|un|Settling Salt Marshes:
speculations on legible vulnerability in a vamishing place

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Abstract

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Hegemonic urban landscapes are positioned as apolitical places of stability, wealth and culture for those who inhabit and embody them, obscuring the socio-spatial and ecological processes that have coalesced to give rise to them. As planetary systems change with the steady rise of global warming comes an opportunity to reevaluate these places through critical narratives that emphasize a radical relationality towards a more equitable future. Through critical social theory and speculative design thinking through the lens of landscape architecture a critical praxis can be developed towards those ends. By imagining counter-environments I work to leverage the discursive shared imaginary to build towards novel and expansive alternatives to the conventions that have literally paved the road to our contemporary conjuncture. Focused on my childhood home of Redwood Shores, California I use my insider knowledge and extensive experiences to build towards the critical speculations. What is shared should serve as an impetus for further discussion as the planet continues to change.

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I would not be here if not for the incredible people who have supported me through this process. I am, and will forever be, grateful to my family for their relentless belief in my ability and unyielding understanding. My friends and cohort saw me through my darkest and most fragile moments as I navigated incapacitating feelings of inadequacy and fear. Without you none of this would be possible. Thank you all for staying by my side when I gave in to my perceived weaknesses.

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Introduction

*"**Any environment tends to be imperceptible to its users and occupants except to the degree that counter-environments are created by the artist.**"*

– Marshall McLuhan[1]

With the rapid onset of global warming and climate change reshaping human relationships with the world around us comes an opportunity for significant socio-political changes across numerous praxes. Scholars have been tracing connections between the causes and effects of the aforementioned environmental changes across time, space, scale, and system in an effort to understand the 'hows' and 'whys' of the upheavals of our planet. Physical scientists measure ecologic, geologic, meteorologic changes, while social scientists monitor human systems to suss out answers in hopes of discovering next steps to meet the emergent paradigm shift. The result of these scholarly pursuits is a complex network of transdiscplinary inquiries and theories that inform how humans understand and interact with systems beyond their control. Throughout time humans have sought for ways to understand and control the conditions in which they lived. A false sense of stability and control, nurtured by modernity's work towards Humans' domination over Nature, has provided much of the logic behind the disruptions that have triggered these cataclysmic system shifts. Relinquishing a sense of control and embracing the discomfort of flexibility is critical to the long-term persistence of the human species.

1 McLuhan, M. "The Borderline Case, Marfleet Lectures," *Understanding Me: Lectures and Interviews*. McClellend & Stewart Ltd. 2003, pp. 103 – 138.

At its core, this thesis is a critical exploration of the networks of inquiries in an effort to develop a new set of logics to inform design praxis, here used to denote a practice that is intentionally influenced by theory, particularly in landscape architecture; a profession often charged with addressing oncoming environmental changes. This project is a call to reimagine the conventions that bind the practice of landscape architecture to the systems that have instigated the cataclysmic and unprecedented series of global changes, perpetuating the current experience of environmental destruction we now witness. In sharing my process, I offer my visions of counter-environments of a suburban development in the San Francisco Bay area known as Redwood Shores that is threatened by its own geo-political position, having been built on marshlands, surrounded by rising sea levels. The speculations I offer for the future of this development consider three response options to the environmental threats it faces so that they may foster a new set of possibilities within the collective imaginary, helping to realize alternatives to society's current trajectory.

Navigating the complexities of socio-ecological networks at any scale can make for an endless task for any one person to undertake so I have chosen to focus efforts on reevaluating the quiet California suburb in which I was raised. This intimate position introduces a subjectivity often avoided in academic endeavors, but it is crucial in that it is my position and deep understanding of this place that inform and enrich my reflections and projections for the future of the place. This deep connection also emphasizes my stake in the place while providing me with grounded insider knowledge and experiences that have allowed for a more complex, albeit biased, analysis and interpretation of the neighborhood. This area was also selected for its complicated origin story, the spatialization of certain cultures, and its geographic location as it relates to the nearby "wilds" of the baylands.

There is no denying the peacefulness of Redwood Shores. Masterplanned in the late 1960s, the ambient tranquility of the suburban development was designed into the place. Promotional literature from 1966 describes the neighborhood as a "water wonderland where everyday is a weekend" and the community continues to pride itself on its distinctly modernist "framework for (a) new kind of living." Composed of a network of discreet residential complexes closely monitored by elected homeowners' associations, these small clusters of homes, painted in mandated color palettes, promote a fiercely individualist mentality of personal ownership and control. The landscape around the homes mirrors this sense of control through discreet and consistent management of its regularly manicured physical features. Leveed bay marshlands frame immaculately kempt lawns, carefully pruned trees, and engineered lagoons that line the regularly repaved streets, emphasizing a form of order suggestive of areas with dense concentrations of wealth. It is this financial positioning that has informed the conception and continued expansion of this community with little regard for the longer-term environmental repercussions.

As a child I was free to roam and explore with little concern for my safety, adventuring out to the edge of the San Francisco Bay and exploring the marshlands with friends. We would throw rocks at the massive water tank next to my house and enjoy the echoes of the metal through the water. We would bike the surrounding levee and make believe we were adventurers on an epic quest or sit in a park and work on the new board game we had dreamt up. Playing at night was never a cause for fear as the streets were well lit and all but completely empty after the adults returned from work. Even the levee emptied of anyone but locals as the day drew to a close. With only two entrances to the development, it was, in effect, a gated community with actual gated communities safely placed at the center. As I grew older and my desire to grow and change shifted with my understanding of myself, I found that the qualities that were so important to cultivating the magic of

my childhood were suffocating and at times violent to my mental wellbeing. The spatialized articulation of dominant, read White privilege, culture and power became palpable and my discontentment manifested through small embodied rebellions against the disciplining forces of the suburbs. Having lived and grown outside of the neighborhood now I have different frames of reference to better understand other forms of violence and risk within the seemingly idyllic conditions that helped to raise me.

As I have changed with time and experience, so too have the conditions of the neighborhood. The geographic location of the community is exceptionally vulnerable to the currently slow, and thus more sinister violence of ecological change brought on by global extraction and production practices. With bay levels rising, the fecundity of the marshland interrupted, and its physical structure failing, the material condition of the development is under threat. The question then is what is to be done with a place that is sinking as the surrounding waters advance, and what might those decisions mean for the inhabitants, place, and greater context. This thesis begins with my critical stance, followed by a review of relevant literature that informed the work of this thesis. The literature review is followed by a review of historical and contemporary contexts and conditions before moving into three distinct critical speculations on the future of Redwood Shores. These imagined possibilities are analyzed and reflected upon in the final section before opening up the ideas to further discussion.

Critical Stance

This thesis is being written at a time when the rate of change across innumerable dimensions is unprecedented and increasing exponentially. The world as we've built it is in flux, with a variety of critical socio-ecological systems and human/nonhuman assemblages in decay that may conclude with the extinction of our species. With these changes come an opportunity to respond – "to design ourselves a 'beautiful ending'" to the ways in which the world has been functioning since the Enlightenment sent White Europeans out into the world to supposedly save the colonial subject from themselves.[2] Regardless of what is to come, it is clear when considering the global changes now at hand, that what has been put in place is no longer working and that a radical reset is necessary for us to imagine and create an "elegant extension" in order to leave a meaningful legacy for posterity.[3] This radical reset will require a relational interrogation of what has been and what currently is to best inform what can be imagined and realized for our remaining time on this planet.

Relationality, similar to systems thinking, focuses on the connections between things.[4] In relationality it is made clear that any one thing can only exist as it is understood/interpreted/positioned by another. The wealthy cannot exist without poverty just as indigeneity means nothing without colonizers and rural is meaningless without the urban. Relationality is not limited to binaries. For example, my being is different based on who I am in relation with others at any given moment. To my mother, I am her first born amidst a variety of other relationships I share. The mother/son identities we co-create for each other differ dramatically from the elder brother/younger brother relationships I share with my siblings. By taking a relational

2 studioolafureliasson. 'Broken Nature: Design Takes on Human Survival.' Instagram, quote by Antonelli Paola, 6 Mar. 2019, https://www.instagram.com/p/Buq0UGFnTow/ (Accessed March 6, 2019).
3 *Ibid.*
4 Elias, Amy J., and Christian Moraru. The Planetary Turn: Relationality and Geoaesthetics in the Twenty-First Century. Northwestern University Press, 2015. pp. xii.

approach to ones' praxis, one foregrounds the entangled nature of the connections that bind individual human idiosyncrasies to global systems, which have, up until a point, created the inequality and violence that mars our present. By tracing the links between people and socio-ecological systems, we pull back layers of meaning to make apparent the politics that function behind the scenes of our world. This thesis is a grounded exploration of what that process might look like focused on a suburban development in the San Francisco Bay Area and how it can be reimagined for an intersectionally equitable future.

(Sub)Urban spaces in the United States reveal complex power structures built upon the colonization of life, culture, and place. Coupled with the advancement of capitalism and the identification of living and nonliving things as resources for extraction, the national landscape is constantly reshaped to serve expanding urbanization and economic gain. This has required a stark bifurcation of Nature and the Urban which has positioned nature as distant, disconnected, and all but completely nonhuman subject to be controlled until it exacts some romanticized notion of revenge. The relational interactions between concepts of nature and urban co-create each other through their relationships.

The relationships between Nature and the Urban serve as a platform for the logic behind the West's approaches to urbanization. Over time, the violent socioecological incursions of development and so-called progress into places and lives have been positioned as bounded within history and the resultant socio-economic imbalance considered as naturalized, taken for granted, and easily obscured. Because these violent spatial articulations are not experienced equally by all, it is arguably rare to hear the general public speak to the injustices of a city's material form and layout because such counter given hegemonic narratives are often silenced. Such social transgressions often open the challenger up to violence. This is not to disregard the valiant and critical efforts of innumerable environmental justice movements, who have fought for better conditions for their lives, but instead to call into question the naturalization of spatial inequality -- that is the result of imbalanced socioeconomics.

The conflicting narratives of the 'cosmopolitan urban' and 'urban blight' continue to shape (sub)urban landscapes. Living within a higher socioeconomic bracket buys people an escape from the discomfort and cruelty of urbanization's fluxes and flows; turning what is cruel to some into pleasures for the rich. Disinvestment, crime, and pollution are emphasized in the dominant public discourse of cities and urban blight is positioned as the threatening binary to suburban safety. Though this narrative is now in flux as affluent white people return to cities, it is still inextricably linked to histories that inform the current transition from the decaying urban cores wrought by white flight to playgrounds for the affluent, where work and leisure are blurred. When interrogated, the narratives of urban blight have historically been divorced from their underlying causes, allowing for the perpetuation of the damage. It is critical to make legible these histories if we are to effectively address the destructive trajectory our planet is on.

Tracing the historical context behind socio-spatial developments reveals an unequal distribution of consequences of environmental decisions that often results in harm falling most heavily upon the impoverished and marginalized and the places where they live and work. Social disparities run contradictory to the dominant narratives of success and victory that local municipalities put forward for those positioned to benefit from the capitalist machine. These complicated, layered histories provide a scaffolding for the hegemony of the nation. Hegemonic urban landscapes are positioned as apolitical places of stability, wealth and culture for those who inhabit and embody them, obscuring the socio-spatial and ecological processes that have coalesced to give rise to them.

Designers of the built environment are tasked with reshaping material places and are educated in what the physical rearticulations of a place might mean for the living beings that interact with it. Throughout our education, designers are introduced to, and seduced by, what Manfredo Tafuri (1969) refers to as 'the central illusion of architectural ideology' – that is the notion that once graduated, we will enter the workforce, realize our projects, and change/save the world.[5] This grandiose concept fosters great creativity and imagination in students, but disregards the powerful regulating forces that inform and control all business practices. Budgets, clients, labor, material access, policy all coalesce to control the ways in which a project can be completed. In fact, for Tafuri, architecture – and I would argue landscape architecture and planning - are instruments of capitalism and have functioned as such since the onset of the Enlightenment.[6] The limitations imposed by a capitalist society help to ensure the reproduction and maintenance of the systems that best serve a select few, placate a majority of others, and hide and harm the rest. Articulations of spatialized power foster and maintain hierarchical structures that become taken for granted and allow for business as usual. Because the political structures behind a place are so often rendered invisible to those they serve, it can be difficult for one to achieve critical reflexivity, which in turn makes significant social change without conflict near impossible. The impediments that structure and maintain spatio-political processes are where we need to focus scholarship and action to best reevaluate and rearticulate approaches to designing for the emergent systems needed for an equitable future.

Throughout my academic career across numerous disciplines between the humanities and social sciences, I have grappled with academia's long tradition of studying the Other; of making a subject out of the marginalized. Recently, studies of Otherized peoples are framed as seeking to help those deemed less fortunate but they have historically meant emphasizing and reifying difference, providing a logic for racist and inequitable concepts and policies. Anthropological accounts of the indigenous peoples of the Americas informed dehumanized caricatures of these groups that obscured the shared humanity in favor of cultural and physical distinctions that othered those studied and made the colonial figures comfortable with the violence of their conquest.[7] These destructive, grossly essentialized and false projections of identities persist today and continue to damage the societal positions of those who were initially studied. The works of past scholars have evolved somewhat, and now inform new problematic binaries such as the formally educated and uneducated or rural and urban culture, and continue to fail to empower those under the scrutiny of the elite. Such problematic new manifestations of academically defined distinctions focused on the marginalized add to an elitist discourse and are kept in the ivory tower of the academy. It is my belief that it is a scholar's responsibility to make the familiar strange and problematize our ideas and agendas, that are otherwise taken as fact and left to function without question – as many hegemonic constructs tend to do. Examples of these sinister background ideologies include neoliberal democracy, whiteness, and capitalism. When all of these now-naturalized categories/conditions coalesce and manifest in physical form, we are left with places and moments in history such as the development of the American suburb after the second world war or more contemporarily the renewed interest in dense urban environments and the reinvestment in cities. These places become spatialized expressions of power, disciplining dissenting or divergent ways of being.

5 Tafuri, Manfredo. "Toward a Critique of Architectural Ideology (1969)" *Architecture Theory: since 1968*, The MIT Press, 1998, pp. 7–35.
6 Keyvanian, Carla. "Manfredo Tafuri: From the Critique of Ideology to Microhistories." *Design Issues*, vol. 16, no. 1, 2000, pp. 3–15., doi:10.1162/074793600300159646.
7 Hansen, Richard D. "Social Anthropology and Anthropologists of the Past and Present: from Exoticism and the Imagined Reciprocity to Everyday Inequalities." *The Ethics of Anthropology and Amerindian Research: Reporting on Environmental Degradation and Warfare*, Springer, 2011, pp. 147–190.

If one is to participate in any form of knowledge making, one must be critical and analyze one's own positionality in society. By approaching a study with critical subjectivity and reflexivity we can further enrich innumerable discourses with an awareness otherwise inaccessible under the guise of the overly prized and often inhuman objectivity of an impartial observer -- as though one is capable of denying their place in society. My own experiences, politics, and critical lens deeply influence this work. Having grown up a queer man in the heteropatriarchal place this thesis will reframe, analyze, and reimagine, I am all too familiar with the difficulties of differing from the generally accepted norm of a spatialized articulation of hegemonic forces. Perhaps my status as an "Other" has granted me enough of a divergent perspective to call into question the normalized politics of my homogenized and homogenizing home. Regardless, this position has left me constantly wondering why things are as they are, how we got to this place, and why things must come at the cost of the wellbeing of others. It is my intention to trouble these histories, make legible the power imbalances behind the place, and to offer my perspective on directions this place might become with time.

Literature Review

In formulating a praxis, I have leaned on the work of numerous scholars from a variety of disciplines. Their work is integral to my own as I synthesize new ideas from the discourses that emerge from my placing them in conversation with each other. To begin, the work of urban political ecologists offers a strong lens with which to address the past and present of a place by looking at how a place's politics influence its ecology and vice versa. I build on this work to address how the contemporary global ecological regime shifts are being analyzed and defined. These politicized concepts direct a person's attention and by extension, their efforts, and as such are crucial to helping to define a viable future. With this scaffolding in place I explain my 'use of terms' in the tradition of Raymond Williams' 1976 *Keywords: A Vocabulary of Culture and Society*, in which I share key words and reveal the political work they do in reproducing hegemonic ideologies.[8] These terms are commonly used without much critical reflection and contain coded information that, when revealed, can help reshape our understanding of our positionality within a larger socio-political context. By complicating the semantics of this thesis, I seek to further the reader's ability to engage in imagining new, complex systems that emphasize equity. These ideas are carried over to the subsequent chapter containing my speculations as the critical application of some of these ideas is under-explored and the imagination is a prime place to begin testing their value.

8 Williams, Raymond. Keywords: a Vocabulary of Culture and Society. Croom Helm, 1976.

Politico-Ecological Framework

This thesis centers the political implications of the built environment by addressing a single development through time and with attention to multiple stakeholders from within the place as well as beyond its geographic and arbitrary institutional boundaries. My primary means of accomplishing this is through the critically entangled perspectives of urban political ecology. In working through this body of literature, I was introduced to its influences which led to a more robust and complex understanding of how I can view a place such as Redwood Shore.

Urban political ecology (UPE) is a field of study with roots in anthropology and human geography that focuses on the metabolic flow (material and immaterial production processes) across ecological, economic, and political networks that coalesce to create cities.[9] UPE concerns itself less with the dense concentration of bodies and objects and their relationships in an urban environment and instead looks at cities as "particular forms of capitalist urbanization as a socio-spatial process whose functioning is predicated upon ever longer, often globally structured socio-ecological metabolic flows."[10] Through the emphasis on the politics behind capitalist processes that produce the international subjugation of impoverished laborers and the material objects they create and transport around the world, UPE scholars can identify the spatialized politics that underlie the development and maintenance of urban landscapes. By paying attention to the ways in which nature is taken up and reshaped by capital investment and human labor, one begins to see the political networks that inform who can design/build a city as well as what, and for whom, the city is. These processes "…are never socially or ecologically neutral" and because of this, they foster imbalances in access and power.[11] By tracing the unequal distribution of consequences, urban political ecologists work to better understand the "politically embedded ecological transformations" behind the (re) production of a city to inform a more equitable future through the oncoming socio-ecological changes.[12] By replicating these approaches, I can make clear the politics behind Redwood Shores and the implications its persistence has had for larger systems, as well as speculate on what its continued existence might mean for the greater Bay Area.

Under this UPE framework, a city is understood as transformed nature or *urbanized nature*.[13] The urbanization of nature refers to the ways in which non-human lives and materials are commodified, encoded, and used by designers, developers, and their investors to spatially reify the socio-political places and systems that are mobilizing them.[14] In this way, nature is not the oppositional compliment to culture/the urban, but is instead densely entangled in the productive constellations of extraction and development of socio-economic and political forces. Urban political ecology seeks to understand these insidious processes through critical problematization of the status quo.

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9 "Urbanization and Environmental Futures: Politicizing Urban Political Ecologies." *The Routledge Handbook of Political Ecology*, Erik Swyngedouw, Routledge, 2015. pp.610

10 *Ibid.*

11 "Urban Political Ecology: Politicizing the Production of Urban Natures." In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism, by Nik Heynen et al., Routledge, 2006. pp.12

12 "Urbanization and Environmental Futures: Politicizing Urban Political Ecologies." *The Routledge Handbook of Political Ecology*, Erik Swyngedouw, Routledge, 2015. pp.614

13 "Urban Political Ecology: Politicizing the Production of Urban Natures." *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, by Nik Heynen et al., Routledge, 2006.

14 "Urbanization and Environmental Futures: Politicizing Urban Political Ecologies." *The Routledge Handbook of Political Ecology*, Erik Swyngedouw, Routledge, 2015. pp.610

Herein lies the value of their work for my own inquiries. By making legible intricate networks of political relationships manifested through material use and spatial articulations, one's understanding of a place is enriched and new possibilities for the future can be developed with critical attention to the past and present.[15] These political connections among systems, processes, people, and place can be traced around the planet and beyond the atmosphere. There is no way to grasp the entirety of these networks, so one must pare down to a manageable scale the sites and systems most salient to one's work. This need to focus is a large part of what drew me to my site.

At a macro level, urban political ecology scholars cite high-income industrialized Western nations and their imperial conquests as dominant causes behind the reshaping of the world as those with power seek to fuel the capitalist regimes. These violent interventions have been met with significant resistance from colonized and marginalized populations who lived in or had significant ties to these areas of extraction and industry, though dramatic power imbalances have prevented substantial enduring change. Innumerable areas throughout the United States were, and continue to be, redeveloped through these subjugations of people, place, and natural systems. The white, heteropatriarchal capitalist system can and has maintained these destructive practices through discursive myths of the primordial emptiness of pre-colonized landscapes, a strategy that Sherene Razack calls '*terra nullius.'*[16] This *carte blanche* rational, coupled with the previously mentioned essentializations of multidimensional beings produced by the social scientists' studies of indigenous peoples, furthered the violence of the claiming of inhabited landscapes. The entitlement to these places was, and continues to be, exacerbated by Western society's preoccupation with progress and control. American landscapes, and the First Nations people who have long histories with them, developed uniquely specialized ways of understanding space and process within their contexts. These complex, cogenerative relationships have been erased and intentionally obscured to the ends of universalized hegemonic positions. With this, came the urbanization of the planet, where no part of our world is not somehow enrolled in an aspect of (re)producing the urbanization of itself.[17] Planetary urbanization through the commodification and depoliticization of nature have ensured that urban environments are fundamentally by and for the socio-economic elite, and the luxuries and services provided to said elite often come at the expense of the marginalized.[18] Suburban amenities come at the expense of urban and rural landscapes furthering the spatial inequity of capitalist societies.

Though a relatively young discipline, urban political ecology has garnered significant attention in more radical leftist scholarship for its transdiscplinary approach and emphasis on systems thinking and relationality to fill the gaps in the studies of the urban where process, people, and the physical environment are rarely put in conversation with each other. [19] [20]

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15 "Urban Political Ecology: Politicizing the Production of Urban Natures." *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, by Nik Heynen et al., Routledge, 2006. pp.7

16 Razack, Sherene. "When place becomes race." *Race, Space and the Law: Unmapping a White Settler Society*. Between the Lines, 2002. pp. 1-20

17 "Urbanization and Environmental Futures: Politicizing Urban Political Ecologies." *The Routledge Handbook of Political Ecology,* Erik Swyngedouw, Routledge, 2015. pp.609

18 "Urban Political Ecology: Politicizing the Production of Urban Natures." *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism,* by Nik Heynen et al., Routledge, 2006. pp.6

19 Heynen, Nik. "Urban Political Ecology I: The Urban Century." *Progress in Human Geography*, vol. 38, no. 4, 2013, pp. 598–604., doi:10.1177/0309132513500443.

20 "Urban Political Ecology: Politicizing the Production of Urban Natures." *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism,* by Nik Heynen et al., Routledge, 2006.

Without this perspective, urban political ecology scholars argue that one's understanding of the urban, of nature, of politics is incomplete. Some urban political ecologists leverage the Marxist perspective on the social production of environments, both built and ecological, suggesting the productive relationships between economic systems and the 'natural' need to be centralized to better understand our world. This perspective is known as 'green Marxism.'[21] Others have moved away from Marx in favor of Latour's 'Actor Network Theory,' focusing on the equal agency this theory gives to both the human and nonhuman actors across all networks.[22] Under Latour's theory, the conditions that preexist in an urban development fundamentally inform the creation of said development even when all traces of the previous environment are erased by human intervention. There is a brutal rejection of binaries in Latour's conceptualization of the Actor Theory Network, as well as a rejection of asymmetry which fosters a radical equality somewhat counter to the social productions of Marxist thinking, even when it is reworked to embrace nature.[23]

The ideas of Noel Castree has been critical to my understanding of the discursive tension between 'green Marxism' and the Actor Network Theory as employed by urban political ecologists. Castree argues for a weaker interpretation of Latour's radical equalization of agency in favor of recognizing that social relations may be unevenly influential in the production of value/meaning.[24] This further clarifies the relationships between capital and nature, and by extension urban environments. Castree's work takes away some of the primacy of Marx' capital and tempers it with a rejection of centralized notions of power integral to the Actor Network Theory.

Through the writings of Castree, I will synthesize Marxist notions of social production with the expansive Actor Network Theory to offer a consideration of the social productions unique to Redwood Shores with nonhuman agents to enrich my analysis under urban political ecology. Urban political ecology serves as the overarching framework of my work because of its critical lines of inquiry aimed towards a better understanding of the entangled systems/relationships that create and reproduce (urban) spaces. This critical perspective equipped me with a complex set of loci across intersections with which to enrich my design thinking and the speculative futures I propose.

21 *Ibid.*
22 Castree, Noel. "False Antitheses? Marxism, Nature and Actor-Networks." *Antipode*, vol. 34, no. 1, 2002, pp. 111–146., doi:10.1111/1467-8330.00228
23 *Ibid.*
24 *Ibid.*

Cenes: Anthropo | Capitalo | Chthulu

"***A central question is strategic and representational: how can we convert into image and narrative the disasters that are slow moving and long in the making, disasters that are anonymous and that star nobody, disasters that are attritional and of indifferent interest to the sensation-driven technologies of our image-world? How can we turn the long emergencies of slow violence into stories dramatic enough to rouse public sentiment and warrant political interventions, these emergencies whose repercussions have given rise to some of the most critical challenges of our time?***"

-Rob Nixon[25]

We live in a time of rapid change marked by substantial shifts in how we relate to and understand systems and networks beyond our control – the Age of the Anthropocene – a time when the very notion of control over non-human systems may have to be surrendered for the longevity of our species. For many in the physical sciences this is calling for an epochal shift out of the Holocene, which began over 10,000 years ago. This new period is marked by human intervention and the resultant rapid climate change and planetary warming.[26] These changes trigger intense anxiety and have captured the imaginations of people all over the world. Across a vast array of scholarly disciplines this transition signals an opportunity, if not a necessity, to reframe and reanalyze the world and its human and nonhuman systems. Given the fertility of this proposed "state shift" scholars have been studying, critiquing, and imagining causes and responses to this departure.[27] Human domination over all other lives/systems has long been a core tenet of Western societies to cultivate a sense of stability in a dynamic world. Our influence on the planet by way of industrial extraction and development is being centered in this new age and the effects of our actions are cited as the key sources of these dramatic deviations from what we have come to expect from non-human systems that have been relatively predictable. While some – myself included - see this as the result of the near-global industrialization of imperialist societies, others deny these connections and focus on catalogued fluctuations in planetary climate, ignoring the network of external environmental calamities wrought by our efforts.

A new epoch is being constructed in a plethora of ways, each emphasizing one aspect of its impending effects or causes. Attempts at specificity speak more to a theorist's perspective than any tangible aspect of the cataclysm. This bears mentioning because each framing of the socio-environmental shifts functions as a semantic turn that helps to inform scholarship, public opinion, and eventually the future of the state of change. Emphasizing an indiscriminately human source of the disturbance obscures the vast imbalance of culpability among people (Anthropocene). In interrogating the semantic effects of framing these changes as equally human driven, there are critics who believe that the causation is not universal to all peoples on the planet. Instead, they work to call attention to dominant economic systems that have been driving planetary change since the First Industrial Revolution in Europe and the United States in the late 18th century. This takes blame off colonized and marginalized peoples and places it on the Capitalism of Imperialists, writ vaguely, leading Jason Moore to call this the age of the 'Capitalocene.' This semantic turn creates greater specificity by centering systems of industry, resource extraction, and conquest and those who lead them as the primary driving forces behind the cataclysmic upheaval now facing the globe.[28]

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25 *Nixon, Rob. Slow Violence and the Environmentalism of the Poor. Harvard Univ. Press, 2013. pp.3.*

26 Dryzek, John S., and Jonathan Pickering. *The Politics of the Anthropocene*. Oxford University Press, 2019.

27 *Ibid.*

28 Haraway, Donna. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." *Environmental Humanities*, vol. 6, no. 1, 2015, pp. 159–165., doi:10.1215/22011919-3615934.

Yet others believe this emphasis on human systems in any capacity depoliticizes and obscures the agency of nonhuman beings and systems that also play a role in the changes. Donna Haraway puts forward the notion of the 'Chthulucene' (named not for Lovecraft's Old One, but instead derived from the ancient Greek *khthon* and *kainos* – *khthon* meaning of the earth, often tied to the underworld, and *kainos* referring to the present moment) to emphasize a posthumanist approach that centers multispecies assemblages and systems as a dynamic political interplay among all agents.[29] [30] This shifts focuses further off of the human species to accentuate the interconnectedness of all forces on the planet. Haraway's notion of the Chthulucene is intimately connected to the Actor Network Theory addressed in the previous section as even the smallest actors can instigate substantial change through the pressures they apply to the systems within which they function and influence. Haraway emphasizes the ways in which each actor relies on the other in a relational network where "mortal compositions (are) at stake to and with each other."[31] For this thesis I will be leveraging thinking informed by Haraway's work and will thus be using her terminology to refer to the wider political conjuncture.

Haraway's embrace of the Actor Theory Network breaks from innumerable academic conventions and mirrors comparable departures from expectation that now characterizes humanity's current situation. This mandates a reimagining of innumerable ways of knowing and being and provides fertile ground for academics, designers, and artists to pursue new ideas and techniques. For example, Anna Tsing creates posthuman ethnographies of entanglement that put seemingly disparate actors in conversation with each other. In her 2017 book, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins,* Tsing traces the commodity chains of the matsutake mushrooms as well as the ecological functions in human disturbed forests as they foster new growth.[32] Her tentacular thinking spans scales and geographies by tracing networks and systems to work towards complex multi-species ethnographical accounts of the state of change. Like Haraway, Tsing makes moves beyond the comfort of conventional categorization and trailblazes a new, integrative approach to her work. This robust approach to relationality emphasizes the complexities at play in the planetary shift and serves as an inspiration in this work as a necessary means of moving away from the conventional.[33]

Without new forms of academic discipline expansion/transgression, exemplified by the works of Tsing and Haraway, designers, artists, and academics will continue to reproduce the systems that have given rise to the scenario we now find ourselves in, making livable futures seem less attainable. As it stands, if one is not actively experiencing the consequences of the Chthulucene in a sensationally measurable manner, then the coming changes are likely to be understood as an abstract and distant series of climatic events that demand light consideration and little action. This distance is bought. The Anthropocene is a landscape architecture project of industrial imperialism at a global scale. Without a reflexive eye towards one's own role in the systems that form the pillars of the planetary changes now in rapid motion, we perpetuate them. This is not to suggest that any one person's actions can save the world, nor is the project presented here a work of remediation and mitigation. Instead the Anthropocene signals an opportunity for socioecological change in that it marks a schism from previously understood systems and ontological regimes, interrupting habit and tradition. The work now is to find balance and equity by "troubling" supposedly stable systems at manageable scales by working with the already disturbed. This thesis is a small exploratory step in imagining different futures through critical narratives of a place and its systems that I am intimately

29 *Ibid.* pp.160

30 Haraway, Donna. *Staying with the Trouble Making Kin in the Chthulucene.* Duke University Press, 2016.

31 Haraway, Donna. "New Narratives of Resilience." Laboratory Planet, 2015, laboratoryplanet.org/en/manifeste-chthulucene-de-santa-cruz/. (Accessed May 12, 2019)..

32 Tsing, Anna Lowenhaupt. *The Mushroom at the End of the World: on the Possibility of Life in Capitalist Ruins.* Princeton University, 2017.

33 Tsing, Anna Lowenhaupt. "Earth Stalked by Man." *The Cambridge Journal of Anthropology,* vol. 34, no. 1, 2016, doi:10.3167/ca.2016.340102.

acquainted with as a means of breaking from convention towards equity.

Keywords: exploring fields of meaning

In 1976, Raymond Williams published *Keywords: A Vocabulary of Culture and Society.* This seminal work of cultural linguistics explores the complicated multiplicity of some of Western society's most familiar yet often misunderstood words such as 'culture' and 'originality.' His work began etymologically but moves well beyond to call to light the wide variety of meanings embedded in seemingly simple words that people use without clarifying their precise intentions, highlighting the explicit and implicit processes that occur within language that work upon society – another of his complicated 'keywords.' By cataloguing and analyzing semantic specifics Williams makes legible a 'field of meanings' embedded in concepts that are otherwise taken for granted when leveraged, not unlike the ways in which urban political ecologists complicate the metabolic flows of urban landscapes. Williams' complicates his terms and creates a more robust and complex understanding of his collection and in doing so highlights the politics behind these ideas. This section takes up his efforts and works to complicate and explore the 'field of meanings' that connect the terms adaptation, resilience, vulnerability, precarity, and precariousness with attention to the scholars most directly attached to the ideas.

Disturbingly, notions of vulnerability, adaptation, and resilience place significant emphasis on the idea of recovery. By focusing on the pre-disaster condition, each notion is leveraged to maintain the systems that played productive roles in creating any event that then relationally create the need for the category to begin with. The demand for the comfort and consistency of an undisturbed state outshine the critical search for causation, which tends to end at a physical infrastructure failure or nonhuman forces as full explanation. The concepts of vulnerability, adaptation, and resilience maintain the political systems that gave rise to the very disasters they claim to be addressing, effectively working as the building blocks behind one aspect of the inequitable world we have constructed around us and ensuring these cataclysms continue into the impending climate chaos.

With attention to the rapid urban and ecological changes reshaping the San Francisco Bay Area, it is crucial to bear in mind the ways in which the shifts are being and will continue to be experienced. Populations that live within the areas projected to be taken back by the bay live under direct risk of damage and loss, which in turn affects the wellbeing of those populations. Scholars are employing a variety of metrics and analytics to better understand the overall effects of socioecological changes in the Bay Area. These analytics appear across a variety of disciplines with each manifestation offering its own unique set of meanings. Vulnerability and resiliency show up most regularly in the social science spheres of inquiry, highlighting risk and often falsely looking towards a group's ability to return to a state near identical to that which preceded the disturbance. Adaptation is offered as a means of responding to these changes by minimizing any dramatic shifts to how life is lived, which maintains hierarchical structures within society. These words emphasize the built environment and best practices to mitigate and respond to disaster events instead of interrogating the socio-political and economic factors that exacerbate these experiences. Though political considerations are beginning to be integrated into these discussions they are far from the focus of these inquiries.[34] Because of that lack of attention to sociopolitical and economic disparities, threats to one's livelihood, such as 'disasters,' are regularly positioned as something experienced

34 Eriksen, Siri H., et al. "Reframing Adaptation: The Political Nature of Climate Change Adaptation." *Global Environmental Change*, vol. 35, 2015, pp. 523–533., doi:10.1016/j.gloenvcha.2015.09.014.

primarily by the poor, freeing people with more money from scrutiny and all but completely disregarding the entangled nature of the relational connections they share with the poor/most affected. Under a relational lens, the vulnerable can only exist if there are others who are invulnerable – which is ultimately impossible. Instead, we must think in degrees of risk and expand our understanding of vulnerability.

Resilience

As a concept, resilience has evolved to contain many meanings depending on the context within which it is being leveraged. For nineteenth century physical scientists it referred to an object's elasticity; its ability to absorb energy.[35] From there it became, and remains, closely tied to ecology and a system's ability to reset or persist after a disturbance. These disturbances are frequently, if not entirely, violent and destructive. Eventually concepts of resiliency shifted from ecology to explaining a person's or group of people's abilities to recover after disturbance. Societies, cultures, economies are now understood as resilient only if risk is acknowledged in relation to them. This creates a class of resilient peoples known for their consistent incurring of harm and the need to bounce back from it. As the sociologist Sarah Bracke notes, "the resilience of the wretched of the earth is arguably fetishized by the economic and political institutions that bear great responsibility for the contemporary conditions of precarity that are (designed to be) met with resilience."[36] For Bracke, resilience reproduces a neoliberal and masculine "fantasy of mastery," capitalizing on a being's will to live while depoliticizing and obscuring any systemic causes behind the harm.[37] It is this frame that enables not only a reexamination of resilience, but a fuller understanding of how to approach sites that have been designed into deepening positions of vulnerability due to planetary urbanization.

Vulnerability

Embedded in conversations of resiliency is the condition of being vulnerable. Vulnerability is often posited as an opposite state of being to resilience. This binary is overly simplistic and dismissive of the political underpinning of both concepts. Bracke argues that "…vulnerability and resilience are not precisely semantic opposites, but operate as political opponents" where resilience "…is also conceptually designed to overcome vulnerability—to contain and evade it, to bounce back from it, to minimize its traces, to domesticate its transformative power."[38] This frame acknowledges vulnerability's transformative potential, where the discomfort of risk drives change and the neoliberal mobilization of 'resilience' is pacifying. In urban geographer Maria Kaika's words this "immunizing" force of resilience is a force that placates "citizens and environments so that they can take larger doses of inequality and degradation in the future; it mediates the effects of global socio-environmental inequality, but does little towards alleviating it."[39] Resilience then mediates vulnerability towards the reproduction of neoliberal late capitalistic systems by glorifying the resolute survival-by-necessity strategies of marginalized populations instead of seeking out and attending to the systemic causes behind the needs of those same populations.

35 Bracke, Sarah. "Bouncing Back: Vulnerability and Resistance in Times of Resilience." *Vulnerability in Resistance*, Duke University Press, 2016, pp. 52–75.
36 *Ibid.* pp.60
37 *Ibid.* pp. 58
38 *Ibid.* pp.70
39 Kaika, Maria. "'Don't Call Me Resilient Again!': the New Urban Agenda as Immunology … or … What Happens When Communities Refuse to Be Vaccinated with 'Smart Cities' and Indicators." *Environment and Urbanization*, vol. 29, no. 1, 2017, pp. 89–102., doi:10.1177/0956247816684763.

Like resilience, vulnerability is a multifaceted category/metric that lacks a singular definition and its meaning is often taken for granted.[40] More often than not vulnerability appears as a quantifiable list of conditions relevant to the line of inquiry/concern that suggests a deficit from a universalized norm. One must fall into one or more of these subpopulations to qualify as 'vulnerable' and therefore deserving of care or consideration by the government/paternal protections with more access to resources.[41] This categorical approach to conceptualizing vulnerability ignores the relational core of the matter. Relationally speaking, in order for the elite to have their material wealth and security others must live in poverty and are therefore at greater risk of harm from any number of factors from within their position. In the US context, the affluent can avoid experiencing their inherent human vulnerability through their privileged access to more stable geographic locations, up-to-date infrastructure, and services. These are secured through socioeconomic capital, which distributes vulnerability unequally across socioeconomic categories with an overwhelming amount of threats and risks foisted upon the poor and marginalized. This perceived escape from vulnerability pacifies those with more socio-economic privilege allowing them to build upon and occupy spaces like Redwood Shores that further structures the constant reproduction of the capitalist system and its inherent inequalities without need for critical attention to those imbalances.

Precarity

The uneven distribution of a socially constructed sense of threat that arguably seems to escape those in privilege can be better understood when put in conversation with Judith Butler's (bio)political framing of precarity/precariousness. Precarity first arose in critical social theory as a means of analyzing labor politics and the tenuous position workers experience after Henry Ford reshaped industrial manufacturing practices. It was described as people began finding their employment much less secure and with that, their ability to maintain a stable existence became more tenuous. The condition of precarity has reappeared with the prevalence of the gig economy and growing migrant workforces. Both Foucault and Bourdieau refined and placed the concept of precarity into a context of biopolitics, which speaks to the ability of Western society's forms of government to 'foster life or disallow it to the point of death.'[42] [43] This is where Butler's distinction between mortality (precariousness) and the experience of it (precarity) becomes most clear and relevant to the arguments in this thesis. To Butler, 'precariousness' is one's embodied mortality, vulnerability to harm from others, or the "corporeal fragility" shared by all.[44] She contrasts this universal condition with 'precarity,' an operation of power that emphasizes "the particular vulnerability imposed on the poor, the disenfranchised, and those endangered by war or natural disaster."[45] In other words, there's an equalization in recognizing one's embodied fragility but a differentiation in one's need/ability to do so. In contrast, 'precarity' "focus(es) on conditions that threaten life in ways that appear to be outside of one's control" which is "differentially distributed throughout society" and disproportionately experienced by people that transgress

40 Rogers, Wendy. "Vulnerability and Bioethics." Vulnerability: New Essays in Ethics and Feminist Philosophy, Oxford University Press, 2014, pp. 60–87.
41 Luna, Florencia. "Elucidating the Concept of Vulnerability: Layers Not Labels." *IJFAB: International Journal of Feminist Approaches to Bioethics*, vol. 2, no. 1, 2009, pp. 121–139., doi:10.3138/ijfab.2.1.121.
42 Masquelier, Charles. "Bourdieu, Foucault and the Politics of Precarity." Distinktion: Journal of Social Theory, 2018, pp. 1–21., doi:10.1080/1600910x.2018.1549999.
43 Riofrancos, Thea N. "Precarious Politics: On Butler's Notes Towards a Performative Theory of Assembly." *Theory & Event*, Johns Hopkins University Press, 24 Jan. 2017, muse.jhu.edu/article/646861.
44 Watson, Janell. "Butler's Biopolitics: Precarious Community." *Theory & Event*, vol. 15 no. 2, 2012. Project MUSE, muse.jhu.edu/article/478357.
45 *Ibid.*

societal norms.[46] [47] This precarity stems from Foucault's notion of 'biopower.' Butler makes this distinction to highlight the 'idea that some populations are considered disposable,' undeserving of care or consideration to the point of destructive negligence (e.g. Post-Katrina New Orleans & Flint, Michigan), extreme violence (e.g. Ferguson protests, ICE raids), and state sanctioned death (e.g. Trayvon Martin, Sandra Bland, Nipsey Hussle, and too many others).[48]

The categorization of people into "disposable populations" functions as a disciplining force through violent external coercion upon the bodies of people who have been othered, aimed at recreating the homogenized hegemonic ideal of white heteropatriarchal society regardless of whether true assimilation is possible. There is added violence in that people living under precarity are constantly being reminded of their mortality, consistently at odds with society, consciously fighting for survival and comfort, having internalized the struggle. There is an unequal distribution of the experience of these risks as the privileged disavow and obscure their own mortality through their financial means and other societal privileges. This is evident in places like Redwood Shores. This disavowal of mortality and the spaces that support it cultivates a false sense of stability that informs how people move through the world. The constant state of struggling helps to generate the myth of 'resilience' which eases the discomfort of recognizing one's culpability in causing any of the discomfort and helps some to accept the inequality. The concept of resilience thereby diminishes the recognition of the violent biopolitics of social survival by focusing on the fact that people persevere in light of their pain. The obfuscation and denial of one's precariousness through privilege furthers the divide between those with and without. Designers and artists have the opportunity to make legible the full embodied precariousness that all, even privileged groups, experience.

The work of this literature review exploded a series of taken for granted ideas and emphasizes their relationships across disciplines and meaning. The nuanced network of concepts blend together to foster a discursive framework for this thesis project that will highlights the layered and enmeshed connections across causes and effects behind and in front of Redwood Shores through scale and time. These ideas will be implicitly leveraged in the following two sections and revisited more explicitly in my analysis and discussion of the generative work behind my speculations and design ideas. Navigating the relationships between history, geography, theory, and politics expand my framing of Redwood Shores and offer that complexity forward as a means for others to take up the information and create their own projections of the future of the place.

46 Butler, Judith. "Performativity, Precarity and Sexual Politics." AIBR. *Revista De Antropología Iberoamericana*, vol. 04, no. 03, 2009, doi:10.11156/aibr.040303e.

47 Butler, Judith. *Notes toward a performative theory of assembly.* Harvard University Press, 2015, pp.15

48 Butler, Judith. *Notes toward a performative theory of assembly.* Harvard University Press, 2015, pp.11

Historical and Contemporary Contexts of Redwood Shores

"***Contextual thinking addresses a work more processually, highlighting not the fact of coherence but the more open-ended act of connecting, recognizing emergent and simultaneous domains of meaning that blur the boundaries of a text with its myriad settings — personal, social, political, historical, and so on.***"

-Daniel Cavicchi[49]

Nestled on the eastern edge of the San Francisco Peninsula, Redwood Shores sits almost exactly halfway between San Jose and San Francisco. Located at the northern end of Silicon Valley, and surrounded on three of its four sides by the San Francisco Bay, Redwood Shores has become a desirable place to live with high prices to match. This waterfront development houses a population of approximately 4,366 people on 1.633 square miles of "reclaimed land" that was once tidal marsh and salt flats.[50] Surrounded by a levee, with heavily engineered lagoons woven throughout, Redwood Shores creates a landscape that suggests a stable intimacy with natural systems while obscuring both the destruction of natural systems that its creation allowed, as well as its historical position as a place of industry and capital. Contemporary fluctuations in tidal levels and subsidence are slowly but steadily placing this neighborhood under threat of disappearing. This manicured development was made possible by a long history of colonial extraction and production under the burgeoning capitalist regime of the United States which reshaped huge portions of the greater San Francisco Bay Area.[51]

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49 Somerson, Rosanne, et al. *The Art of Critical Making: Rhode Island School of Design on Creative Practice.* Wiley, 2013.

50 "Redwood Shores neighborhood in Redwood City, California (CA), 94065 detailed profile," n.d., www.city-data.com/neighborhood/Redwood-Shores-Redwood-City-CA.html (Accessed February 17, 2019).

51 Walker, Richard, and William Cronon. *The Country in the City the Greening of the San Francisco Bay Area.* University of Washington Press, 2007. 19.

fig. 1 Historic Marshland Conditions of the San Francisco Bay Area

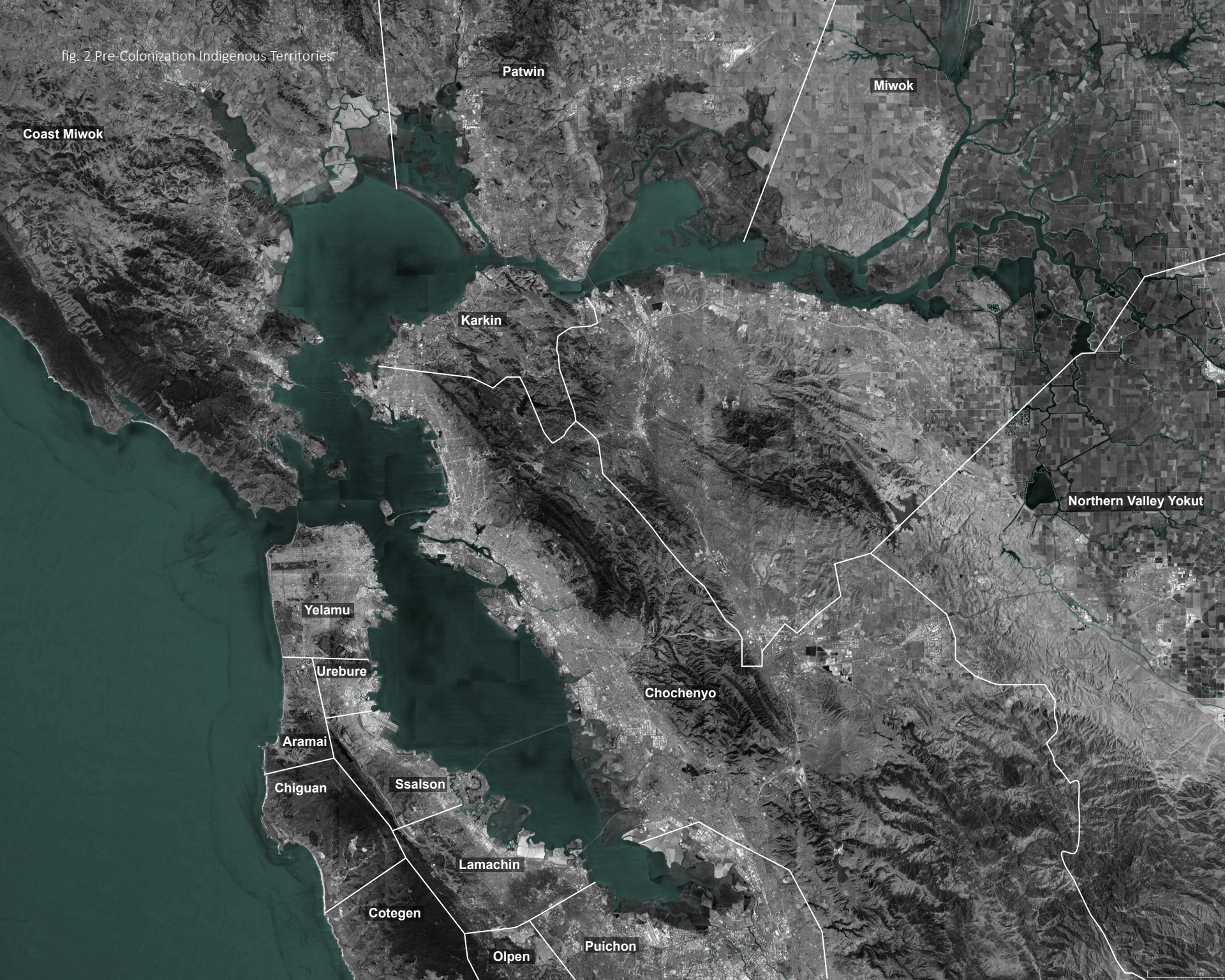

fig. 2 Pre-Colonization Indigenous Territories

The Bay and its surrounding coastline have been in constant flux throughout time. At the end of the last ice age, some 15,000 years ago, sea levels had risen more than 300 feet.[52] As the glaciers receded, surrendering their massive stores of water, the valley carved by the ancient streams and rivers coming down from the Sierra Nevada Range filled with the swelling ocean forming the San Francisco Bay.[53] (fig. 1) This was a massive disruption to the previous ecological regimes. With time, these systems adapted to the new conditions or disappeared, giving rise to new niches for emergent categories of life.[54] The ecotone between bay and land that developed around the water's edge was the estuarine salt marsh, ephemeral and delicate. The rivers, creeks, and streams that now feed the bay brought a fine sediment, which over time was allowed to accumulate because the bay was protected from the onslaught of harsher coastal conditions by the southern Peninsula's barrier position. This accumulation formed a large system of tidal shifting mud flats, cyclically inundated by daily hydrologic cycles.[55] Over time, the sedimentation formed masses and the elevation of these lands increased, allowing salt tolerant plant communities to establish. With these plant populations came further natural obstacles, catching more of the silt, and the area of the marsh expanded.[56] These soft, sheltered areas allow unique flora and fauna to flourish that fostered a plethora of conditions for lively systems.

Aside from the softened shoreline that the absorbent and ever-shifting landscapes create, the density of nutrients brought on by the fertile silt, the tidal flow of microorganisms, and the layers of decomposition foster productive conditions for a huge variety of endemic and migratory plant and animal species.[57] As the communities continued self-regulating existences, their abundance in tandem with the comfortable climate conditions offered viable habitations for the first human settlers. The exact date of this arrival is still being sought, but the prevailing theory is that the initial human occupants are descended from the communities who traveled across the Bering Strait from Siberia 20,000 years ago. The journey over from what is now Siberia was likely in pursuit of food and the fecundity of the San Francisco Bay area offered viable conditions for human settlement. Through a series of linguistic anthropological studies, Otto von Sadovszky concluded that the Ohlone arrived here around 3,000 years ago.[58] The constellation of tribes, unified by social relations and similar, though distinct, languages prospered in relative peace around the bay for thousands of years.[59](fig. 2)

52 Olmstead, Nancy J. "Water on the Land – The Coast People." n.d., www.foundsf.org/index.php?title=Water_on_the_Land%E2%80%94The_Coast_People (Accessed February 17, 2019)
53 Olmstead. par.1
54 Clarke, Chris. "San Francisco Bay's Lost World: The Saltmarsh." KCET, 8 Feb. 2016, www.kcet.org/redefine/san-francisco-bays-lost-world-the-salt-marsh. (Accessed February 17, 2019)
55 Fagherazzi, Sergio, et al. *The Ecogeomorphology of Tidal Marshes*. American Geophysical Union, 2004. pp. 1
56 Pariona, Amber. "What Is A Salt Marsh And How Is It Formed?" *World Atlas*, 21 Dec. 2017, www.worldatlas.com/articles/what-is-a-salt-marsh-and-how-is-it-formed.html. (Accessed February 18, 2019).
57 Fagherazzi et al. pp. 1-2
58 Billiter, Bill. 3,000-Year-Old Connection Claimed : Siberia Tie to California Tribes Cited. Los Angeles Times, 1 Jan. 1985, www.articles.latimes.com/1985-01-01/local/me-10267_1_tribes. (Accessed February 20, 2019).
59 Milliken, Randall, et al. O*hlone/Costanoan Indians of the San Francisco Peninsula and Their Neighbors, Yesterday and Today.* Archaeological and Historical Consultants, 2009.

The Ohlone villages were dispersed from the top of the San Francisco Peninsula across the bay to the east and south to the northern edge of Big Sur. These settlements sustained themselves through the hunting of grizzly bear, elk, deer, sea otters, and sea lions; the gathering of plant matter, abalone, clams, shrimps and oysters as; well as fishing for salmon, trout, and sturgeon.[60] On the peninsula, in a relatively small area, lush meadows, redwood forests, a small mountain range, and streams were sandwiched by the Pacific Ocean and the San Francisco Bay. This made the marshlands an especially valuable resource with its offerings of shellfish, waterfowl, and edible plants all in close proximity to their established settlements. The residents also managed their land with its plants and animals through intentional harvesting, controlled burns, and population monitoring. The tribe that settled nearest to what is now Redwood Shores were the Lamchin people, tucking themselves back away from both the Pacific and San Francisco Bay coasts, favoring the lush and protected environments of the nearby potable creek beds in what is today San Carlos and Belmont.[61] There the people had easy access to food, water, and shelter in a temperate climate, but they were unable to maintain their way of life as Spain's violent conquest tore through the California coast in the mid-1700s.[62]

Beginning on November 4th, 1769, the Spanish "discovery" of the San Francisco Bay triggered a series of extractive capitalist practices that have set a tempo for the socioeconomic and environmental policies of today. The Portola Expedition, which crested Sweeny Ridge on the aforementioned date, brought religious fanaticism to the Bay Area.[63] This required devotion to a higher calling obscured the violence of colonialism with the commonly understood well-intentioned offering of salvation. This colonization of place and people through occupation, displacement, and forced conversion all but eradicated the local peoples and their ways of knowing/living from the landscape.[64] What took the place of these land practices were sprawling pastoral *ranchos* where the Spanish would tend their sheep, horse, and cattle herds. This new addition to the landscape paid little heed to the preexisting systems and eventually these once lush grassland meadows became overgrazed and barren due to poor land management by a peoples new to the context. The Mission era of California drew to a close in 1821, when Mexico successfully won its independence from Spain.[65] Twenty seven years later, the management processes violently changed hands again after the US won the Mexican-American War.[66] This new, dominant culture would reap great benefits from the acquisition of this land as it coincided with the onset of the California Gold Rush.

Though the practice of gold mining was not new, the size and scale of this boom brought global attention to California with around 300,000 people immigrating from Europe in hopes of making their fortune.[67] With this economic

60 Mackenzie, Anouk. "A Cultural and Natural History of Cordilleras Creek Watershed." Friends Of Cordilleras Creek, 13 Feb. 2005, cordillerascreek.org/FOCCbooklet.htm. pp.1 par. 5 (Accessed February 20, 2019)
61 Milliken et al. pp. 94
62 Mackenzie. pp. 1 par. 9
63 Milliken, Randall, et al. O*hlone/Costanoan Indians of the San Francisco Peninsula and Their Neighbors, Yesterday and Today.* Archaeological and Historical Consultants, 2009.
64 Mackenzie pp. 1 par. 10 -12
65 "Early History of the California Coast." National Parks Service, U.S. Department of the Interior, www.nps.gov/nr/travel/ca/intro.htm. (Accessed February 20, 2019).
66 Mackenzie p. 2 par. 1
67 "California Gold Rush, 1848-1864." Learn California, web.archive.org/web/20110727033216/http://www.learncalifornia.org/doc.asp?id=118. (Accessed February 20, 2019).

boom came a fast-tracked statehood for California and in the fervor to keep up with land claims and resource rights, the state carved political lines through the landscape with policy. The massive influx of people coupled with the destructive practices of mining dramatically rewrote the topography of the foothills to the East of the bay. Human settlement in the Bay Area blossomed with this new flow of money, people, and resources. San Francisco expanded rapidly, as did Oakland, San Jose and Sacramento; all leveraging their positions along waterways to take advantage of the increase in shipping trade brought on by the rapid increase in resources brought in to meet the needs of the population boom. These port cities gave rise to smaller port towns around the bay that might offer reprieve for the ships or places to store and process goods. Redwood City became one such place, rewriting the way the marshlands were to be read and understood once again.

With the conclusion of the Gold Rush and the new-found economic power that the state now possessed, the Bay Area continued to densify. In the early 1860s a rail line was built, connecting San Francisco to San Jose.[68] This allowed the San Francisco Peninsula to develop into a means of escaping the congestion of the cities. With its more protective weather conditions and wider spaces, it rapidly became a place of summer homes for the wealthy. This is not to ignore the industry that drove these smaller cities economically but to emphasize the way this landscape was being understood. Redwood City, the oldest city on the Peninsula, became the county seat of San Mateo and its downtown became important to commerce, local government, and manufacturing which has helped to maintain its viability today.[69]

Industrialization of salt marshes

Salt harvesting in the San Francisco Bay has been a sustaining practice since the Ohlone peoples inhabited the shoreline. Their method of production took advantage of natural processes, harvesting salt from shallow basins that had filled at the highest of tides with the water evaporating over the course of the year. This salt was used internally, or as a means of trade for other necessary supplies with neighboring groups. Colonization changed this practice by requiring that the harvested salt was surrendered to the friars at the Mission. This shifted again with the eventual boom of the Gold Rush and its exponential increase in demand for salt as miners from all over the world flocked in to the state, driving the population of California to grow at an unprecedented rate.[70] Until 1857, salt was gathered by hand through natural process but in that year residents of Hayward, a city across the bay from Redwood City, built levees to begin making salt more actively.[71]

The demand for salt continued to grow with a silver rush in Nevada in 1859, which required salt in vast quantities for industrial ore processing.[72] Salt became a primary means of industrial growth for the entire state of California with the Bay Area producing upwards of 41,000 tons in some years. What this meant for the landscape was just as dramatic as the

68 "More History." San Mateo, CA - Official Website, www.cityofsanmateo.org/291/More-History. (Accessed February 20, 2019).
69 "History of Redwood City." RWC Local History, 2011, www.rwc-localhistory.com/history-of-redwood-city. (Accessed February 20, 2019).
70 Booker, Mathew M. "Real Estate and Refuge: An Environmental History of San Francisco Bay's Tidal Wetlands, 1846-1972." Stanford University, 2005. pp. 222
71 Booker, Mathew M. "Real Estate and Refuge: An Environmental History of San Francisco Bay's Tidal Wetlands, 1846-1972." Stanford University, 2005. pp. 224
72 Booker pp. 224

economic pressures to produce. One of the largest political shifts for the salt harvest was triggered by companies establishing legal title of the tidal flats. There were a few avenues through which legal title of the flats could be secured, but more often than not it was a process of corruption and blurred lines where a company claimed areas far beyond the high tide boundary.[73] The nature of land ownership where seasonal and tidal boundary lines are in constant flux is difficult to define and manage even for the most earnest of government figures. The last method of land claiming, and the one used by the Hayward producer, was to classify lands as "swamp" or beyond the reach of the tide regardless of how inundated they are. This meant if a landowner held rights to where a creek opened out to the bay, it was very likely they could make a strong case for rights to the tidal flats, where the fresh and salt waters met.[74] As the state of California continued to industrialize, the need for salt as an ingredient for producing commodities ranging from food to refined oil, continued to grow and the land was split further through legal machinations and marshland manipulation. In 1901, in a city just north of Redwood City, the Leslie Salt Refining Company opened.[75]

Leslie was a conglomeration of acquired smaller, family owned salt production companies spread across the bay area. By 1936, they had around 44,000 acres of marshlands leveed off and in production. Through the use of new technologies, Leslie was able to unify their disparate properties through a plumbing system that traversed the bottom of the bay. In 1947, the now named Leslie California Company produced 500,000 tons of salt at a value of $3 million. These salt ponds had shown their economic value consistently over time, but with the end of the Second World War and the subsequent boom in population, the demand for land became higher than that of salt. As property value increased, Leslie was moved to consider a different means of financial gain.[76] (fig. 3)

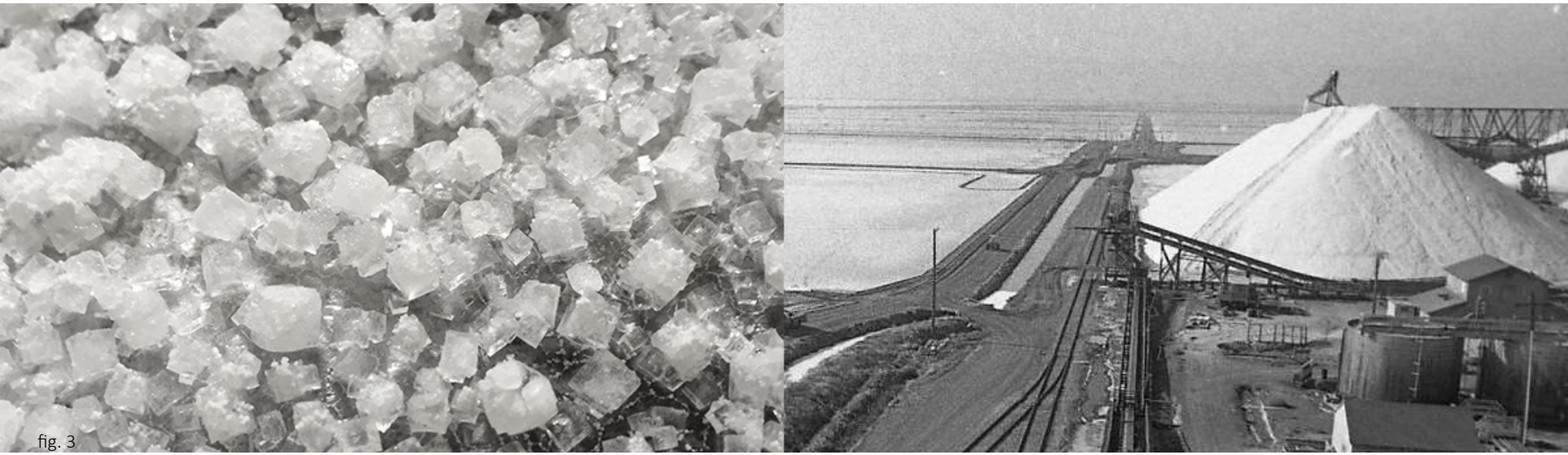

fig. 3

73 Booker pp. 224
74 Booker pp. 226-227
75 Benton, Cris. "Arden Salt Works." Hidden Ecologies, 17 Nov. 2005, www.research-benton.ced.berkeley.edu/he/?p=82. (Accessed February 21, 2019)
76 Booker p. 231

From salt to home and beyond

After World War II, Leslie realized they owned the most undeveloped, private bay land left in the Bay Area with their salt flats. Marshlands have a long history of being filled and developed and plans to do this quickly became a focus for the salt producers. In the 1950s, Leslie began filling in thousands of acres of tidal flats in an area just north of Redwood City. The process saw a new form of colonization as salt flats and formerly uninhabitable parts of the shoreline were further diked off, water removed through tidal gate and pump then filled with concrete, sand, and soil to compress the mud.[77] This process, ironically known as "reclamation," creates seemingly stable land on previously tidal areas through isolation and the pressure placed on the mud. This process destroyed habitats, beginning with the formation of the commercial salt pans, and furthered colonial capitalism. It was on this fill that the Leslie Company planned a "high value real estate development" intended to blend residential neighborhoods with white-collar office life that they would call Redwood Shores.[78]

The plan was met with mixed reviews from the general public in the post war era of expansion and settlement at a time of mounting concern for natural systems. Plans were delayed and pared down after local environmentalists called for the preservation of marshlands and seismologists reported potential issues with the engineering of the land pushed against further development.[79] In 1959, the Army Corps of Engineers released a report that emphasized a large amount of land available for reclamation from its tidal conditions – effectively suggesting the bay could be developed down to the size of a wide river by 2020.[80] This furthered Leslie's goals, but not without further resistance from the emerging environmentalist movement.

Local conservationists were joined by politicians and swathes of marshlands were converted into wildlife reserves. This effort began formally in 1961 with Kay Kerr, Sylvia McLaughlin, and Esther Gulick and the founding of the nonprofit organization Save San Francisco Bay Association (later renamed and still known as Save the Bay). Their efforts began out of concern over the industrial dredging, rampant diking, and proliferation of dump sites that were rapidly taking over the shoreline around the bay. Kerr, McLaughlin, and Gulick lobbied the state legislature for four years until, together, they were able to pass the McAteer-Petris Act, which halted further fill of marshlands and established the state agency the San Francisco Bay Conservation and Development Commission in 1965. This commission put together a master plan for the San Francisco Bay that balances careful development with preservation.[81] While this was happening, the construction of the suburb on what was Leslie's salt pans began in 1968; this was also the year Marine World/Africa USA opened on the same piece of fresh fillscape, bringing further attention to the development.[82]

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77 "Future Development of the San Francisco Bay Area, 1960-2020: Economic Aspects of Comprehensive Survey of San Francisco Bay and Tributaries." U.S. Dept. of Commerce, Office of Area Development, for U.S. Army Engineer District, San Francisco, Corps of Engineers, 1959. p. 77

78 Booker p. 232-233

79 "Future Development of the San Francisco Bay Area..."... p. 9

80 *Ibid.* pp. 9

81 Reed, Vivian. "Saving the Bay: A Movement Started by Women." Save The Bay Blog, 20 Jan. 2017, www.blog.savesfbay.org/2015/03/a-movement-started-by-women/. (Accessed March 10, 2019).

82 Hartlaub, Peter. "Marine World/Africa U.S.A. Is Gone, but the Legend Grows." San Francisco Chronicle, 9 Mar. 2018, www.sfchronicle.com/oursf/article/Marine-World-Africa-U-S-A-is-gone-but-the-12739394.php. (Accessed February 21, 2019).

Over time, and through the continued political and economic struggle over the development of land or preservation and restoration of habitat, Leslie Salt Company's resources were slowly depleted and eventually they ran out of the money they were using to complete the project. The land was then purchased by Mobil Oil Estates, now a part of ExxonMobil, and with that purchase came a new push towards development.[83] Leslie continued to lose money and was eventually purchased by Cargill Salt, which still runs the few remaining salt flats around the Bay Area today.[84] Under the new ownership, an updated master plan was developed for Redwood Shores, further emphasizing the combination of residential and commercial projects. This was officially adopted in 1975 and included the 200-acre lagoon system the neighborhood is known for.[85] This renewed synthesis of home and business, coupled with the emerging computer industries a few cities south, gave rise to the community that exists today.

In the late eighties Marine World's lease ended and the park moved to less expensive land northwest in Vallejo.[86] This vacancy was redeveloped by San Francisco's Campeau Corp into a corporate park with office buildings, a hotel, and fitness club. According to a newspaper article from 1984 by Terry Robertson, the "design theme will focus on a 13.5 acre reflecting lake with seven acres of public recreation facilities designed by (landscape) architect Dan Kiley…"[87] Evidence of Kiley's involvement in the design can be found in the University of California Berkeley's Eckbo collection. What was Marine World became the site of the Oracle Corporation, a massive international technology corporation. Their move into Redwood Shores triggered a chain reaction and the neighborhood now hosts many such corporate giants like EA Games, Nintendo, Shutterfly, and more. This corporate settlement was well in line with a trend traced by Louise Mozingo in her book *Pastoral Capitalism : A History of Suburban Corporate Landscapes*, that documents the expansion of business out of the urban cores in pursuit of the same ideals that fueled white flight.[88]

The intimate geographic relationship between work and home life played in harmony with the myth of suburbia to create a strong, homogenized disciplining force on what still appear to be a bedroom community regardless of the proximity of the nearby office parks. The flow of money into this blossoming Silicon Valley bayside community continued its expansion east, onto more of the filled flats. Through the 90's more housing, a shopping center, a fire station, and an elementary school were constructed.[89] The boom in Silicon Valley continued as Facebook took off in Palo Alto and Google settled into nearby Menlo Park. This continued the rapid flow of money and rise in population of the region. The demand for housing saw one last push for housing on the northeastern edge and a second elementary school being built in the early portion of the 2010s. While the sprawl continued to expand, the calls for non-human habitat protection pushed back to save the endemic and endangered bird species of the Ridgway's Rail (*Rallus longirostris obsoletus*) and the salt marsh harvest mouse (*Reithrodontomys raviventris*), both of which made home in the destroyed marshes.[90]

83 Fried, John J. *Life along the San Andreas Fault.* Saturday Review Press, 1973. pp. 124
84 Benton par. 12
85 Carmichael, Patrick. "History." Redwood Shores, www.redwoodshores.com/history. (Accessed February 21, 2019).
86 Hartloub par. 15
87 Robertson, Terry. "Marine World's Leaving, What's next for Site?" Peninsula Plus, 25 July 1984, www.docs.wixstatic.com/ugd/dc8a32_7dda3bca67ce-4a74b0f9f97742fd6e20.pdf. (Accessed February 21, 2019).
88 Mozingo, Louise A. Pastoral Capitalism A History of Suburban Corporate Landscapes. The MIT Press, 2016. pp.25
89 Archives Committee of the Redwood City Library. Redwood City: A Hometown History. STAR Pub. Co., 2007. pp. 389 -390
90 "Rare and Endangered Species of San Francisco Bay Area." Wildlife in San Francisco Bay Area, www.sfbaywildlife.info/species/endangered.htm.

Contemporary conditions around the world reveal climate shifting dramatically and sea levels rising as polar ice reserves melt faster than ever documented. Coastal communities find themselves at constant risk of flooding. This holds true for the Redwood Shores development. Projections have the area flooded by a five-foot raise in sea levels by 2100.[91] Complicating this vulnerability further is the fact that the fill is subsiding as the marshes beneath compact. This subsidence is due to a few key factors, but the nature of the original, tidal, substrate is one of the key factors. Studies have found that this process is occurring at a rate much faster than previously expected, exasperating the persistent threat of flooding.[92](fig. 4)

The tension between development and preservation continues today. As of this writing, Cargill, the company that bought out Leslie Salt, is still seeking to make a large profit by developing more office parks and residential neighborhoods on what is left of its closed salt flats a few miles south of Redwood Shores. These attempts have been stalled consistently by Save the Bay and other agencies in defense of open space, natural systems, and non-human habitats. At the same time, Redwood City has been densifying at a rapid rate as the demand of tech workers reshapes the cultural and physical landscape of the Bay Area with little regard for the people and places that existed prior to their arrival.[93] [94] Our current federal governing bodies has targeted many environmental protection agencies and with that has come a renewed push for a housing development on Cargill's salt flat ruins.[95] With the sea levels rising, the subsidence of Redwood Shores, and the constant threat of flooding, it is unfortunate that money is still driving a development of this type.

The history of Redwood Shores is as complex as that of any other community, but it is in its specifics that the core conditions of the place can be understood. The uncertainty of the future of the neighborhood and its adjacent marshlands must be considered in light of past and present invisible socioecological and political systems that created and shape it. Deep, layered understandings of a place are essential to inform expansive imaginaries that may drive synthetic and tentacular design responses that break convention and generate more livable conditions in the study site and beyond. In the next chapter, I explore some of my own alternative imaginaries for this place as a way of constructing counter-environments to unsettle and inspire new ways of thinking about the present and future in the context of impending change. Through three distinct responses to the projected environmental changes threatening Redwood Shores, I emphasize shared experiences of precarity and precariousness in a variety of degrees to make clear the potential embedded in the recognition of our inextricably connected experiences.

I take up the exercise of critical speculation to free myself from using design work as a means of nullifying threats of discontinuity and creating comfort to those who can afford the service. By shedding convention and a focus on problem

91 "NOAA Logo Sea Level Rise Viewer." NOAA, www.coast.noaa.gov/slr/#/layer/slr. (Accessed March 14, 2019)
92 Sanders, Robert. "Sinking Land Will Exacerbate Flooding from Sea Level Rise in Bay Area." Berkeley News, 19 July 2018, www.news.berkeley.edu/2018/03/07/sinking-land-will-exacerbate-flooding-from-sea-level-rise-in-bay-area/. (Accessed March 14, 2019).
93 "Development Projects." City of Redwood City,www.redwoodcity.org/city-hall/current-projects/development-projects. (Accessed March 14, 2019).
94 Chapple, Karen and Miriam Zuk. "Case Studies on Gentrification and Displacement in the San Francisco Bay Area." July 2015, www.urbandisplacement.org/sites/default/files/images/case_studies_on_gentrification_and_displacement-_full_report.pdf. (Accessed March 14, 2019)..
95 Alexander, Kurtis. "Trump's EPA Opens the Door for Massive San Francisco Bay Development." San Francisco Chronicle, 15 Mar. 2019, www.sfchronicle.com/science/article/Trump-s-EPA-opens-the-door-for-massive-San-13690376.php. (Accessed March 15, 2019).

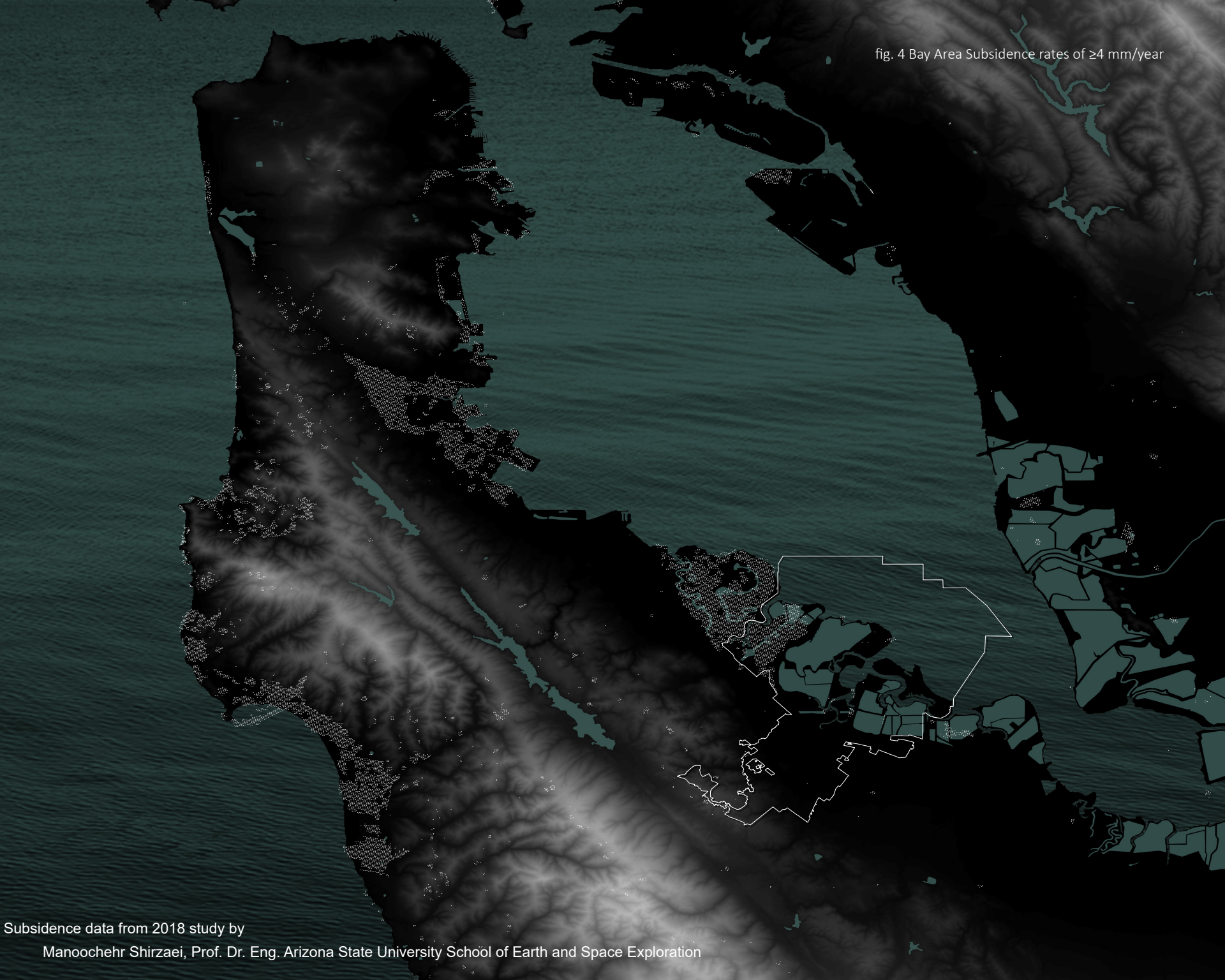


fig. 4 Bay Area Subsidence rates of ≥4 mm/year

Subsidence data from 2018 study by
Manoochehr Shirzaei, Prof. Dr. Eng. Arizona State University School of Earth and Space Exploration

solving in my work, both my readers and I will be able to dream up more comprehensive alternatives to contemporary design responses for the built environment. These creative exercises speak directly to the imagination of the reader through narratives that extend beyond the embodied comforts of a manicured suburb and its specific socioecological problems. These stories emphasize the interconnections of Redwood Shores within its context as the surrounding environment shifts into the Chthulucene. In the first story I showcase the more catastrophic dangers of environmental denial and preoccupation with comfort as levees fall and the bay reclaims the area taken from it in the ‘60s, emphasizing the universality of precariousness. The second narrative is deeply influenced by my education and emphasizes equitable design action on multiple levels through the creation of a park that meets socioecological needs under imminent change. The final tale is a cautionary exploration of technomanagerial solutions that makes clear the unequal distribution of these design fixes as those left out of the new protected areas are faced with even more dire conditions to remind them of their precarity. With these three speculations, I am not seeking to create site designs that are grounded in and articulate space, but to create instead speculative design fictions that are intended to open up spaces for discussion of some of Redwood Shores’ more wicked sociopolitical and ecological relationships.

Material Explorations | Speculations

"***Salt is the only rock directly consumed by man [sic]. It corrodes but preserves, desiccates but is wrested from the water. It has fascinated man for thousands of years not only as a substance he prized and was willing to labour to obtain, but also as a generator of poetic and of mythic meaning. The contradictions it embodies only intensify its power and its links with experience of the sacred.***"

- Margaret Visser[96]

While formulating the following speculations, I simultaneously engaged in a process of 'critical making' as a means of furthering my understanding of some of the physical processes that occur on site and how they might influence, or be influenced by, other objects and systems present in Redwood Shores. Working primarily with salt as a semi-forgotten element of the landscape, I sought to understand its physicality by studying its accretion and structure over time. I have been drawn to processes of influence where control must be abandoned at some point and the outcome can only be watched and analyzed. There can be immense preparations and careful systems put in place but at some point, it must be recognized that some systems function beyond our direct influence. In this spirit I was looking to salt as an agent of the Redwood Shores landscape and learning from how it might reestablish itself as a crucial aspect of the place through design processes. Leveraging salt crystals as an aesthetic centerpiece with affective power when not taken for granted or dismissed to the sidelines helps to call attention to changing systems that are constantly at work. This resulted in a cogenerative relationship

96 Visser, Margaret. *Much Depends on Dinner: The Extraordinary History and Mythology, Allure and Obsessions, Perils and Taboos, of an Ordinary Meal.* McClelland and Stewart, 1986 pp.75

where theory and materiality were intended to inform each other through the process of exploration to create my visions of the future.

My sculptural graphics are intended to serve as tools for communication of process and intention more so than define details regarding the fictions offered to the collective imaginary. What follows are parallel narratives where reflections of my salt growing process overlap with and inform possible futures for Redwood Shores.

I.

No one expected the levee to fail.
It had been stable for so long.

The initial breach of the outer barrier brought more surprise than concern to Redwood Shores. It was the eleventh of December 2043 and it had been raining straight for the last two and a half weeks. This was not abnormal save for the series of storms that had shaken the coast that started significantly earlier that year. Residents gathered under umbrellas in their rarely needed rain boots, some with coffee and others their dogs in tow, to watch as the water slowly crested the lowest points of the levee and collect in the potholes and divots around the outer edges of the neighborhoods. The shock and awe of the adults were juxtaposed strongly with the jubilant cries of children splashing through the newly encroaching ecotone between suburb and marsh-'wilds.' Though few recognized it as such, it was in this moment, when the sounds of laughter and uneasy murmurs mingled with the twinkling of rain joining pooling bay water, that the Chthulucene had finally asserted itself as an explicit part of Redwood Shores.

Porous and absorbent, the painted paper experiments had a variety of ways in which they could interact with the saltwater – and I knew I had to explore them all. Floating on top. Anchored below. Folded over the edge of the container. Poured on. Lightly painted upon. Each brought a different effect to the paper and gave rise to a distinct quality of crystal. When water met paper, the changes were immediate. Ink began to flow, obscuring the structured images I had taken an hour to apply and the paper quality shifted as it became saturated. The changes came immediately, and they were dramatic. The sense of relief I felt knowing I found a viable means of expanding my understanding of the process of salt production settled on me as quickly as the crystals grew.

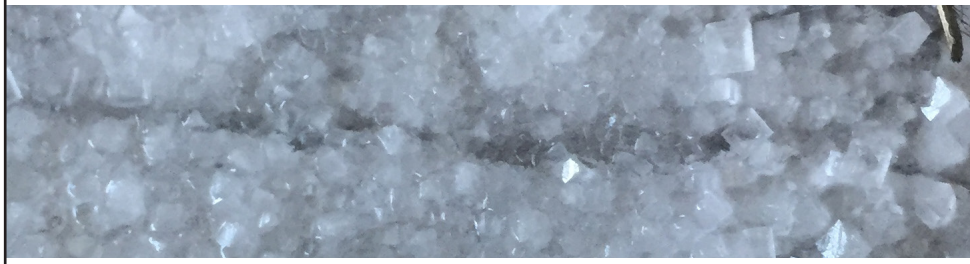
Experienced as trickles and pools instead of a deluge, this infrastructure failure was written off as an anomaly that warranted little more thought than was required for its hasty recovery. Crews were on site the following day and completed the rushed patch job on the levee before the noontime sun was able to burn through the morning's clouds, signaling a brief respite from the downpour. Once the flow had been halted, work crews used a series of noisy pumps to remove the water from the streets and other low-lying areas. Two days later, the streets were dry, and people had fallen back into their routines – save for the Williams family.

The Williams residence was the only home to see any damage from the flood, being positioned just so that one of the flows ran directly through their backyard and in through the sliding glass door. Without flood insurance they were forced to pay for the repairs themselves, which took only a couple of weeks to complete once the weather had cleared. The cost of the repairs, though an unexpected expense, was managed with relative ease as the damage was minor and only a few portions of the flooring needed replacement. As far as most were concerned, once normalcy had been restored any sense of anxiety had passed. This occurred almost as quickly as the physical signs of the levee failure had been managed and life went back to normal.

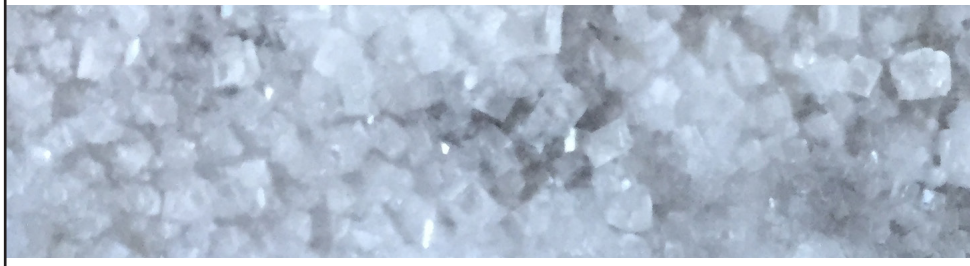
It quickly became clear that I was faced with the tyranny of choice as each result of my saltwater experiments had its own distinct qualities within which I saw value. The papers that stayed submerged surprised me by growing more crystals at the water's surface than below the waterline. These clusters were opaque and not particularly showy. I wasn't sure what to make of that but in terms of aesthetic power I found it lacking as the water did substantially more to the images than the crystals did -- speaking to the immense power of water under the right conditions. The wicking of the salt was arguably the most compelling insight pulled from that particular system. It reminded my of high school lessons on osmosis, where areas of lower concentrations of a substance pull from areas with higher concentrations until a state of equilibrium was reached. Through these observations I realized that there was a water to paper relationship that had to be navigated carefully if my desired results were to be achieved.

Not everyone was able to put the flood behind them so easily. A few concerned families, led by Kim Williams, an environmental lawyer, began attending their HOA meetings with their disquiet and worked collectively to write to the local government demanding further action. The process took five months due to heated arguments during the writing process, conflicting schedules, and a strong lack of engagement from the rest of the community. It took a viral video campaign that dramatized the flooding and exaggerated the destruction and financial burdens of disasters from other parts of the world to shake residents out of complacency and remind them of the possibilities that had been realized the night of the first flood. As people projected themselves into the hurricane scenes shared in the video their discomfort with the lack of action grew. Soon the petition was being sought out and long lines formed outside of the grocery store as people waited to add their signature.

Driven by their desire to maintain their property values and ways of life, the coalition passed levee reinforcement petitions up to the city, but there wasn't nearly enough fervor, nor funding, to see anything come of their efforts. As time continued to pass, fewer people thought about the break. The most anxious had put their homes on the market when the city failed to listen to them. Their swift departures coupled with new sea level rise projections that threatened further flooding meant a further drop in property value and homes began to stand vacant throughout some of the complexes. These silent shells stood as sentinels, looking towards the bay for what was yet to come.



Most visually appealing of all of my experiments with paper were those that I left floating on top of the saltwater. Saturation was never met as the paper performed a wicking process not unlike the submerged pieces described earlier but because the entire top face of the paper was exposed to air, crystals were able to accumulate in a much more dramatic display of a light-refracting network of transparent cubes. This delicate crust added dimension to the warped images and layered meaning in compelling ways, highlighting the need for an intentional balance of intentional influence and flexibility of expectations.



Over the next nine years, small breaches continued as climate conditions worsened and the restorations efforts became more frequent and less carefully executed. The interruptions to the livelihoods of the residents became more severe as more and more homes were affected. Water from the floods was no longer only affecting streets and yards but was now entering homes. Property damage claims began to outweigh the few and fleeting outcries over the occasional traffic disruptions due to street closures as water was pumped out. With the increasing intensity of winter storms came more and more regular flood events leading to exponential growth in insurance premiums (which were near impossible to get for new residents) until the state also decided they were no longer willing to pay for the recovery of infrastructure. Lawsuits against the city exploded in numbers and a legal war was put in motion between a city and its residents.

Instead of providing any more recovery aide, the city mandated a six-month evacuation and closure of the neighborhood. The quick turnaround meant the government had little time to find appropriate long-term housing alternatives for the community and instead offered FEMA-like accommodations tucked up in the undeveloped wooded areas of the Coast Ranges for those who could not find stable housing in time. Sleepy rural towns were suddenly host to large numbers of climate refugee families without the infrastructure in place to support the boom in population. Traffic congestion and a run on resources in the towns bred resentment across both groups. This tension made for further trauma for the now homeless community of, the now vacant, Redwood Shores.

The rapid departure coupled with the final series of floods caused immense emotional distress for the residents. Having survived multiple disruptions to their habitats without much relief and the inability to reestablish a life in a place lost to the environment, left many with significant trauma making adapting to their new contexts difficult.[97] Most people left the Coast Range refugee communities in under a year. Once the shock of the evacuation had passed and they were able to get their finances in line, finding a new home proved relatively easy. Some even decided to stay in the hills, amongst the redwoods for which their previous city was named. Time and distance helped ease the pain of loss of access to their homes as new habits established and new social networks were realized.

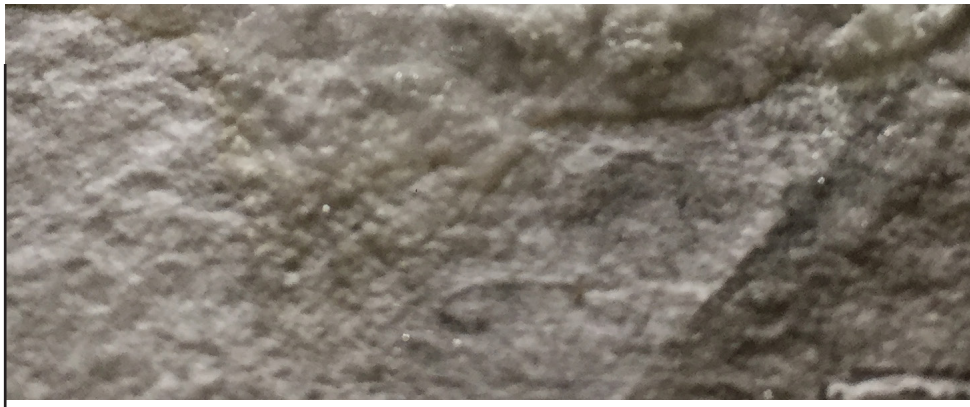
The dispersed community was once again reminded of their trauma after the “Other Big One” hit in 2054. This massive storm, named for sharing its context with a long expected cataclysmic earthquake (deemed “The Big One”) along the San Andreas Fault, hit in the midst of the deconstruction period of Redwood Shores. The scale of the levee breach, coupled with the costs of recovering the area enough to continue the process of breaking down the neighborhood, were too great and the government again decided to abandon the area. [98] With 75% of the buildings still standing, the area became an unplanned monument to the follies of the development as the bay covered soil and roads with water and new layers of silt.

97 Jamali, Mehdi, and Ali Nejat. “Place Attachment and Disasters: Knowns and Unknowns.” Journal of Emergency Management, vol. 14, no. 5, 2016, pp. 349., doi:10.5055/jem.2016.0299.

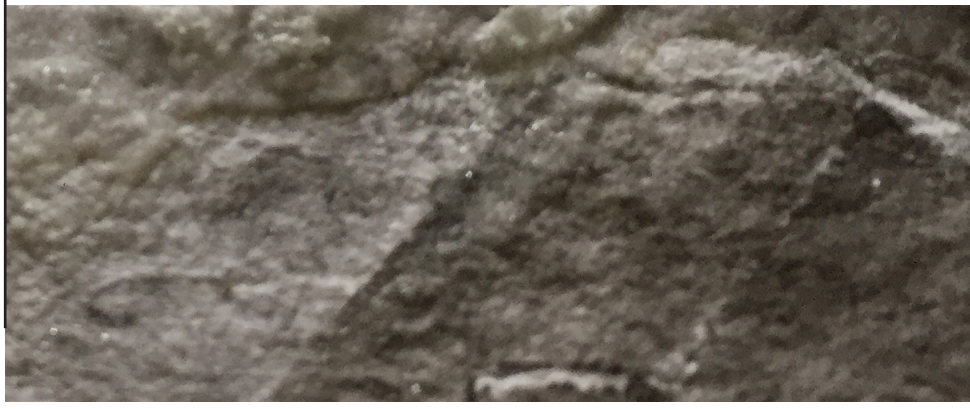
98 Swain, Daniel L., et al. “Increasing Precipitation Volatility in Twenty-First-Century California.” Nature Climate Change, vol. 8, no. 5, 2018, pp. 427–433., doi:10.1038/s41558-018-0140-y.

Human intervention never truly ended in the area. The bay remained a critical source of economic advancement, with maintained shipping routes dominating the waters. The remnants of Redwood Shores became a new form of eco-tourist destination, functioning as a novel landscape and reminder of failed attempts at environmental control. The neighborhood itself became a vibrant new community as a junkyard worth mining for materials for a new class of gleaners who emerged in light of increasing stratification of socioeconomic classes. Small floating encampments grew off the larger office buildings as the reclamation operations were underway. There temporary villages made use of their surroundings, building out with the less valuable materials to fortify their structures, residing between their watercrafts and the empty buildings, and fishing the waters to enrich their diets. These parasitic structures rose and fell with the tides and were able to move on after operations finished up and new areas became inundated with bay water.

Over time, with the raging of massive winter storms and the consistent march of the tides, the buildings eventually started to fall – one by one. The new arrangements of materials from the homes created novel habitat zones, offering new pressures and opportunities for evolution. The once endangered populations of endemic species began to rise as a result, and with them newly emergent species more suited to the new conditions. Pickleweed made good use of the newly accumulated silt flats on the higher regions of the derelict structures. These new fields, relatively undisturbed by human intervention, offered immense safety to the once endangered / wilting populations of harvest mice and ample roosting areas for shorebirds following the ever-shifting Pacific Flyway. There are now, twenty-eight years since the Other Big One, calls to redevelop the area but habitat protection agencies and new laws controlling coastal conditions should prevent that. There is even talk of getting the submerged neighborhood on the National Register for Historic Places.



The papers that had saltwater applied to them grew crystals more like superfine glitter than the crystalline skins of the other two. The glimmer brought a visual interest, but the manual application of the water felt counter to the processes of salt production I had been reading about. Yes, evaporation was still a part of the final product but the control I was able to execute in putting the water on the paper meant less warping of the image and a more legible outcome. This was less satisfying because, for me, sometimes things that are not readily understood and read provide greater opportunities for personal interpretation and reflection…and that was the ultimate goal. The delicate glimmer that resulted from these experiments were too controlled, too gentle on the paper to adequately communicate the complexities of the salt industry, at any level.



II.

Crystalline memories accumulate as time continued to cycle.
The echoes of meanings once treasured shift with the tides as the landscape embraced its past.

Concerned by the avalanche of published climate change and sea level rise projections supplemented by studies on the psychological effects of living through disasters and rapid evacuation, the state of California called for the withdrawal of housing on the Redwood Shores peninsula in 2029. Evacuation orders came with detailed explanations behind the order in the form of dense packets mailed out to residents. Tense town hall meetings were held where the public outcries attempted to drown out verbal explanations of the government's logic and the order of operations for the planned departure. Residents were to immediately begin searching for alternative housing while the county worked to expand the K-8 schools in the surrounding cities to be able to adequately take on the incoming transfers. The five-year plan provided ample time for residents to make their peace with leaving and to establish their next steps.

This careful planning did little to ameliorate the outrage people felt being told they could no longer live in their homes. There was immediate and vocal resistance from the residents. Drawing on their immense collective voice and economic power, the community banded together in a way they had never before to battle the legislation pushing them from their homes. Lawsuits were filed and the media scrambled to cover the clash between neighborhood and its elected government. A particularly lively televised interview given by 78-year-old Joan Lee, Redwood Shores resident for over forty years, made it to national syndication. This attention brought in community organizers and a massive march on the Redwood City city hall was led by Joan on her motorized scooter. Though peaceful, the demonstration emphasized the pain and anger of the residents as they hid their fear of change.

I knew there were other lessons to learn from the salt growing process, so my experiments continued. I was still mystified by the lack of crystal growth on the fully submerged papers as I had grown rock candy on similar set ups as a child. The primary difference, other than substituting salt for sugar, was in the use of paper as opposed to a weighted down string. How would, if at all, that shift in material choice alter my outcome? I knew a new set of conditions would alter the processes significantly as nuanced relationships can be changed dramatically with the smallest shift.

Over time, with the continued deluge and absence of services, resistance gave way to acceptance, and eventually all of the people of Redwood Shores left – often relocating to the nearby and newly densified and gentrified areas of Redwood City, San Carlos, and Belmont. Others still left the Bay Area altogether, finding this push to be the final straw in the dramatic reshaping of the bay area to meet the expanding rhythms of Silicon Valley. By the end of the fifth year, there were no more people living in the area. Each of the complexes were fenced off and closed to the public. The once perfectly manicured exteriors of the neighborhood had become overgrown, creating a novel sense of wilderness in the seemingly homogeneous suburban landscape.

The city proposed a design competition for the vacant and underutilized landscape. The state saw the value of this move to call attention to its commitment to its citizens in light of the massive environmental changes forcing numerous areas to be reconsidered as viable places to live, and provided the funding for the design efforts. There were numerous considerations to take into account. One of the key aspects was the planned continued presence of the tech industries on site. Due to the zoning difference that governed the business parks of Redwood Shores, the office buildings were allowed to stay longer than the residents. These areas of commerce were protected by their perceived productivity and found themselves and their infrastructure incorporated into the new design work being done to reimagine the unstable land. The water treatment plant too was protected as a critical and sacred piece of civic services and found itself as another key feature in many of the design proposals as a means of reconnecting people with their water systems. This shift in focus emphasized water as a resource but fell short of capturing the full story of the neighborhood's literal rise and fall.

I set up a few jars and brought out a few flexible fabric-like materials to see how that might alter my crystal growth. White embroidery floss, a strip of cheese cloth, and a single strand of black thread were all tied around their own small washer on one end and a ruler on the other. The washers were then dropped into individual jars, with the rulers preventing the entire piece of fabric from dropping to the bottom. Left in the sun, the crystals had begun accruing within the first hour. Each material offered a different anchor in its surface area for the salt and I believe this to be the key reason behind their distinctions. Having explored similar systems earlier in life there was no immediate excitement as my expectations were met. I chose to swirl one jar twice a day in reference to shifting tidal waters -- that string lost most of its crystalline growth each jostle. Maybe this is why the bay shoreline isn't a shimmering geometric garden of salt formations.

After a rigorous design review, a relatively simple vision was selected by city officials of Redwood City and the dispersed residents of the Shores to best commemorate their lost Atlantis. The winner emphasized the variety of histories of the site while working towards habitat restoration and sea level rise mitigation for the greater Bay Area through an emphasis on the ecosystem services of marshlands. As houses and other buildings were deconstructed and what material could be reused was sent away, many foundations were left to act as salt pans in reference to the industrial past. Infrastructure was broken up and piled up to serve as the primary support for a new series of trails, woven around the everchanging pattern of encrusted pools as they cycled through the ephemerality of the vibrant colors of fluctuating salinity levels and microbial populations. These flashes of color, often tucked away so that sedimentation could continue to accrue, were framed with marshland plant colonies that further reinvigorated the interrupted systems. Once endangered populations flourished alongside eager bird watchers and people using the paths for their physical wellbeing.

The results of submerging the weighted linear materials in saltwater were much more like those of rock candy than of the paper experiments. Of the three types of material I used, the thin line of thread grew the least amount of crystals, but the largest. I'd venture to guess that this was because the salt accrued upon itself instead of spreading its growth over the larger surface that the cheesecloth provided. The embroidery thread yielded comparable results but with larger networks of smaller crystal structures. The most visually appealing, however, was the cheesecloth, which combined thin threadlike substrates across a larger, loosely woven area. The crystals grew in a variety of dramatic sizes and offered a compelling new form to the cloth. The heterogeneous shapes offered by the netting of the cheesecloth allowed the salt an opportunity to showcase its own heterogeneity as it navigated the varied conditions. The homogeneity of the simple lines grew larger results but lacked the complexity I was hoping for.

Residents of the surrounding cities and working professionals alike flocked to the new network of raised trails that run alongside and through some of the old complexes. These paths offer new frames of reference through aesthetic and spatial processes and articulations, making legible the socioecological systems that gave rise to the new bayland park. Frequented by birdwatchers and fitness seekers alike, the park became an amenity for the locals. It also became a sort of mecca for design professionals and public art enthusiasts who are drawn to the historic and current processes that keep the park from being static. Each season reshapes the area through tidal flooding, salt pan evaporation, and nonhuman migratory events. The proximity and drama of these occurrences proved indispensable for local land-based education and the nearby schools stepped up as the primary stewards of the area, ensuring the place was rarely without the joyful sounds of school children.

Once dry, the three long lines of salt had a final lesson for me. Where the crystals grew large and on top of each other, a flexibility was lost that the cheesecloth had maintained. Because there were areas with smaller crystals, I was able to take the new object and reorient it to create interesting new forms. From the control I had relinquished throughout the growing process came new opportunities to influence the final piece where what had been created both directed and also reinforced some of the decisions I made as I manipulated the structure. This relationship felt critical to the longevity of the new hybrid objects as the soft scaffolding of the cloth complimented the supportive structure of the crystals. This balance between responsive stability felt, and continues to feel, crucial to my design practice.

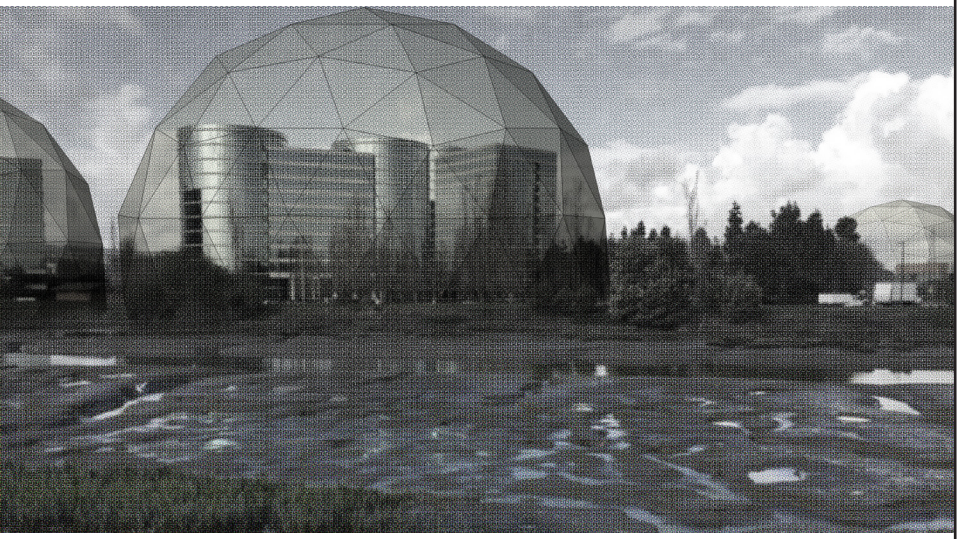
III.

Silicon Valley continued its technomanagerial sprawl out into the bay.
The ideallic conditions of the San Francisco Bay Area were preserved and regulated to ensure the comfort of those who could afford to live there.

Armed with significant economic sway, the corporations with offices in Redwood Shores joined together to fund the infrastructural retrofitting of the area to address the projected changes set to make life in the area difficult. Corporate competitors, bound together by their geographic proximity, let go of their oppositional positions to join forces to save their land and livelihood through robust financial investments. Led by Oracle's immense and far reaching work with database networks, the Redwood Shore conglomeration leveraged their technological expertise to synthesize a landscape fully controlled by its funding bodies. Everything in the area was monitored. Cameras were installed along streets and around the boundaries of the neighborhood intently watching for disturbances. Sensors were installed in the lagoons and in the soil to document levels, temperatures, and pH. Air quality stations were built into all of the buildings to ensure breathable air quality to the residents. An invisible network of watchful eyes spread across Redwood Shores to ensure the neighborhood remained in ideal conditions for Oracle's utopic vision.

Reflecting on what I had already learned from the last two series of experiments I realized I had yet to try my hand at the very process that people had been using throughout history to separate salt from water. I mixed another batch of the salty solution and collected a few small glass vessels of various depths to see how the crystals might grow when left on a significantly less porous surface. The walls of the containers shaped the water and created small, glowing pools on my windowsill.

The sinking landscape, a condition worsened by the reality of rising bay levels, needed significant attention both to address the subsidence as well as to reinforce/reimagine the levee system to meet the emergent conditions. Advancements in size and function of the levees were designed and proposed in combination with new pump systems to best address the encroaching waters. This armoring of the shoreline would fix one of the three primary concerns but failed to meet the needs of the other two.



The settling of the interrupted marshlands that form the foundation of the development proved more complicated to design for. Experimental new forms of responsive pilings were brought in as a pilot program and installed beneath one of the lowest areas of Redwood Shores. Rising and sinking with the both the geology and surrounding bay ensures a consistent sea level with the option to adjust the level in increments as small as a millimeter and as larger as ten meters. This was made possible by a hydraulic system that leveraged the groundwater in tandem with the bay and was powered by photovoltaic cells installed on the roofs of the buildings beneath which the pilings sat.

This process of crystal accumulation in the glass vessels proved slower and required greater attention to detail if any changes were to be seen, at least initially. When the water had fully evaporated the bottoms of the containers were geode-like in encrusted splendor. The crystals themselves were smaller than I had expected but the dense network of white salt made for a compelling display. Logically, if there was more saltwater in a container the crystals that grew were larger – likely due to the increased amount of salt in the solution. Some containers were left with a paper thin, glittering coat of salt while others grew substantial blankets of crystals. It was in this experiment that I found the greatest array of variables manifesting the most dramatically different results, but the limitations of the container created a sense of measured restraint that I was hoping to escape.

The conglomeration decided to form new departments within their companies to offset some of the astronomical costs of these renovations. Grants were received and galas thrown until but even still these fundraising efforts paled in comparison to the price points of the new technologies. Oracle decided their money was better spent purchasing the land from the state and instituting their own series of tax-like charges to the residents to fund the project. Workers who did not already live in Redwood Shores were charged a toll to enter the neighborhood each day as they drove into work. This rate was reduced to ten dollars for the employees from the twenty dollars charged to non-affiliates. Property taxes were raised, and annual dues were instituted. These new expenditures proved prohibitive for many of the people who were already living in the neighborhoods and Redwood Shores saw a mass exodus. The people who left were rewarded for their perseverance as property value had skyrocketed with the new tech amenities.

With the massive increase in population around the bay, the air quality had taken a sharp turn for the worse. Even with the prevalence of Tesla vehicles on the road, people found breathing while outside to be difficult. This combination of conditions and concurrent advancements in technologies generated the design for the new Oracle floating Biospheres -- following in the tradition of the Amazon Spheres created in Seattle back at the beginning of the 21st century. These new palatial feats of technoarchitecture rose from the waters on self-regulating pilings that adjust with the environment to provide a sense of consistent stability. These newly articulated areas were selected for encapsulation based on their proximity to the adjacent office buildings. Tunnels ran through the water to connect the discreet orbs. These encased neighborhoods lived under ideal climate-controlled conditions, protected from the rising tides; in a system that directly addressed all environmental concerns for the development. Without any need for environmental concerns, the residents were expected to focus intently on their productivity and to embody the ideals of the neighborhood. The culture of the community began to shift to match these expectations and within a few years the residents' lifestyles were as homogeneous as the house colors. The sparse groups of people led muted lives of predictable routine that gave way to exuberance predictably on weekends. Come Sunday all signs of the festivities were gone, and a day of rest was had before the work week began again.

The close and constant attention paid to the area by the digital system of sensors and programs were sold as the best way to attend to the wholly constructed environment. If a plant presented any aesthetic imperfections, it was replaced. Tides were controlled through gated culverts and pumps. Animal populations were documented and managed through the capture and release of any species that rose above or fell below the allowable numbers. Genetic tests were conducted to ensure population health and chips implanted in all newly introduced animals to track their locations. Each company was put in charge of different aspects of the landscape. The control centers were staffed constantly and the data running through them was analyzed with intense scrutiny. Walls of screens glowed with video of the neighborhood, and people moved through public spaces knowing full well they too were being watched. Like the nonhuman species, people were constantly under observation. Deviations from company policy were recorded and infractions met with fines. Malfunctions were attended to swiftly and any trace of them erased. Change was planned. Change was choreographed.

Their design also monitored ambient environmental conditions closely, ensuring the surrounding environment works as a literal and metaphoric extension of the interior workings of these businesses. These amenities came at astronomical prices which redefined who was able to live in the development. All new residents were employed by one of the five remaining companies that were able to afford their own place in the new landscape. Those who predated the new techno-infrastructure were faced with dramatically different living conditions and the end of many social networks they had built over the course of their time living in Redwood Shores. Having been grandfathered into the tech utopia of neighborhood level ambient climate control as well as the novelty of living on a floating landscape appealed to a few.

The interaction between the vessel and the new crystals remains compelling as the transparency of the glass allows for views of the translucent salt that may have otherwise been impossible to see. The containers are lent their form insofar as the salt remained attached to the glass, but that's about as far as that sense of control had gone. Not only had the salt grown more on itself than on the glass but in doing so, it had grown up and out of the water along the surface of the vessel. In one particularly full container it had even encrusted the entire edge of the dish and had begun growing down the outside. The boundaries proved less relevant to the salt than I had subconsciously expected as I marveled over the results. Contrary to my expections, the restrictions of the glass basins were not as totalitarian as they might have been. I'm always pleasantly surprised when my expectations are not met in material and process experiments. It reminded me that control does not always mean one's assumptions will be realized.

The shift in culture and cost that came with the completion of the project was found to be alienating as the tech elite reshaped the core place that once existed. This exaggerated homogenization and audacious display of economic means triggered a contest of sorts, where the most powerful of corporations sought to outdo the last, and climate-controlled structures began popping up around the Bay Area. These installations offset bay water, making flood events substantially more catastrophic in areas that were unable to afford the infrastructural armoring. The economic elite found refuge in their newly protected technologically advanced enclaves while the less privileged were left in the wake of the environmental changes reshaping the Nature of the area.

Around the greater Bay Area and up along the delta, impoverished communities lived through increasing numbers of exaggerated storm events as the tech elites kept them in the area by employing people to take care of their utopias. Travel by water had increased with the consistent flooding of non-shelled roadways and helped to control the visibility of the service workers that keep the spheres functioning. Each company had its own private ferry fleet to ensure their service employees arrived in time for their multi-day shifts. These waterways and their correlating docks were designed in such a way that those traveling across the water to work were funneled into side entrances – far from the luxurious viewsheds of the richest residents.

Life outside of the sphere was extreme. Seasonal weather brought dry summers that triggered massive wildfires through the foothills. The Central Valley was no longer a viable place for growing food due to the scorching summers and endlessly rainy winters. Poverty and desperation spread as quickly as the flood and fires of the landscape. The hopelessness was furthered by economic dispossession of unprotected areas as governments were run by corporate funding, focusing their attention on their benefactors. Corruption spread as a means of survival and the outside communities banded together to fight for control of their livelihoods. The captains of the private ferries began charging extra for their services and the toll workers skimmed money from their daily deposits. With their backs turned on the outside world, the corporations that controlled the contained developments could not be bothered with the small infractions…as long as company conduct was maintained within their borders.

Discussion

"***To feel uncomfortable is precisely to be affected by that which persists in the shaping of bodies and lives. Discomfort is hence not about assimilation or resistance, but about inhabiting norms differently. The inhabitance is generative or productive insofar as it does not end with the failure of norms to be secured, but with possibilities of living that do not 'follow' these norms through.***"

-Sara Ahmed[99]

Change is a constant condition of the intersecting socio-ecological spheres we inhabit. Neo-liberal capitalism has systems of reproductive forces that control lives and place through discipline, surveillance, exploitation, and appropriation/ assimilation to ensure its persistence in spite of these constant sociopolitical and ecological changes. The reproductive strategies manifest spatially through the aligned professions of the built environment motivated and controlled by profit. The motivation of capital gains too often obscures opportunities for reflexivity, blinding the privileged from recognizing their role in the unequal distribution of power. In order to see beyond the veils of productivity and comfort that have been naturalized through spatial articulations of power, creative and critical exercises must be explored by the privileged for whom the (sub) urban condition has been designed. This thesis offers some critical concepts through cautionary tales of potential futures to foster discomfort as a means of generating novel logics and counter-hegemonic landscapes towards a more equitable future.

The hegemonic pressures of capital profit have structured the built environment in such a way that inequality and violence are quietly reproduced through the maintenance of comfort and a sense of control for the privileged. The reproductivity of capitalism makes it difficult to separate from it as the thought of deviation calls to mind the violence

99 Ahmed, Sara. "Queer Feelings." T*he Routledge Queer Studies Reader*, edited by Donald E. Hall et al., Routledge, 2013.

enacted upon the marginalized. It is crucial to remember that there is agency within the margins. The articulation of power made spatial cannot fully control marginalized people who find ways to take up what is available and reimagine it to meet their counterhegemonic needs – to "abide differently within the norms."[100] This material appropriation, or queering, of place and object is a function of necessity for the people who society has marginalized to create a livable life within a hostile socioecological environment.[101] This is the generative potential of discomfort.

With the three speculative narratives of Redwood Shores presented in the previous chapter, I sought to offer multiple possible futures and counter-environments to make clear some of my own discomforts with the uncritical practices of the profession I have studied over the last three years. In doing so I have embraced much of the thinking and tools taught throughout my landscape architecture courses but also leveraged ideas and methods of thinking and making from other fields such as human geography, art, and anthropology. This synthesis intentionally breaks tradition and offers alternatives modes of approaching design. I opted for this strategy rather than a singular site design precisely as a way to challenge the hegemonic order, and to project a few logical trajectories of the current capitalist system for that part of the Bay Area as a moral warning.

For example, with the first speculation I sought to illustrate the outcomes of blind trust in seemingly stable systems, social and environmental, through a relatively slow moving albeit still disastrous reclamation of the neighborhood by the bay. This story highlights the equalizing moments environmental disruption can bring through reminders of one's precariousness and the fact that after the immediate danger passes, rebuilding a life is not equally possible for all within our society, especially those living with heightened conditions of precarity. The first speculation also shows the tensions and support that can come from the emergent post-disaster communities when residents are forced to work together to navigate the threats to their ways of life. The second speculation follows the outcome of an aspirational, though somewhat conventional, design project after the wealthy are forced to leave their homes. This story looks at the power struggles between money and government and plays with scale, zooming in and out of Redwood Shores to see the connections that can be made by sharing shorelines around the bay. It also emphasizes how places of shared loss and success can function as a binding agent as people work together to maintain the shared systems of a new marshlands. The third and final speculation is one of tech salvation that illustrates some of the costs that come with extravagant means of protecting residents' current way of life with little consideration of repercussions eco-politically. This hedonistic excess runs counter to the vulnerable entanglements of the first two speculations in that the residents of those versions of Redwood Shores are forced to reckon with their human fragility, or precariousness, regardless of their positions in society. In the first two narratives, the loss of the neighborhood is shared, and though the physical geographic connections may have interrupted there may be a deep sense of community generated from these types of dispossession. This is absent from the third narrative, which shows literal walls being built to protect the carefully constructed, comfortable way of life of the elite at the cost of those who cannot afford entry. Each of these speculations of possible futures, in its own way, underscores our own differentially experienced precarity under today's planetary condition of rapid change.

Comfort most often denies the potential for positive change; a chance to disrupt what is harmful. This thesis is a call for us to place ourselves outside our comfort zone, to imagine the implications of our current actions and their

100 Singh, Julietta. *Unthinking Mastery: Dehumanism and Decolonial Entanglements.* Duke University Press, 2018.
101 Ahmed, Sara. "Queer Feelings." T*he Routledge Queer Studies Reader*, edited by Donald E. Hall et al., Routledge, 2013.

contribution to potentially dire futures if our destruction of the environment in search of profit goes unchecked. The white heteropatriarchal elite whose bodies and lives are privileged need to listen to and embrace the discomfort of Others if we are to move towards new sociospatial and ecological articulations of equity. If we continue to deny our environmental precarity and work to maintain our comfort, a dramatic series of disasters giving rise to greater socioeconomic disparity may lead to the end of human society as we understand it at costs far greater than necessary. Those costs will fall most heavily upon the marginalized, as they already are. The need for dramatic revolution will remain but creative alternatives need to be spread so that the masses can find their intersections and work together towards better conditions for all.

Reframing socio-political histories as they intersect with ecology to highlight how they underpin a place provides a foundation for critical design work that can radically reimagine the course of events. By tracing these narrative lines, the agentic power of nonhuman species can be recognized and better understood moving towards a more robust integration of concerns. These are the counter-environments, brought to life by the many, that we need to be imagining. In the context of landscape architecture, these imagined counter-environments can become the seeds for new systems places that can help redirect our current trajectory. Critical scholars and artists can subvert the reproduction of neo-liberal ideologies by fostering different futures through the offering of new subjectivities through fiction. These new spaces of discourse can be opened through imaginative narratives that trace grounded possibilities through alternative futures. By working within the productive systems that reify said ideologies, practitioners have to navigate the disciplining pressures of capitalism while finding and taking full advantage of the opportunities presented by their grounded and material work.

I have elected to leverage my training as a conceptual artist and anthropologist as I work through my design education because it has been clear to me throughout my education that myopic and siloed practices, while excellent for building expertise, dull one's ability to trace connections across the networks that bind us to each other and to the planet. The power of narrative is recognized and valued across all three of my chosen disciplines. Design, unlike the other two fields of study/practice, uses narrative to build towards a solution. The power of stories does not lie in any material manifestation but instead in the potentialities they generate through imagination, and as such they can be a first step toward change. Because design has a long history of emphasizing control and autonomy, I felt it crucial to break from landscape design convention and move towards embracing a lack of control – of relinquishing my own ideas to see how they collide with and synthesize new concepts through discursive exchange with the reader. This cogenerates new futures similar to how my own material experimentations were cocreated alongside my speculations.

Further Reflections on Material Explorations:

The small manipulations of objects that I engaged in while working on this thesis yielded some surprising insights into how change and accrual might alter place and memory. Through material experimentation and a desire to visualize my interpretations of place and process I took up common place materials and charged them with meaning. These symbolic articulations of salt growth on my conceptualization of Redwood Shores helped me to develop an approach of rendering my understandings of the site through a series of layered information that make use of processes of control and lack thereof. Insights into form and process were most readily cross-applied as the materiality of the substrates spoke to me of politics and public mindsets and vice versa. Rigidity was met with an appropriation of form as the salt engulfed its container. SImplicity made for substantial growth but limited pliability, making for a fragile struture when the certain forms of pressure

were applied. The most complex and flexible of materials provided the same qualities in its final form, making for the most engaging, versatile forms that have held up the best over time. My expectations were rarely met and that in itself is a lesson worth continung to embrace as the planet moves faster towards the unknown.

I have known for a long time that in working with process every detail matters – the salinity level, type of salt, how long a substrate is submerged, how deep it is submerged, what *it* is in the first place all altered the final results once the water was fully evaporated. A key lesson from playing in these options was the power of form and function of the substrate. When I left saltwater to pool and evaporate in rigid vessels, I was left with dramatically different forms than if I left cheesecloth suspended in the saltwater. Once the water had fully evaporated from the vessels, I had encrusted dishes that delicately flaked away over time, the salt was a surface level treatment most dramatic at the deepest depths of the dish form where it grew on itself. The outer edges had encrusted over the course of the evaporation by wicking the saltwater up their forms and the crystals anchoring themselves on top of each other. This highlighted the lack of control at play even when structure and informed expectation go into a project. The complicated networks of crystals that had amassed on top of each other and filled the void in the base after being completely underwater. These sculptural forms created inspiring moments of refraction from within their containers that were far more structurally sound than the light creep of the edge treatments. This was quite a different result from the crystallized cheesecloth forms that resulted from the submerged fabrics. Comparable in complexity but less fragile while retaining some levels of flexibility – these forms were far more compelling and inspiring to me. It is this flexibility that I believe Western society has incidentally worked hard to protect itself from as this durable flexibility is often the result of uncertainty.

Onward, into the unknown:

What is offered here in this thesis are my thoughts and visions, bound to and informed by my position, experiences, and subjectivities as they exist now focused on a single geographic location with a relatively limited history of long-term human presence. While this document has been written for an academic audience as a capstone project to complete a masters degree, the real work that this thesis calls for will require a much broader audience and significantly more imaginaries reshaping additional places at multiple scales. In fact, as it stands, it is my belief that this work is merely the beginning of a much larger process of problematizing places that subtly communicate and (re)produce taken for granted power structures and ways of being so that they may be read and understood in their multiplicity. Once understood differently, designers can work alongside a variety of human and nonhuman agents to reimagine what is yet to come, influencing the abstractions of the future by leveraging speculations as metaphors to make a critique of the present. Without this, capitalism will continue to peddle its commodity-based solutions that reproduce its extractive and exploitative functions. These are some of the key players in our current planetary crisis. All professions engaged in the built environment need to expand their practice through an embrace of multilayered narratives towards a critical practice for the survival and advancement of their fields and the planet.

"***If it is labeled as art it is easier to deal with but if it remains design, it is more disturbing; it suggests that the everyday life as we know it could be different, that things could change.***"

-Anthony Dunne & Fiona Raby[102]

102 Dunne, Anthony, and Fiona Raby. *Speculative Everything: Design, Fiction, and Social Dreaming.* MIT Press, 2014.

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