’s role in environmental research, citing Cornell Lab’s NestWatch program as one example for doing long-term contemporary citizen science. They break down the process from data collection to analysis.

²⁶⁸ Dickinson and Bonney note that citizen science pushes some environmental scientists to confront a hierarchy of knowledge-sharing when they “arrive at the doorstep [...] with a deficit view of the public’s scientific potential, a sense that science is *the* way of knowing, and the notion that they (the scientists) will magnanimously bring scientific wisdom to a hungry or even ignorant public” (2012, 11, Irwin 1995).

notion of citizen science as democratizing science within the context of this specific initiative and my engagement with it. I thus analyze Urban Tides through a more critical lens. Undergirding my critique of this case study is a view of citizen science as a neoliberal concession to a neoliberal framework, overtly dependent on the notion of the individual and individual responsibility. That is, the responsibility rests more so on the individual rather than federal, state and local agencies to help fund good science and protect communities from environmental catastrophes. Here, I am sympathetic with the fates of scientists, who must forge ahead with conducting projects on a global scale without the necessary funding to do so without volunteer labor.

The ethos of individual responsibility that characterizes many citizen science projects, Urban Tides included, therefore, points to the challenges that arise as local and federal funding for doing “good science” is slashed or disappears completely (Tucker and Taylor 2005, 29).²⁶⁹ Several questions emerged from my experience as a citizen scientist with the Urban Tides initiative. What is the scientific methodology behind the Urban Tides initiative? Who is considered a “citizen” in this project? Who is driving the production of knowledge? What are the competing forms of knowledge, and what are the hierarchies that govern which forms are accepted? What weight does on-the-ground knowledge really have in scientists’ models of data-gathering? Given that the impact of SLR promises to have dramatic socio-economic consequences on the entire region and nation, how can researchers think strategically about the arguments for distribution of resources to the radically uneven vulnerabilities of human and other inhabitants? The following section parses out these questions by going into deeper detail about Urban Tides’ objectives. The project’s conceptual foundations create a path for discussing the political undertones and scientific ideologies that shape the production and distribution of knowledge about SLR in California.

²⁶⁹ Connie Tucker and Douglas Taylor use this term within the context of community-based participatory research, describing it as “science that helps us determine ways to understand and improve our health and quality of life” (2005, 29)

Urban Tides Objectives

Urban Tides emerged from the National Sea Grant College Program, a “partnership between universities and the federal government’s National Oceanic and Atmospheric Administration.”²⁷⁰ USC Sea Grant’s objectives derived from the passage of the National Sea Grant College Act in 1966. Its model promotes an efficient “transfer of science-based information” rooted in applied research, community-based knowledge, environmental literacy and communication.²⁷¹ In California, Urban Tides regionalizes and localizes efforts to conserve, preserve and protect coastal communities, with the intention of actualizing governmental “strategies that will help the region adapt to the future impacts of SLR.”²⁷² It encompasses four main objectives, which I outline here.²⁷³

The first aim involves building a repository of public photos for scientists “to visualize current flooding risks at coastal locations in Southern California.” These photos are synced from citizen scientists’ smartphones and stored in Liquid’s cloud-based storage system, which digitizes and expands the movement of data that scientists (and other registered users) can utilize to determine processes such as spatial patterns.²⁷⁴ Urban Tides’ datasets are public, providing anyone with a Liquid account access to photos and recorded information about various beaches in the state. For this project, citizen scientists are considered contributors, a title that implies they have no decision in determining how the public can use their photographs. Each record they submit through Liquid is asterisked with a reminder that “[b]y uploading an image, you irrevocably consent that it may be used for educational, research, outreach and

²⁷⁰ National Oceanic Atmospheric Administration’s Sea Grant History: “Who We Are.”

²⁷¹ To increase ocean and climate literacy at the local levels, for example, outreach efforts included activities such as: educational beach walks; public workshops on data results from CoSMoS; presentations from public officials about SLR guidance and adaptation strategies; and suggested lesson plans about king tides for elementary students.

²⁷² Urban Tides Community Science Initiative home page.

²⁷³ As of 2018, the initiative was still in existence.

²⁷⁴ Environmental scientist and Liquid founder Jacob Shidler collaborated with his friend who was also a coder to build a database-management system that is “basically an electronic, online version of the scientific method” (Smith 2015). The scientific data management company is based in Queensgate, Ohio. Shidler described data as “siloes in the sciences because of this paper-based system. It’s not fluid and transferable across disciplines, across researchers, across departments, even” (Smith 2015). For private projects, the cost of Liquid’s service is done on a sliding-scale (apart from a free, 30-day trial), depending on the level of individual and institutional involvement. After testing the product’s alpha version with a small base of interested users in 2014, Liquid teamed up with Sea Grant to develop a customized, digitized form that Urban Tides’ citizen scientists access with an app to record data and take pictures of California’s tidal lines (Sarason 2014).

promotional purposes, in any medium, in perpetuity.”²⁷⁵ The implications of this caveat draw attention to the power relations inscribed in producing knowledge about SLR.

Urban Tides’ second goal is to “ground truth and calibrate scientific models that project flooding and erosion due to future SLR.”²⁷⁶ Foregrounding this objective is marine science (i.e., a field that entails the study of the ocean’s role in chemical, geological, physical and biological processes that occur on Earth and affect human and nonhuman life). Oceanographers are trained to use and have access to technologies such as the Coastal Storm Modeling System for Southern California (CoSMoS) to help Urban Tides project SLR by 2050. They draw from CoSMoS to predict and prepare for environmental disasters (specifically coastal erosion and flooding) related to past, present and future climate change.²⁷⁷ Urban Tides’ oceanographer O’Neill notes that a series of features distinguish CoSMoS from other modeling systems that assess the impact of climate change on California’s coast.²⁷⁸ She explains:

The purpose of CoSMoS is to provide coastal flood hazard projections for future storms and SLR[.] We do that by explicitly simulating storm events with high-resolution numerical models, accounting for relevant physics and flooding contributions. Simulations are run for several storm (up to 100-year storm) and SLR scenarios [...] to provide a large ensemble of projections (over 40 scenario combinations). This provides some very useful information for community-scale planning. [...] All models have limitations, and there are many other projections and models out there with different strengths and weaknesses [...] A good planner will look at several projections (keeping in mind strengths and limitations) for an appropriate determination of risk.

The initiative’s third and fourth objectives underscore the need for “collaboration,” which USC Sea Grant equates to bi-directional learning and knowledge-making among local communities, municipalities, city officials, citizen scientists and scientists (among other social actors).²⁷⁹ This begs the question: How is data, including that from Urban Tides’ participants, shared, discussed and

²⁷⁵ Urban Tides Photo Database record.

²⁷⁶ Urban Tides Community Science Initiative flier.

²⁷⁷ Urban Tides’ research model suggests “[...] the knowledge of the formally trained expert is considered valid, and reality is described by empirical and testable results” (Tucker and Taylor 2005, 27).

²⁷⁸ My e-mail exchange with O’Neill occurred on May 9, 2016.

²⁷⁹ Collaboration is not a transparent term and needs to be dealt with more critically by closely interrogating the roles and relations of collaborators. Ross et al. argue: “Collaboration with academic researchers [...] may cause a structured group to be vulnerable to disassociation of individuals or even splintering of the community itself. [...] This is one reason why academic researchers may want to partner with multiple [community-based organizations] or to seek multiple community partners” (2010, 22).

contextualized? Workshops, webinar series and stakeholder meetings are ways that USC Sea Grant has collaborated with local and state entities concerned about climate change impacts. On October 21, 2015, for example, the City of Santa Monica joined USC Sea Grant to hold a public workshop sharing “initial results from [CoSMoS] for Southern California,” although Urban Tides’ data sets were not yet included in these analyses.²⁸⁰ From 2015 until 2016, USC Sea Grant also produced the “Regional AdaptLA Webinar Series” for various stakeholders “to provide subject-specific information and training that will help to advance sea-level rise and coastal impacts planning in L.A. and Southern California.”²⁸¹

Researchers at the Scripps Institution of Oceanography (SIO) also solicited feedback from Urban Tides citizen scientists via a pre- and post-participation survey in 2016 to better understand their “motives for engaging in the initiative” and improve communication with scientists who use their photographs of beaches.²⁸² Ultimately, Urban Tides’ objectives are grounded in the idea that citizen scientists’ observations about how and where the coastline is changing “will help further collective dialogue about how we can adapt to rising sea levels.”²⁸³ The initiative is supposed to work against a “more technocratic form of decision making” (Frickel 2011, 24). In the following section, drawing from my own experience as a citizen scientist for Urban Tides, I explain the challenges that arise in trying to achieve the initiative’s objectives.

²⁸⁰ See: “Initial Coastal Storm Modeling Results Workshop” (dornsife.usc.edu/uscseagrant/cosmos-results/) as well as USC Dornsife Sea Grant page “CoSMoS 3.0 Results,” which notes: “The full suite of CoSMoS 3.0 results and data covering 40 scenarios for Southern California will be officially released in late 2016/early 2017. Results will be free of charge and publicly accessible through the mapping tool Our Coast, Our Future (www.prbo.org/ocof). Accessed January 26, 2018.

²⁸¹ See: “Regional AdaptLA Webinar Series” at dornsife.usc.edu/uscseagrant/adaptla-webinars/. Accessed January 26, 2018.

²⁸² See Astrid Hsu’s “Walking North: Lessons in Citizen Science” (March 15, 2016). dornsife.usc.edu/uscseagrant/walking-north-lessons-in-citizen-science/. Accessed January 26, 2018. According to survey results: 45 percent of respondents cited “Project updates from scientists on how they are using the photos” as the most important component for encouraging participation in the Urban Tides initiative.

²⁸³ Urban Tides Community Science Initiative flier.

Becoming an Urban Tides Citizen Scientist

In January 2016, I took the preliminary steps of volunteering for Urban Tides by attending field training at SIO in La Jolla, California.²⁸⁴ My initial interest in the initiative stemmed from surfing. As a surfer, I was disturbed by the visible impact of winter storms mixed with extreme high tides (i.e., king tides) at various popular surf breaks throughout Southern California. During January 2016, for example, the main parking lot near the central lifeguard tower of La Jolla Shores, a touristic hotspot between the months of June and September, flooded after particularly intense winter-storm activity. Additional flooding occurred near a surf break named Trails in the southern zone of San Onofre State Beach, wiping out ten parking spaces that visitors and surfers frequently used to access the ocean. During the first week of March 2016, the University of California, San Diego, closed a main lifeguard route to Blacks Beach in La Jolla for three weeks due to a cliff collapse. These instances of minor destruction were a stark reminder that the future of public beach access at low-lying coastal areas is precarious.

Several items were on the agenda for Urban Tides training, including an early morning walk from the parking northward along the beach to the SIO Pier during a king tide (i.e., extreme high tide); a tutorial on how to photograph tidal lines using my smartphone; and two presentations about the scientific fundamentals of El Niño. With this training, I left with the hope that if I took photos of tidal lines at San Onofre State Beach, perhaps they would help scientists map SLR at Trestles and expand plans for community resilience to the City of San Clemente. This was a lofty imagining but factored into my motivations for participating nonetheless.²⁸⁵

²⁸⁴ Scientists usually require those interested in their projects or initiatives to attend some form of field training. This is one way they (attempt to) achieve uniform data collection while navigating the methodological challenges of citizen science. The duration and intensity of this preparation period largely depends on the projects' scope and objectives. Each one becomes an opportunity to collaborate with scientists and participate in real-time scientific investigations. In an ideal scenario, this training is bi-directional, meaning it works both ways. As such, scientists can also learn from citizen scientists (vice versa).

²⁸⁵ People are motivated to participate in these projects for several reasons. Goffredo et al. argue that it is a way they immerse themselves in a culture that values recreation as a conduit of the scientific method. Others find it useful for networking or building relationships with like-minded citizen scientists. Concern about the future of the planet and its environment is also a motivational factor. People like me consider it an opportunity to acquire more research experience and experiment with compatible methodologies (ethnography in this case) (Goffredo et al. 2010, 2171-2172).

I had already served as a citizen scientist in 2013 after conducting beach-use surveys of a Marine Protected Area (MPA) for four months at Border Field State Park (adjacent to the U.S.-Mexico border). Wildcoast, an environmental nonprofit based in Imperial Beach, had launched an “MPA Watch” program to help monitor onshore and offshore “non-consumptive and consumptive” beach activities, such as tide pooling, cast-net fishing, surfing and fishing on private vessels. Wildcoast used citizen scientists’ observational data to inform and facilitate MPA enforcement and management decisions regarding (il)legal human activity inside San Diego County’s MPA network. At Border Field State Park, for example, only methods of hand-held dipnet for recreational fishing and round-haul dipnet for commercial fishing were allowed. If I saw anyone casting fishing rods from small boats (which was possible because I had professional-grade binoculars to monitor ocean activities), I was asked to report it on my survey sheet, where the information would be forwarded to the California Department of Fish and Wildlife. I also recorded recreational, legal activities such as kayaking and running/walking along the beach. The completed surveys helped “provide contextual information on human use for interpretation of biological monitoring data.”²⁸⁶ In other words, Wildcoast’s project database contained records of what people were doing in MPAs and the potential impact their activities had on wildlife.

As an MPA Watch participant, I attended a two-hour information session, followed by two days of mandatory training. This form of preparation is typically how scientists and researchers “implement protocol for rigorous data collection and submission that will engage motivated individuals who may or may not be formally trained in natural history observation [...] or scientific investigation” (Bonney and Dickinson 2012: 20). The training also was expected to enhance citizen scientists’ data quality and facilitate education outreach efforts. During the first day, Wildcoast staff outlined the central purpose of the program, which was to determine how effective MPAs are at supporting recreational activities and upholding California’s Marine Life Protection Act, passed by the state legislature in 1999. The following weekend, attendees conducted a group sample beach-use survey, using a 31-page field guide that included

²⁸⁶ Wildcoast MPA Watch orientation presentation June 2013.

MPA informational materials, a list of transect sites and answers to frequently asked questions. I supported Wildcoast's goal for local, state and federal agencies to protect and expand the county's MPA network. At the same time, Wildcoast's mission appealed to people who anticipated their on-the-ground data would influence future policies and regulations regarding MPAs. At the personal level, my willingness to participate in the MPA Watch program indicated several things: I "[cared] about the wild, [felt] at home in nature," and wanted to believe I was "making a difference while exploring" Border Field State Park. These basic characteristics of a citizen scientist gave me reason to begin calling myself one (Goffredo 2010, 2170).

I officially began taking photos for Urban Tides on January 10, 2016, amassing a total of 121 records by January 16, 2017. I describe here what I did as a citizen scientist, drawing upon different ways of doing citizen science and knowing the site, which in this case is technically Trestles, located within San Onofre State Beach. I unpack the significance of this technicality in my section that addresses surfer's knowledge. To become an Urban Tides contributor, I established a username and password, then downloaded the Liquid app on my iPhone.²⁸⁷ With this feature, the Urban Tides data set automatically loads once this information is generated, the app is opened, and login is complete. I created a new digital record for each photo session and input required information, which included: location (auto-populated latitude and longitude with the tap of a small arrow); location description; and compass orientation. The fields for date and time were auto-populated. As Benjamin Zuckerberg and Kevin McGarigal explain: "Using data that are spatially explicit (i.e., sites that have exact latitude and longitude) is necessary if the investigator plans to delineate landscapes" (2012, 122). This especially matters to GIS experts, oceanographers and geographers who are using the Urban Tides data sets to model short- and long-term

²⁸⁷ Urban Tides Community Science Initiative flier. As of September 2016, there were no similar applications available for download for other smartphones (e.g. Android). Desktop computers suffice for uploading digital photos, although this method takes a few more steps to complete.

impacts from global climate change along California’s coast. Each photo included space to note “something cool” about the site and general notes that may be useful.

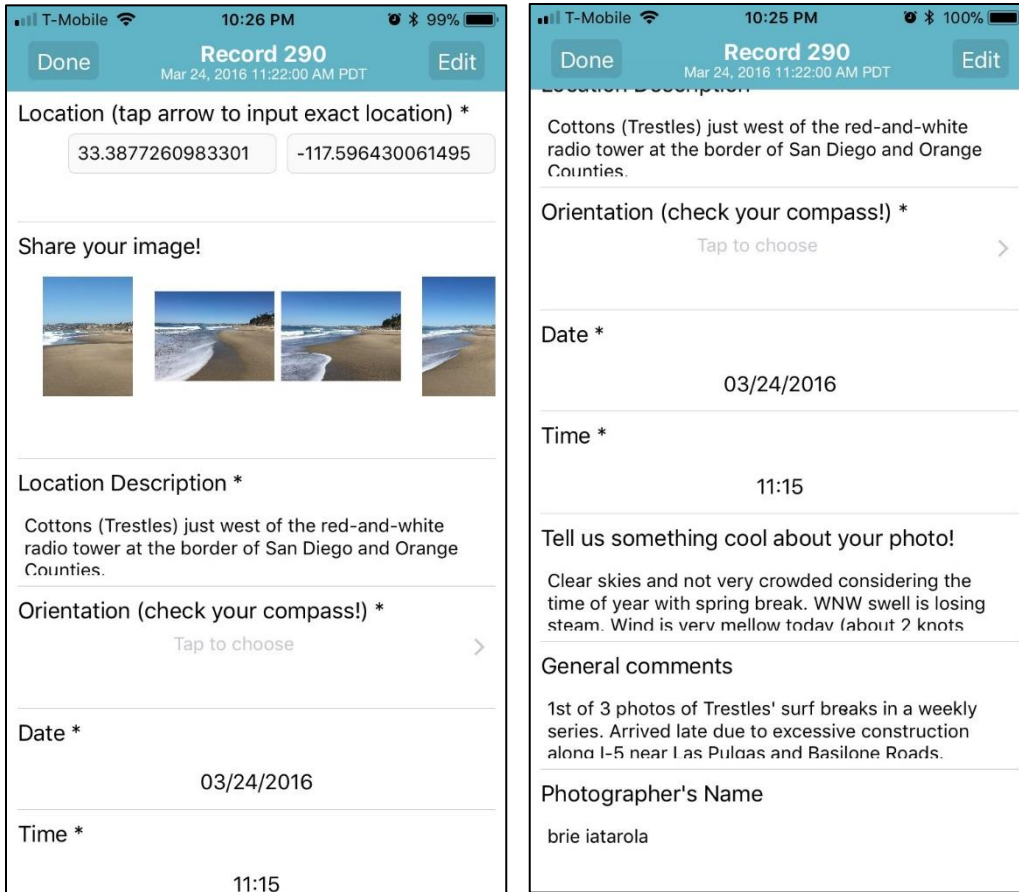


Figure 4.1: An example of a completed Urban Tides record for March 24, 2016.

Each trip by car to San Onofre State Beach took between 35 to 55 minutes each way, depending on the traffic season. I did not live inland, and my timeframe to leave La Jolla was flexible between 7:45 a.m. to 5:15 p.m., which made the commute generally fast and uninterrupted. The drawback was that my timeframe for collecting data always fell within traditional business hours. I avoided holiday trips and rush hour at all costs. March 2016 marked a particularly active period in which I made five trips to Trestles, three of which are detailed here and invite a critique about my approach to “doing” citizen science as a practice for Urban Tides.²⁸⁸ My ethnographic observations and on-the-ground knowledge as

²⁸⁸ Trips to Trestles occurred on the following dates in 2016: 3/4; 3/10; 3/16; 3/24; and 3/28.

a surfer are meant to show how eco-ethnography and citizen science inform each other as methods of data collection and analysis, both of which allow me to see things that I might not have otherwise.

Each month I set aside at least four hours to conduct fieldwork at San Onofre State Beach.²⁸⁹ On Friday, March 4, 2016, I departed La Jolla at 9:11 a.m. and located parking off Cristianitos Road by 9:51 a.m. The ocean was still a twenty-minute walk away and, unlike several park-goers and surfers, I did not



Photographs 4.1: The Panhe Trail, also referred to as the ‘Nature Trail’, eventually leads to Trestles.

have a skateboard, scooter, bike, electric bike or any other form of transportation with wheels. I usually took the Panhe Trail rather than the California State Parks and lifeguards’ paved service road, even though this added more time to my trip. It was an intentional choice, influenced by the victory of the Save Trestles and anti-241 Toll Road campaigns. When I arrived at the beach, I engaged in a ritual of picture-taking protocol after I decided which surf break I would photograph first. Today it was Middles based on

²⁸⁹ This did not include three weeks total (two separate trips) of camping at the San Mateo Campgrounds, illuminating experiences that are regrettably not included in this dissertation.

tide times. The first low was dropping to -0.1 feet at 12:31 p.m.²⁹⁰ That gave me 2.5 hours to: walk south to the surf break; record beach-use activities; take notes about the surf conditions; and compare my onsite observations to several surf reports, including Surfline’s for South Orange County.²⁹¹

Written inside my field notebook were notes for the three-day forecast from meteorologist and surf forecaster Schaler Perry. Today he reported: “Solid WNW building throughout the afternoon; favorable winds in the late morning and early afternoon. Dropping tide -0.1 at 12:31 p.m. Fair to Good. 4-6ft to 1 ft overhead occ. 9ft. Good size WNW swell builds through the day and peaks late. Small SSW swell. Light AM wind.” To translate: For the next few days, a swell from the west-northwest mixed with

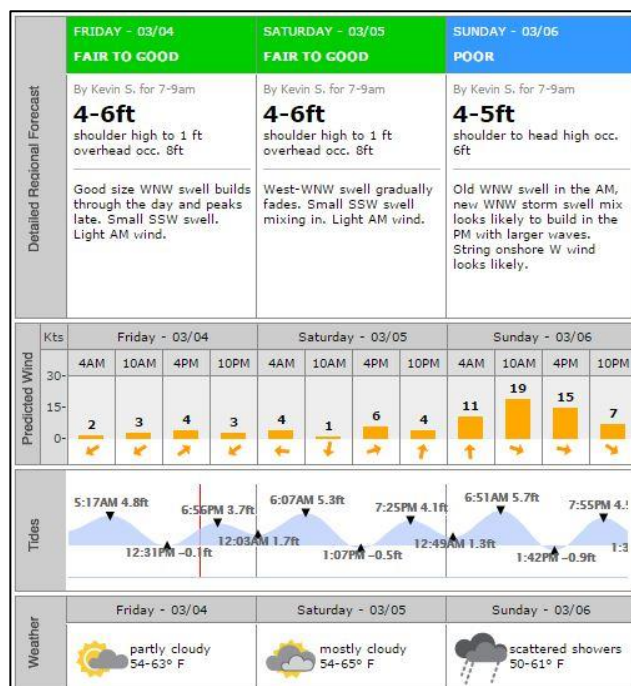


Figure 4.2: A surf report from March 4-6, 2016, indicates wave size, predicted winds, tide information and weather. Image reproduction courtesy of Surfline.com.

²⁹⁰ A “mixed semi-diurnal tide” means that both high tides and both low tides are of different heights.

²⁹¹ A surf report generally contains detailed information about regional surf forecasts, predicted winds, tides and the weather. Various companies provide surf reports, including Surfline.com, Surf-Forecast.com, Magicseaweed.com and many others. One methodological challenge that I faced was determining which surf report to use. I chose Surfline because I was more familiar with the platform. Typically the South Orange County report differs from reports for each of the surf breaks that comprise Trestles. I elected to simplify my data collection efforts by using only one surf report, which served as a representative sample of all surf breaks South Orange County. This decision does introduce several methodological issues.

swell originating from the south-southwest was increasing in size. Ocean-goers could expect surfable waves between four- to nine-feet high with “fair to good shape” along South Orange County’s coast, as well as a slight wind throughout the morning.²⁹² The surfarazzi had flocked to Lower, a row of telephoto lenses and fancy tripods along the shore resembling an artillery line of new-age cannons ready for ego wars. Frenetic energy zoomed across the air. At least sixty boards floated atop the cobblestone peak where the waves were breaking. Men were everywhere like black-suited water-ants spilling out of a liquid hole. I moved away from the surfarazzi and walked farther south to Middles.

Typing up detailed observations in the Urban Tides record template with only my thumbs was awkward, slow and uncomfortable. I tried the best I could, but it was a tedious process, better suited for a keyboard. Furthermore, I did not know which observations technically qualified as “cool” per Urban Tides’ criteria. Did crowd size or my thoughts on race and gender matter to scientists mapping and modeling hypothetical sea level scenarios? Probably not, but they were important for explaining how space is produced at Trestles. Instead of submitting detailed write-ups through the Liquid app, I used a pencil to write down thicker descriptions in my field notebook.

**

Traffic heading to Trestles on Thursday, March 24, 2016, was terrible with spring break in full swing. Two accidents and a backup of vehicles at the U.S. Customs and Border Protection’s San Clemente Border Patrol Station checkpoint delayed my arrival.²⁹³ It was especially atrocious at the San Diego-Orange County border, and I missed the high tide by approximately 35 minutes, frustrated I had not left La Jolla earlier. Under these traffic conditions, driving a total of nearly 2.5 hours to take photos of tidal lines for only 2.5 hours was environmentally gratuitous. I was complicit in a transportation system

²⁹² The forecast is a product of contemporary surf science, which is rooted in a plethora of mapping technologies and science-based tools, not limited to a global swell model known as LOLA, an algorithm that accounts for fluctuating surf heights, below-sea surface charts, high-resolution wind models, real-time buoys, an offshore buoy network and nearshore wave models that depict a variety of surf regions across the globe. This surf report along with “car journeys, phone calls, flags flying, perturbations in the weather and waves all form part of the material reality of surfing” (Whyte 2016).

²⁹³ I had suspicions the heightened security was a result of the terrorist attacks in Brussels on March 22, 2016, when 31 people died and 300 were injured at the Brussels Airport in the Belgian municipality of Zaventem.

and willingly contributed to greenhouse gas admissions because my concern for SLR at Trestles' future took precedence. Did that make me a misguided environmentalist and citizen scientist?



Photograph 4.2: Northbound traffic stalls at the San Clemente Border Patrol Station for U.S. Customs and Border Protection.

Getting to San Clemente (approximately 45 miles north of where I lived in La Jolla) cost considerable time and money.²⁹⁴ Another challenge arose based on Urban Tides' needs: Scientists using the data sets for the CoSMoS project wanted images taken either at high (preferred) or low tide. Such timing inevitably conflicted with a lower-income or working-class schedule, thereby shrinking citizen scientists' window for taking photographs. My relatively flexible schedule as a graduate student researcher afforded me time to visit the remote (by urban beach standards, at least) surf breaks.²⁹⁵ Even as a 24/7 single mom, having my own vehicle and considerable control over working hours enabled my involvement with the initiative.²⁹⁶

²⁹⁴ These factors likely affected the participation rate of inland residents concerned about SLR.

²⁹⁵ Cooper et al.'s argue that citizen scientists have the freedom to determine "where they collect data, when they collect data and the effort they expend in data collection" (2012, 10). This is true to an extent; however, external factors and life responsibilities hinder their availability, thereby affecting how often they engage in this process.

²⁹⁶ These socioeconomic variables affect the diversity of participants in citizen science projects, an issue that is evidenced by low participation rates from racial groups historically underrepresented in the sciences. Marine science-focused citizen-science projects are linked to an unequal distribution of racial groups living along California's expensive coast. Pandya also problematizes the notion of a "democratic approach to science" by pointing to low levels of involvement among socioeconomically disadvantaged groups (Pandya 2012, 314). He argues: "Participation that more accurately reflects US demographics will be achieved not by a single project but by the combined effect of a suite of place-based, culturally relevant, community-driven programs" (Pandya 2012, 316). This framework challenges Urban Tides and similar citizen science projects to widen their scope of involvement and

The mixed winter-spring swell brought relatively small waves.²⁹⁷ The interval between each set sustained consistent, surfable conditions, designed to deteriorate as the swell expended its energy and disappeared. Wave size had slowed most boating activity near the coast. To ensure that I would be at Cottons by 12:31 p.m., I began the photo-prepping protocol at Middles at 12:07 p.m. The Urban Tides initiative's directions stated the following:

Take a few moments to watch the water. Find the highest wet water line in the sand. Then, take two steps or strides landward from the water line. Take the photo facing parallel to the shoreline. Include some sort of structure or feature in your picture, such as a pier, jetty, breakwater or dock, for perspective. This will help scientists better identify the water line.²⁹⁸



Photograph 4.3: Capturing the tidal lines at Middles on March 24, 2016.

I followed these steps while facing south toward SONGS, which rested atop bluffs less than two miles down the coast. The scene captured a pre-Fukushima period in which the threat of tsunamis seemed an afterthought in plans for coastal development. I tapped an icon to activate the app's camera, which enabled me to capture real-time, geo-specific tidal activity. I included my name as the photographer in

analysis in ways that incorporate more socioeconomically and racially diverse communities also affected by climate change.

²⁹⁷ Imagine long, horizontal, equally spaced ripples moving toward the shore.

²⁹⁸ Urban Tides Community Science Initiative flier.

Record No. 226 for Middles, which included three photos and notes about the direction of the swell, adapted from Surfline. I turned around, heading north toward Loweres and repeated the Urban Tides' protocol at 12:17 p.m., creating Record No. 227. *The swell appears to be less steeply angled than the one that came through last week*, I added as "something interesting." I knew this based on the direction in which the waves were approaching the shore. *The rocks are a little more scattered at this break than at Middles. Slope of sand is less extreme*, my description continued. It took another twenty minutes to arrive at Cottons, just west of a red-and-white tower near the train tracks at the border of Orange and San Diego Counties. This time I took four photos -- two horizontal and two vertical -- and recorded details about the surf break, noting: *The sand is really grainy up here -- way more so than by Middles. It looks as though a dump truck unloaded tons of sand just north of Uppers. Beach is a lot flatter slope-wise, too. Wind is strongest here. Tide is just past low now.*

**

On Wednesday, March 16, 2016, I left La Jolla at 11 a.m., too late to reach Cottons in time for the 11:51 a.m. zero-foot low tide. I took the pictures anyway and trekked south to Loweres. The temperature crept toward an expected high of 74 degrees Fahrenheit. It was a bit warm with spring around the corner. Surfline forecaster Perry described the day's wind as "light to locally moderate offshore early, trending onshore through the morning. Light westerly flow 3-8 knots picks up in the afternoon, may lighten before dark."²⁹⁹ I knew the elementary difference between onshore and offshore winds based on my experience surfing. Onshore winds traveled from the ocean onto shore; offshore ones zipped off the beach toward the water. Wind was integral to the shape of the waves.³⁰⁰ In Perry's report, waves were tagged as "fair to good," reaching about three to four feet in height, or waist-to-shoulder-high. But how fast was the wind

²⁹⁹ Surfline's March 16, 2016, surf report for South Orange County.

³⁰⁰ Describing the role of wind in modeling "near-surface wind fields for San Francisco Bay, USGS states: "While global climate models provide useful projections of near-surface wind vectors into the 21st century, resolution is not sufficient enough for use in regional wave modeling projects, such as CoSMoS. Short-duration high wind speeds, on the order of hours, are of key importance in wave and subsequent coastal flood modeling." USGS presented "temporally downscaled wind data for historical (1975-2004) and projected (2010-2100) time periods, developed using a method similar to constructed analogues, suitable for use in local wave models." See: www.sciencebase.gov/catalog/item/5994dc46e4b0fe2b9fe915eb.

blowing? In which direction was it coming and going? It seemed to come from the northeast, and Surflin’s projections were slightly weak. It was blowing harder than 8 knots, according to the wind tunnel in my ears, an unofficial form of embodied surfer knowledge (not scientific by any means, but

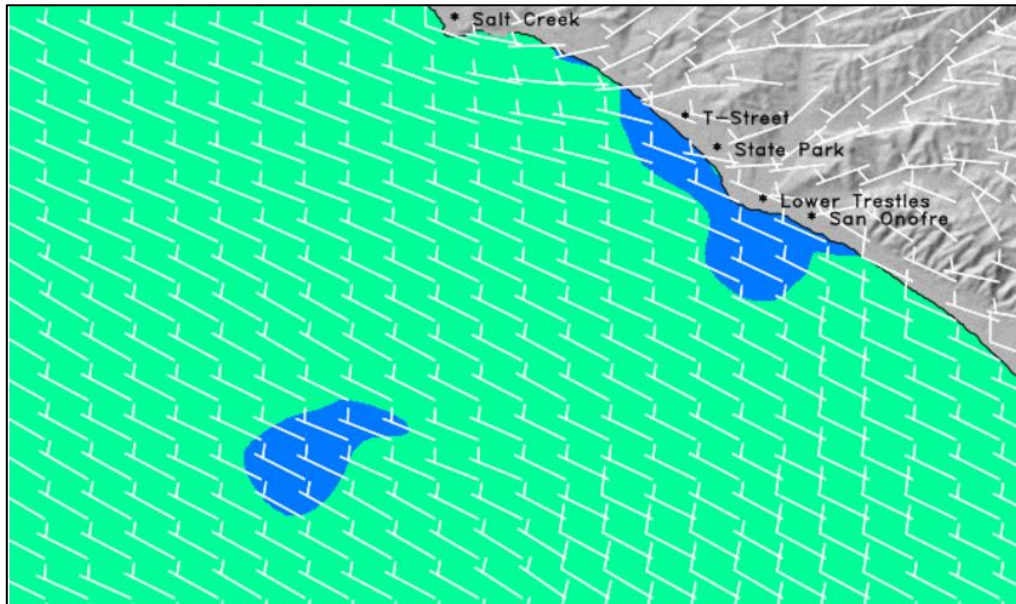


Figure 4.3: A snapshot of Surflin’s high-resolution wind forecast for 11 a.m. on March 15, 2017. Winds from the west-north-west were expected to blow between 6 to 10 knots heading toward San Onofre State Beach.

accurate enough to contradict the surf report). I turned to Surflin’s high-resolution wind-modeling system and wind barb tool for insight on how to read these details.³⁰¹ I needed reminders that wind is reported as the direction from which it comes -- rather than the direction where it is headed.

Unfortunately, the wind model reflected conditions from the previous day, which did not help in terms of providing timely data. The three-day forecast that I typically turned to appeared off. Once I reached Lowers, I pulled out my notebook, scrawling the *wind is much milder here and protected by the sand slope. Sand went from pebbly to hard-packed and firm (not quite dry, though). Extreme slope from last few weeks seems to have leveled a bit. Much more crowded due to spring break most likely. [...]*

³⁰¹ Surflin utilizes its own model to produce high-resolution wind forecasts. The firm claims it is more sophisticated at capturing “small scale phenomena such as the sea breeze circulation and winds that interact with the terrain” than the Global Forecast System. See the “Surf Science” and “Surflin Charts” homepages for additional information. See “Beyond the Waves” (Iatarola 2011, 25-26) for a discussion regarding the cultural and economic impacts of the internet and Surflin’s forecasting technologies on coastal communities in El Salvador.

General bathing pool for the seagulls has shifted way southward. They're absent today. Upon reaching Cottons, I continued writing:

Wind indeed is coming from the WNW. I don't believe the arrows are correctly in place for Wednesday's three-day forecast -- at least at the start, but this is accurate. Yes to the WNW wind right now. It's the 5 p.m. arrow (arrow is pointing SE and wind is coming from the NNE, but the offshore swell heights and wind chart do not match this image at all. Must be some kind of error. Maybe it's hopeful wind versus predicted wind, and the hopeful winds take precedence for today? [...] Fuck arrows. I can feel the elements, which makes me understand their power better than any wind model or diagram.

The photo session was uneventful aside from the seal pup that caught my eye as its dark head poked out of the water and then dunked under, doing this several times while swimming out to sea. The wind slammed the waves shut, producing one un-surfable closeout after another. I felt inklings of burnout and doubt. Would I have joined Urban Tides had the initiative not intersected with my research? The haul to and from Trestles was tiring. Were my photos and observations useful or useless for scientists? Considering the Urban Tides dataset was public, who else was analyzing it? What specific characteristics made the photos valuable in the first place? I had no precise example for comparison. By the time I finished field work in January 2017, I had taken approximately 40 images per surf break over the course of a year. But was it all in research vain?

Assessing the Limitations of Citizen Science

The following section examines a set of limitations concerning the model of citizen science used for Urban Tides. It addresses technical issues that arise with the Liquid smartphone application (a.k.a. Liquid), a database-management platform central to the initiative's functionality, and questions how democratic citizen science really is considering its reliance on the neoliberal individual for data collection. Dimensions of race and class also shape the pool of citizen scientists who participate in coastal research projects, thereby affecting the outcome of modeling results themselves.³⁰² Myopic data sets draw attention to the need for other ways of knowing, which is where I find my ethnographic gaze and surfer

³⁰² The official name is "liquid mobile data collection." As of September 2016, only an application for the iPhone was available. There were no similar applications available for download for other smartphones (e.g. Android). Desktop computers suffice for uploading digital photos, although this method takes a few more steps to complete.

knowledge to be useful. These problems and insights emerge in a phone interview I had in August 2017 with oceanographer and meteorologist Andrea (Andy) O’Neill of the United States Geological Survey.³⁰³ O’Neill, who also worked with the Urban Tides datasets for the CoSMoS 3.0 project, provided valuable feedback on my photographs of tidal lines at Trestles that I submitted through the Liquid app. Her answers shed light on the time-consuming process of vetting data and modeling citizen scientists’ photographs using CoSMoS, particularly when syncing issues arise. I analyze our conversation, drawing from sociologist Aya H. Kimura’s critique on the neoliberal underpinnings of more contemporary models of citizen science to complicate the idea that Urban Tides democratizes knowledge-making between scientists and citizen scientists.³⁰⁴

My first interaction with O’Neill occurred online through Liquid’s “discussion” tool for “community science contributors.” I received an e-mail alert that she had posted a comment regarding my descriptions of sand activity in photos of Middles. “Good context,” she wrote, along with a request for me to move closer to the shore so that geographers had a better perspective of the tidal lines. Her comment opened a window for communication between the citizen scientist and scientist. I re-calibrated the following weeks, still unsure whether subsequent photos were useable, so I asked for confirmation through the discussion tool. A message from USC Sea Grant coordinators via e-mail confirmed they were. The pace of my research and photo sessions remained steady.

Eight months later, O’Neill and I conversed over the phone about my research as she pulled two digital photos from the Urban Tides dataset for comparison. I could see them over a shared desktop program. The first one was of Lovers at an approximate 1.49-foot low tide at 1:49 p.m. taken on October 26, 2016. O’Neill needed clarification on my location because she was unfamiliar with San Onofre State

³⁰³ The interview occurred on Friday, August 4, 2017.

³⁰⁴ The conversation emerges from an e-mail questionnaire that I sent O’Neill in 2017, followed up by a phone call on Friday, August 4, 2017. Kimura writes that although “[...] we can celebrate citizen science as an instance of the democratization of science, it is nonetheless important to analyze it in relation to the larger political context of neoliberalization” (2016, 15).

Beach. She noted in her e-mail that location accuracy was USGS' biggest challenge in using the Urban Tides database. O'Neill added:

There are lots of pieces of geographic information that get tagged to photos (not only where the photo was taken, but sometimes where the photo was uploaded), and all those get uploaded to the site. So we sometimes have to do some detective work to use the correct coordinates. Beyond that, we also want to know how precise and accurate those photos are – images are taken from several different types of phones and cameras, and everyone's photos (no matter how carefully we craft guidance) are taken with slightly different perspectives[.] [S]o from a scientist point of view, these are really useful, but I need to be able to say how much of an offset may be present in the locations (uncertainty) given all the differences in how we get the data.... Something we're still working on.

Using her cursor, O'Neill circled around the stones and pockets of water, commenting that it looked as though I were standing in the ocean, not quite far enough ahead of the tidal line. Furthermore, when



Photograph 4.4: An Urban Tides photo of Lowers at low tide on October 26, 2016.

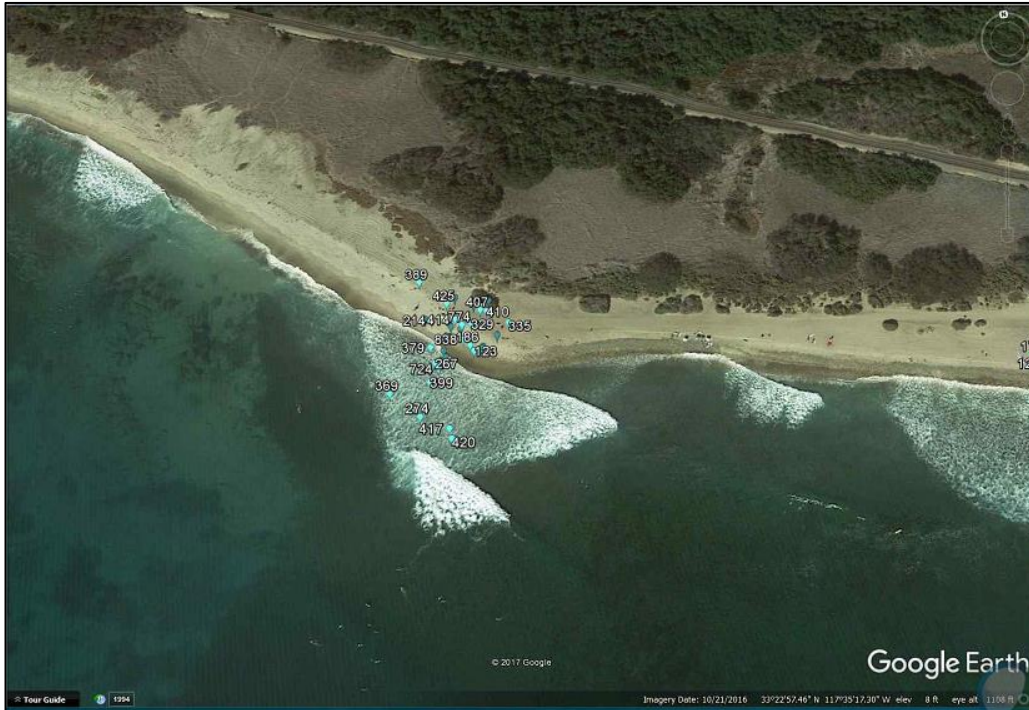


Figure 4.4: A series of plotted coordinates from my Urban Tides photos of Lowers. Mapped image courtesy of Andy O’Neill and USGS.

mapped, the data point appeared too far out in the sea, which was a problem.³⁰⁵ “Specifically, when you know all the conditions, then you can link similar conditions. These are all the high tides; these are the points,” she said, switching to a mapped image where photos from Cottons were taken. Data points close together represented groups of similar tidal conditions, which helped give oceanographers more confidence in what the geography was telling them, and how it was changing with other conditions, including extreme high and low tides. She wanted to know the story behind my photo. “That’s Lowers at low tide,” I said, adding that for each record I (almost) always included the information in “Tell us something cool about your photo!” There was a pause, followed by, “I see. That provides a lot more clarification on readings from low-tide photos.” I asked if they were useless, offering that SIO and Urban Tides indicated in field training that scientists were interested in both. In fact, the exact wording from the

³⁰⁵ In our e-mail interview, O’Neill noted that many citizen scientists took “really interesting photos of flooding impacts (of locations [she] is not familiar with) that [scientists] can’t use – the coordinates are bizarrely for locations out in the middle of the Pacific Ocean.” She continues by asking: “Where were those photos taken? What are the conditions at the beach? Did the citizen scientist upload from a ship?”

September 2016 USC Sea Grant flier stated: “We welcome photos from any location, day and time; high tide, low tide, king tide” (September 2016).

O’Neill responded that although the scientific agency could “definitely use” my low-tide photos, they were “harder to validate against [...] selections not immediately relevant to [the] first order.” She was using my high-tide photos to ground truth in radar data that USGS had. “Remote-sensing imagery can be quite powerful,” she said, “but without concrete data on the ground to calibrate what I’m seeing from the air, sometimes it’s hard to have confidence in what the geography is telling.”

For the CoSMoS project, high-tide photos were preferred -- that is, the highest wet water line at high tide. Two specific characteristics made them usable: “good coordinates” and strategic location. Effective photos were positioned “along the beach with some sort of discerning feature or landmark in the view,” O’Neill said. Surely my records of Cottons with the jetty and Middles facing SONGS met these criteria. She also explained that useable photos helped USGS scientists and oceanographers “identify any behavior in the area (such as areas of extreme run-up or overtopping) that may be important.” Supplemental location information increased the agency’s confidence in the photo’s narrative, O’Neill added. For quality-control purposes, oceanographers combed through each of the database’s uploaded photos, plotting their locations. “If the photo aligns with the imagery of the site and surrounding landmarks (that is, there isn’t a mismatch between the coordinates and what’s shown in the photo),” O’Neill said, “it goes into our own database for further use.”³⁰⁶ Additionally, mid-tide photos, of which O’Neill noted many citizen scientists submitted, had no value in this specific project. I winced upon realizing that most of my March photos were taken at low tide because the timing was conducive to my schedule. How many others since then? I would have to comb through 121 uploaded records to compare the number of my high- versus low-tide photos, too time-consuming at this point of research. *So much for my useful contributions*, I thought, feeling like Urban Tides’ dedicated yet failed citizen scientist -- at least in terms of helping USGS and contributing to the CoSMoS 3.0 mapped results.

³⁰⁶ O’Neill interview on Friday, August 4, 2017. Liquid’s dataset retains all the original photos; only the original user/photographer has the authority to delete from the public dataset.

We moved on to the second image of Cottons on July 14, 2016. O'Neill approved of the photo-taking angle. Qualitatively, the photo was useful, she said; however, I had taken it at low tide. Outlining the liquid tracings with the cursor, she explained the crisp details made it easier for scientists to read the tidal lines. O'Neill was curious as to why "the location did not line to the water line." "I'm not sure," I admitted, confused. "That's weird. This is Cottons, at the border of San Diego and Orange Counties." I almost always included these germane details in the "Location Description" of each record. "Where is it being uploaded?" I asked. O'Neill pointed slightly inland from a southerly cluster of points near Middles. She noted that the coordinates were off, a significant technological glitch given all my photos were "software pulls" (that is, data imported from the Urban Tides dataset to map SLR). "I'm unsure which coordinates are the ones to use in some cases," she said. "I think one set is linked to where the photo was taken and another where it was uploaded." She cited lack of Wi-Fi access at certain beaches as an obstacle, but as I had told Rindge, that was not an issue for me. Even so, the locations for the bulk of my photos did not match the tidal line positioning, a problem solved only by human intervention and labor. Perhaps the coordinate chaos is what had prompted Liquid to update the app update two weeks later.

The situation exposed a major weakness in Liquid's syncing capabilities. The data-management platform was supposed to help facilitate communication between scientists and Urban Tides volunteers. Each record was a data space for citizen scientists to communicate real-time environmental details that could support or complicate scientists' projections about SLR. Satellite imagery, remote-sensing data from drones and mapping technologies revealed only so much information. The syncing issue first came to my attention on Thursday, June 2, 2016, when I logged into to view the Urban Tides dataset. None of my photos from April or early May were there. I e-mailed Holly Rindge, communications manager for USC Sea Grant, to express my concern. She investigated the issue and discovered my photos were "unsynced." I confirmed I was using my iPhone 6s (with reliable Wi-Fi access) to upload them onsite, but currently the number 0 was listed under each record. Rindge instructed me to log into the app, go to the records screen, and drag it down with my finger to force sync my records to the larger dataset. If a checkmark did not appear after doing so, then I had to open and tap "done" for each record.

The first suggestion did not work, so I tried the second approach. Rindge followed up shortly after to inform me that Liquid database managers were attempting to sync my missing photos, and my case was unique systemwide. It would be a quick fix, she noted. By July 25, 2016, the app appeared to be in working order, and records no longer were labeled with 0. I e-mailed Rindge to let her know my photos from April and May finally synced. She responded an app update at the end of the month would fix several bugs. Until my discussion with O’Neill, I had assumed the situation was resolved, now realizing it was not. O’Neill said the uncertainty and possible error in the location underscored why some scientists hesitated to use citizen scientists’ data in similar projects.

In the Urban Tides case, nothing matched correctly with my photos, and there was no survey-grade equipment to rectify a possible error in the location. The situation revealed a challenge in using new technologies to collect data for citizen science projects. “Speaking just on this project,” O’Neill wrote, “I think we’re limited by the technology (phones/cameras are only so precise) and training (how photo is taken, forwarding correct position, etc.)” In many of my photos, it was also difficult for O’Neill to pick out geographically where the water line was without linking a specific coordinate to what was happening near it. Cleaning up the dataset was laborious, and USGS had a strict timeline. The agency, already behind schedule, was transitioning the project to Central California and moving ahead with a new phase. “Unfortunately,” she said, “projections are already out for Southern California.”³⁰⁷

Moving forward, O’Neill and I agreed one area in need of improvement was more in-depth training for how to take useable photos. Doing this would yield better data from citizen scientists. “As we get more people trained in how the data in their photos is used, then I think that’s really powerful,” O’Neill added. “They say, ‘Oh, I see how they’re using this. [...] This is potentially very powerful for lots of other science projects in risk analyses.” In O’Neill’s vision, democratizing the production of

³⁰⁷ See: “Southern California Coastal Impacts Project” dornsife.usc.edu/uscseagrant/sccip/; ScienceBase Catalog → Coastal Storm Modeling System Summary: www.sciencebase.gov/catalog/item/5633fea2e4b048076347f1cf; CoSMoS 3.0: Southern California: walrus.wr.usgs.gov/coastal_processes/cosmos/socal3.0/index.html; Our Coast Our Future: data.pointblue.org/apps/ocof/cms/; Sea-Level Rise Stakeholder-Technical Advisory Committee (STAC) Working Draft Chapter 1: “Planning for Sea-Level Rise in Del Mar” released November 21, 2017; Phil Diehl’s “No ‘retreat’ from rising sea levels for homes in Del Mar” in *The San Diego Union Tribune* (December 4, 2017).

environmental knowledge entailed fostering communication between citizen scientists and scientists. I saw user feedback on data-collecting technologies as crucial. Not only did it facilitate a bi-directional exchange of knowledge, it also exposed the disappointing shortcomings of evolving technologies dependent on cloud-based storage systems from the perspective of users themselves.

How to improve training and app-based technologies with limited funding is one predicament that USC Sea Grant faces, particularly as its existence is at risk under an environment- and science-hostile federal government.³⁰⁸ Goffredo et al.'s claim that "[i]n an ideal world, all surveys would be conducted by a small team of highly experienced individuals, but this is seldom possible due to lack of finance and time" (2010, 2172). Similarly, if USC Sea Grant had the resources, professionally trained science photographers would have been the ideal group of data collectors. This was not the situation, however. Citizen science in Urban Tides' case substituted as a feasible alternative for expensive, expert-driven data collection. This state reflects the neoliberal political economy in which we continue to operate. It is dependent on unpaid labor and self-motivated behavior, emphasized in O'Neill's call for community engagement. "The community can really engage and take that first step with, 'Hey, we can provide you with something,'" she said.

The fallout of such an economy indicates that financial support for environmental research remains unsteady, severely reduced, constantly threatened or nonexistent. Sociologist Aya H. Kimura attributes this shift to "government budget cuts, particularly in what is often seen as unproductive areas such as environmental protection" (2016, 15).³⁰⁹ As a result, individual citizens and "nonprofit community groups" are responsible for completing environmental tasks that were formally under the domain of and/or funded by the government (2016, 15). They are also responsible for training, another

³⁰⁸ See: *Science* magazine's "What's in Trump's 2018 budget request for science?" (May 23, 2017); Mandy Sackett's "NOAA's Sea Grant Program on Trump's Chopping Block" in *EcoWatch* (April 18, 2017); Keith Matheny's "Trump budget would kill Sea Grant funds, end Great Lakes coastal research" in *USA Today* (March 8, 2017); and Dennis Anstine's "Lawmakers aim to save Sea Grant: Federal budget cuts threaten OSU program" in the *Newport News Times* (March 2017).

³⁰⁹ Kimura analyzes the gendered landscape of citizen science by focusing on the roles women specifically played monitoring radiation-contaminated food after the Fukushima Daiichi Nuclear Power Plant catastrophe on March 12, 2011.

point emphasized through O'Neill's characterization of programs to become an official, amateur weather observer. "[T]hese individuals provide reports that are used by federal agencies to verify weather reports and provide critical information for hazardous weather forecasts," she wrote. "That's citizen science already in action, really... We just need to bring a bit of that order (and sense of contribution and camaraderie?) to other scientific disciplines."

This neoliberal ethos was born out of slashes in science funding and ideological battles over climate change, global warming and other environmentalisms. Kimura argues that neoliberalism's impact on contemporary models of citizen science signals an intricate bond between a "framing of politics as negative" and emotion-driven concerns for the future of the environment (2016, 155). Accountability, therefore, shifts onto individual consumers because fighting an environmental battle at the micro-level is easier than doing it at the corporate or governmental one. My involvement in Urban Tides was an example of "responsibilization" -- that is, what is good for the environment benefits the people who visit beaches.³¹⁰ Apart from helping scientists (for free), I wanted to pose an alternate ending to the Save Trestles campaign -- one based on citizen science as a form of civic mobilization. The more pictures people took of California's coast, the better idea scientists would have of the future impact of SLR at surf spots such as Trestles. It was coastal-research teamwork, an approach that worked when a community produced "benefits both ways," O'Neill said. Thus, the community shared the responsibility with the city, state and federal government to document and prepare for SLR.

Similar neoliberal ideology undergirded the engaged efforts and two-way dialogue to get usable data about tidal lines. The Urban Tides initiative was designed to involve citizen scientists in the production of environmental knowledge about SLR in California's coastal communities. As I continued conversing with O'Neill, however, I wondered whether this was possible given the structural weaknesses

³¹⁰ In the case of the MPA Watch program, citizens conflated the environment's well-being with their own through acts of "self-regulation" and "self-care" (Kimura 2016, 15). By walking along the beach and recording beach-use activities, private citizens took responsibility for the MPA's health and future just as they were expected to do for themselves. My participation was driven more by what Dickinson and Bonney call "selfish altruism, in which participants likely experience altruistic motivation, at least to some degree, while also receiving the tools and resources that support their interests and hobbies" (2012, 7).

in Liquid's data-management system.³¹¹ Even with all the app updates, would the real-time functions work as intended? Prior to concluding our interview, my thoughts shifted back to the toll road controversy and the existing photos I had taken of Cottons, Lowers and Middles. The latest news involved a proposal to create an arterial network that connected La Pata to Cristianitos, the road that fronted Camp Pendleton and the San Mateo Camping Grounds. The City of San Clemente and The Reserve Corporation had filed a new set of lawsuits that essentially aimed to undo the pivotal November 2016 legal settlement to protect San Onofre State Beach and a surrounding conservancy area from any development. On August 9, 2017, Surfrider sent an e-mail, criticizing Congressman Darrell Issa (R-CA, 49th District) for taking steps to resurrect the toll road proposal yet again.³¹² At the same time, Issa publicly criticized the latest alternatives. I informed O'Neill of the controversy, providing political context for my involvement in Urban Tides. "Maybe one day somebody will find those images useful," I proposed, concluding our discussion on a dispirited yet faintly hopeful note. "Oh yeah, I'm sure," O'Neill said. "There is potential to grow and continue, but not necessarily for the CoSMoS project. That capability is there for future events."

Was democratizing knowledge even possible if citizen scientists ultimately had little power over how the data from their photographs stored in a publicly accessible dataset would be used? Would it be coopted by other pro-development forces or for national security? What distinguished democratized from privatized or exploited? I could not be involved in every project drawing from my contributions. Deleting each of my records -- something I would not do (yet) -- was the only power I had over future use of my photographs. Democratizing the production *and* distribution of environmental knowledge seemed fruitless. In the end, who really benefited most from my photos? Furthermore, who is participating in Urban Tides? That is, "who counts as a citizen in this citizen science-based initiative? (Kimura 2016,

³¹¹ I was unable to follow up with O'Neill or Liquid regarding this concern due to institutional time constraints.

³¹² See Stefanie Sekich's "Two Wrongs Don't Make a Right." *Surfrider Foundation* (August 9, 2017).

15).”³¹³ And what is the role of the citizen in the production and distribution of knowledge in relation to deliberative processes? Despite Urban Tides’ educational objectives and ideological commitments to citizen science -- which in this case, is framed as a hybrid form of volunteerism, leisure and edification -- I quickly realized the geographical and socioeconomic limitations of the initiative’s project design as I drove to and from San Clemente on a regular basis.³¹⁴ Urban Tides is directed at people who enjoy going to the beach and taking pictures of the coast, provided they have the time and resources to get there. Accessing the ocean, let alone Trestles, however, is no easy task for all beach-lovers.³¹⁵ I was “one of very few” citizen scientists taking pictures of San Onofre State Beach, O’Neill confirmed during our interview eight months into my field work. Access invariably brings up issues of race and class. Is citizen science, like surfing, a racialized and class-based practice?

My most profound critique of my experience with the Urban Tides initiative came from my hybrid subject position as a surfer and ethnographer. The next section provides richer context for how my “surfer’s knowledge” and ethnographer’s gaze contribute to the production of knowledge about San Onofre State Beach. I borrow from Jason Corburn, who conceives this as ways that community members use “their experience” with environmental issues and organize “their knowledge to supplement what professional researchers and decision makers have to say about their neighborhood” -- or, in this case,

³¹³ Kimura (2016) via Burchell (1996). This paper does not analyze the demographics of citizen scientists, although more robust analyses of participation diversity are needed. See Kimura for “a particular normative understanding of the citizen-subject (Ong 2006)” in citizen science (2016, 15).

³¹⁴ Aside from barriers to participation, motivations and stakes must be considered. This leisure-based framing of citizen science eclipses the political and economic stakes that driver poorer communities to engage in what Jason Corburn calls “street science.” Goffredo et al. also argue: “Asking volunteers to travel at their own expense to specific sites [...] carries the risk of making participation in the research project less attractive and so reducing the number of volunteers willing to participate” (2010, 2171).

³¹⁵ Rajul E. Pandya destabilizes the idea that anyone can be a citizen scientist by drawing a connection between race and participation rates. He argues some citizen science projects reflect racial groups’ lack of access to public spaces of nature, beaches included. Pandya also deconstructs popular models of citizen science in relation to race, noting that income, job responsibilities and lack of access to transportation are “root causes for the lack of minority participation in citizen science” (2012, 314-315). He encourages scientists to mine the published materials of long-term projects to understand “the dearth.” These evaluations suggest that lack of access to natural settings (Evans et al. 2005) as well as discomfort in those settings (Levine et al. 2009) inhibit the participation of many urban dwellers” (2012, 314).

their beaches (2005, 12).³¹⁶ An opportunity to analyze my ethnographic and historical data through the lens of a citizen scientist emerged at the onset of picture-taking, particularly because ethnographic observations and historical texts are central to my understanding of the production of space, as well as the surfscape. Each time I drove to San Onofre State Beach to document wave conditions and tidal lines, I was compelled to include additional observations and assessments that did not fit into the data collection model designed by Urban Tides. Foregrounding my analyses was my experience as a surfer and my knowledge of the political ecology literature from the social sciences. The social and political consistently crept into the ethnographic record. This framework helped me foster conceptual connections between Urban Tides, the 241 Toll Road controversy, and the history and future of Trestles.

Other Ways of Knowing

As a citizen scientist, I clearly did not possess the skill set, appropriate software or technical vocabulary to create geographic models of SLR from my images. Such limited technological expertise ultimately delimited my role in shaping (and mapping) my knowledge about SLR. This set of circumstances begged yet another question: Which communities would be included in SLR projections? I asked O'Neill which sites USGS had mapped. Del Mar's projections were already out, she said. "Why Del Mar?" I asked, cognizant of the class- and socioeconomic-based dynamics that factor into participation rates in citizen science projects.³¹⁷ As of July 1, 2017, the U.S. Census Bureau reported a population of 4,312 residents in Del Mar.³¹⁸ "White alone" accounted for 4,146 residents. There were 321 individuals who identified as "Hispanic or Latino (of any race); 19 as "Black or African American"; 89 as "Asian alone"; and 254 veterans. Approximately one-quarter of the population was classified as "foreign born." How many of these people had been Urban Tides participants, if any? O'Neill mentioned ample

³¹⁶ Corburn continues: "The accounts, stories, tests, and practices of residents represent what I am calling *local knowledge*. Generally, *local knowledge* can be understood as the scripts, images, narratives, and understandings we use to make sense of the world in which we live. When combined with insights, tools, and techniques from disciplinary science, local knowledge forms the basis of street science" (2005, 12).

³¹⁷

³¹⁸ This number was based on five-year estimates from a 2012-2016 American Community Survey. See: factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk. Accessed January 30, 2018.

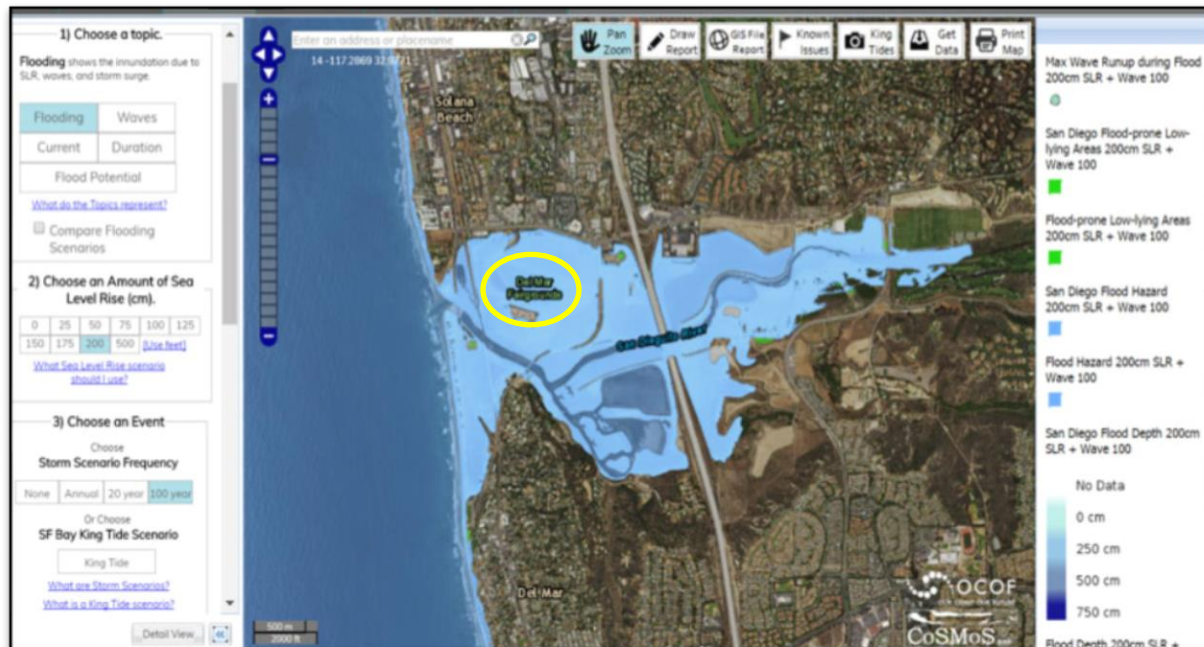


Figure 4.5: CoSMoS flood projections for the Del Mar area in San Diego County, based on 200 cm SLR with a 100-year storm event, inundate the Del Mar Fairgrounds (circled in yellow). Both mapped images courtesy of USGS.

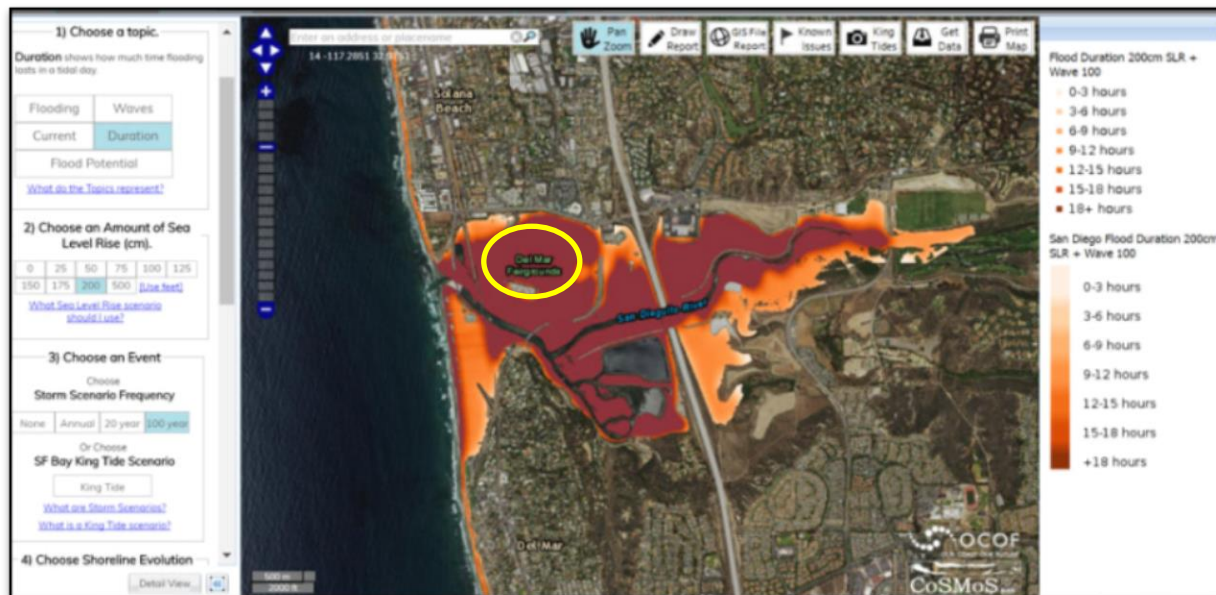


Figure 4.6: CoSMoS flood duration storm-scenario projections for the Del Mar Area in San Diego County, based on 200 cm SLR with a 100-year storm event, in which the flood is expected to last more than 18 hours in some parts of the beach town, including the Del Mar Fairgrounds.

participation and usable photos distinguished this wealthy beach town, where the media household income was more than \$108,000, from others.³¹⁹ Her answer resonated with what she had written to me

previously when I had asked approximately how many pictures were necessary or ideal to do effective mapping and modeling of SLR. “That’s difficult to say,” she wrote:

I don’t think there’s a specific number that we have to have, but the more the better, and the more widespread (that is, more locations along the Southern California coast) the better. I think it’s similar to weather observations -- the more observations, the more we can say about how the model is operating -- and this is what makes the initiative so unique.

I wondered how many surfers had taken pictures of Del Mar given its popularity in the local and global surfing community, and how much of the famous Del Mar Fairgrounds, where activists had noisily rallied against the 241 Toll Road extension proposal, might be under water permanently 100 years from now.

The Urban Tide initiative’s collective approach to knowledge-production is why, apart from documenting tidal lines for Urban Tides, I wanted to deepen the connection between (citizen) science, ethnography and my work on Trestles. Modeling systems, CoSMoS included, often fall short in representations of space without on-the-ground knowledge (Goffredo et al. 2010, Dickinson and Bonney 2012).³²⁰ Mapped results needed social and cultural context. To strengthen the transdisciplinary connections with ethnography and surfing, I had cross-fertilized my own ethnographic and surfer’s knowledge into the sites where I chose to gather data. I created a small data set for Urban Tides specifically related to three of Trestles’ surf breaks: Cottons, Lower and Middle (located nearly a mile south of the Panhe Trail).³²¹ Their connection to the 241 Toll Road controversy and proximity to Camp Pendleton and SONGS influenced my desire to photograph their tidal lines. Urban Tides’ methodological approach was appealing because it is modeled on the premise that citizen scientists not only learn about

³²⁰ Goffredo et al. reiterate: “Participation in [...] projects provides a forum in which participants engage in thought processes similar to those that are part of science investigations, and increase their knowledge of ecology and environmental issues” (Goffredo et al. 2010, 2172, Trumbull et al. 2000, Evans and Birchenough 2001, Brossard et al. 2005). Their relationship is symbiotic if scientists, including oceanographers, are willing to view science as “the process of investigation rather than [...] as a body of accumulated knowledge” (Cooper et al. 2012, 99).

³²¹ The connection between the initiative, activist interventions and my research on the toll road became clearer as I documented king tides that inched closer toward the train tracks near Cottons. The transportation infrastructure appears especially vulnerable to rising waters. A micro-level concern is how far inland the tidal lines will reach in the future, and whether SLR will have a severe impact on public accessibility to San Onofre State Beach.

SLR, but also engage in a knowledge-making process that is deliberative, scientific and respectful of diverse voices.

As an academic researcher and surfer, I was gathering several types of data that appealed to very different audiences and wanted to become critically involved with their subsequent analysis. This is what I thought “democratizing” knowledge looked like within the context of Urban Tides. The next section richer context for how my “surfer’s knowledge” and ethnographer’s gaze contribute to the production of knowledge about San Onofre State Beach. I borrow from Jason Corburn, who conceives this as ways that community members use “their experience” with environmental issues and organize “their knowledge to supplement what professional researchers and decision makers have to say about their neighborhood” -- or, in this case, their beaches (2005, 12).³²²

While doing fieldwork, I recognized the surfer and ethnographer together made a unique and politically powerful research team because of the type of information one methodology produces that the other does not. I experimented, routinely asking myself how that information informs one another. Mixing their methodologies and perspectives with citizen science while attending to experience plus the cultural, political and social context embedded in the sites I observed produced a unique hybrid of environmental and cultural knowledge -- not just about SLR, but also about Trestles. During one of my research trips to San Diego State University’s Surfing Collection at the Department of Special Collections & University Archives, for instance, I found a 1977 copy of *The Weather Surfer: A Guide to Oceanography and Meteorology for the World’s Wave Hunters* by Vic Morris and Joe Nelson. Chapters included depictions of environmental phenomena ranging from cloud types such as the nimbostratus to a summer map of major frontal storm tracks. Morris and Nelson’s squiggly image of a “combo swell” aimed to show how a mix of distant storms affects wave size. I saw a form of visual poetry that mirrored the complex rhythm of Trestles’ seasonal waves. Swells swam alone and together, intersecting

³²² Corburn continues: “The accounts, stories, tests, and practices of residents represent what I am calling *local knowledge*. Generally, *local knowledge* can be understood as the scripts, images, narratives, and understandings we use to make sense of the world in which we live. When combined with insights, tools, and techniques from disciplinary science, local knowledge forms the basis of street science” (2005, 12).

serendipitously and predictably. Some were reserved; others were aggressive. In my mind, surfing animated the curving dots, dashes and lines punctuating Morris and Nelson's science art. In the water, my

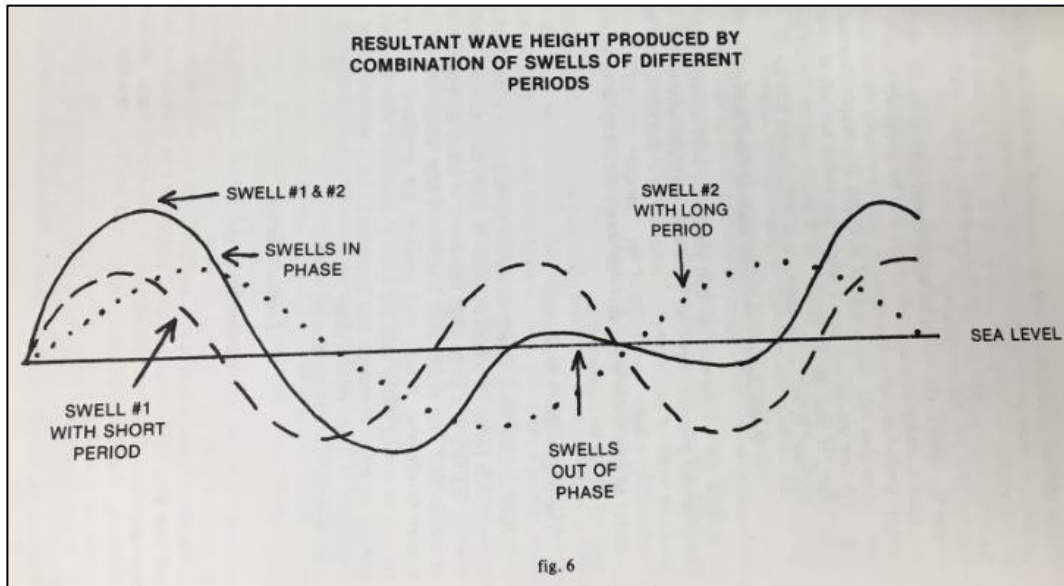


Figure 4.7: This swell model appears in *The weather surfer: a guide to oceanography and meteorology for the world's wave hunters*. Image reproduction courtesy of the San Diego State University Surfing Special Collections.

surfing body actually *felt* the “resultant wave height of [a] combination of swells.” Those feelings translated into environmental and embodied knowledge about the ocean, waves and wind that I continuously referenced throughout my fieldwork.

Despite no formal training as a natural scientist and my small repertoire of technical vocabulary about SLR, eleven years of surfing had boosted my ocean literacy. I knew, for instance, that surf reports and swell forecasts often mismatched actual wave conditions at my local surf breaks. From my experience, my embodied knowledge of the environment as a surfer often interfered with or substituted for these inadequate and unreliable technological tools. Furthermore, although I did not have the equipment or training to test the ocean's water quality after storm activity, I also had learned as a surfer how to visually monitor and assess the flow of urban runoff. It was not difficult to hone this skill after suffering from three major staph infections (two of which required trips to the hospital and antibiotics) following major storms and a sewage spill at my favorite surf breaks in San Diego. Perhaps my detailed

observations about real-time surf conditions and urban runoff during storm activity could provide more nuanced context for my photos that oceanographers, scientists, geographers and researchers might consider when modeling beach erosion and SLR at San Onofre State Beach.³²³ Whereas storm-modeling systems such as CoSMoS projected an aerial view of what SLR potentially would look like by 2050, my observations ground-level could show the immediate, real-time impacts of environmental phenomena including El Niño and king tides.

Whether scientists valued non-linear data was debatable; I saw the process as a means of fostering a mutually beneficial relationship between more than two groups (Goffredo et al. 2010). Perhaps my surfer observations about northwest swell activity during wintertime at Trestles, for example, lent new insight to scientists and state park officials about the impact specific swell directions had on beach erosion during El Niño compared with days when the waves were flat or swells originated from the Southern Hemisphere rather than Aleutian Islands near Alaska. Better yet, maybe the images of the tuna crab and sea slug die-offs would reveal new distribution patterns for dead marine life or help scientists demonstrate why some beaches attract certain species more than others, particularly when El Niño is underway. Even the U.S. Marine Corps might find my photos useful in terms of photograph-based research for environmental security projects. Or maybe the military's constant presence factored into syncing and technological issues, my paranoid logic at one point as I mulled reasons why my photographs never got mapped in the first place. I had technically been conducting research on federally owned property. The possibilities seemed vast and fruitful. Ultimately, the details of my observations could provide important social, cultural and ecological context for a host of social actors, including more radical environmental justice groups and other social justice nonprofits that are not involved or invited to take part in coastal policymaking processes.

³²³ Goffredo et al. identify social and scientific benefits of creating a “volunteer-scientist partnership.” Their understanding of “recreational monitoring” creates use value for what people do for fun. It is applied in Goffredo et al.’s three-yearlong study that involves using recreational scuba divers to monitor marine diversity in the Italian Mediterranean Sea during their regular sport dives (Goffredo et al. 2010, 2170).

In terms of understanding wind, which contributed to other future climate scenarios such as cliff and beach erosion, although I found Surfline's high-resolution wind-modeling system very useful, it was equally important that my body knew how to localize wind conditions throughout San Onofre State Beach for several reasons. I wanted to compare my real-time data with surf reports, which did not always include complete wind forecasts. Using my body (rather than spotty technology) as a compass stemmed from confusion about incomplete wind forecasts and an unreliable wind app that temporarily disabled my phone, thereby delaying the picture-taking process for Urban Tides on a few separate occasions.³²⁴ Embodied knowledge was more expedient and intuitive than relying on weather or wind speed applications when time was a constraint. I also felt more connected with my surroundings without these aids, and each trip to Trestles helped me hone my wind-reading skills. My method constituted an embodied and dependable "way of knowing" how to produce environmental data (Ingold 2011, 154). Once trained, my body routinely localized wind conditions specific to San Onofre State Beach and the surf breaks. Incorporating the Beaufort Scale of Wind into my embodied knowledge was helpful because the descriptions of observed effects on the sea were easy to imagine. For example, at 3 knots "ripples with the appearance of scales are formed, but without foam crests." At 8 knots, wind's effects included: "large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses" (WMO Technical Regulations 2016). A light westerly flow between 3 to 8 knots ranged from "light air" to a "gentle breeze," which I could feel as a nudging of the wisps of hair around my neck. The reliable flaps of my backpack also rocked in the wind, tapping against my elbows as I walked under these conditions. Even if scientists did not need this information, wind was part of ecology's physical environment and central to surfing Trestles on a good, rather than bad, day. In this regard, Urban Tides' public database became my digital archive of wind memories.

In closing, although my personal experience volunteering for Urban Tides was different than I was expecting, both citizen science and my eco-ethnography provided different tools and data that

³²⁴ I was using an iPhone 6s.

enabled me to analyze how space is being produced and undone at Trestles. As such, I refrain from dismissing the entire enterprise of citizen science, particularly because there are positive case studies that demonstrate qualitatively and quantitatively the benefits of a volunteer-based approach to participating in the scientific process (Goffredo et al. 2010; Bonney and Dickinson 2012; Cooper et al. 2012; Kasymova and Gaynor 2014).³²⁵ But citizen science is not just a means of data collection.³²⁶ It is also a deeply compromised activist intervention.³²⁷ With this comes its own set of challenges of how scientists can extend their citizen science projects to better represent the communities and voices impacted by SLR but unable (or unwilling) to participate in resilience-focused initiatives as the effects of climate change intensify. Building trust with underrepresented communities and their members is key.

As the future of November 2016 legal settlement protecting San Onofre State Beach remains uncertain, shifting attention on the 241 Toll Road controversy to include SLR at Trestles is a challenging task. Current re-articulations of the controversy are provoking groups including the Save San Onofre Coalition to take political action against the latest alternatives for new transportation infrastructure. Perhaps members of USC Sea Grant and the Save San Onofre Coalition stand to benefit from collaborating with each other, as modes of civic mobilization are changing, with citizen science emerging as an increasingly popular method to connect scientists with communities impacted by climate change. The underlying socioeconomic and geographic inequalities in Urban Tides' citizen science model call into question the deliberative foundation upon which citizen science purportedly rests; however, it is never too late to recalibrate when an underlying objective is to promote a collective exchange of knowledge -- environmental, scientific, cultural and otherwise.

³²⁵ Various case studies using citizen science demonstrate the benefits for researchers in need of expansive spatial and/or temporal data sets to explain climate change and SLR (Goffredo et al. 2010; Cox et al. 2012). Also see: Zuckerberg and McGarigal's "Widening the Circle of Investigation: The Interface between Citizen Science and Landscape Ecology (2012)."

³²⁶ This continues to be a common framing, originating in much of the citizen science literature from the 1990s and early 2000s.

³²⁷ Similar to community-based participatory research, it is "one more tool, and a potentially effective one, for communities to employ the fight for the health and well-being of their neighborhoods" (Tucker and Taylor 2005, 29).

Conclusion

This dissertation set out to explore and analyze the ways in which the Trestles surfscape is produced and threatened. In this complex coastal zone that borders San Onofre State Beach, recreational benefits have emerged from nature's world-class waves, effectively creating a public ecosystem service with economic value for the local and global tourism and surf industries.³²⁸ These recreational advantages factor into the production of Trestles' surfscape, a term I coined to capture the geological, indigenous, economic, subjective and political complexity of one of the planet's most famous collection of surf breaks. For more than sixty years, competing demands for space, national security interests involving the Department of Navy and U.S. Marine Corps, and environmental concerns ranging from the extinction of wildlife to the irreversible impact of climate change have thrust Trestles under a global spotlight that continues to pit indigenous leaders, environmentalists, surfers, scientists and conservationists against developers, planners and transportation agencies responsible for building toll roads in Southern California.

Undergirding this dissertation was my interest in the ongoing campaign to "Save Trestles" from the construction of an eight-lane, sixteen-mile toll road extension that transportation and planning agencies in Orange and San Diego Counties expected to begin building in 2007. Driven by my own conflicted relationship with surfing, I initially set out to examine why the surf-centric campaign was effective in halting the construction of the toll road. An unlikely coalition of surfing and environmental groups, funded by the powerful surfing industry, came together in the Save San Onofre Coalition (SSOC), and then linked forces with indigenous activists, including the Juaneño Band of Mission Indians, Acjachemen Nation, The City Project and United Coalition to Protect Panhe, to derail the Transportation Corridor Agencies' (TCA) repeated attempts to build the SR-241 extension. It cannot be overlooked, however, that part of the successful outcome to stop this transportation project also stemmed from the

³²⁸ See: *Surfer Today*: "USA Surf Spots"; Travel Channel's "World's Best Surf Destinations"; CNN Travel's "50 best surfing spots around the world" (July 1, 2013).

involvement and presence of the military. As the feud between Pro Toll Road and No Toll Road groups continues, the U.S. Marine Corps remains a central figure yet unreliable ally in determining the fate of Trestles as a public good. The same is true for the surf industry, which, having already contributed to the ecological precarity of Trestles' surfscape, is now manufacturing its own wave parks in the face of sea-level rise and shrinking beachfronts for surf-contest audiences.

The current battle over space in San Clemente continues to prioritize the toll road, dangerously neglecting to take place in the context of climate change and the pressures to sustain surfing as a global business. Sea-level rise (SLR) particularly undermines the longevity of Trestles as an ecosystem service. As I began fieldwork in mid-January 2016, I immediately found myself gravitating toward this perspective while watching swells from the west-northwest and southwest intermingle after a destructive El Niño storm. The shoreline was visibly impacted, and the waves had their own invasive rhythm, creeping ever so close toward the railroad tracks where the Amtrak Pacific Surfliner transported commuters and travelers from one coastal county to another. The San Mateo Creek also rushed back to



Photograph 4.5: A view of the rising sea level between the Pacific Ocean and Surfliner train tracks in April 2016.

the ocean, taking vegetation and trash with it. Throughout 2016, the water continued to encroach on the infrastructure necessary to secure San Clemente's continued dominance in the global matrix of surf tourism.

On Martin Luther King Jr. Day one year later, the San Mateo Creek flowed into the Pacific Ocean, cutting through the beach traffic at Trestles. Winter rains had arrived again, though without the fanfare of El Niño headlines, mudslides, blustery winds or floods. Even so, imminent coastal destruction



Photograph 4.6: The San Mateo Creek flows on Martin Luther King Jr. Day (January 18, 2017).

gave reason for some environmentalists and surfers like me to become involved in projects designed to protect our coast. Not only is our recreational livelihood at stake; so too are our communities' health and longevity. These concerns led me to become a citizen scientist for the USC Urban Tides initiative and join Sea Grant's efforts to help communities develop resilience strategies for SLR. Each time I documented tidal lines, king tides, beach erosion and El Niño-induced destruction, I balked at the claim that Trestles was "saved forever." The historic November 2016 legal settlement that permanently barred TCA from building a toll road through San Onofre State Beach and the Richard and Donna O'Neill Land

Conservancy was, of course, a well-earned and extremely important victory on multiple levels. Even so, I questioned whether the No Toll Road groups really were successful in the long-term fight to conserve and preserve open, public beach space. *What exactly are they trying to “save?” How else are they planning to protect Trestles apart from shutting down a toll road?* Trestles is not, and never will be, immune from the impacts of El Niño or SLR.

What could fellow researchers and I do, therefore, to make sense of these overlapping complexities in socio-ecological spaces like Trestles? How could we do a better job of understanding these layers and interactions that are implicated in ecosystem functionality? To address these concerns, I coupled theories concerning the production of space and knowledge to tell an alternative story about the defense of a common -- in this case, Trestles. I also wanted to bring the theoretical framework of political ecology into view with ethnography and citizen science as methods. I drew on these mixed theoretical frameworks and methodological tools as well as my ways of seeing, experiencing and interpreting tides as a surfer to capture the myriad and intricate processes involved in producing, undoing and ultimately destroying this space. These methodological and theoretical approaches point to the importance of diversity of knowledges, informed by traditional, evolving and new ways to collect data. Transdisciplinary thinking guided me throughout the data-gathering process and eventual academic analysis.³²⁹

The intellectual and political challenge stems from the demand for other ways of knowing, respect for other “non-scientific” voices, and a hybridity of knowledge or convergence of nomenclature that matters beyond citizen science. I tackled this task by conducting what I have termed an “eco-ethnography,” an evolving methodology that respects the diversity of knowledges and treats ecology as a sensorial, political subject activated by environmental advocacy, (citizen) science and different ways of knowing. It enables me to make sense of space, seeing it through the lens of a surfer, citizen scientist and academic researcher.

³²⁹ By transdisciplinary I mean a way of thinking that extends beyond the academic audience, connecting experts with non-experts across academic and non-academic disciplines.

These three levels of methodological engagement were useful for several reasons. They underscored how producing and reproducing space -- in this case, the surfscape -- is a fraught process shaped by unequal power relations. They also exposed uncertainty about who drives the production of knowledge and ultimately controls space, for which there are contending demands. Trestles' proximity to Camp Pendleton, for instance, presented issues of national security and property rights. The state park's lease ends in 2021, a tenuous situation given the U.S. Marine Corps owns the land. The San Onofre Nuclear Generating Station also introduces energy and additional infrastructural dilemmas. Competing frameworks that address culture, ecology and economic interactions influence the (re)production of a surfscape. They underscore the difficulties in managing a culturally, ecologically and economically complex space.

This dissertation aimed to fill a deficit in scholarship regarding ecosystem services and functionality with respect to surfing. It, therefore, contributes to the growing scholarship on surfing and sports from a political ecology perspective, and to the scholarship on political ecology from the perspective of the globalization of the sports and recreation industries. Chapter 1 explained the production of Trestles' surfscape. I initially imagined it as an aquatic scape extending from the city, which depends on commerce and economic exchange to flourish. San Clemente's local economy relies on the spatial practice of surfing for economic survival. Surfing has played a fundamental role in San Onofre State Beach's transformation from an indigenous space into a racialized, gendered and commercialized surf destination that faces the very real threat of SLR.

Trestles' unique bathymetry has made it possible for the city of San Clemente, state of California and federal government to affix and validate the economic value of surf breaks. Surfonomics, as Nelsen and Pendleton explain in their study, quantifies the recreational and ecosystemic value of the land that conjoins with three main creeks that facilitate the flow of sediment, stones and rocks from the San Mateo Point watershed into the Pacific Ocean. The rhythms of these natural resources create waves, which attract surfers and tourists. My issue with surfonomics, though clearly useful as an activist tool, was that quantitative-focused studies seldom capture the cultural intricacies of San Onofre State Beach. Those

forces are undetectable by economic theories and surveys, which is why historical narratives, on-the-ground observations and real-time data are equally important.³³⁰ This dissertation explored how Trestles' rich indigenous history was colonized by the forces of settler colonies' appropriation of indigenous land through eminent domain and ideologies of white supremacy. It also revealed how the surf breaks' transformation into a surfscape rested on the establishment and rejection of borders built within the missionization, commercialization and militarization of public space.

San Onofre State Beach's conversion from indigenous terrain into a federally owned land indicated a historical "quieting" through the subjugation of the Acjachemen (Blomley 2002, 557). Property regimes such as the Department of Navy possess the power to "quiet" the land. Yet quieting breeds discontent when people mobilize to resist land-use projects such as the 241 Toll Road extension. In San Onofre State Beach's case, the social actors who hold power (e.g., through money, property or legal apparatuses) determine how space will be used, at times without any consideration for public input or interests. This was not the case with Trestles in the 1960s, however, when an unlikely settlement between Nixon, Reagan and the Marine Corps returned 3.5 miles of Camp Pendleton's beach to the public through a 50-year lease. Surfers declared victory when Trestles became a surf-only zone shortly thereafter.

By the 1970s, Trestles was on the global radar for surf tourism, its depoliticized aura drawing visitors from around the world. The flow of bodies yielded cultural consequences, however -- a point I made discussing my experience surfing Trestles as a white woman navigating a white man's surf world. I addressed the impact of my race and gender while riding waves during busy swell periods at Middles among a group of white men, and at Lowers with Jeremy Muta, the semi-pro black surfer from Papua New Guinea. My performance was under scrutiny at Middles; at Lowers, being a white woman gave me advantages with wave priority that Muta did not have as a Black man. The experiences facilitated my subjective critique of a surf culture at Trestles that is enmeshed in the micropolitics that nourish white

³³⁰ See Harley's *The New Nature of Maps: Essays in the History of Cartography* (2001).

male supremacy and a hierarchy of wave rights. This pecking order determines who gets to surf at what time and where, simulating social conditions on land in battles for control over natural resources in public spaces.

These dynamics played out further in Trestles' contest scene. Surfers from around the world arrived in packs on the hunt for perfect peaks while the surf industry sponsored a series of contests throughout the summer months. Each contest, the surf industry's economic interests superseded surfers' reliable access to public waves. Announcers consistently reminded recreational surfers that no-surf zones were reserved for competitors until events concluded for the day. Corporations and organizations complicit with the surf industry's contest model gave money -- \$25,000 in the case of Surfing America -- to temporarily privatize surf breaks within Trestles' surfscape. Chapter 1 also addressed the human-induced destruction occurring at sea level that followed preparation for Lowers yearly surf extravaganza, the "Hurley Pro." I argued that contest infrastructure and thousands of human bodies compacted into one small space particularly compromised Trestles' ecological integrity and eroding shoreline. It is not surprising, therefore, that in 2018 the contest was moved to surf legend Kelly Slater Wave Company's "Surf Ranch." This shift in location warrants an in-depth analysis about the future ecological and cultural implications of the budding wave-park industry, as well as a discussion about the economic impact fewer contests will have on Trestles' local surf tourism revenues. Now that Lowers will no longer play host to the annual "Hurley Pro," economic arguments that were once so powerful in derailing the toll road extension must be re-imagined.

Chapter 2 introduced the toll road as the principle threat to the recreational functionality of San Onofre State Beach as an ecosystem service. The crusade to "save" Trestles from essentially being developed beyond repair stemmed from power struggles among and between groups that could be allies for one cause yet enemies for another. Stakeholders in favor of TCA's 241 Toll Road proposal were identified as Pro Toll Road stakeholders. TCA drew support from a powerful contingent of state legislators and congressmembers, who were quick to appeal California Coastal Commission's (CCC) initial decision in February 2008 to reject the toll road proposal, igniting a decade of ongoing local, state

and federal government drama and intervention. Without the backing of then-Secretary of Commerce Gutiérrez and the U.S. Marine Corps, however, the agencies faced a plethora of legal battles. In the end, the Coastal Act and U.S. Marine Corps' position concerning issues of national and environmental security were critical to the success of the Save Trestles campaign.

Chapter 2 also framed the SSOC as an unlikely but powerful coalition of countervailing forces that came together to defeat TCA's proposal. For environmentalists, the toll road extension proposal signified an undervaluing of San Onofre State Beach as an ecosystem service. This prompted them to mobilize and turn to social-change networking and advocacy that increased the exposure of the Save Trestles campaign. This chapter also identified an array of diverse voices that mobilized to defend waves, indigenous histories, animals, public space and beach access. SSOC's membership reflected a diverse union of "Latino, African American, Asian-Pacific Islander and Native American organizations" (Dedina 2011, 108). Advocacy and collective action brought attention to San Onofre State Beach's militaristic property regime, a point clearly made when stakeholders called on the U.S. Marine Corps to reject the 241 Toll Road extension in 2007. Detailing the human history of Camp Pendleton, researcher Phillip Rosenberg writes the United States' "continual need to prepare for war with other people has spared this land from the bulldozer" (Rosenberg 1994, 8). No Toll Road advocates raised the important question whether activists "would have to mount similar campaigns for every effort to preserve threatened open space in Southern California" (Dedina 2011, 128). Public hearings outside the Del Mar Fairgrounds were a reminder that surfers could not "fight coastal battles on their own" (2011, 107).

Although the Save Trestles campaign was victorious in defeating TCA's original extension proposal, Chapter 3 disrupts the victory. A dead gray whale and disturbing sequence of marine life die-offs of tuna crabs and sea slugs from April to June 2016 due to warming ocean waters forced me to question what saving the surf breaks meant beyond the scope of coastal development. Dead sentinels of ecosystem change pointed to the impact of El Niño on wildlife. My initial purpose was to detail and compare ways that humans handled the corpses of these sentinels of ecosystem change because their unavoidable presence undermined Trestles' reputation as a pristine space for recreational purposes. The

cities of San Clemente and San Diego opted to chop the dead gray whale into pieces and dump everything into the Miramar Landfill. A 70,000-ton blob of rotting whale impeded public access to one of Southern California's busiest, most popular surf breaks, but die-offs of tuna crabs and sea slugs did not. Differing practice of managing deceased wildlife highlighted the anthropocentric divide between humans and animals, pointing to the uneven approaches to managing dead creatures that disrupt the flow of surf tourism. I posed composting the carcass of the dead gray whale as an alternative to hacking it to bits with construction equipment and dumping the body parts into the Miramar Landfill, home to the so-called "Whale Cemetery." The landfill operated as an extension of the surfscape where humans could disappear dead marine sentinels and erase signs of their existence (Whiteside 2002, 113). My composting suggestion rested on my anthropocentric stance toward animal ethics, animal rights and animal hierarchies. The necropolitics unraveling at the surfscape underscored the (un)manageable effects of El Niño on Trestles' animal ecology. During those encounters with dead marine sentinels, I turned to citizen science as a community-based means of protecting ecosystem functionality. This method of data collection and civic participation was supposed to help produce environmental knowledge and community resilience strategies for SLR, which was scientifically linked to El Niño weather patterns and unstable global temperatures.

But as I discussed in Chapter 4, mapping technologies, satellites, global swell models, surf reports, algorithms and the like could do only so much in their representations of SLR. I needed to account for a Theory of Change to speak to fellow researchers about what we must do to better understand the layers and interactions that make Trestles such a complex, biogeophysically ecological space. In my mind, to save Trestles meant to protect an equitably accessible, regenerative, sustainable surfscape. What is needed is a better finessing of action research agendas that can more adroitly interweave the diversity of knowledges (academic and nonacademic) in play at hyper-contested, socio-ecologically vital spaces and places. So, what must researchers put into place to get there? The promise of human agency frames the Urban Tides initiative. Yet important conversations are still lacking between scientists and the "nonspecialist volunteers" -- or citizen scientists -- who collect data for such projects.

This poses a problem because public policy in many cases emerges from science that neglects diversity in civic participation. Even so, collaboration and citizen science, though both fraught with compromise and ideological baggage, shine light on ways to enable a just identification and regenerative governance of spaces that reinforce a more equitable, respectful human-nature connection. One of those ways is by increasing accessibility to scientists to improve the co-production of knowledge about a space such as Trestles.

As a citizen scientist for Urban Tides, I established a line of communication with USGS oceanographer O'Neill in an effort to forge a more robust pathway to science-society relations while fostering an "environment of co-learning" (Pandya 2012, 316). For all its claims to democratizing knowledge, citizen science in this case still ultimately assumed knowledge-exchange was a unidirectional process where scientists' perspectives and data were the most valuable.³³¹ When I pushed against this hierarchy, my bi-directional communication with O'Neill revealed the limitations of using a citizen scientists' photographs of tidal lines to map SLR projections at Trestles.³³² A critical analysis of what democratizing science and the production of environmental knowledge mean within a larger context of SLR was important. My discussion with O'Neill highlighted the potential to improve how citizen scientists collected real-time environmental data that was then uploaded to a cloud-based, data-management system. As these type of services evolve, so must conversations regarding neoliberalism's impact on the production of usable data (Kimura 2016). New markets will emerge from sophisticated ways of conducting scientific research and storing publicly accessible data. How the environmental knowledge is used beyond the scope of the scientists' and citizen scientists' imaginings is worth exploring more closely.

³³¹ Echoing Pandya's claim: "The most successful projects value traditional knowledge, historical accounts, and participant observations in addition to scientific data" (2012, 316-4-317). He was not suggesting science education is pointless; rather, he saw cultural education as a necessary counterpart that many scientists simply do not have to do effective citizen science.

³³² I am in a different position as a doctoral student to push against this hierarchy.

Ultimately, this dissertation has tried to speak to the importance of other ways of knowing. All caveats aside, because the idea that the diversity of knowledge and respect for its hybridity matters in citizen science -- not only as a method of data collection, but also as community-based participatory research, civic engagement and bi-directional learning and communication -- I still have hope for this methodology. To enact a Theory of Change, Trestles needs two things: a constituency led by stakeholders with diverse interests. In this case, the SSOC comes to mind. And “good science” that better informs coastal policies and politics. A regulatory framework for coastal development in California is already set in place, and the CCC is envisioned as the agency that enforces laws meant to protect the beach while ensuring the public’s access to it.

As I have indicated, the politics of the Save Trestles victory have not abated, and the U.S. Marine Corps’ support is unpredictable. Furthermore, programs such as USC Sea Grant (which runs Urban Tides and similar projects focused on the health of our coast and ecosystem) are under attack by the Trump administration. Consequently, the CCC likely will face Pro Toll Road and No Toll Road groups yet again once a new site is determined for the transportation infrastructure. It is premature to declare Trestles has been saved from destruction, and various activist approaches throughout the decades have shown the fight for its economic, cultural and ecological survival will never really end.

Moreover, while the capacity for civic mobilization increases when treasured spaces such as Trestles and San Onofre State Beach are under siege, destructive human activity causes global warming, inevitably increasing SLR. The surfscape, therefore, is not indestructible, which is why humans are constantly looking beyond the waves to reproduce it.³³³ Land is critical to the (re)production of a surfscape. The surf industry is seizing, purchasing and reconfiguring landscapes to artificially construct reproducible waves. As is evident with the shift of the Hurley Pro to Slater’s new Surf Ranch, as well as the financial success of enterprises such as Surf Snowdonia, which is an “artificial surfing lake” in Conwy, United Kingdom, savvy surf entrepreneurs have no qualms about charging the surf-riding public

³³³ This process calls attention to cultural geographer Nicholas Blomley’s idea of “enactment” of land.

to participate in a commodifiable, re-designed, re-imagined and potentially profitable recreational activity. The “public” in surfing is being privatized rapidly.³³⁴ This shift in surfing’s imaginings is seen in the industry’s incessant push toward constructing wave pools, wave parks, surf lagoons, surf rivers and other human-designed ecosystem services that promote surfing as the principle activity or touristic draw. On the face of it, this might seem to reduce the environmental impact at Trestles if the importance of its surfscape recedes from the spectacularization of surfing relative to the surf industry’s turn toward manufactured infrastructure and new wave technologies. However, the economic drive to capitalize off this spatial practice outside of the ocean already has introduced an entirely different layer of socio-ecological dilemmas and vulnerabilities in need of new knowledges, research questions, analyses and critiques. Ironically, to better understand the impact of this infrastructure of manufactured waves on the production of an ever-evolving surfscape, we should begin by looking at the destruction we have already wrought on the Earth’s oceans and precious waves as a recreational resource.

³³⁴ See: www.surfsnowdonia.com.

Works Cited

- ABC10 News. "Federal Government Rejects Trestles Toll Road: Decision Upholds California Coastal Commission's Rejection." (December 18, 2008): www.10news.com/news/federal-government-rejects-trestles-toll-road. Accessed December 10, 2012.
- Aguirre, David. *Waterman's eye: Emil Sigler – Surfing San Diego to San Onofre, 1928-1940*. San Diego, CA: Tabler and Wood (2007): 14-15. Courtesy of San Diego State University's Surfing Collection.
- Aitken, Stuart, Mitchell, Don and Staeheli, Lynn (Eds. Gaile, Gary and Willmott, Cort). "Urban Geography." Ch. 17. New York: Oxford University Press Inc. (2003). 165, 246.
- American Shore & Beach Preservation Association: Science and Technology Committee. "Surfers as Coastal Protection Stakeholders." *White Paper*. (January 2011): 1-9.
- Amtrak. "Great American Stations: San Clemente (2013)." www.greatamericanstations.com/stations/san-clemente-ca-snp/. Accessed May 15, 2017.
- Anderson, E.N. *The Pursuit of Ecotopia: Lessons from Indigenous and Traditional Societies for the Human Ecology of Our Modern World*. Santa Barbara, CA: Praeger. (2010).
- Appadurai, Arjun. "Disjuncture and Difference in the Global Cultural Economy." *Theory, Culture & Society*. 7 (1990): 264, 282-283, 295-310.
- Arias, Elisa. Phone interview. May 6, 2016.
- ASP Surfing Cards. Futera Sports Cards: Australia. Courtesy of San Diego State University's Surfing Collection. (1995).
- Ball, John H. "Doc." *California Surfriders*, First Edition. Lost Angeles: N.B. Whale. (1946): 48, 85, 103.
- , John H. *Surf-Boarders Capture California*. Washington, D.C.: National Geographic Society. 86:3. (September 1944).
- Barry, John and Wissenburg, Marcel. (Eds.) *Sustaining Liberal Democracy: Ecological Challenges and Opportunities*. New York, NY: Palgrave. (2001).
- Bauerlein, Judy. Panel Participant: "Waves are Bodies in Motion." Conference title: *Society of Ethnomusicology and Conference on Dance*. Philadelphia. November 10, 2011): 1, 4, 6, 8-9.
- Beacon Economics LLC. <https://beaconecon.com/aboutus>. Accessed December 15, 2012.
- , "Economic Benefit Analysis 241 Completion Project." (July 2011): 1-12. Accessed December 15, 2012.
- Beckman, Tad. "Spanish and Mexican Possession." *The View from Native California: Lifeways of California's Indigenous People*. (1997, 2014). Independently published. Accessed April 2017. pages.hmc.edu/beckman/western/ch15.htm

----- . “California Stehhood and Federal Administration.” *The View from Native California: Lifeways of California’s Indigenous People*. (1997, 2014). Independently published. pages.hmc.edu/beckman/western/ch16.htm. Accessed April 2017.

Benton, Ted. *The Greening of Marxism*. New York, NY: The Guilford Press. (1996): 162.

Berg, Peter. “The Bioregional Approach for Making Sustainable Cities.” <http://www.planetdrum.org/library.htm>. Accessed Oct. 22, 2015.

Berlant, Lauren. *Cruel Optimism*. Durham, NC: Duke University Press. (2011): 51-52.

Biersack, Aletta and Greenberg, James B. (Eds.). *Reimagining Political Ecology*. Durham, NC: Duke University Press. (2006): 32

Blaikie, Piers and Brookfield, Harold. *Land Degradation and Society*. New York, NY: Methuen & Co. Ltd. (1987).

Blocker, H.G. *Philosophy and Art*, New York: Charles Scribner's Sons. (1979): 43.

Blomley, Nicholas. “Mud for the Land.” *Public Culture*: 14:13 (Fall 2002). 557-582.

----- . “Law, Property, and the Geography of Violence: The Frontier, the Survey, and the Grid.” *Annals of the Association of American Geographers*: 93:1 (2003). 121-141.

----- . *Unsettling the City: Urban Land and the Politics of Property*. New York, NY: Routledge. (2004): 15.

Bonney, Rick and Dickinson, Janis L. (Eds.) *Citizen Science: Public Participation in Environmental Research*. “Overview of Citizen Science.” Ithaca: NY: Cornell University Press, Comstock Publishing Associates. (2012): 22, 25-26.

Bourdieu, Pierre. (Eds. Mukerji, Chandra and Schudson, Michael). “Sport and Social Class.” *Rethinking Popular Culture: Contemporary Perspectives in Cultural Studies*. University of California Press Ltd: London, England. (1991): 357-373.

Brannstrom, Christian and Vadjunec, Jacqueline. *Land Change Science, Political Ecology, and Sustainability*. London: Routledge Taylor & Francis Group/earthscan. (2013).

Bryant, R.L. “Political Ecology: An Emerging Research Agenda in Third-World Studies.” *Political Geography*. 11:1: (1992): 12-36.

Burkett, Paul. *Marx and Nature: A Red and Green Perspective*. New York, NY: St. Martin’s Press. (1999).

Burrough, P., MacMillan, R. and Van Deursen, W. “Fuzzy classification methods for determining land suitability from soil profile observations and topography.” *J Soil Science*. 43: (1992): 193-210.

California Coastal Commission. “Staff Report and Recommendation on Consistency Certification.” (March 26, 2007): 157-176.

-----, “Program Overview.” www.coastal.ca.gov/whoweare.html. Accessed 01-22-14.

California Marine Life Protection Act Initiative. “Draft Regional Profile of the MLPA South Coast Study Region.” (September 15, 2008): 1-196.

California State Parks. California Department of Parks and Recreation: “A State Park System is Born.” www.parks.ca.gov/?page_id=940. Accessed: June 1, 2014.

-----, “San Onofre State Beach Map” 2010, 1-4.

California State Parks Store: Surf Explorer Vehicle Day Use Annual Pass. <http://store.parks.ca.gov/park-passes/surf-explorer-vehicle-day-use-annual-pass/>. Accessed March 3, 2014.

Cannavò, Peter F. *The Working Landscape: Founding, Preservation, and the Politics of Place*. Cambridge, MA: The MIT Press. (2007).

Carroll, Nick. *30 Years of Flame: California's Legendary Surf Photographer*. San Clemente, CA: Surfing Magazine. Courtesy of San Diego State University's Surfing Collection. (2005).

Carson, R.T, Flores, E.N. and Mitchell, R.C. “The Theory and Measurement of Passive-Use Value.” Eds. Bateman, Ian and Willis, Kenneth. *Valuing Environmental Preferences: Theory and Practice of the Contingent Valuation Method in the US, EU, and Developing Countries*. England: Oxford University Press. (2001): 98-99, 102-103, 119.

Casa Romántica “San Clemente” display. Personal visit in April 2016.

Certeau, Michel de. *The Practice of Everyday Life*. Berkeley, CA: University of California Press. (1988): 93, 108.

City of San Diego. Environmental Services. “Miramar Landfill” general information page. <https://www.sandiego.gov/environmental-services/miramar>. Accessed March 17, 2017.

Clifford, James and Marcus, George. *Writing Culture: The Poetics of Politics and Ethnography*. Berkeley, CA: University of California Press. (1986): 78.

Connelly, Laylan. “Hurley Pro at Trestles removed from world surf tour, replaced by Kelly Slater's Surf Ranch.” *The Orange County Register*. (November 20, 2017): www.ocregister.com/2017/11/20/hurley-pro-at-trestles-removed-from-world-surf-tour-replaced-by-kelly-slaters-surf-ranch/. Accessed November 20, 2017.

Cooper, Caren B. (Eds. Dickinson, Janis and Bonney, Rick). *Citizen Science: Public Participation in Environmental Research*. “The Opportunities and Challenges of Citizen Science as a Tool for Ecological Research.” Ithaca, NY: Cornell University Press, Comstock Publishing Associates. (2012): 99-101, 108-110.

Coppock J.T. & Rhind D.W. “The History of GIS.” *Geographical Information Systems: Principles and Applications*. (1991): 21-43.

Corburn, Jason. *Street Science: Community Knowledge and Environmental Health Justice*. Cambridge, MA: The MIT Press. (2005): 12.

- Cortner, Hanna J. and Moote, Margaret A. *The Politics of Ecosystem Management*. Washington, D.C.: Island Press. (1999).
- Cox, T. et al. "Expert variability provides perspective on the strengths and weaknesses of citizen-driven intertidal monitoring program." *Ecological Applications*. 22:4, 1201-1212 (2012): 1201.
- Crain, Amy H. "Trestles Historic District" registration form. National Register of Historic Places for the United States Department of the Interior. Prepared by California State Office of Historic Preservation. (December 2011 draft): 4-5, 9-12, 15-17, 26.
- Crapanzano, Vincent. (Eds. Clifford, James and Marcus, George). "Hermes' Dilemma: The Masking of Subversion in Ethnographic Description." *Writing Culture: The Poetics of Politics and Ethnography*. Berkeley, CA: University of California Press. (1986): 51.
- Davis, Susan. *Spectacular Nature: Corporate Culture and the Sea World Experience*. Berkeley and Los Angeles: University of California Press. (1997).
- Dedina, Serge and Hernandez, K. "Saving Trestles: Anatomy of a Miracle." *Voice of San Diego*. (February 12, 2008): www.voiceofsandiego.org/community/article_84bc49ee-b682-58fa-83a8-922595f89a8a.html. Accessed December 10, 2012.
- Dedina, Serge. *Wild Sea: Eco-Wars and Surf Stories from the Coast of the Californias*. Tucson, AZ: The University of Arizona Press. (2011).
- Denuccio, Kyle. "The Road to Nowhere: We Thought We Killed It, But Like a Zombie, the Trestles Toll Road is Back." *Surfer*. (October 19, 2011): www.surfermag.com/features/the-road-to-nowhere/. Accessed November 22, 2012.
- Dickinson, Janis L. and Bonney, Rick (Eds.). *Citizen Science: Public Participation in Environmental Research*. "Why Citizen Science?" Ithaca, NY: Cornell University Press, Comstock Publishing Associates. (2012): 7-11, 25-26.
- Do, Anh. "Dead Whale (Pieces) Hauled Away from San Onofre State Beach." *Los Angeles Times*. (April 28, 2016): <http://www.latimes.com/local/lanow/la-me-dead-whale-hauled-away-20160428-snap-story.html>. Accessed April 29, 2017.
- Dobson, Andrew and Lucardie, Paul. (Eds.). *The Politics of Nature: Explorations in Green Political Theory*. New York, NY: Routledge. (1993): 33.
- Dorrian, Mark and Rose, Gillian. (Eds.). *Deterritorialisations...Revisioning Landscapes and Politics*. New York, NY: Black Dog Publishing Ltd. (2003).
- Earth Day Network. "Earth Day: The History of a Movement." <http://www.earthday.org/earth-day-history-movement>. Accessed Nov. 1, 2015.
- Ekers, Michael et al. *Gramsci: Space, Nature, Politics*. West Sussex, UK: Wiley-Blackwell. (2012).
- Elwell, John C. "Surfing in San Diego: John C. Elwell, Jane Schmauss, and the California Surf Museum." Charleston, S.C.: Arcadia Publishing (2007): 84, 124.

“Environmental Data.” Great Lakes: Quality Management Training - Data Review Glossary. Region 5: Great Lakes National Program Office. http://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&glossaryName=Data%20Review%20Glossary. Accessed November 3, 2015.

Escobar, Arturo. *Territories of Difference: Place, Movements, Life, Redes (New Ecologies for the Twenty-First Century)*. Durham, North Carolina: Duke University Press. (2008).

Escobar, Arturo, Dianne Rocheleu, and Smitu Kothari. “Environmental Social Movements and the Politics of Place.” In “Place, Politics and Justice: Women Negotiating Globalization,” ed. W. Harcourt. Special Issue. *Development* 45(I):28-36. (2001).

Exxon Valdez Oil Spill Trustee Council. “Questions and Answers about the Spill.” www.evostc.state.ak.us/?FA=facts.QA. Accessed October 1, 2015.

Feuling, Jim. *Early California Surfriders: A Collector's Edition of Rare Photographs Covering Classic California Longboard Surfing in the Thirties and Forties*. Ventura, CA: Pacific Publishing. Courtesy of San Diego State University's Surfing Collection. (1995).

Flink, John Allan Jr. *Riding the Mythic Wave: The History of Surf Culture in North San Diego County*. San Diego State University's Surfing Collection: Dissertation. (2008).

Ford, Nick and Brown, David. *Surfing and Social Theory: Experience, embodiment and narrative of the dream glide*. New York, NY: Routledge Taylor & Francis Group. (2006): 10, 17, 20, 39, 45, 47, 50-52, 83-87, 92, 96-98.

Forsyth, Tim. “Political Ecology and the Epistemology of Social Justice.” *Geoforum* 39. (2008): 756-764.

Fortun, Kim. *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders*. Chicago: University of Chicago Press. (2001): xiv, 93, 218-220, 245-246, 178-179.

-----, “Figuring Out Ethnography.” *Fieldwork Is Not What It Used to Be*. New York, NY: Cornell University Press. (2009). 161, 177-179.

-----, “Ethnography in Late Industrialism.” *Cultural Anthropology* 27:3 (2012). 446-464.

Foster, John Bellamy. *Marx's Ecology: Materialism and Nature*. New York, NY: Monthly Review Press. (2000): 73-74.

Frickel, Scott. *Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement*. “Who Are the Experts of Environmental Health Justice?” Cambridge, MA: The MIT Press. (2011): 24.

Friends of the Foothills. “Commerce Department Upholds Coastal Commission Decision.” www.taskforce.sierraclub.org/friendsofthefoothills/. Accessed November 22, 2012.

García, Robert and Baltodano, Erica Flores. “Free the Beach! Public Access, Equal Justice, and the California Coast.” *2 Stanford Journal of Civil Rights and Civil Liberties* 143. (2006): 34, 169-170.

Glasman, Jean-Michael. *Surf Graphics*. Le Vésinet, France: Editions Yocar. Courtesy of San Diego State University's Surfing Collection. (2005).

Goffredo, Stefano et al. "Unite research with what citizens do for fun: 'recreational monitoring' of marine biodiversity." *Ecological Applications*. 20:8, 2170-2187 (December 2010): 2170-2172, 2184.

Goodchild, Michael F., Maguire, David J. and Rhind, David W. *Geographic Information Systems*, First Edition. Hoboken, NJ: Wiley. (1991).

----- "Geographic Information Systems." Aitken, Stuart and Valentine, Gill (Eds.). *Approaches to Human Geography*. Thousand Oaks, CA: Sage Publications. (2006).

Grannis, LeRoy et al. *Surf Photography of the 1960s and 1970s*. Koln, Germany: Taschen. Courtesy of San Diego State University's Surfing Collection. (2006).

Great Lakes: Quality Management Training - Data Review Glossary. "Environmental Data." Region 5: Great Lakes National Program Office. http://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&glossaryName=Data%20Review%20Glossary. Accessed November 3, 2015.

Greenberg, James B. and Park, Thomas K. "Political Ecology." *Journal of Political Ecology*. 1 (1994): 4-5.

Gutierrez, Carlos Miguel. U.S. Secretary of Commerce. "Decisions and Findings by the U.S. Secretary of Commerce in the Consistency Appeal of the Foothill/Eastern Transportation Corridor Agency and the Board of Directors of the Foothill/Eastern Transportation Corridor Agency from an Objection by the California Coastal Commission." (December 18, 2008): 1-2, 13, 15, 20, 22, 25-28.

Hamilton, Robert A. "Subject: Review of Dennis Murphy Letter and Evaluation of California Gnatcatcher Habitat within Grading Limits Proposed for the Foothill Transportation Corridor Project, Coastal Zone." Letter to the California Coastal Commission. (January 16, 2008): 1-3.

Harley, J.B. "Deconstructing the Map." *Cartographica*. 26: 2 (Spring 1989): 1-3, 20.

----- "Deconstructing the Map." *The New Nature of Maps: Essays in the History of Cartography*. Baltimore: Johns Hopkins University Press. (2002): 5, 150-168, 178-179.

Harrison, Steven J. "A Human History of the Camp Pendleton Area." Ed. Rosenberg, Phillip S. *Geology and Natural History Camp Pendleton United States Marine Corps Base, San Diego County, California*. (1994): 5-8.

Harrison, Molly. "The Kids' Times: Gray Whale." NOAA's National Marine Fisheries Service, Office of Protected Resources. 2:4 (2005): 2.

Harwood, Frank. In-person interview. May 26, 2016.

Hayward, Tim. *Political Theory and Ecological Values*. New York, NY: St. Martin's Press. (1998).

Heimann, Jim. *Surfing: Vintage Surfing Graphics*. Los Angeles: Taschen. Courtesy of San Diego State University's Surfing Collection. (2006).

Hershkovitz, Linda. "Political Ecology and Environmental Management in the Loss Plateau." *Human Ecology*. 21:4 (1993): 328-329.

- Heynen, Nikolas. "Urban Political Ecology I: The Urban Century." *Progress in Human Geography*. 38:4 (2014): 59.
- Heynen, N., Kaika, M. and Swyngedouw, E. (Eds.). *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*. London and New York: Routledge. (2006).
- Hoare, Quintin and Smith, Geoffrey Nowell (Eds). *Selections from the Prison Notebooks of Antonio Gramsci*. New York, NY: International Publishers. (1971): 238.
- Holbraad, Martin. "Can the Thing Speak." Working Paper Series #7. (2011): 2, 4, 7-12.
- Holmes, Douglas R. and Marcus, George E. *The Sage Encyclopedia of Qualitative Research Methods*. "Paraethnography." Los Angeles, CA: Sage Publications. (2008): 596-597.
- Hoffman, Andrew J. *How Culture Shapes the Climate Change Debate*. Stanford, CA: Stanford University Press. (2015).
- Humphrey, Mathew (Ed.). *Political Theory and the Environment: A Reassessment*. Portland, OR: Frank Cass Publishers. (2001).
- Hunt, Joe. *Mission Without a Map: The Politics and Policies of Restoration Following the Exxon Valdez Oil Spill*. Exxon Valez Oil Spill Trustee Council. Alaska: Alaska Resources Library and Information Services. (August 2015).
- Iatarola, Briana. *Economic and Cultural Effects of the Global Surf Industry in El Tunco: El Salvador*. Master's Thesis (2010).
- Ingold, Tim. "Materials Against Materiality." *Archaeological Dialogues* 14:1, 1-16. (2007): 7, 9.
- ". "Against Space: Place, Movement, Knowledge." *Being Alive: Essays on Movement Knowledge and Description*. New York: Routledge Taylor & Francis Group. (2011): 151, 154, 148, 314.
- Irwin, John Keith. "Surfers: a study of the growth of a deviant subculture." Master's thesis. (1965): 7, 13, 16. Courtesy of San Diego State University Surfing Collection.
- Jackson, Anthony L. and Marano, Nick. "Marine Corps perspective of the 241 Toll Road project." Undated letter. 2010.
- Jacques, Peter J. *Environmental Skepticism: Ecology, Power and Public Life*. England: Ashgate Publishing Ltd. (2009): 69.
- Juañeno Band of Mission Indians Acjachemen Nation. "The Tribe": www.juaneno.com/. Accessed July 6, 2014.
- Kasymova, Jyldyz and Gaynor, Tia Sherée. "Effective Citizen Participation in Environmental Issues: What Can Local Governments Learn?" *State and Local Government Review*. 46:2 (June 2014): 14.
- Klein, Arthur H. and Klein, M.C. *Surf's Up! An Anthology of Surfing*, First Edition. Indianapolis, IN: Bobbs-Merrill. Courtesy of San Diego State University's Surfing Collection. (1966).

- Kimura, Aya Hirata. *Radiation Brain Moms and Citizen Scientists: The Gender Politics of Food Contamination after Fukushima*. London: Duke University Press. (2016): 155-156.
- Kitchin, Rob. (Eds. Aitken, Stuart and Valentine, Gill). *Approaches to Human Geography. "Positivistic Geographies and Spatial Science."* Thousand Oaks, CA: Sage Publications. (2006).
- Klein, Karen. "A Surprise Detour for Orange County Toll Road." *Los Angeles Times*. (June 20, 2013).
 ----- "The Acjachemen's victory." *Los Angeles Times*. (December 27, 2008).
www.latimes.com/opinion/editorials/la-ed-panhe27-2008dec27-story.html. Accessed June 5, 2014.
- Krauss, Werner, "Migratory Birds, Migratory Scientists, and Shifting Fields: The Political Ecology of a Northern Coastline" in *Multi-Sited Ethnography Problems and Possibilities in the Translocation of Research Methods*. New York, NY: Routledge. (2011).
- Latour, Bruno (translated by Catherine Porter). *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press. (2004).
- Lawson-Remer, Terra. *Essays on Economic Development, Property Rights, and Natural Resource Governance*. Ann Arbor, MI: UMI Dissertation Publishing. (2010).
- Lazarow, N. Miller, M.L., and Blackwell, B. "Dropping In: A Case Study Approach to Understanding the Socioeconomic Impact of Recreational Surfing and Its Value to the Coastal Economy." *Shore and Beach* 75:4, 21-31 (2007).
- LeCG. "Economic Benefits of Toll Roads Operated by the Transportation Corridor Agencies." (June 2006): 5-8.
- Lefebvre, Henri. *The Production of Space*. (Translated by Donald Nicholson-Smith). Cambridge, MA: Blackwell. (1991): 1, 9, 38, 45, 50, 53, 56, 70-71, 84, 383-385.
 ----- *Rhythmanalysis: space, time and everyday life*. Trans. Elden, Stuart and Moore, Gerald. New York: Continuum. (2004) [1992]: 60, 78-79.
- Leys, Ruth. "The Turn to Affect: A Critique." *Critical Inquiry* 37. (Spring 2011): 443, 459.
- Litman-Navarro, Kevin. "Why Scientists Drag Dead Whales to the Bottom of the Sea." *Atlas Obscura*. www.atlasobscura.com/articles/whale-fall-carcass. Accessed April 30, 2017.
- Lockyer, Bill. "Re: Opposition to Consistency Certification for Foothill South Toll Road (CC-018-07)." Letter to the California Coastal Commission. (January 17, 2008): 1.
- Loftus, Alex. "Gramsci, Nature and the Philosophy of Praxis." Ekers, Michael et al. (Eds.). *Gramsci: Space, Nature, Politics*. West Sussex, UK: Wiley-Blackwell. (2012): 181.
 ----- *Everyday Environmentalism: Creating an Urban Political Ecology*. Minneapolis, MN: University of Minnesota Press. (2012).
- Lovich, Robert. "Re: Response to Coastal Commission Staff Report Released September 2007, Foothills South Transportation Corridor South" regarding impacts to the endangered arroyo toad (*Anaxyrus [Bufo] californicus*)." Letter to California Coastal Commission. (January 22, 2008).

- Lyons, Kristina. "The Poetics of Soil Health." Platypus: the CASTAC Blog. March 2016. <http://blog.castac.org/2016/03/poetics-of-soil-health/>. Accessed March 3, 2017.
- Maguire, D.J. and Dangermond J. "The Functionality of GIS." *Geographical Information Systems: Principles and Applications*. Maguire, D.J., Goodchild, M.F. and Rhind, D.W. (Eds.). New York, NY: John Wiley and Sons (1991): 319-335.
- Mann, Geoff. "State of Confusion: Money and the Space of Civil Society in Hegel and Gramsci." Ed. Ekers, Michael. *Gramsci: Space, Nature, Politics*. West Sussex, UK: Wiley-Blackwell. (2012): 105, 117.
- Marin Corps Base Camp Pendleton: "History." Camp Pendleton's History and Museums Office. <http://www.pendleton.marines.mil/About/History-and-Museums/>. Accessed April 2014.
- Martin, Claire. "Breaking Point." *Smithsonian*. (November 2012): 84-96.
- Martinez, Angelica and Jimenez, Jose Luis. "Coastal Commission Rejects Toll Road Through San Onofre State Beach." *The San Diego Union-Tribune*. (February 6, 2008).
- Marx, Karl and Engels, Frederick. "Manifesto of the Communist Party." *Marx/Engels Selected Works, Vol. One*. Progress Publishers: Moscow. (1969): 98-137.
- Marx, Karl. "Economic and Philosophic Manuscripts of 1844." *The Marx-Engels Reader: Second Edition*. Robert C. Tucker. New York, NY: W.W. Norton & Company. (1978): 66-81.
- Marx, Spencer Adolph. *Surfing: A Philosophical Inquiry*. San Diego State University: Master's thesis. Courtesy of San Diego State University's Surfing Collection. (1976).
- Massey, Doreen. *Space, Place, and Gender*. Minneapolis, MN: University of Minnesota Press. (1994): 82, 167, 250-251.
- Mathieson, Blair. "Upper Trestles and Lower Trestles Travel Info and Southern California Regional Overview." www.surflife.com/surflife/report_breakdata.cfm?id=4738&sef=true. Accessed July 27, 2017.
- McHarg, I.L. *Design with Nature*, Wiley, NY. (1969).
- Melin, Matt. In-person interview. July 12, 2016.
- Meyer, John M. *Political Nature: Environmentalism and the Interpretation of Western Thought*. Cambridge, MA: The MIT Press. (2001).
- Myers, Larry. "Re: Comments: Foothill Transportation Corridor South (FTC-S) Toll Road." Letter to Thomas Street of the National Oceanic Atmospheric Administration Office of General Counsel for Ocean Services. (May 27, 2008): 1.
- Miller, Gary, et al. "Re: Foothill/Eastern Transportation Corridor Agency v. California Coastal Commission; Coastal Zone Management Act Appeal Regarding California State Route 241 in Orange County and San Diego County, California." (May 28, 2008): 1, 7.

Mindes, Aimee Rebecca. *The Perceptions of Hazards Among Surfers in Southern California*. California State University, Long Beach: Master's thesis. Courtesy of San Diego State University's Surfing Collection. (1997).

Mitchell, Mark, Jennings, Cynthia R., Younger, James. "Confronting Environmental Justice in Connecticut." Visgilio, Gerald and Whitelaw, Diana M. (Eds). *Our Backyard: A Quest for Environmental Justice*. (2003): 127.

Mitchell, W.J.T. *Landscape and Power*, Second Edition. London: The University of Chicago Press. (1994): 2.

Moore, Sue E. "Marine Mammals as Ecosystem Sentinels." *Journal of Mammalogy* 89:3, 534-540. (2008): 534-535, 538.

Moriarty, Jim. "Letters" from *OC Weekly*. (November 2, 2006): www.ocweekly.com/2006-11-02/columns/letters/. Accessed December 18, 2012.

Morris, Vic and Nelson, Joe. *The Weather Surfer: A Guide to Oceanography and Meteorology for the World's Wave Hunters*. San Diego, CA: Grossmont Press. Courtesy of San Diego State University's Surfing Collection. (1977).

Mouffe, Chantal. *Agonistics: Thinking the World Politically*. Brooklyn, NY: Verso Books. (2013): 3-7, 80, 89-90.

Nagami, Damon. Phone interview. August 15, 2016.

National Oceanic and Atmospheric Administration. NOAA Fisheries. "Gray Whale (*Eschrichtius robustus*)." www.fisheries.noaa.gov/pr/species/mammals/whales/gray-whale.html. (January 15, 2015). Accessed June 16, 2017.

-----, "Is Sea Level Rising?"
<https://oceanservice.noaa.gov/facts/sealevel.html>. Accessed December 12, 2017.

-----, "Bottlenose Dolphin (*Tursiops Truncatus*): California Coastal Stock." (December 31, 2001). Accessed June 16, 2017.

-----, "Who We Are."
seagrant.noaa.gov/WhoWeAre/SeaGrantHistory.aspx. Accessed March 11, 2017.

-----, "Ocean Facts: What is Bathymetry?"
<http://oceanservice.noaa.gov/facts/bathymetry.html>. Accessed May 2015.

-----, "Hello La Niña. Weather This Winter Likely to be Influenced by Climate Phenomena." (November 10, 2016): www.noaa.gov/news/hello-la-nina. Accessed July 24, 2017.

Nelsen, Chad Edward. *Collecting and Using Economic Information to Guide the Management of Coastal Recreation Resources in California*. Dissertation. University of California, Los Angeles. (2012): 2, 6-9, 14, 35, 51, 116-117, 151.

Neumann, Roderick P. *Making Political Ecology*. New York: Oxford University Press Inc. (2005): 5-8, 10, 47.

Nixon, Deborah P., and Jones, John Paul. "Geographic Information Systems." *Approaches to Human Geography*. Thousand Oaks, CA: Sage Publications. (2006): 66.

Nordhaus, Ted and Shellenberger, Michael. *Break Through: From the Death of Environmentalism to the Politics of Possibility*. New York: Houghton Mifflin Co. (2007): 2, 6, 132, 142-143.

Oliver, Kelly. "Toward an Ethics of Responsiveness." *Research in Phenomenology*. 40:2 267-280.

Olund, Eric. "From Savage Space to Governable Space: The Extension of United States Juridical Sovereignty over Indian Country in the Nineteenth Century." *Cultural Geographies*. 9:2 (2002): 129-146, 158.

O'Neill, Andrea. E-mail interview. May 9, 2017.

----- Phone interview. August 4, 2017.

Orange County Board of Supervisors Newsletter. "Camp Pendleton's History and Museums Office Fact Sheet." August 31, 2012. bos.ocgov.com/legacy5/newsletters/pdf/CP_08.31.12.pdf. Accessed May 30, 2014.

Orange County Supervisor Pat Bates Fifth District. District Issues: "241 / Foothill-South". <http://ocgov.com/gov/bos/5/info/issues/241>. Accessed November 2, 2014.

Orange County Transportation Authority. *Outlook 2035 Long Range Transportation Plan*. (September 12, 2014): 42.

Ortiz, Steven M. *A Sociological Dimension of Leisure: An Explanatory Study of Surfing as a 'Central Life Interest' of Surfers*. California State University, Long Beach. Master's thesis. (1979). Courtesy of San Diego State University's Surfing Collection.

Ott, David. "Staff Report City of Solana Beach." (October 10, 2007): 1-10.

Ottinger, Gwen. "Buckets of Resistance: Standards and the Effectiveness of Citizen Science." *Science, Technology & Human Values*. 35:2 (March 2010): 244-270.

Pandya, Rajul E. "A framework for engaging diverse communities in citizen science in the US." *Frontiers in Ecology and the Environment*. 10:6 (August 2012): 314-317.

Park, Brian. "Federal Agency to Reassess Juaneño Band of Mission Indian Sovereignty." *Dana Point Times*. December 18, 2013. Accessed: August 26, 2014.

Parsons, Howard L. (Editor). *Marx and Engels on Ecology*. Westport, CT: Greenwood Press. (1977): xi, 4-5, 7-9, 12, 102, 134-136.

Paulson, Susan and Gezon, Lisa L. (Eds.). *Political Ecology across Spaces, Scales and Social Groups*. New Brunswick, NJ: Rutgers University Press. (2005).

Pearson, Susan and Weismantel, Mary. "Does 'The Animal' Exist? Toward a Theory of Social Life with Animals." *Beastly Natures*. Charlottesville, VA: University of Virginia Press. (2010): 18-19, 20-22, 24, 26-27, 32.

Peet, Richard and Watts, Michael. (Eds.) "Liberation Ecology: Development, Sustainability, and Environment in an Age of Market Triumphalism." *Liberation Ecologies*. London and New York: Routledge. (1996): 1-45.

----- (Eds.). *Global Political Ecology*. London: Routledge Taylor & Francis Group. (2011).

Peuquet, Donna J. and Marble, Duane F. (Eds.). *Introductory Readings in Geographic Information Systems*. London: Taylor & Francis. (1990).

Pezzoli, Keith. *Human Settlements and Planning for Ecological Sustainability: The Case of Mexico City*. Urban and Industrial Environments. Cambridge, MA.: MIT Press, 2000: 556

Popular Mechanics Magazine. "Land Surfboard on Rollers is Run like a Scooter." Chicago, IL. 64:2 (August 1953).

Potts, Deborah, Stott, Philip and Sullivan, Sian (Eds.). *Political Ecology: Science, Myth and Power*. New York, NY: Oxford University Press. (2000): 4, 45-47.

Pruitt, Jim. In-person interview. March 30, 2016.

Pursell, Robert. "Breaching Shark Brings Contest to a Halt at Trestles." *Grind TV*. <http://www.grindtv.com/surf/surfers-forced-water-breaching-shark-swath-womens-pro/>. (September 12, 2016). Accessed June 13, 2017.

Raffles, Hugh. *In Amazonia: A Natural History*. Princeton, NJ: Princeton University Press. (2002).

Reuters. "Red Tuna Crabs Carpet Southern California Beaches Again." Reuters: Environment. <http://www.reuters.com/article/us-california-crabs-idUSKCN0Y71VM>. Accessed April 22, 2017.

Rhind, D.W. "Counting the People: The Role of GIS." First Edition, Volume 2. *Geographical Information Systems*. Hoboken, NJ: Wiley. (1991).

Robbins, Paul. *Political Ecology: A Critical Introduction*, Second Edition. New York, NY: Wiley-Blackwell (2012).

----- "Fixed Categories in a Portable Landscape: The Causes and Consequences of Land Cover Categorization." Zimmerer, Karl S. and Bassett, Thomas J. (Eds.) *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*. New York, NY: The Guilford Press. (2003): 182, 193, 196, 283.

Rodgers, Terry and Lee, Mike. "Toll-Road Project Debated." *The San Diego Union-Tribune*. (September 23, 2008).

Rosenbloom, Sandra. (Eds. Katz, Cindi and Monk, Janice.) "Women's Travel Patterns at Various Stages of Their Lives." *Full Circles: Geographies of Women over the Life Course*. New York, NY: Routledge. (1993).

Ross, Lainie Friedman and Loup, Allan et al. "The Challenges of Collaboration for Academic Community Partners in a Research Partnership: Points to Consider." *Journal of Empirical Research on Human Research Ethics: An International Journal*. 5:1 (March 2010): 22.

Rossotto Ioris, Antonio Augusto. *The Political Ecology of the State: The Basis and the Evolution of Environmental Statehood*. New York, NY: Routledge Taylor and Francis Group. (2014): 31.

Roussopoulos, Dimitrios. *Political Ecology*. Montreal/New York: Black Rose Books. (1993).

Salamon, Lester M. *Rethinking Corporate Social Engagement: Lessons from Latin America*. Sterling, VA: Kumarian Press. (2010).

San Diego Association of Governments. *1996/2020 Regional Transportation Plan*. (April 2000).

----- . "Transportation Committee Agenda." (December 10, 2004): 1-3.

----- . "Amendment No.1, Resolution No. 2005-15(2)." *Mobility 2030: The Transportation Plan for the San Diego Region*. (January 28, 2005): 2, 11.

----- . "Board of Directors Agenda Item No. 05-02-1B." (February 25, 2005).

----- . *2030 Revenue Constrained Regional Transportation Plan: 2006 Update*. (February 2006): 21, 55-56.

----- . "Systems Development: More Travel Choices." *Mobility 2030: The Transportation Plan for the San Diego Region*. (November 2007): Chapter 6, 6-29.

----- . "Public Facilities: Strengthening the Social and Physical Infrastructure of Our Communities." *2030 Vision*. 171.

San Diego Regional Water Quality Board. "Executive Officer Summary Report. Re: Waste Discharge Requirements: Foothill/Eastern Transportation Corridor Agency, Tesoro Extension (SR 241) Project, Orange County (Tentative Order No. R9-2013-0007 (Darren Bradford))." (March 13, 2013): 7.

San Onofre State Beach. "Native American History: Panhe." www.parks.ca.gov/pages/647/files/SanOnofreFinalWebLayout092710.pdf. Accessed: June 1, 2014.

Sarason, Mike. "Innovation News: Local Startup Liquid Simplifies Data Collection and Analysis." *Soapbox Cincinnati*. (April 18, 2014). www.soapboxmedia.com/innovationnews/042214-Liquid-simplifies-data.aspx. Accessed August 2, 2017.

Sasaki, T. (Ed.). *Nature and Human Communities*. Tokyo: Japan: Springer-Verlag. (2004).

Save San Onofre Coalition. "Re: Comments on Appeal of Foothill/Eastern Transportation Corridor Agency Pursuant to the Coastal Zone Management Act." Letter sent to Thomas Street of the NOAA Office of General Counsel for Ocean Services. (May 28, 2008): 2-3, 7, 8, 170.

Scheinbaum, Chase. "So... Public Records Show You Could Rent Lower Trestles for 25K." *The Inertia*. August 9, 2016. www.theinertia.com/surf/so-public-records-show-you-could-rent-lower-trestles-for-25k/. Accessed September 20, 2016.

Schuurman, Nadine. "Trouble in the Heartland: GIS and its Critics in the 1990s." *Progress in Human Geography*. 24:4 (2000): 569–590.

Schmidt, Alfred. "The Concept of Nature in Marx." *Uneven Development: Nature, Capital and the Production of Space*. Smith, Neil (Ed.). New York, NY: Basil Blackwell Inc. (1984): 32, 52.

Schuurman, Nadine. "Trouble in the Heartland: GIS and its Critics in the 1990s." *Progress in Human Geography*. 24:4 (2000): 569–590.

Scott. "BIA Fails to Recognize Juaneño Band of Mission Indians, Acjachemen Nation." *Cherokee One Feather*. (March 17, 2011).

Sekich, Stefanie. "Legislation to Protect State Parks Clears First Hurdle." *California Chronicle* (posted April 29, 2009). <http://savetrestles.surfrider.org/2009/04/legislation-to-protect-state-parks.html>. Accessed Nov. 2, 2015.

Severson, John. *Great Surfing: Photos, Stories, Essays, Reminiscences, and Poems*, First Edition. Garden City, NY: Doubleday. Courtesy of San Diego State University's Surfing Collection. (1967).

Sherman, Pat. "Toll Road: Hundreds Want to Speak; Less Than Fourth May Have Chance." (September 19, 2008): www.delmartimes.net/2008/09/19/toll-road-hundreds-want-to-speak-less-than-fourth-may-have-chance/. Accessed November 22, 2012.

----- "Toll Road: Thousands Showed for Meeting." (September 22, 2008): www.delmartimes.net/2008/09/22/toll-road-thousands-showed-for-meeting/. Accessed December 10, 2012.

----- "Toll Road Issue Likely to End up In Federal Court." *Del Mar Times* (September 23, 2008): www.delmartimes.net/2008/09/23/toll-road-issue-likely-to-end-up-in-federal-court/. Accessed November 22, 2012.

----- "Trestles Issue Continues to Pack Fairgrounds." *Del Mar Times*. (October 2, 2008): www.delmartimes.net/2008/10/02/trestles-issue-continues-to-pack-fairgrounds/. Accessed November 22, 2012.

Short, Kevin A. *Trestles*. San Juan Capistrano, CA: Puerta del Cielo Publishing. Courtesy of San Diego State University's Surfing Collection (2007).

Silver, Dan. Phone interview. July 26, 2016.

Smith, Carrie Blackmore. "The Power of Liquid: A Startup Story." *Cincinnati.com* (USA Today Network). (September 24, 2015). www.cincinnati.com/story/news/2015/09/24/power-liquid-startup-story/72748176/. Accessed August 4, 2017.

Smith, Neil *Uneven Development: Nature, Capital and the Production of Space*. New York, NY: Basil Blackwell Inc. (1984): 75.

Soja, Edward W. *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*. London: Verso Press. (1989): 6, 53.

-----, "The Political Organization of Space." Commission on College Geography Resource Paper No. 8. Association of American Geographers. (1971): 1, 7.

-----, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*. London: Verso Press. (1989).

Short, Kevin A. *Trestles*. San Juan Capistrano, CA: Puerta del Cielo Publishing. (2007): 1, 7, 29. Courtesy of San Diego State University's Surfing Collection.

Solana Beach City Council. "Foothill South Toll Road Resolution of Opposition: Agenda Item No. 9." (February 13, 2008): 1.

Spehn, Deanna. In-person interview. July 11, 2016.

Spencer, Wayne D. "Re: Impacts of Foothill Transportation Corridor – South (FTC-S) on Coastal Zone Resources." Letter. (August 17, 2007): 1.

Steinhauer, Jennifer. "In California, Coastal Commission Wields Vast Power." *New York Times*. (February 23, 2008): www.nytimes.com/2008/02/23/us/23clemente.html. Accessed December 19, 2012.

Stewart, Kathleen. *Ordinary Affects*. Durham, NC: Duke University Press. (2007): 1-2, 6-7.

Stott, Philip and Sullivan, Sian (Eds.). *Political Ecology: Science, Myth and Power*. New York, NY: Oxford University Press. (2000): 4, 24, 34-35.

Stranger, Mark. *Surfing Life: Surface, Substructure and the Commodification of the Sublime*. Surrey, England: Ashgate Publishing Ltd. (2011): 140.

Sturken, Marita and Cartwright, Lisa. *Practices of Looking: An Introduction to Visual Culture*. New York, NY: Oxford University Press. (2009): 253.

Surfer. *Surfer's Guide to Southern California*. San Francisco, CA: Chronicle Books. (2005).

Surflife. "Upper Trestles and Lower Trestles Southern California Regional Overview." www.surflife.com/travel/index.cfm?id=2081#2950. Accessed March 1, 2014.

-----, "Upper Trestles Travel Info: About Upper Trestles." www.surflife.com/surf-report/upper-trestles-southern-california_4738/travel/. Accessed March 5, 2014.

-----, "California Coastal Commission Reports Toll Road Would Destroy Trestles Break." (February 5, 2008): www.surflife.com/surf-news/_13556/. Accessed November 10, 2012.

-----, "San Diego County High Resolution Wind": March 15, 2007. www.surflife.com/surflife/chart_viewer/?chart=106076&id=2950&zone=-8

Surfrider Foundation. *Legal Handbook*. (November 2009): 37, 57-60.

-----, "About Us." www.surfrider.org/pages/mission. Accessed January 5, 2015.

-----, "Our Vision." www.surfrider.org/pages/our-vision. Accessed December 1, 2015.

Swegles, Fred. "San Juan Capistrano 'Strongly Opposes' Toll Road Options that Cut Through Its Boundaries." *The Orange County Register*. (June 9, 2017). <http://www.ocregister.com/2017/06/09/san-juan-capistrano-strongly-opposes-toll-road-options-that-cut-through-its-boundaries/>. Accessed August 25, 2017.

Swyngedouw, Erik and Heynen, Nikolas. "Urban Political Ecology, Justice and the Politics of Scale." Special Issue. *Antipode*. Oxford: Blackwell Publishing. (2003): 898-915.

----- *Liquid Power: Contested Hydro-Modernities in Twentieth-Century Spain*. Cambridge, MA: The MIT Press. (2015).

----- "Modernity and the Production of the Spanish Waterscape, 1890-1930." Zimmerer, Karl S. and Bassett, Thomas J. (Eds.) *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*. New York, NY: The Guilford Press. (2003): 95-97.

Takaki, Ronald. *A Different Mirror: A History of Multicultural America*. New York: Back Bay Books. (2008): 95.

Taylor, Bron. "Surfing into Spirituality and a New, Aquatic Nature Religion. *Journal of the American Academy of Religion*. (2007): 925.

Telles, Lisa. "TCA Responds: Toll Roads and Save Trestles." *The Inertia*. (May 18, 2013).

Tempest, Rone. "Park Panel Urges State Officials to Block Tollway: Opponents of the Road through an O.C. Park Want Governor, Attorney General Involvement." *Los Angeles Times*. (November 19, 2005). www.cityprojectca.org/blog/archives/214. Accessed November 30, 2015.

ten Bos, René. "Toward and Amphibious Anthropology: Water and Peter Sloterdijk." *Environment and Planning D: Society and Space*. (2009): 27. 73-86.

The Inertia. "The Dead Whale at Trestles Has Been Hacked Up and Removed." *The Inertia*. May 1, 2016. <http://www.theinertia.com/surf/the-dead-whale-at-trestles-has-been-hacked-up-and-removed/>. Accessed January 1, 2017.

Toll Roads: "Background & History." www.thetollroads.com/aboutus/toll-roads-history.php. Accessed March 17, 2014.

Townshend, JRG. "Environmental Databases and GIS." Goodchild, Michael F., Maguire, David J. and Rhind, David W. (Eds.) *Geographic Information Systems*, First Edition. Hoboken, NJ: Wiley. (1991). 201-216.

Transportation Corridor Agencies. "Draft Environmental Impact Statement/Subsequent Environmental Impact Report and Draft Section 4(f) Evaluation for the South Orange County Transportation Infrastructure Improvement Project Volume 1: Executive Summary." (April 26, 2004).

----- "241/Foothill-South." ocgov.com/gov/bos/5/info/issues/241. Accessed November 2, 2014.

----- "Debunking Myths & Misinformation by Opponents of Completion of the 241 Toll Road." Public fact sheet. (October 2007): 1, 5, 12.

----- . “Toll Road Agency Board to Reach Out to Stakeholders, Redouble Efforts to Find Traffic Solution.” *The Toll Roads* press release. (January 8, 2009).

----- . “SR 241 – Tesoro Extension.” (February 2012).

Tsing, Anna. “Strathern beyond the Human: Testimony of a Spore.” *Theory, Culture & Society*. 31:2/3 (2014): 224, 231, 235-237, 239.

Tucker, Connie and Taylor, Douglas. “Good Science: Principles of Community-Based Participatory Research.” *Race, Poverty & the Environment*. 11:2 (2004/2005): 25, 27, 29.

United Coalition to Protect Panhe and The City Project. “Re: Save Panhe and Save San Onofre State Beach – Stop the Proposed Toll Road: Reject Override Request – Consistency Certification for the Foothills South Toll Road [FR Doc. E8-5247].” Letter to U.S. Secretary of Commerce Carlos Gutiérrez (May 22, 2008).

Urban Tides Community Science Initiative: <http://dornsife.usc.edu/uscseagrant/urban-tides-initiative/>. Accessed January 2016.

USC Sea Grant. “Urban Tides Community Science Initiative: Capture the Future of Our Urban Ocean” flier. (September 2016).

Visgilio, Gerald R. and Whitelaw, Diana M. (Eds.) *Our Backyard: A Quest for Environmental Justice*. New York, NY: Rowman & Littlefield Publishers Inc. (2003).

Von Hellermann, Pauline and Coleman, Simon (Eds.). *Multi-Sited Ethnography Problems and Possibilities in the Translocation of Research Methods*. New York, NY: Routledge. (2011).

Walker, Isaiah Helekunihi. *Waves of Resistance*. Honolulu: University of Hawai‘i Press. (2011): 105.

Warshaw, Matt. *Zero Break: An Illustrated Collection of Surf Writing, 1777-2004*. Orland, FL: Harcourt. Courtesy of San Diego State University’s Surfing Collection. (2004).

Weikel, Dan. “U.S. Funds Sought for Foothill Toll Road.” <http://articles.latimes.com/2003/mar/14/local/me-foothill14>. Accessed December 10, 2012.

White, Michael. “Impacts of the Foothill Transportation Corridor – South (FTC-S) on Wetland Resources in the Coastal Zone.” Letter. (September 13, 2007): 1-6.

White, William J and Bundy, Kevin. “Re: Comments on the 2005 Final Supplemental EIR and related findings for the SOCTIIP Project.” Letter from Shute, Mihaly & Weinberger LLP addressed to Macie Cleary-Milan of F/ETCA. (January 12, 2006): 18, 33-35.

Whiteside, Kerry H. *Divided Natures: French Contributions to Political Ecology*. Cambridge, MA: The MIT Press. (2002): 63-65, 108-109, 111, 113.

Whitehead, Judith. *Development and Dispossession in the Narmada Valley*. New Delhi, India: Longman, Dorling Kindersley. (2010): 280.

Whyte, David. "Knowledge as Movement in Surfing and Anthropology." *Material World*.
www.materialworldblog.com/2016/05/knowledge-as-material-movement-in-surfing-and-anthropology/.
Accessed September 2, 2016.

Wielenga, David. "Letters" from *OC Weekly*. (November 2, 2006): www.ocweekly.com/2006-11-02/columns/letters/. Accessed December 18, 2012.

Wildcoast/Costasalvaje. "Volunteer Opportunities." May 2013: E-Mail Newsletter.

----- "MPA Watch Volunteer Field Guide." May 2013: 1-32.

Wissenburg, Marcel. "The Idea of Nature and the Nature of Distributive Justice." *The Politics of Nature: Explorations in Green Political Theory*. Dobson, Andrew and Lucardie, Paul (Eds.). New York, NY: Routledge. (1993): 5-7, 33.

World Meteorological Organization's "Manual on Codes: International Codes, Volume 1.1, Annex II to the WMO Technical Regulations" (2016).

Wright, Gary and Thomas, Murray. *Paper Shredders: An Anthology of Surf Writing*. Lincoln, NE: Universe Inc. Courtesy of San Diego State University's Surfing Collection. (2005).

Young, Emily. "Balancing Conservation with Development in Marine-Dependent Communities. Is Ecotourism an Empty Promise?" Zimmerer, Karl S. and Bassett, Thomas J. (Eds.) *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*. New York, NY: The Guilford Press. (2003): 31, 37.

Zardini, Mirko (Ed.). *Sense of the City: An Alternate Approach to Urbanism*. Canada: La Müller Publishers. (2005): 303-304.

Zilberg, Elana. *Space of Detention: The Making of a Transnational Gang Crisis between Los Angeles and San Salvador*. Durham, N.C.: Duke University Press. (2011).

Zimmerer, Karl S. and Bassett, Thomas J. (Eds.) *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*. New York, NY: The Guilford Press. (2003): 31-32.

Zuckerberg, Benjamin and McGarigal, Kevin. (Eds. Dickinson, Janis L. and Bonney, Rick). *Citizen Science: Public Participation in Environmental Research*. "Widening the Circle of Investigation: The Interface Between Citizen Science and Landscape Ecology." Ithaca: NY: Cornell University Press, Comstock Publishing Associates. (2012): 122.

* Fish out of Water: The 'Prince of Whales' Sideshow and the Environmental Humanities *Why Scientists Drag Dead Whales to the Bottom of the Sea.