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SANTA CRUZ

**“WHISKEY IS FOR DRINKING:”
WATER PASSIONS AND WATER POLITICS IN THE AMERICAN WEST**

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

DOCTOR OF PHILOSOPHY

in

SOCIOLOGY

by

Kirsten Sara Rudestam

June 2017

The dissertation of Kirsten Rudestam is
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List of Acronyms

BOR – Bureau of Reclamation
COID – Central Oregon Irrigation District
DBBC – Deschutes Basin Board of Control
DRA -- Deschutes River Alliance
DRC – Deschutes River Conservancy
ESA – Endangered Species Act
FERC – Federal Energy Regulatory Commission
FS – Forest Service
KBRA – Klamath Basin Restoration Agreement
NMFS – National Marine Fisheries Service
PGE – Portland General Electric
STS – Science and Technology Studies
TSID – Three Sisters Irrigation District
USFWS – United States Fish and Wildlife Service
UDWC – Upper Deschutes Watershed Council

Abstract

Kirsten Sara Rudestam

“Whiskey is for Drinking:” Water Passions and Water Politics in the American West

The Deschutes Basin, a watershed spanning central Oregon, is one of countless regions across the American West experiencing an increasing demand for water amid a rapidly decreasing supply. The human population in the Deschutes has the fastest growth rate of any county in Oregon, but while municipal demand has skyrocketed, available surface water supplies are already over-allocated. In addition, during the spring and summer irrigation season, water diversions cause a dramatic reduction in the Deschutes River’s flow, contributing to degraded fish habitat and poor water quality.

The Deschutes is emblematic not only for its water supply concerns. The basin is also nationally renowned for having undertaken an innovative approach to solving its water distribution problems. In 2001, tribal members, irrigation district managers, and environmental proponents came together and established a water market for managing and distributing the basin’s fresh water supply. Since the inception of the Deschutes Water Bank, water marketing has become increasingly popular across the American West and the Deschutes has served as a model for many of these initiatives.

My dissertation examines the ways in which more-than-human encounters matter when it comes to natural resource politics. In foregrounding the

commodification of local waters, current management strategies tend to overlook the everyday practices and encounters that are central to waters' movement through the landscape. I turn to theories of affect and emotion in order to demonstrate that how we know, feel, and relate to local waters and to local politics is central to our water management practices and key to understanding and participating in equitable water policies.

Acknowledgements

This project represents far more than the stories, encounters and discoveries that I have attempted to put into words below. It is a work that required the participation and mentorship of many beings – human and non-human. It entailed the physical, tangible explorations into new territories such as spring-fed streams, boardrooms and breweries. It rests upon the kindness and generosity of fellow scholars, farmers, water advocates and friends. This project embodies a collection of ideas that continues to grow and develop beyond the bounds of the written document. As such it contains within it hopes for water justice and for the resilience of more-than-human communities and the waters within them.

I have deep gratitude for all of my participants who offered me their time and perspectives on water issues in my field study site of the Deschutes Basin in Central Oregon. I want to especially thank the staff of the Deschutes River Conservancy, who patiently explained to me the inner workings of water politics in the Deschutes and who confided in me their personal stories of their relations with local waters. I feel immensely grateful to have learned from and worked with this collection of good-hearted people.

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by this dissertation enhance all those striving for water justice and equity in the world.

Chapter 1

Introduction: Water Stories and Water Justice

The Pelton Round Butte dam complex has a unique history. Portland General Electric (PGE) constructed the three dam facility along the Deschutes River in Central Oregon in 1962. In order to allow for fish migration, PGE implemented fish passages throughout the complex, but these modifications failed and in 1968 PGE abandoned all pretenses of accommodating for fish, severing the historic migration of salmon and steelhead in the Deschutes River system. Thirty years later, in a new world of Endangered Species litigation, the Pelton-Round Butte dam complex came up for federal relicensing. Inspired in part by the crisis that had ensued in the Klamath Basin just fifty miles south when the federal government turned off irrigators' water to protect the endangered sucker fish, irrigators, dam operators, and environmental representatives in the Deschutes chose to collaborate and avoid federal involvement. Twenty-two agency and group representatives met over Formica tables in board rooms to discuss the environmental impacts of the dam, and in 2004 came to an agreement: PGE and the Confederated Tribes of Warm Springs would become co-owners of the dam, and they would devote \$130 million to restore fish passage to the watershed.¹

¹ A conversation with a DRC staff member clarified the roles of the various organizations in this initiative – “the tribes and PGE are responsible for getting the fish to the water, and [the DRC] is responsible for getting water in the streams for the fish”

The plan to restore fish passage required waterscape² engineering the likes of which had never before been seen. One of the problems facing migrating anadromous fish³ was that of temperature. The cold water from the Metolius River flowing into the Deschutes River sank to the bottom of Lake Billy Chinook, the large lake formed by the Round Butte Dam, while the warmer water from the Crooked River and the upper Deschutes moved over the top of the cold water and either headed back up the arm of the Metolius or swirled around in eddies rather than in a direct route downstream. Fish follow river currents, and the unpredictable water flows generated by the dams were enough to confuse all attempts of fish to find their way downstream. After years of meetings and modeling, a plan was hatched – PGE would construct a 273-foot underwater tower that would alter the water currents in the lake to direct fish into a sorting facility. From there, larger fish would be returned to the lake to be caught by tourists and tribal members, and smaller fish would be sedated, then released into the lower river, where they would, dazed and drugged, continue their migration back to the ocean.

This cyborg fish migration project, completed in 2010, has largely been regarded as a success. Secretary of State Gale Norton, for example, praised the

² Water management agencies have adopted the metric of “watershed” to engage with the geographic boundaries of local water systems. Some scholars have argued that the term “watershed” is problematic, in that it implies that there exists a clearly-defined geographic unit of analysis, rather than the constantly shifting hydrosocial relations that define water’s geography across space and time (Swallow 2009; Mollinga 2007; Boelens 2012). In line with Swyngedouw (1999) and Budds and Hinojasa (2012), I prefer to use the term “waterscape,” with the intent to represent water as relational and political, surpassing spatial and temporal boundaries. Waterscaping practices, in turn, involve the material, symbolic, affective, and power-laden practices that maintain and create the waterscape

³ Anadromous refers to fish that migrate up rivers from the sea to spawn

arrangement at the time of the tower's inauguration, remarking, "With sound science, cutting-edge technology and creative solutions, we can have both healthy rivers and thriving communities" (Hydropower Reform Coalition 2010). Thousands of salmon and steelhead have now passed through the dam complex on their way to the ocean, and in 2012 the first adult salmon from the first batch of young released smolts returned upstream, generating hopes for what engineers believe will be a self-supporting population of anadromous salmon and steelhead. A local media account offered the narrative, "After a two-year construction process and numerous setbacks, this unique facility at the Pelton-Round Butte Dam is helping both fish and humans reach their goals" (Wright & Bell, 2014).

Water Stories

In the Deschutes and around the world, decisions made around water supply and allocation affect countless lives. It is estimated that in the coming century almost two-thirds of the human population will be living with severe fresh water shortages, precipitating a range of ecological crises as well as regional and global conflicts. The implications of climate change serve only to heighten these tensions, exacerbating already existing vulnerabilities to water shortages by altering the timing of precipitation and by producing more frequent and extreme droughts (Vynne et al. 2011).

My work is motivated by a concern for the equitable availability of fresh water for all beings. In this regard my project, while limited to a small rural basin in

the American West, expands our understanding of human-water relations more generally. I begin with the story above because it presents us with a puzzle. How and why did citizens, business owners, farmers and tribal members choose to devote over one hundred million dollars to revitalize a native fish run? As a student in hydrology, I was trained to regard water as an abstraction. We were taught that water was H₂O -- something that could be isolated from its surroundings, understood as a chemical compound measured in cubic feet per second or dollars per acre-feet. In those days I spent weekends “in the field,” wading into various creeks and rivers to measure velocity and flows. I remember what it felt like, trying to maintain balance amidst the ceaseless tugging of the flowing waters, and in those moments my knowledge of fluvial geomorphology would be dwarfed by my direct sensory experience; I was touched by the entangled, imprecise, and indisputably uncapturable presence of water in its many changing forms. This water did not fit into my textbooks – it contained the osprey nests, the old railway lines, the irrigation canals and the history of nuclear contamination from the nearby Hanford facility.

In my work as a natural scientist, I found that my colleagues and I were all touched in various ways through our direct experiences of studying the waters embedded in local places. These felt experiences seemed to dwarf any of the explanatory frameworks typically adopted by natural resource managers (primarily those of ecosystem services and market based theories of value) to make sense of water policy decisions. To this end, in this dissertation I set out to demonstrate how the efforts to (re)produce a historic fish run and the enthusiasm around such

initiatives illustrate how deeply water management practices are informed by the affective and emotional relationships that people have with place and with more-than-human encounters.⁴

To my surprise, in addition to tracking the felt encounters between people and place, I found myself tracking the felt encounters between people and politics. The western landscape is a conundrum; Euro-American colonial settlement is based upon a water politics of abstraction, where fighting over water quite literally has become quarrels over the *rights* to water.⁵ These are quarrels that take place in meeting rooms, conference tables, and court offices – all sites where I witnessed passion for politics emerge with as much if not more force as passions for place. In interviewing people engaged in water management, I found that they experienced the emotional intensity around water rights and access as second-nature – in countless interviews I heard the quotation attributed to Mark Twain that “whiskey is for drinking, water is for fighting over.”

But despite the recognition of water politics as affectively loaded terrain, Deschutes water management practices tend to increasingly rely on emotionally

⁴ The term “more-than-human” has become increasingly common in geographic and anthropological literatures. Scholars have applied it in their discussions of the social world in attempting to enlarge our conceptions of the social and to upset the subject/object dichotomy (Whatmore 2002). I use this term throughout my dissertation in order to underscore how the earth, animals, plants, physical attributes, and technologies all matter when it comes to understanding ourselves and the living world, and to indicate that human agency is not the dominant agency in the coproduction of the waterscape.

⁵ Quite literally, western water law attributes ownership of water to the state. The state then allocates water rights to applicants who demonstrate that they will use the water for a “beneficial use.” That said, water rights and water ownership are regularly conflated by even those well versed in water policy.

neutral realist epistemologies in attempting to “rationally” solve water conflicts. Water managers in the Deschutes (and increasingly throughout the American west) dissatisfied with the inefficient policies passed down to them from a colonial western water law have turned towards market-based methods to better allocate local waters across diverse users. This is a process that results in a valuation of things (e.g. H₂O) more than relations, normalizing the disconnection upon which water and its colonization is based and perpetuating a disregard for the diverse and complicated ways in which water and life come together.

How do we make sense of these various affects and human-nature relations? How do these passions for politics and passions for place become visible and do work in systems defined by abstraction? What are the implications of these meetings between bureaucracy, affect, and more-than-human cohabitation? These became the questions that motivated my research in the Deschutes. The answering of them helps us to not only craft better theories for understanding human-environment relations, but sheds light on the ways in which national politics have contributed to environmental unraveling in the Anthropocene.⁶

Previous research suggests that one of the major impediments to attaining equitable and cooperative water governance is the failure to recognize the multiple and incommensurable meanings that people make of water and the values assigned to

⁶ Nobel prize winner Paul Crutzen first used the term “Anthropocene” in 2000 to denote the current geological epoch as one in which humans have an ongoing and irrevocable impact on the planet. The term has since been adopted by scholars across the social and natural sciences in attempts to make sense of contemporary human-nature relations.

these meanings (Linton 2010; Strang 2006). We see a split among environmentalists in this regard. Ecological economists are among those who argue that assigning nature a monetary value is the most effective and pragmatic way to protect the environment.⁷ Others have rejected this initiative on ethical and methodological grounds. For example, at the World Water Forum, an international event to raise awareness about water issues, we see discussions on full-cost pricing of water at the same time that activist groups chant outside the conference center: “Water is not a commodity” (Kallis, Gómez-Baggethun, & Zografos, 2013).

Is it helpful to assign nature a monetary value? When discussing the economic value of water, it may be useful to define what I mean by commodification. A commodity is a good or service exchanged in a market. Commodification is the institutional, symbolic and material changes through which a good or service that was not previously meant for sale enters the sphere of market exchange (Bakker 2005). Contemporary water management strategies in the Deschutes have turned increasingly to the commodification of local waters. What are the effects of this process? Political ecologists have asked similar questions, bringing our attention to the environmental and social consequences of capitalist enclosures of nature (Bakker, 2007b; Braun, 2005; Braun & Castree, 1998; E. Kaika, Swyngedouw, & Heynen,

⁷ This is not to imply that all ecological economists believe that a simple metric has the capacity to represent the highly complex and interconnected nature of ecosystems. Many in the field concur that this is an impossible task, and that there is no unique value for environmental resources independent of the institutional settings within which they are expressed. That said, many participate in processes of monetary valuation of nature in order to have these values incorporated into dominant institutions, and in so doing their contributions often end up dominated by cost-benefit analyses (Kallis et al., 2013).

2006; McCarthy & Prudham, 2004). These scholars document how water and other so-called resources are responsive to neoliberal influence, and document cases wherein turning nature into a commodity has created situations of ecological degradation and deprivation.

While I find these studies invaluable in helping me to understand the global pressures that lead to such neoliberal water management strategies, this dissertation is only partially a political economic critique of the neoliberalization of nature. During my time in the Deschutes, I found that even those actively engaged in water marketing initiatives expressed ambivalence with respect to refiguring water into “services” and “natural capital.” The people I talked to told me different stories about their relations with local waters, stories that epitomize what Donna Haraway has called “encounter value” (2008) -- the affective capacities of actions and relations that extend beyond quantitative numbering.

In order to represent the force of these human-water and human-politics relations, in this dissertation I highlight the affective potential of the encounter. Commodification is a relational moment, involving not only new institutions that render certain things marketable, but also introduces political, material, and discursive principles that reshape human-nature relations. To that end, I tell stories that incorporate but are not fully explained by political economic factors. These are stories that document the tensions between political economy and personal subjectivities, stories that gesture towards the indeterminacy of nature, and stories that shed light on the ways that nature’s “values” can be used for other, anti-capitalist

projects. Throughout, I make the case that in order to live together in ways that are ethical and just, we must recognize that *we live together*.⁸

Methodology

I first became interested in the Deschutes when I was teaching at the University of Oregon and studying water politics. In researching the successes and failures of contemporary western water management practices, I found that people repeatedly referred to the Deschutes Basin as a poster child for innovative new approaches to managing western water. These frequent references piqued my interest, and I subsequently chose the Deschutes as a site for teaching an undergraduate field course on western water issues. I taught this course for three consecutive years (2006-2009) and this experience provided me with a number of preliminary contacts in the area as well as a familiarity with Deschutes water issues. I became particularly curious about the water marketing strategies that had taken hold in the basin. What does it mean to have water's value translated into that of a commodity? How does the colonial political legacy of water rights create space for this commodification, and how do both water law and water market approaches fail to account for the various ways that people understand, experience and relate to their local waters?

In answering these questions, I chose to embark upon an ethnography of water politics, of human-water encounters, and of water itself as it moves and is moved

⁸ I borrow from Brian Massumi (2015) the definition of ethics as that which is situational. Unlike morality, which he describes as universalizing in that it attaches positive or negative values to specific actions, ethics is variable, emerging differently in different context and thus directly shaped by the encounter (2015, p. 11).

through the Deschutes waterscape. Over the course of four years, I conducted 45 formal interviews and approximately 30 informal interviews with environmental activists, landowners, farmers, irrigation district operators, tribal members, and other community members. I found participants primarily through local networks and snowball sampling, with a main intent of including a wide range of perspectives from self-identified “stakeholders” in the local water supply (Schutt 2009). In addition, I worked for a total of six months as a participant intern with the Deschutes River Conservancy, a non-profit organization with board members representing state and federal agencies, irrigation districts, municipal interests, tribal members, and environmental concerns that has become the primary water arbitrator in the basin, and spent time informally with residents, attended community meetings and over fifty professional meetings with water managers. I found that people were eager to participate in my research, and my questions often elicited strong emotional responses.

In addition to my work in the field, I engaged in a discourse analysis of representations of water issues and regional identity in the Deschutes Basin through historical documents and local and national media. I transcribed all interviews and field notes, and coded these and all archival files using NVivo. I explored the emergent themes through an interdisciplinary framework, which I elaborate on in more detail below.

More-than-Human Theories

This dissertation represents my theoretical turn as a scholar. My scientific training in hydrology taught me to regard water as something that could be apprehended and analyzed objectively (so long as my tools of measurement were “precise”). It did not encourage me to reflect upon the ways in which our conceptions of water and waterways are inextricably knotted with our practices of knowing. As a “scientist,” I felt ill equipped to describe the suchness of water. I began to understand the circulation of water as embedded in ecological, cultural, and political-economic processes and I found myself turning to different disciplinary frameworks through which to understand the variability and dynamic nature of the stuff. This search has continued through my years as a graduate student and has led me to explore new studies in anthropology, cultural studies, environmental studies and sociology that theorize human-water relations.

In my attempts to better understand the felt dynamics of water and water politics I turned first to political ecology. Political ecologists have beautifully illuminated how control over resources and knowledge production are inseparable from social relations of power (Escobar, 2008; Peet, 2004; Rocheleau, 1995). While much political ecology has been written by anthropologists (Escobar 1999; Dove 1993a) and geographers (Blaikie 1985; Peets and Watts 1996; Jarosz 1996; Rocheleau 1995), sociologists have also defined their work as political ecology (Belsky 2002; Neumann 1992). And while political ecology has its critics (Baviskar, 2008; Walker, 2007), the emergence of political ecology documents an important

theoretical moment wherein scholars in these fields began challenging common assumptions about the origins of environmental problems, including eco-scarcity arguments and the assumed causality between poverty and environmental exploitation.

As I note above, the commodification of water is central to the water stories that I recount from the Deschutes. Early political ecology emphasized the relationship between human ecology and political economy, even coming to understand the environment not as an external source of limits, but as “the will of capitalism writ onto the landscape” (Robertson, 2004, p. 366). Critical environmental historians have taken a similar approach, highlighting the role of capitalist production in the shaping of more-than-human worlds (Cronon 1991, 1992 1996; Gandy 2003; Merchant 1980).

I refer to many of these scholars cited above as first-wave political ecologists. While first-wave political ecologists helpfully trouble commonplace assumptions about environmental problems and resource use, I find that they do not go far enough in their conceptions of natural resources themselves. Rather than perceive water as connective and relational, first wave political ecologists often approached the stuff as something that can be counted and measured, that which circulates through networks of pipes, laws, meters and quality standards – in short, as H₂O. Critics such as Amrita Baviskar have argued that this early political ecology is dogged by “the dull rigours of economic determinism” (2008, p. 1), failing to account for symbolic or discursive dimensions of meaning made of the more-than-human world, instead relying on political economic explanations in making sense of resource use.

The complex social nature of water is crucial for equitable environmental governance. Yet throughout the west, the institutional structures that characterize water management have been influenced most heavily by an ecosystem services approach, wherein non-human natures are increasingly assessed and valued as static volumes of resources that provide services to humans (Nelson, 2015, p. 461). A second wave of political ecologists has thus critiqued this tendency of resource abstraction, evident in both the policy realm of resource management and the academic theories of early political ecology. These scholars describe resources as accruing meaning through cultural beliefs, historical memory, and social practice (Braun 2002; Braun and Castree 1998; Escobar 1995; Peet and Watts 1996; Rocheleau 2008). They share an interest in conflicts over natural resources and accept much of first-wave political ecology's Marxian critique of capitalism, but are primarily interested in the ways in which environmental practices, knowledges and institutions are sites of contestation rather than the resource itself. In addition, their turn to discourse in political ecology scholarship is grounded in a Foucauldian understanding of truths as statements or modes of thought, socially and culturally constructed, that become hegemonic and necessitate forms of social power. Peet and Watts, for example, posit that the environmental imaginary, a perception of nature that is "a powerful, almost primordial, element in discursive formation" (1996:16), operates to shape and influence individual and collective identities and environmental practices. Likewise, Baviskar argues that traditional political ecology fails to recognize the dynamic and relational process of identification, relying instead on

fixed identity categories from which to analyze and understand resource use and conflicts.

While Baviskar and others make an important intervention in terms of understanding the dynamics of power and culture in environmental practices, I fear that they tend to fall into another trap – assuming that resources are singular entities that people perceive differently rather than things that are themselves multiple and contingent. As water scholar Karen Bakker (2010) notes, water is both political and biopolitical. It connects individual bodies in its cycles through complex ecosystems and organisms, and it crosses geopolitical boundaries, creating competition and conflict between upstream and downstream users. It is used as a source for survival, as well as for industrialization and urbanization, and it is used as a sink, to dispose of effluent and waste. Water can be regarded as “intensely political” in that “it is implicated in contested relationships of power and authority” (Bakker, 2010, p. 190), but it is also biopolitical in the Foucauldian sense in that water is key in disciplining bodies and controlling populations, for example via regulatory mechanisms linked to public health or through infrastructural access to urban water and sanitation services. We can see how the often invisible management of water allows for the control of whole populations. Its imposed movements become encoded into social practices of recreation, bathing, and hygiene.

Thanks to the complex relationships that water both embodies and engenders, political ecologists have turned specifically to water as a site from which to examine the dynamic internal relationships between humans and nature

that produce socio-natural entanglements and geographies. Several scholars have adopted the term “hydro-social” to capture the ways that water connects people to each other and to the more-than-human world both materially as well as politically and socially (E. Kaika et al., 2006; Swyngedouw, 2004). In one of the first attempts to apply an urban political-ecology perspective on water distribution, Swyngedouw, Kaika, and Castro (2002) described the modification of the urban water cycle as contingent upon capitalist modes of production. They argue that major urban water projects be considered “spatio-temporal fixes” (Harvey 1996), in that they provide a temporary solution to capitalist crises by deferring water loss to the future through geographic expansion.

But these approaches to understanding water still do not sit well with my own experiences of water and water politics. They continue to rest on conceptions of water as something “out there” – a dynamic and variable “out there” but one that is nonetheless abstracted from its many relations. As I make clear in the pages below, despite the structures of western water law and more recently of water-markets, water is never simply a natural resource, able to be abstracted from its context. In similar fashion, those participating in water politics are never simply stakeholders, with unchanging and predictable stakes in management decisions. Continuing to use these terms as analytic categories empirically and theoretically may have the consequence of perpetuating dominant narratives that do not account for the relational nature of everyday water practices.

As noted above, second-wave political ecologists have attempted to intervene in this regard, emphasizing relationship as key to understanding human-nature dynamics. They have used terms such as hybrid natures, regional imaginaries, and co-production to indicate this relational condition of being. But the task that second-wave political ecologists have defined for themselves is not an easy one. In demonstrating that cultural and symbolic dimensions are central to natural resource use politics, scholars struggle to include such dimensions and maintain a hold on politics, or uphold a strong political position but fall into hegemonic abstractions (Braun, 2002; Kaplan, 2007; Linton, 2010; Strang, 2009). What does it mean to insist that there are multiple waters based on variegated subjectivities of different actors? What does it do for us to abandon stakeholder categories and metrics for valuing the natural world in favor of dynamic, relational, and contextual understandings of identity? This kind of claim can result in highfalutin theorizing as well as in political paralysis. At the same time, I believe that perpetuating a nature-culture polemic (which we see in contemporary natural resource management and in much of the first-wave political ecology scholarship) renders invisible the cultural politics of water, and marginalizes the meanings, struggles and identifications that don't appear to count in a dichotomous system of value.

I propose that one way to avoid this dilemma of relying on polemics in order to effectively engage in political action is to foreground the material encounter. Water's movement and use is contingent upon the many ways in which water and place are felt and understood, and this kind of contact happens in the space of the

encounter. This became increasingly evident to me during my time in the Deschutes, where despite the marketing and monetizing of water that took place in boardrooms amongst water managers, I saw encounters that made a difference – where a woman going for her daily riverbank run spotted dead fish and sparked a media frenzy, where the intrusion of the river otter to the dam complex resulted in elaborate electric fencing, and where a field trip to observe lamprey passage inspired a new sense of care.

The world, rather than something “out there” that we can take apart and study, is dynamic and relational, and our scholarship must accommodate its very aliveness. As Bruno Latour, pioneer in the field of STS points out, “how come we have, for three centuries, *discounted* what is given to us through experience and *replaced* it instead with something *never* experienced that philosophers have nonetheless the nerve to call ‘empirical’ and ‘matters of factual’?” (2004:35). This is a world knotted up with practice, and as such, the study of it is inherently ontological and epistemological.

Latour and other STS scholars have used the idioms of co-production, entanglement and intra-action in order to illustrate how the situated knowledge of the researcher is directly implicated in that which she studies (Barad 2003; Reardon 2005; Haraway 2008). Knowledge-making (and world-making) is an inherently relational endeavor; it relies on the encounter between knower and known. STS scholar Karen Barad (2003), for example, refers to recent discoveries in quantum physics in order to demonstrate that bodies are not objects with inherent boundaries

nor do objects exist prior to their interaction; instead bodies emerge through what she calls “intra-actions,” a neologism that signifies the existing condition of entanglement. She uses the term “onto-epistemology” to describe how the theory of knowing is always linked to the theory of being. Likewise, Donna Haraway describes life as made of “mortal world-making entanglements” (2008:4) where becoming “worldly” in Haraway’s use of the word, is to recognize that our very being-ness is hitched to and hinges on the being-ness of countless human and non-human others.

Clearly, one of the engagements that we need to take seriously with respect to human-water relations is its encounter with the political economic system of capitalist production. This is a task that political ecologists do well, in helping us to understand the ways power has been taken up via capital, the state and legitimate stakeholder positions. But in its adherence to structural positions, first-wave political ecology cannot capture how and why and when other worlds become possible, or how, why and when people mobilize around local waters or do not. This is a task that scholars who regard ontology as inseparable from epistemology, such as the second-wave scholars I cite above, are beginning to take on. In so doing they highlight physical, sensory, and cultural relationships that people have with local waters (Kaplan, 2007; Krause & Strang, 2016; Morales & Harris, 2014; Mosse, 2003).

Geographer Jamie Linton describes water as a product of engagement and practice: “every instance of water is secondary to the process of engagement that makes it part of our world” (2010, p. 224). These relations between human and non-humans are central to the (re)production of water politics and emblematic of the

entanglements to which Haraway and Barad refer. I crafted my dissertation to demonstrate the various ways in which these more-than-human entanglements matter to water management decisions. It did not occur to me that the relations between people and politics would prove equally important to the ways in which water moves and is moved through the landscape as those relations between people and places. This study thus charts new ground, illuminating how legacies of abstraction can become the very terms of engagement in more-than-human politics. These are water stories that have not yet been told, and their emergence here offers us an important and necessary intervention in our approaches to natural resource management and to environmental humanistic social theory.

In focusing on the encounters between people and waters and people and politics, I foreground the felt experience of individuals and collectives in water policy decision-making processes. While environmental discourse and political economy shape perceptions of and actions around local waters, I demonstrate how the everyday embodied experiences of encounters with water, people, and politics play equally important roles in defining and influencing perceptions and behaviors.

Feminist scholars and social scientists from various traditions have demonstrated how multiple ways of knowing better account for how societies understand the world around them than “rational” and/or scientific knowledge practices (Abu-Lughod, 2009; Butler, 2004; Haraway, 2000; Nightingale, 2011). I am particularly interested in how affect theory helps augment these understandings in the realm of water resource struggles. More prevalent in the humanities and the arts,

affect theory has garnered attention within sociology and other disciplines and has resonated for a number of scholars interested in issues of justice and inequality (Ahmed 2004; Clough 2007; Gordon [1997] 2008; Gould 2009).

Affect refers primarily to public feelings, material and sensate experiences and perceptions that, unlike emotions, have not yet been linguistically or conceptually captured. Affects make up life – you experience, rather than read affect. In this sense, and drawing from Raymond Williams' (1978) "structure of feelings," affect is the potential for emotion, experienced but not produced solely by individuals. For some, the interest in affect studies has been catalyzed by dissatisfaction with poststructuralist approaches to power (Cheng 2000; Massumi 2002; Sedgwick 2003). These theorists argue that a post-structural position perceives the subject to be one that is created by discourse, and that this conception leaves little space for the indeterminacy of subject creation or the capacity of innovation in social movements. Affect, however, offers an alternative approach to understanding the operation of power, providing a framework for understanding subjects as produced by discourse as well as by the circulation of emotion and feelings between and within objects and bodies. This move invites us to recognize the force of that which may be linguistically and conceptually evasive but experientially palpable.

When I first began my research with my ears and eyes tuned to feelings and emotions I immediately recognized that I was on the right track. Many of the water managers, advocates, farmers and fishermen that I talked to all laughed at the suggestion that decisions made around water could be considered rational, and

described them as anything but. They described fierce loyalties to private property rights, critical condemnation of environmentalists, and sentimental images of salmon-rich rivers as more influential in guiding local management than cost-benefit analyses or particular identity groups. Of course, decisions made based on emotional attachments, kinship relations, and self-preservation can all be considered rational. But this kind of rationality is not the same as the rationality evoked by contemporary management practices that are informed by a neo-classical economic logic, and it is this second form of rationality that guides water policies and is considered fundamental to formal collaborative management scenarios (Nightingale, 2011).

Nigel Thrift describes affect as “a different kind of intelligence about the world, but it is intelligence none-the-less” (Thrift, 2008, p. 60). Encounters with water are always affective, in the sense that the encounter itself is something that is felt (consciously and pre- or unconsciously), and engenders a particular, context-specific and embodied form of knowledge. One way we can track this form of knowing is through the emotional responses of individuals, such as those that I mention above. Another is by focusing on everyday practices and the emotional and/or felt norms around these practices, such as encounters between salmon and white fishermen, or dams and Warm Springs tribal members. It is through these everyday practices and affects that institutions come into being and are reproduced. The majority of political ecological, sociological, and natural resource management literature, in examining inequities and potential for change in water management, has focused on the dynamics of water management institutions. While I incorporate some

of this research in my analysis of western water policy, I do not follow this design. Instead, I turn my attention toward the everyday, the affective, and the emotional – the “different kind of intelligence” that Thrift describes above – in order to better understand the power dynamics within western water allocation.

I also use affect theory to help me to think through subjecthood in terms of understanding how it is that humans formally and informally do or do not cooperate around shared waters. According to Foucault (1980), the subject is produced through social interactions that are always laced with power dynamics and it is this power that gives the subject the ability to act in the world. While often conflated, subjectivity is not the same as identity; the former refers to the ways in which people are brought into relations of power. Identities emerge through this process (S. Hall, 1996). As I will discuss in greater detail below, in contemporary western water policy we see a turn towards both collaborative forms of management as well as the commodification of water. In terms of the first, in order to participate in collaborative forums, one must identify as a stakeholder. Stakeholders have particular agendas, priorities, and interest groups. Thus, in order to participate in water policy decisions, subjects are limited in terms of how they can present themselves.

Affect theory, on the other hand, demonstrates the inherently dynamic and variable nature of the subject.⁹ For example, Sara Ahmed describes emotions (a contracted or mediated form of affect) as that which shape the “surfaces” of

⁹ Affect theorists are not the first to explore how social relations of difference are produced out of everyday interactions. Feminist theorists have long been describing the instable nature of subject positions and how claims to identity are (re)produced and performed (L. Bondi, 2005; L. I. Z. Bondi, 1990; Butler, 2004; Nightingale, 2011).

individual and collective bodies, “allow[ing] us to distinguish between an inside and an outside in the first place” (2004:10). Rather than assume that individuals own and produce emotions and feelings, emotions are the vehicles through which surfaces and boundaries are made; feelings do not reside in objects but are produced as effects of circulation. This is an approach to the subject that relies upon connection and interaction rather than one that works from an implicit notion of interiority. Along these same lines, Deleuze and Guattari (1987) encourage us to consider the fold, which enables us to see the inside as yet another surface. According to this perspective, the body exists solely through its external connections and is mediated by affective responses (sensations). In elaborating upon this theory, Deleuze and Guattari describe any given body as that which is defined by its connections and relations -- as an “assemblage,” composed of “connections of desires,” “conjunctions of flows” and “continuums of intensities” (1987:161).

What I find important about these approaches to subjectivity is that they have the capacity to account for change. The fixed associations with particular stakeholder positions limit participants in collaborative water management dialogues. I use affect theory to engage with the possibilities for new water coalitions that are not limited by stakeholder positions but instead emerge in encounters with more-than-human others. This move is crucial if we want to look beyond the limiting power dynamics that have perpetuated systems of unequal access to water for human and non-humans across the globe.

A Road Map of the Dissertation

Ecological crises have been challenging us to rethink our relations with the natural world, and this work responds to that call. Each chapter embarks on territory that cannot be accessed by market-based theories of water management or by a political ecology literature that prioritizes large-scale institutions over everyday relationships. Instead, I tell stories that recall our attention to the ways in which water and place are felt and understood by those who encounter them. These moments of contact across difference matter – as I demonstrate below, they help us better understand how and why particular politics play out through the affective and emotional bonds that humans have with their local waters. I propose that welcoming these interests into the realm of the political can help us more creatively, openly and equitably address contemporary water conflicts and problems.

In Chapter 2 I begin by situating the Deschutes Basin geographically, historically and politically. The drive for capital accumulation has been central to the socio-ecological shaping of the American West, and the recent demographic transitions in the Deschutes can be understood in this regard, where resource extractive industries have been eclipsed by tourism and ex-urban migration. In this shift we see a collision between an angry political right invested in resource extraction and a bureaucratic political left responding to residents increasing interest in environmental values. The institution of the DRC emerged in this context and characterizes a global turn towards collaborative water management, where multiple

stakeholders are enlisted to participate in shaping local water politics. But the DRC is also unique in that it is one of the first institutions in the nation to utilize a water banking system as a way of reallocating contested waters. In this chapter I illuminate how despite its glowing reputation in the world of natural resource management, the harnessing of Deschutes water by capital has been a messy process, complicated by the emotional attachments of local residents and by the imprecise nature of water itself.

Chapter 3, *Traveling Narratives*, provides us with a case study that helps illuminate a central argument of the dissertation – that feelings are central to waterscaping practices, and that world-making is an intrinsically relational process. I take us to the Klamath Basin, a watershed just south of the Deschutes where in 2001 the combination of drought, environmental legislation and newly gained tribal status for the Klamath Tribes led to the forced federal closure of irrigation withdrawals, inciting nation-wide protest and civil unrest. Although the events that unfolded in the Klamath could not realistically be repeated in the Deschutes, the collective fear that arose in the wake of the Klamath crisis motivated Deschutes stakeholders to adopt new water management strategies. This chapter illustrates how water politics and the emergence of waterworlds are driven not simply by economic incentives and/or political structures, but by the force of collective public feelings.

Chapter 4, *A Peculiar River*, takes us back to the material phenomenon that is the Deschutes River. In the previous chapter I make the case that affect emerges in the space of the encounter. What are the varied encounters between humans, non-

humans and water in the Deschutes, and how do these encounters engender affective relations and new ways of being in the waterscape? The Deschutes River has been regarded as “peculiar,” and its peculiarity matters to the engineering of its design and to its framing by different interest groups. I thus describe the natural history of this unusual river and waterscape, and then look at two dominant framings of the waterscape that are frequently utilized in public communication strategies and campaigns – that of a wild, free-flowing river and that of a heavily engineered drainage canal. The use of these two frames by various interest groups is often strategic, intended to evoke very different emotional and/or affective responses in the residents to whom they are employed. But those who rely on these frames also express a certain amount of ambivalence about their utilization, demonstrating that hegemonic perceptions of the waterscape, while strategically useful, may not fully capture the ways in which people understand, relate to, and make meaning of place.

The fifth chapter, *Affective Encounters*, introduces us to the Pacific salmon. The complicated water management scenarios that have taken hold in the Deschutes can be attributed to one particular critter – the Pacific salmon, a beloved and imperiled long-time resident of the waterscape. I take up the salmon to make two related points. For one, by taking us through the history of human-salmon relations we can see how the salmon is a material-discursive phenomenon, positioned in such a way as to recruit particular forms of care and valuation. But in addition to deconstructing our understanding of what constitutes a Pacific salmon, I argue that the salmon, although an object around which politics has taken hold, emerges in the

world as a living, breathing being. This is a being that encounters other beings, and these encounters engender feelings such as care, passion, gender, or disdain – all of which motivate political action.

In exploring these affective human-salmon relations I raise the question: why and how do we care about facets of the more-than-human world? Pacific salmon have accrued a charismatic appeal in the Pacific Northwest that is not shared by other species, even those that have been put in a similar category of endangerment. To help answer this question, I introduce us to two different aquatic critters – the Pacific Lamprey and the Spotted Frog – both of whom have an imperiled presence in the basin but have received a fraction of the care. In investigating frog and lamprey politics, I find that relationships of power and colonial histories play important roles in designating who and what is worthy of saving in an ecologically compromised waterscape.

Finally, I end this chapter by revisiting the multi-million dollar PGE dam complex, routinely described as a success story in natural resource management circles. I argue that the complex represents more than success – it stands in for all that has been lost in the wake of colonialism, a project that regarded native residents and ecologies as expendable in the quest for industrial growth. I thus close by narrating an alternative story – one not of achievement but of loss – in order to give voice to that which continues to shape the contemporary waterworld.

In Chapter 6 I investigate collaborative water management – the new paradigm that has taken hold across the globe for governing local waters. In theory, the consensus

based, collaborative approach to water management sounds ideal, and the Deschutes has become a poster child for such collaborative strategies, where diverse stakeholders are brought to the table to negotiate water allocation. But I argue that this approach is limited for three main reasons: 1) its omission of emotions from the political; 2) its reliance on stakeholder categories that tend to constrain participation in water politics; and 3) its move away from traditional, conflict-based politics and towards a post-political form, which precludes opportunities for conflict and reduces the political to social administration. I describe each of these limitations in turn, and I suggest two main ways in which collaborative governance might be modified to account for these concerns. The first I call “geographies of practice,” where I argue that differences in space matter to how and why people engage in water politics. The second is by foregrounding assemblage -- welcoming the emergence of coalitions among diverse actors in response to various events. Geographies of practice and coalitional politics provide us with tools to address dimensions central to the encounter – those of time and of space – and in so doing get us beyond static categories of stakeholder and stake and into the dynamic nature of what it is to co-exist in multi-species worlds.

Throughout the dissertation, I bring our attention to the complex entanglements between people and nature, affect and human action, and knowledge and power. While I embarked on this project suspicious of neoliberal attempts to measure and commodify nature, I do not end with a simple critique of capitalism. It may be that water marketing technologies present new opportunities for mobilization

and regeneration around issues of inequality and environmental resilience (Jackson & Palmer, 2014). However, in thinking creatively about these new forms of governance, I draw our attention to everyday practices of engagement with more-than-human places and beings. It is in this space of the encounter that I believe we can discover new ways of relating with and understanding the more-than-human world that engender more effective and just water politics.

Chapter 2: Changing Values of Water

Situating the Deschutes

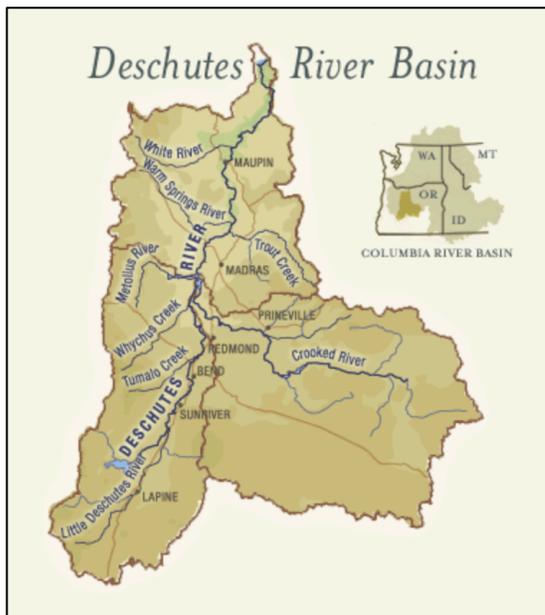
A major sub-basin of Oregon's Columbia River, the Deschutes Basin is located in central Oregon east of the Cascades, and drains an area of about 10,000 square miles (W. Robbins et al., 2009). Bordered by the city of Madras in the north, the high Cascade mountain crest in the west, and the western edge of the high desert on the east, it contains one primary river – the Deschutes, which flows north, collecting water from the Metolius and the Crooked Rivers before meeting its terminus at the Columbia. Approximately five counties are couched within the drainage area – Crook, Deschutes, Hood, Jefferson, Sherman and Wasco, as well as the Confederated Tribes of Warm Springs Reservation.

As a consequence of being located at the intersection of three eco-regions (the Blue Columbia Plateau, and the Northwest Basin and Range, and the Eastern Cascades Slopes and Foothills), the ecology, climate and topography of the Upper Deschutes is highly varied (Duncan, 2010). In the high elevation areas, forests are composed primarily of spruces, firs and mountain hemlock, while the lower regions of these mountainous slopes consist of ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*Pinus contorta*). Juniper and sagebrush communities dominate the landscape east of the foothills. The upper portion of the basin, inhospitable to juniper, is composed of dry grassland and timbered slopes. Throughout the region, the

soil is shallow and rocky, made of porous volcanic deposits consisting of basalts, andesite lavas, cinder cones and pumice.

Oregon is abundant in rivers and streams, and its water rich heritage has been a source of regional identity and pride (Paretchan, 2003). This holds true in the Deschutes as well, although the area of Central Oregon is quite different from the lush, green region west of the Cascade mountain range. The Deschutes is known as high desert country, and does not receive the heavy rainfall that is characteristic of what some describe as “the Pacific North-wet.” While the volcanic ridges of the Cascades are bestowed with more than 200 inches of rain and snow a year, the Deschutes Basin receives a fraction of this amount, averaging ten inches per year (Paretchan, 2003).

Figure 1: Map of Deschutes River Basin



Accessed: deschutesriver.org

As I note in the introduction, the Deschutes is unique in that it is one of the first arid regions in the nation to utilize a water banking system to reallocate water to new uses and users. This chapter fleshes out the background that has set the stage for these new waterscaping practices. The waters of the Deschutes have long been utilized by human inhabitants, from Indigenous fishing practices to the irrigation developments of Euro-American colonists. I begin by outlining these human histories. I then provide a brief primer on western water law, which has recently been adapted to accommodate market-based mechanisms in order to meet the evolving water needs and values in the basin. I document the water market as emblematic of a significant cultural and political shift that has transpired in western water management, and describe the Deschutes River Conservancy as an institution that exemplifies this new paradigm.

Human-Water Histories in the Deschutes

Long before contemporary irrigation schemes dominated western water politics, native inhabitants of central Oregon occupied Deschutes waterways and relied upon the local waters for sustenance, ceremony, and livelihood. Three different tribes had developed societies in the Deschutes Basin of Central Oregon – the Wasco, who had taken up residence in the east, the Walla Walla (later called the Warm Springs), who moved between summer and winter villages along the Columbia River, and the Paiutes, who lived in the southeastern portion of the basin. Despite eventually being herded into one shared reservation, these bands of Indigenous peoples are and

were distinctly unique, with different lifestyles, practices and languages (Confederated Tribes of Warm Springs, 2016).

Before their encounter with Euro-American colonists and their forced relocation to the Reservation, food was plentiful for the three tribes. Agricultural practices were not necessary; all three bands hunted game animals and gathered roots, fruit and other plants. Salmon and lamprey were staples for particularly the Wasco and Warm Springs bands, and the methods of obtaining these aquatic creatures were as significant to tribal culture as the animals themselves. Wasco and Warm Springs members built elaborate scaffolding over waterfalls so that they could fish with long-handled nets. The fish and eels were highly revered, and were central to specific festivals and rituals (Confederated Tribes of Warm Springs, 2016).

In the 1800s Euro-American colonists began to arrive in Central Oregon, bringing with them a distinct origin myth. Dunbar-Ortiz describes the founding narrative of the United States as that which paints a picture of colonists acquiring “a vast expanse of land from a scattering of benighted peoples who were hardly using it – an unforgivable offence to the Puritan work ethic” (2014, p. 46). But the historical record documents what actually existed: a network of nations with sophisticated governments, commerce, arts and sciences, technologies, philosophies, and institutions that had been developed in association with one another and with their local environments. The Indigenous people had conducted trade along well-developed roads and waterways, and thanks to their capacity to enhance transport and navigation, rivers in Central Oregon served as central passageways for colonists as

well. In 1824 the Hudson's Bay Company set up their regional headquarters near the confluence of the Willamette and Columbia rivers, and Peter Ogden, a beaver trader who worked for the company is purported to be the first European to explore the Deschutes, traveling through central Oregon with his large party of trappers by way of the Deschutes River.

In addition to disease and warfare, Euro-Americans brought with them the emerging concept of land as private property.¹⁰ In 1855 Joel Palmer, the Oregon Superintendent of Indian Affairs, presented representatives of Sahaptin and Chinookan peoples with an offer. The resultant Treaty of 1855 ceded 10 million acres of land south of the Columbia River and between the Cascade and Blue Mountain ranges to the US government, and in exchange, the Warm Springs and Wasco peoples, who occupied the western part of the Columbia Plateau and the lower Deschutes watershed, settled in what became the Confederated Tribes of Warm Springs Reservation -- 578,000 acres south of the Columbia on the Deschutes, Metolius, and Warm Springs Rivers. The Warm Springs land was located in a remote corner of their territory; a Wasco elder is quoted as telling Palmer, "The place you have mentioned, I have not seen. There [are] no Indians or Whites there yet, and that is the reason I say I know nothing about that country. If there were Whites and Indians there then I would think it was a good country" (W. Robbins et al., 2009).

¹⁰ In the 16th and 17th centuries commons in Europe were transformed into lands for commercial sheep operations, forcing the peasants who had lived on those lands to move into cities and work in the new textile factories. Ironically, many of these displaced peasants were offered the opportunity to settle in North America as indentured servants with the future promise of land after serving their terms of indenture (Dunbar-Ortiz, 2014).

The treaty overlooked the numerous bands of Northern Paiute, who also occupied the ceded treaty territory but whose lifestyles were more nomadic than the bands of Wasco and Warm Springs natives who settled into life on the reservation. After years of resistance and military campaigns mounted against the Paiute, the tribes were eventually forced onto the reservation, but, as allowed by the treaty, continued to fish at Celilo and travel throughout the region. These small freedoms lasted a short time; in 1865 the Huntington Treaty limited the tribal members from leaving the reservation, and the Dawes Act of 1887 further commodified all Indian reservations in the US, transforming them into real estate tracts that could be bought and sold (W. Robbins, 2004).

By the time native peoples had been relegated to reservations, water had become important to the state and colonists for means beyond travel and transport. In the late 1800's, the U.S. railroad companies launched a campaign to reinforce the idea of the west as a place of natural wealth and abundance. This initiative was crucial in attracting settlers and filling the frontier, but although the campaign was initially successful in encouraging westward expansion, settlers were often dismayed by the unanticipated hardships obscured by the advertisement of plenty. Unlike other parts of the Pacific Northwest, the arid climate and the short growing season of Central Oregon deterred Euro-American immigrants, whose efforts to farm the thin volcanic soil were met with frustration. The U.S. government did its best to attract settlers to the area, reporting that the region contained "grazing country sufficient for numbers of flocks and herds" (Captain H.D. Wallen 1859), but Captain John Drake's

impression five years later was the following: “As for the country, I have no desire to visit it or any portion of it again. It is a desert to all intents and purposes, utterly worthless, sandy, rough and rugged...with a stunted growth of juniper covering the surface.” The few hundred settlers that did arrive in the area in the mid-1850s organized themselves into loose communities adjacent to reliable water sources, and most subsisted by raising livestock (W. Robbins et al., 2009).

Two infrastructure developments catalyzed dramatic changes in the Deschutes landscape toward the end of the 19th century: the federal railroad and irrigation projects. During the first several decades of Euro-American settlement, much of Oregon and Washington had become recognized for its high quality timber. Areas with access to river shipping on the Columbia quickly grew, but because of its relative distance from markets, Bend and the surrounding area relied primarily on subsistence practices and small scale trade until the completion of the Deschutes Railroad in 1911(W. Robbins, 2004, p. 230). The Oregon Trunk Railroad Line connected the region to national and international markets and expedited large scale-timber production from Central Oregon forests, sparking a fierce competition between two lumber companies – Brooks Scanlon and Shevlin-Hixon – who built mills on opposite sides of the river and raced to harvest the largest trees (W. Robbins et al., 2009).

While timber processing enjoyed its short-lived phase of high productivity, Euro-American farmers were having a difficult time living up to the Jeffersonian ideal of self-sufficiency in the dryland of Central Oregon, attempting to eke out fruits

and vegetables from soil not well suited for agriculture. Irrigation was the solution to this dilemma, in Central Oregon and throughout the arid West. Settlers with access to surface water dug small ditches and irrigation canals to irrigate their small plots of land, but these small-scale operations were over-shadowed by the advent of large-scale federally funded irrigation projects. By 1920, \$12.7 million had been invested by private and public shareholders in irrigation projects, and federal irrigation policies sped through efforts to bring water to more than 986,000 acres of previous desert lands (M. Hall, 1994).

A series of federal irrigation acts thus paved the way for the waterscaping of the American West. The Desert Land Act of 1877, which applied to the arid states of Oregon, California and Nevada, allotted settlers one section (640 acres) of desert land if they irrigated it within three years. Residence within the section was not a prerequisite for purchase, and this loophole opened the door to rampant corruption. Cattle companies eagerly scooped up the miles of land bordering streams for their grazing operations. The General Revision Act of 1891 modified the Desert Land Act, in allowing an association of individuals the ability to construct shared ditches and canals. This period marked the birth of the irrigation districts in the Deschutes, which at that time fell into two camps: those organized as cooperative efforts and those organized as commercial investment enterprises. The former included Squaw Creek Irrigation Company (now Three Sisters Irrigation District) and Deschutes Reclamation and Irrigation Company (now Swalley Irrigation District). The commercial enterprises included Arnold, Tumalo (which suffered major disasters),

Walker Basin (which ultimately failed), and Central Oregon Irrigation Company (now the most powerful irrigation company in the basin) (M. Hall, 1994).

The Carey Act of 1894 opened the door to even more sophisticated irrigation arrangements; states could take lands from public domain if they could “reclaim” the land through dams, canals, and other irrigation systems. In 1902, the Reclamation Act created what is now the Bureau of Reclamation, a federal agency under the US Department of the Interior, which oversees water resource management and is most famous (or notorious) for its maze of diversions, delivery and storage projects throughout the western U.S. By this time, irrigation prospects in the Deschutes Basin were the best advertised in the entire nation, with marketing strategies claiming the Deschutes as “the river of gold” (M. Hall, 1994). By 1920, \$12.76 million had been invested by private and public interests in the basin’s irrigation projects spanning 986,000 acres (M. Hall, 1994).

One day in the Deschutes River Conservancy (DRC) office I rescued a poster from the recycling bin and propped it up next to my computer to help contextualize my work. It was a simple map of the Deschutes watershed, with the spidery outlines of the main rivers, lakes and tributaries. I grabbed it not for its depiction of the waterways – at that point in my research, I could sketch an accurate rendition of these with my eyes closed – but for its other demarcations. Large swaths of different colors represented the seven irrigation districts: Central Oregon Irrigation District (COID) encompassed the largest chunk, right over the city of Bend, followed by North Unit

According to environmental historian Paul Claeysen, the intention of the Revision Act (which set up the irrigation district system) was to privatize water for irrigation from the start – private developers were encouraged to develop irrigation systems that settlers would then tap into by paying a fee to the developer.

Unfortunately for the hopeful settlers, developers were often more interested in speculation than in actually providing reliable irrigation waters to their constituents; this proved to be the case in Tumalo, wherein “irrigation canals had more paper reality than construction features, and settlers found themselves without reliable water” (Claeyssens, 2000, p. 2).

As reflected in Sean’s quip, a century later these corporations continue to have a stronghold on the local water supply. Today, the seven remaining irrigation districts, known collectively as the Deschutes Basin Board of Control (DBBC), control 94 percent of all the basin’s water, and own and operate all of the water infrastructure delivery systems that provide water to individual water-users. These users (collectively known as “patrons,” a term that encompasses both farmers and others who use irrigation water for non-agricultural purposes) each belong to one of the seven districts, and they pay their districts’ annual assessments in exchange for water delivery.

The New West and New Values for Water

“The discovery of gold and silver in America, the extirpation, enslavement, and entombment in mines of the aboriginal population, the beginning of the conquest and looting of the East Indies, the turning of Africa into a warren for the commercial hunting of black-skins, signaled the rosy dawn of the era of capitalist product. These idyllic proceedings are the chief moments of primitive accumulation” – Karl Marx, from “Genesis of the Industrial Capitalist,” *Capital*.

The drive for capital accumulation has been central to the socio-ecological shaping of the American West. As Oregon historian William Robbins contends, “capitalism provides the most useful, systematic, and ordered approach to understanding change in the region” (2013, p. 282). The logic of capital, according to Marx, is such that capitalism’s survival necessitates an incessant drive for increasing innovation and surplus value. Within a capitalist economic framework, aspects of the natural world are treated as commodities or as raw material suitable for exploitation in order to expand production and profits, such as the conversion of land to private property that we witness in the wake of colonial imperialism.

Commodities, markets and money are not unique to capitalist societies, but what distinguishes capitalism’s commodification is that capitalism is organized around wage labor. When societies are organized around class, with wage laborers and capital-holders representing class differences, we see the tendency for all things, people and social relations to be reduced to monetary values (Kallis et al., 2013). Political scientist Karl Polanyi in his 1944 book *The Great Turning* described this

tendency within capitalism to treat land, labor and money as market commodities even though they are not equivalent to goods that have been produced via the labor process. When these public goods, which Polanyi calls “fictitious commodities,” are treated as commodities produced for sale on the market rather than as inherent rights, Polanyi predicted social and environmental crises.

We do not have to look far to see the veracity of Polanyi’s predictions. Environmental problems and the unequal exposure to them are the increasingly normalized features of our contemporary more-than-human existence. These problems, such as water pollution, soil depletion, extreme weather events, and nuclear contamination can all be directly linked to the capitalist profit seeking motive, where nature is considered a resource that can be privatized for individual gain rather than a commons protected as a public right for all human and non-human beings.

In the American West, primitive accumulation facilitated the burgeoning of new resource extractive industries, such as the railroad, timber processing and irrigated agriculture. Between 1910 and 1920 the population of Bend swelled from 500 to 5,000 people, and most of these newcomers came eager to work in the mills and on the railroads. Over a fifty-year period the mills on the Deschutes River churned out around 55 billion board feet of ponderosa timber, robbing the region of almost all of its old growth and decimating the resilience of forest ecosystems (W. Robbins et al., 2009).

By the 1950s the frenetic pace of tree removal and wood processing had slowed down. Most of the lucrative lumber had been harvested, and irrigation districts

had gobbled up the water rights to all of Central Oregon's surface waters. A new wave of enclosure came in the form of neoliberalism and the concurrent economic restructuring of the 1970s where primary industries were outsourced overseas and capitalist initiatives concentrated on other services, such as tourism, recreation, retail, professional services and high technology (Claeyssens, 2000). Far from being a region reliant on natural resource extraction, the Deschutes Basin now typifies what John Robbins describes as "the New West" -- a differentiated outback characterized by "a burgeoning winter sports tourism industry, the emergence of telecommuter communities, and the migratory phenomenon from urban to rural environments crudely referred to as 'white flight'" (W. G. Robbins, 2013).

In this New American West, the legacy of the American frontier as a place destined for New World colonists to claim nature for financial profit persists, albeit in different forms. The Deschutes Basin, like many other natural-resource-reliant regions, has taken on a new brand – one that sells a recreational playground for tourists and ex-urban migrants. For example, in the 1950s and 1960s lumber barons recognized the potential for profit in recreation; Prineville lumbermen founded the Sunriver destination resort and development in the 1950s, and Brooks-Scanlon, one of Bend's largest corporate sawmill investors, changed their name to Brooks-Resources Inc. and now sell real estate subdivisions carved from the company's old timberlands (W. Robbins et al., 2009). Both entities capitalize on the local waterways; the former advertises white water rafting and world-class fishing to their vacationers while the latter attempts to obstruct local efforts to pipe irrigation canals

proximate to their subdivisions in order to preserve the natural aesthetic of what look to be free-flowing streams.

The history of the Deschutes demonstrates how the drive for capital is a primary force in generating environmental changes over time (Cronon, 1996; W. Robbins, 2004; Worster, 1985). In the American West Euro-American colonists conceptualized water, like land, trees, and native peoples, as a resource with commodity value. The legislation governing its use thus rests upon this ideology, forcing those who participate in water politics to approach water as resource rather than as something with intrinsic value or as part of a larger ecosystemic whole.

In the New West, primitive accumulation continues to inform water management decisions, but it does so in new ways, and these new ways represent new sets of values. Rural areas are being increasingly urbanized, and with this transition, water has shifted out of the hands of irrigators and into the municipal domain. Rather than hydropower and dams, we see subsidies for riverfront parks and subdivisions placed strategically next to irrigation canals. Consumptive, lifestyle ('hobby') farms have appeared alongside productive agriculture (Aylward, 2006). These demographic shifts and ecological transitions have spawned new social conflicts. In the Deschutes, a large and vocal contingent of rural residents voice concern over the fragmentation of farms, loss of district acreage and impacts on district deliveries and assessments, while another constituency has begun to speak on behalf of restoring rivers, historic fisheries and riparian habitat. These two voices represent two kinds of affect that we see operating with respect to natural resource use in the rural American west – an

angry political right that is often volatile, unpredictable and protective of private property¹¹ juxtaposed with a technocratic, bureaucratic, political left that avoids expressing strong emotions and bases arguments on scientific evidence. These affective mobilizations do real work in the world of water management, as we will see in the subsequent chapters.

New Institutions and Old Politics: Waterspeak and the Water Trust

In order to be considered legitimate, governance strategies that aim to protect water for municipal, recreational, and ecological uses must adhere to an old system of water rights crafted at a time when water was valued primarily for agricultural use. Despite the dramatic physical, social and demographic changes that have taken place in the Deschutes waterscape over the last two hundred years, contemporary waterscaping practices are bound to colonial western water law. Because of this, in order to contextualize present-day water politics, I provide a short primer on western water law. While potentially dry reading, it is essential background for understanding the legislation binding water managers and users in the American West.

In order to retain the American West for imperialist profit, the United States government recognized that they needed settlers to stick around and “improve” the land. For that to happen, colonists needed access to water for farming and industry.

¹¹ A recent case that exemplifies this affective politics is that of the 2016 occupation of the Malheur National Wildlife Refuge, where armed militants seized the headquarters of the Oregon refuge to demand that the federal government cede its ownership and open the area up for economic development.

Thus, the formulation of western water law prioritized water storage and diversion projects for capital development, and it created disincentives for any scenario that would result in water going to “waste” (eg., not capturing it before it flowed out to sea).

In the United States, water law takes one of three forms -- the doctrine of prior appropriation, riparian rights, or a combination of these two systems.¹² The doctrine of riparian rights is primarily implemented in eastern, more water-rich states, and defines water rights in terms of land ownership. Under this system, water rights are available to landowners who hold land adjacent to watercourses, and this right is to the use of water rather than to water itself. When water is deemed scarce, its use is governed by standards of “reasonable use,” which prioritizes “parity” over “priority.” In addition, riparian water rights are attached directly to the land, not to the owner of the land.

The doctrine of prior appropriation, which primarily applies to states in the arid west, is much more a product of an imperialist and expansionist frontier ideology intent on making the “desert bloom.” Akin to riparian rights, prior appropriation designates rights to use but not own water, and this designation generally resides with the states. But unlike the eastern linking of water with land, prior appropriation emphasizes putting water to “beneficial use.” Historically, definitions of beneficial

¹² Ten states, including Oregon, have hybrid systems. That said, although Oregon operates within a mixed system of prior appropriation and riparian rights, its courts have whittled away at riparian rights over the years. The legislature basically subsumed all riparian rights into the appropriative system, abolishing all riparian rights that were not being used and requiring all subsequent water uses and permits to be appropriative.

use were exclusively productive; water could be diverted from tributaries for agricultural, industrial, domestic, and mining purposes, but not used for habitat or species protection, or deemed beneficial in its own right.

Two important corollaries comprise the doctrine of prior appropriation. One is commonly referred to as the “use-it-or-lose-it” principle. This expression speaks for itself; water not put to “beneficial use” for a statutory period of time is subject to forfeiture. The second principle allocates water by priority rather than parity (“first in time, first in right”). First-time users of water are designated senior users, and all subsequent junior users of water, even if they live upstream of senior users, must relinquish their use of water in times of limited supply (King, 2012).

During the Reclamation Era (from approximately the 1890s to mid 1970s), the main goal of federal policy was to create a west sprinkled with irrigated family farms. To this end, the Federal Bureau of Reclamation spent billions of dollars plugging up western waterways with large dams. The transition from direct diversions (farmers sticking a little weir on their local stream to channel water to their fields) to water storage meant that water rights became relatively stable throughout the year, leading to less enforcement of water rights and a decreased threat of having one’s water right shut off for a senior user. Rather than settlers posting public notices at their sites of diversion, modern appropriation of water is administered through complex state bureaucracies, and small dry farming, livestock, and mining operations have given way to what water scholar Doremus Tarlock describes as a “large-scale irrigation

society with urban oases supported by aqueducts and multi-purpose dams” (2001, p. 770).

The doctrine of prior appropriation initially denied the designation or importance of instream flows.¹³ Water left instream to flow out to sea was seen as water “wasted,” not put to “beneficial” use to support economic production. But in 1955, concerns over fish habitat, recreation and aesthetics paved the way for Oregon’s Minimum Perennial Streamflow Act. This legislation recognized base stream flow level standards for various tributaries and required that in some cases, a small amount of water be left in tributaries rather than be drained by all the water rights holders. This move did not, however, recognize in-stream water as a legitimate “beneficial use;” this legal modification was not approved by the state legislature until 1987, after the environmental movement and shifts from industrial to service economies led to a greater recognition of instream flows for recreation and ecosystems protection (Neuman 1998).

In western states, appropriation is seldom a realistic option for those eager to get their hands on water. Many tributaries, such as the Deschutes River, are over-allocated – those with junior use permits never see the water for which they applied. Existing rights in the Deschutes harken back to the late 1800s, making more recent “paper” rights owned by junior users relatively meaningless. Although in-stream water finally achieved the status of “beneficial” by the Oregon legislature, it had such

¹³ Instream flow protection refers to “the legal, physical, contractual, and/or administrative methods that have been used to ensure that enough water remains in streams to sustain instream [flows]” (Gillian and Brown ruling as quoted by King).

a junior priority date (1987) that the new signification was virtually meaningless. This changed in the early 2000s, thanks to two important events.

For one, the Endangered Species Act (ESA), passed in 1973, provided a justification for keeping water in stream in order to safeguard native aquatic species as well as species' "critical habitat." The designation and protection of "critical habitat" was key to maintaining instream flows – this provision gave the federal government the authority to regulate public lands as well as any project that requires a federal permit, such as dam relicensure. The Klamath Basin crisis of 2001 (see Chapter 3) exemplified how the designation of "critical habitat" could make powerful waves within a waterscape.

Secondly, in 1993 the Oregon state legislature granted authority to state agencies and private organizations to acquire through purchase, lease, or donation, instream water rights.¹⁴ This paved the way for the water trust – a public/private entity that works to monetize and market existing water rights under the provisions of western water law in order to maintain in-stream flows (King, 2012).

Water trusts are emblematic of a larger trend within western water management marked by the devolution of federal authority to state and local levels and private, voluntary conservation approaches that utilize market transactions. According to King (2012), the neoliberal underpinnings of the water trust raise questions of democratic legitimacy, the privatization of public lands and resources, and the marginalization of nonprofit groups. But the privatization of instream water

¹⁴ Although these entities are prohibited from holding those rights but instead must transfer them to the state Water Resources Department

rights is a multi-faceted issue. Although initially founded in order to maintain in-stream flows, municipalities in the rapidly urbanizing new west have found water trusts to be instrumental in securing water for their thirsty (and wealthy) clientele. The displacement of small-scale farming and ranching communities by urban growth and the role of the water trust in facilitating this transition is a site of contention for resident irrigators, who resent the pressure to sell their water rights to high paying municipal customers and who attempted, unsuccessfully, to overturn the 1987 law establishing instream water rights. On the other hand, water trusts have managed to counter some of the obstacles that public initiatives have faced in lobbying for in-stream flow protection, such as inadequate funding, ineffective enforcement, and the typically slow and expensive bureaucratic process of acquiring water rights.

In general, Oregon has been eager to accommodate water trust institutions and was the first state in the west to recognize and enact a water trust. As such, it has served as a model for the establishment of similar programs.¹⁵ The Deschutes River Conservancy (DRC) is perhaps the most famous and the most successful of Oregon's water trusts and its history is unique. In the late 1990s state and federal courts began recognizing tribal reservations as having legitimate, unacknowledged "first in time, first in right" claims to surface water. Rather than go through legal proceedings to readjudicate all of the water rights in the basin (an expensive, lengthy and often conflict ridden process), stakeholder groups in the Deschutes chose a different route.

¹⁵ The Washington Water Trust, adopted in 1993, explicitly referred to the OWT in its inception: "the [WWT] will be modeled after its highly successful counterparts...and, of course, its prototype, the [OWT]" – from the Proposal to the Northwest Area Foundation to Establish a Washington Water Trust (cited in King, pg. 521).

In 1996, Environmental Defense, the Confederated Tribes of Warm Springs, and local irrigation districts, formed the DRC, a non-profit organization with the mission to “restore streamflow and improve water quality in the Deschutes Basin” using market-based solutions.

The DRC is similar to the Oregon Water Trust (OWT) – enough so that the OWT eventually backed out of its Deschutes based projects and left the DRC to handle all of its instream leases. In addition to its leasing program, the DRC has its hands in a few other arenas. It operates a federal funds and grants program, awarding money to institutions and organizations involved in restoration or streamflow enhancement projects, as well as participates in basin wide planning processes with other state, federal and private agencies. The DRC prides itself on having broad stakeholder representation. Its nineteen-member board includes representatives from the tribes, cities, the basin’s eight irrigation districts, ranchers and farmers, federal agencies and environmental interests.

Modern Water

The DRC business card:

1 cubic foot per second (CFS) = 448.8 gallons per minute (gpm)

1 cubic foot = 7.48 gallons

1 CFS x 24 hours = 1.98 acre-feet (AF)

1 AF = 43,560 cubic feet = 325,851 gallons

1,000,000 gallons = 133,680.56 cubic feet

1 million gallons per day = 3.07 AF or 1.547 CFS

1 CFS = 646,412 gallons per day

1 gallon of water weighs 8.34 pounds

1 CFS of water weighs 62.38 pounds

1/40 CFS per acre = 11.22 gallons per minute per acre

1/80 CFS per acre = 5.61 gallons per minute per acre

In the Deschutes, water trusts have been central in terms of creating space for new values for water (e.g., intrinsic, ecologic, aesthetic) to work within the confines of western water law. That said, I had launched into my research of the Deschutes waterscape both curious and wary. Water marketing might be a useful tool for getting more water back in rivers (where, I believed, it belonged), but I worried that the abstraction and commodification of water utilized to achieve such a mission would have negative implications – namely, obscuring the felt attachments, relationships and meanings made within and of the more-than-human world.

As declared prominently in the DRC’s documents, CFS (cubic feet per second) is the DRC’s “measure of success.” A chart on their main website documents the protected streamflow, measured in CFS, and their leasing accomplishments from 2011 are summarized by tributary “Middle Deschutes River – 55 CFS; Lower Deschutes River – 14 CFS; Whychus Creek – 12 CFS...” Those numbers initially meant nothing to my untrained eye, and yet they marked an important change in the hydrology of the basin. In an overallocated basin, where junior users routinely are denied their full water rights, environmental advocates, recreators, and the Bend tourist bureau celebrated every drop of water returned to streams.

According to members of the DRC, the water returns achieved in the early days represent the “low hanging fruit.” Thanks to the permeable desert soil, unlined irrigation canals routinely lost more than 50% of their water before reaching their destinations. The DRC helped fund canal lining and piping projects, and in return ensured that some of the conserved water stayed in the streams. They contacted

landowners who weren't using their full water rights, reminded them that if they didn't use the water for a beneficial use they could lose it, and offered them financial incentives for leasing their unused water instream. In addition to these leasing arrangements, the DRC arbitrates the permanent transfer of water rights, operates a groundwater mitigation bank, where new groundwater users can obtain temporary credits through instream leases for new groundwater rights, and funds conservation projects, such as the canal piping initiatives.

Through the piping and conserved water projects the DRC has managed to plump up flows in the middle Deschutes, but the upper basin remains ecologically degraded and is considered by water managers as “the last worst place” in the watershed. Rather than work with a lease here and a conservation project there, DRC staff took a step backwards to examine the basin as a whole. Thus began the Deschutes Water Planning Initiative (DWPI), which later morphed into the Deschutes Basin Study. Arthur, the director of one of the irrigation districts, described this transition from single projects to a basin-wide initiative: “The Deschutes used to be project by project...[now] you need to build the big picture and if you want to bring in a lot of money you need to bring in the basin plan and basin study.”¹⁶

The work of DWPI resulted in “Water Movement Scenarios,” developed by DRC staff. DWPI identified 300 CFS in the Upper Deschutes as a crucial amount of water for meeting environmental needs. Starting with this baseline for instream flow,

¹⁶ The money, in this case, is primarily from the federal government.

the scenarios investigate different permutations of water allocation to keep 300 CFS instream while safeguarding irrigation demands.

I found the scenarios impressive, to say the least. They resemble a giant natural resources chess game, with units of water and water rights moving around the board in elaborate exchanges. For example, Scenario Number One, entitled “Simple,” involves Central Oregon Irrigation District (COID) transferring 2,500 acres of urbanizing lands onto 2,500 acres of North Unit Irrigation District (NUID) Crooked River lands. In exchange for receiving COID’s water rights, NUID transfers its Crooked River rights instream. COID is reimbursed for this arrangement by being paid to conserve 5,000 acre feet of water by piping unlined canals, also giving them an opportunity to create a hydropower facility for future revenue. Swalley Irrigation District then transfers 250 acres of water rights to the river for mitigation in exchange for payment from DRC. The “Simple” scenario also modifies the management of Crane Prairie, Wickiup, and Crescent Reservoirs, giving priority to certain irrigation districts in order of efficiency rather than water rights seniority. And viola! Three hundred CFS are back in the Upper Deschutes.

These arrangements are anything but simple. I spent many an hour puzzling over different aspects of the scenarios, and realized just how much knowledge of water law and irrigation infrastructure one needs in order to interpret what is going on. For example, operating three reservoirs as one sounds like an easy enough plan, but it involves renegotiating the historical water rights of the various irrigation

districts, each of whom has rights to a certain amount of water in each reservoir at different times of the year and in different orders of seniority.

In the process, CFS becomes something to barter over, with key numbers symbolizing success or failure, while its non-quantifiable qualities appear to be lost by the wayside. For the DRC, the key number is 300, and takes on such importance that the metric it refers to (CFS) is often dropped off in discussions. The number also becomes a point of contestation. Robin, a member of Trout Unlimited who also sits on the DRC board argued that studies show that 300 CFS is only sufficient for sustaining winter flows for fish 90% of the time: “Biologically we can wipe out the whole system in one bad year, so maybe that’s not good enough. One step further, when you look at the biology, hydrology, geomorphology, 300 is just a starting point. You really need 500 to make a difference.”

The Water Crisis – Distribution or Scarcity?

In underscoring its tradeable, fungible, and marketable qualities, the DRC does something unique in the world of water. The institution situates the problem of access to water as one of distribution rather than of scarcity. This is not to imply that quantity itself is irrelevant. The director of the DRC acknowledged this constraint, saying in a public meeting that, “There’s no new water available in the basin.” But he went on to describe the proposed solution that stems from this limitation; “It creates a cap and trade system...These kinds of problems are very strategic. Think about the big picture and how this is part of an overall plan to manage water in the basin.”

While perhaps a simple enough concept, the DRC's emphasis on allocation rather than scarcity significantly contrasts with mainstream understandings of contemporary water issues and diverges from the origin story founding western water law. The more common assumption about water, and one that is inflamed by media accounts and exacerbated by predictions of global warming, is that there simply is not enough water to meet all demands (Barlow, 2010; Gleick, 1993, 2007). In many of these cases, this focus on adequate water supply and hydrologic scarcity has neutralized the politics of water distribution. A recent issue of *Water International* highlighted this theme, publishing an exchange between Sociology Professor Ben Crow and Hydrogeology Professor Yoram Eckstein (2014). While Crow described the global water crisis as fundamentally precipitated by inequitable distribution, Eckstein argued that while water injustices "are driven by a combination of social, political, and economic problems...the regional issues of scarcity are driven by laws of nature (mainly physics of the atmosphere)."

This academic debate helped to problematize the notion of water scarcity but, in pitting a social and natural scientist against one another, perpetuated a polarized dynamic between two narratives – that of water scarcity versus water inequity. Political ecologists have attempted to break down these barriers, in reviewing the multiple forces at work that create conditions wherein humans and non-humans compete for water. For example, Maria Kaika (2005), in studying a three year drought in the city of Athens, found that nature was implicated by the media as a source of the crisis and this social construction was central to building social consensus around

“emergency measures” that led to commodification of water and resulting social stratification. Similarly, Swyngedouw (2004) describes how the framing of water in Guayaquil as “naturally scarce” lowered expectations and diffused potential for rebellion and mobilization. And Lyla Mehta (2005) demonstrated how the dam on the Narmada River in India was promoted as an answer to “manufactured scarcity” (9), claiming that “[the] naturalization of scarcity at the discursive level leads to its exacerbation at the physical level” (322). In these cases, the social construction of water as “scarce” is regarded as helping to streamline the application of a spatial fix in order to remedy “nature’s problem.”¹⁷ Crow’s response to Eckstein echoed those of the political ecologists cited above, claiming that “both society and nature are involved” in the positioning of water as scarce.

Academics and policy makers alike have thus focused on scarcity as the main ideology (whether accurate or not) influencing water management. While political ecologists have illustrated how scarcity has been manufactured to meet particular political ends, until very recently mainstream water policy makers have tended to frame water issues alongside this main Malthusian presumption – that there is simply not enough to go around. In this regard, the Deschutes has been iconoclastic. In a game-changing tactic, the DRC and DWPI set out not to secure more water for an over-allocated basin, but to distribute water more efficiently between users. The water, the DRC and others argued, was there. It was just not being distributed

¹⁷ David Harvey (1996) introduced the idea of the scalar or spatial fix as a strategy to avoid crisis wherein capital may switch to different sectors or to different locations to avoid the inherent problem of overaccumulation.

equitably between their three main constituents: agriculture, municipalities, and fish. Peter, a DRC staff member, explained this perspective: “We have enough water here. I think we’ve been able to do some great things here, and the Deschutes should be studied, but it’s not just about how great we are. We have enough water. We have a fantastic water resource here. We just need to redo the plumbing a little bit.”

According to Sean, director of the DRC, reallocating water is simple. You first evaluate what cities, irrigation districts, and fish need, you get modelers to come up with various scenarios that solve those goals at different cost caps, and then you see what financial incentives you need to offer to get one of the scenarios implemented. This strategy of tracking, trading, and counting water veers dramatically from the paradigm of water scarcity that has historically trademarked water’s management and signals an important, and yet under-acknowledged shift in the political ecology of western water management. Investigating this new direction of water management provides us with an opportunity to look more closely at the global consequences of the increasingly prevalent laissez-faire environmentalism – where the focus on crisis, justice and morality has been eclipsed by an interest in efficiency, fairness, and markets.

Slipping through the cracks

Despite my reservations about the inadequacies of “modern water,” after spending a few weeks with the DRC, I found the language of water abstractions rolling off my tongue. I never managed to estimate the CFS of a river flow, but I

surprised myself by how quickly I converted to discussing the metric in lieu of the river. I even found myself sharing a certain disdain with DRC staff for those who did not understand how water really worked in the Deschutes Basin. Those of us in “waterworld,” as the DRC employees called it, knew that the basin, for all its natural seeming beauty, was really “plumbed,” from the headgates of the dam up on Wickiup Reservoir down to the Pelton Round Butte complex out by Madras. A network of irrigation canals and diversions lay in between, and the water pumping through those veins and arteries was constantly monitored and managed by the Department of Water Resources.

What also appeared to be true was that in some of the work, counting and trading water seemed to be paying off. Thanks to the efforts of the DRC, water had made its way back into the river and tributaries for the first time in decades. Researchers, activists, and governmental agents come from all over the American West and beyond to study the DRC as a model for managing water transactions. Even I, initially suspicious of water marketing strategies, was seduced by the elegance of the DRC’s work. Perhaps, I wondered, the costs of “modern water” could be outweighed by the real environmental benefits.

In the months that followed, I began talking more frankly with DRC staff, and stepped farther from their office doors. In the process, I found that the apparent tidiness of the water market was an illusion. The more I looked, the less I saw water’s movement matching the CFS mapped onto excel spreadsheets. For example, the gauge stations, which provide the information for all of the DRC’s sophisticated

modeling, are woefully out of date. Ian, the local Watermaster told me, “Yeah, people look online at the USGS website and think they’re getting a real account of the water flows. They don’t know that we haven’t been out there to update those numbers for weeks.”¹⁸

In addition, in the rural hinterlands of the Deschutes, it is relatively simple to take water for which one does not have a water right. Landowners dig their own canals and create their own diversions, and get penalized only when and if someone lodges a complaint. To this end, Ian drives around in a government truck, responding to calls from angry citizens who suspect that their neighbors are using more than their fair share of water. But for every call that is investigated, there are countless more that go unnoticed and unattended. Thanks to the lack of available time and resources, monitoring of water is haphazard at its best, and invisible at its worst.

Karen Bakker (2010) describes water as an “uncooperative commodity” because it does not stay put – its commodification is hindered by public pressures for environmental safety, and its very unwieldiness prohibits new investors from entering the water supply market. The commodification of water is a fraught task, in that it is an entity that is embedded in dynamic, variable bodies and ecologies. As geographer Noel Castree puts it: “Capital circulation and accumulation are not...imposed on a putatively separate domain of natural entities. Rather, they are necessarily embedded in a qualitatively diverse world of flora, fauna, minerals, bodies and ecologies” (2002, p. 137).

¹⁸ While weeks may not seem to be long enough to see significant changes in water levels, if a resident is illegally diverting water, he or she can deplete a stream within days.

The legacy of western water law and the market based mechanisms imposed upon it structure our social relations to nature in fundamental ways. As Castree acknowledges, water (and other phenomena categorized as natural resources) is embedded in worlds where all forms of contact, with flora and fauna as well as with political economic structures, matter to its movements and to the shaping of environmental subjectivities and values. The following chapters identify and prioritize these moments of contact and in so doing, they speak to that which market-based water politics cannot – the affective and emotional bonds that humans have with their local waters. These stories help us identify new possibilities for a water politic – one that makes space for subjects and interests not currently recognized by contemporary water management frameworks. I propose that welcoming these interests into the realm of the political can help us more creatively, openly and equitably address contemporary water conflicts and problems.

Chapter 3: Traveling Affect – The Threat of Fish vs. Farmers

Dear Deschutes River Conservancy

I think you need to rethink how you frame issues. The irrigators do not have a "right" to the water in our rivers. The water is owned by all citizens of Oregon as a public trust, They only get to use the water because so far most of the public does not realize that WE OWN THE WATER...You, of all groups, should know the water laws of the way. A water "right" only determines who gets to take water out and in what amounts--IF THE PUBLIC DETERMINES IT WANTS ITS WATER TO BE USED THAT WAY. Why don't you start asserting the public trust, and start pointing the finger at the irrigators who are destroying our waterways and help the public understand how we are being robbed of our patrimony. Allowing irrigators to dry up rivers is akin to allowing some company to pollute the river with poison. The effect is the same. How about framing the issue this way.” – Email correspondence to the DRC, October 2013

The seasonal shoring up of the Deschutes River at Wickiup Reservoir is an annual occurrence, and routinely results in the die-off of stranded fish who are unable to survive in the lowered waters. Historically Deschutes residents hardly noticed this phenomenon. But just two years after the first anadromous fish made it past the Pelton Round Butte complex for the first time in decades, news of the fish kill in the upper basin inspired a media frenzy. How could multi-million dollar fish be ushered through the lower basin but left to perish in the upper reaches? Perhaps the irony of this situation was too much for residents to bear. When I came into the office Monday morning, a few days after the fish kill made newspaper headlines, Bev, the communications director for the DRC, looked frantic. She said she had been fielding

phone calls and emails all weekend from anglers, tourist bureau representatives, and a variety of funders who had been outraged by the kill. “People don’t understand water law. They don’t get why this happened and they’re blaming us,” Bev said, overwhelmed.

The publicity accompanying 2013’s autumn fish kill illustrates the difficult and often clumsy role that the DRC adopts with respect to accommodating both the historical legacy of irrigation in the west, and a new population that values water left instream. Most of the accusations from Deschutes residents were directed at two specific targets – the DRC, the organization in the Deschutes committed to “restor[ing] stream flow,” and irrigators, whose water-use behaviors deplete the river flows that the DRC is supposed to protect. The quotation above takes on both of these parties, blaming the DRC for defending irrigators who “are destroying our waterways.”

The “jobs versus environment” mantra has played out in various forms throughout rural America. Rebecca Scott, in researching the Appalachian coal industry, describes the trope as hegemonic, “reflect[ing] a well-worn articulation between a particular conception of the human relationship to nature and a notion of nationalistic progress” (Scott, 2010). The “jobs” referenced by the phrase are almost always natural resource extraction or heavy industry centered, seen to be the backbone of the economy, whereas the “environment” evokes images of national parks and spotted owls. This oppositional dynamic perpetuates a dualistic understanding of humans and the natural world, and erases the complex relationships

between and among more-than-humans, such as the labor and livelihoods of native people, or the natural resources that make capital accumulation possible in the first place.

In the case of water, the most visible way in which this polemic emerges is in the pitting of “fish” against “farmers.” For example, an *Associated Press* article described a local water controversy as a case wherein “The federal government shut off water to most of the farms in 2001 to protect the salmon” (Barnard, 2013). In 2014 House Speaker John Boehner supported a bill to roll back environmental protections of the California Delta, claiming, “How you can favor fish over people is something people in my part of the world would never understand” (Goodyear, 2014). Likewise, a *Washington Post* headline from 2009 read, “It’s farmers versus fish for California water” (Richardson, 2009), in response to mandatory water cutbacks initiated by the Environmental Protection Agency to protect the endangered Delta Smelt. State Representative George Radanovich spoke to this same issue, complaining, “When it comes to water policy, humans [should] come before fish” (Richardson, 2009). And another recent article documented a case of western water restriction wherein “Farmers say their economic interests have been ignored while officials seek to protect the fish” (Smith, 2015). The 2012 Deschutes fish kill exemplified this positioning of fish versus farmer, where irrigators were blamed for “drying up [our] rivers.” In response, irrigators defended their practices, expressing concern that attempts to mitigate the damages could potentially hurt their fragile businesses.

In the introduction I describe how approaches to understanding water issues have been historically framed through the lens of scarcity and yet are increasingly being managed as issues of allocation. The trope of “fish versus farmers” is one way in which the scarcity paradigm continues to operate, particularly in the American media. In pitting fish against farmers, there is the implication that there is a fixed amount of water to go around, and thus any water reallocated for environmental quality or environmental habitat represents water robbed from irrigators.

The simplification of complex issues into a fish versus farmer debate has a number of consequences. For one, it can lead to the avoidance of more pertinent and pernicious issues underlying current water conflicts. While environmental protections can force farmers to cut back on their water use, there are a number of other factors that impact the quantity of water available for irrigation (Bacher, 2009; Miller, 2014; Orr, 2014; Overstreet, 2014). Climate change, for example, plays a significant role in diminishing available water supplies. In the northwest U.S., the changes in climate have led to warmer, wetter winters, depriving the region of its accumulated snowpack, which has historically served as a storage facility for water that is gradually released over the warmer months. Inefficient infrastructure is also a culprit in diminishing available water for human use – in the arid Deschutes, up to half the water left in open reservoirs and canals can evaporate before it reaches its destination. But in solely blaming environmental protection of endangered species for water deprivation, politicians and farmers routinely ignore the multifaceted factors that influence water availability.

In addition, the fish versus farmers polemic perpetuates the image of irrigators as family farmers with individual, hard-won water rights when in reality this kind of landscape and livelihood is increasingly rare. In the Deschutes in particular, the arid climate, poor soil conditions, and swelling urban and suburban populations have hindered the success of agricultural operations, impacting ranchers and farmers long before the emergence of federally listed species. In many ways, fish versus farmers speaks to a larger antagonism that has become increasingly apparent between white rural residents of this country and government interventions. Sociologist Arlie Hochschild (2016) calls this dynamic the “Great Paradox,” where people and places that need federal help the most oppose it in the name of patriotism, private property and religious faith. In her ethnography of rural poor white residents in Louisiana, Hochschild describes how the people in her study are marginalized by falling wages and rapid demographic change. These working class white citizens resent a liberal culture that they observe ridiculing their patriotism and faith while subsidizing the environment, blacks and immigrants at their expense. In rural communities such as these, “fish” in the fish versus farmers debate often stand in for more than aquatic critters – they represent big government, elite liberals, welfare politics, regulation and taxation.¹⁹

¹⁹ A recent case that exemplifies the resentment experienced by white rural resident towards federal intervention is that of the 2016 occupation of the Malheur National Wildlife Refuge, where armed militants seized the headquarters of the Oregon refuge to demand that the federal government cede its ownership and open the area up for economic development.

Despite the shortcomings and oversights inherent in the fish versus farmers frame, it has become a primary narrative shaping water politics of the American West. In addition to its visibility in mainstream media and historical accounts, almost all of the irrigators and ranchers that I spoke with during my time in the Deschutes reduced contemporary water issues into competitions between farmers and fish. If we seek a more sophisticated understanding of complex water ecologies how, when and why particular water practices are enacted, we cannot ignore this widespread tendency. We can also see how the framing of issues as a competition between jobs and the environment is not unique to water politics. The adversarial antagonism in fish versus farmers belies the underlying class and race-based resentments held by an increasingly precarious white working class.

In the case of the Deschutes, I introduce the fish versus farmers narrative as a way to illustrate how we selectively mobilize past stories and their affective resonance in order to conceptualize and plan for a coherent future. The fish versus farmer trope traveled, and brought with it a distinct affective resonance of fear and anxiety, as well as a new water management plan. To demonstrate how this was the case I begin with the Klamath Basin, situated just south of the Deschutes. In the Klamath, a year of drought incited intense conflict between irrigators, tribal members, and environmentalists. While the case was extraordinarily complex, it became neatly summarized as a “fish versus farmers” scenario, and non-tribal Deschutes water users were terrified that a similar situation would play out in their own basin. This fear was foundational in motivating the innovative water marketing strategies that were

subsequently adopted in the Deschutes and which have since been emulated by other western water management regimes.

I share the Klamath story in order to make several points that are central to my dissertation's main argument. For one, the case demonstrates the affective nature of discursive formations and their material effects in the world. Secondly, it highlights world-making as an intrinsically relational process. And third, it serves to remind us of the importance of affect to local politics. Whether we choose to include affect and emotion explicitly in our theories of natural resource management or not, it is clear that they have force in the world. I suggest that acknowledging them as such is a necessary intervention, politically and theoretically, and I demonstrate this in the story below.

Water Wars in the Klamath

Located just south of the Deschutes in southern Oregon, the Klamath Basin was originally occupied by the Klamath, Modoc, and Yahooskin Band of Snake tribes (called "the Klamath Tribes") who extensively utilized the local waterways for food, trade, and travel. Akin to the events that played out in the Deschutes, early colonial efforts to irrigate the land transformed the Klamath landscape and contributed to the marginalization of the native peoples. By the 20th century, the Klamath Tribes had lost their tribal status as well as nearly all of their traditional lands (Doremus & Tarlock, 2008).²⁰

²⁰ In 1864 tribal members were pressured to sign a treaty that ceded 20 million acres of their homeland to the federal government in exchange for a 2.1 million acre reservation. These

The Bureau of Reclamation began the Klamath Project in 1906 -- a series of dams, reservoirs and canals that deliver irrigation water to nearly 200,000 acres of land in the basin. The Klamath River Hydropower Project, approved in 1956, followed in the footsteps of the Klamath Project, establishing six additional dams for managing irrigation water and generating hydropower. Both projects impeded and/or severed anadromous fish passage and transformed the basin into a highly maintained network of irrigation canals, shuttling water to various agricultural entities and ranchers (BOR, 2009).

In 1975, water claimants in the Klamath Basin began a lengthy and conflict-ridden adjudication process, precipitated by Klamath tribal members' desire to clarify their water rights. Water adjudication involves assigning water rights to claimants based on their priority date, and in the case of the Klamath, over 700 people and institutions, including the Bureau of Indian Affairs, the United States Forest Service and other governmental agencies, made a case for their senior rights to local waters. Over 5,600 existing water users flooded the courts to oppose the adjudication, fearing that their water rights would be jeopardized by tribal recognition. Their fears were warranted; the lawsuits eventually determined that the Klamath tribes were, in fact, owners of the most senior water rights in the basin (Doremus AD, 2003).

holdings diminished after the Allotment Act of 1887, which allowed the privatization and sale of reservation lands to non-tribal members. In 1954, in what has since been recognized to have been an exploitative land-grab by the federal government, the majority of members of the Klamath Tribes voted to terminate their tribal status in exchange for a cash payment. The remaining portion of the reservation land, held in trust by a private trustee, was sold in 1973. In 1986 the tribes regained federal recognition, but had little to show for this achievement. After being terminated, they were cut off from education, health care, housing and other governmental services (Doremus & Tarlock, 2008).

The adjudication process was just the beginning of what became a long and conflictive legal battle over local waters. In 1988 the Short-nosed sucker and Lost River sucker were listed as endangered species under the ESA and in 1997 the Coho salmon followed suit. The designation of endangered species complicated an already contentious situation among existing water users, many of whom had felt unjustly robbed of their historical water rights in the recent adjudication. In 2001, these users (primarily irrigators) were forced to make even more cut-backs to their water use. The United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) demanded that irrigation water be modified to provide for the listed species' critical habitat. The Coho needed more water released below the dam, and the Sucker fish required more water left in the lakes above the dams. The Klamath Project interfered with both of these recommendations, and subsequently the US District Court ordered that all irrigation be halted.

The federally mandated halt of water resulted in uproar. Thousands of upset irrigators and sympathetic citizens took to the streets in a passionate demonstration of anger and resistance, parading in a "bucket brigade" and protesting in front of the government center in Klamath Falls. Activists even illegally breached the headgates of the dam. Overnight, the sleepy town of Klamath Falls erupted into a maelstrom of protest. Even the Bush administration joined the fray, sympathizing with the irrigators and commissioned a new study released by the National Research Council (NRC) that refuted the biological opinions set forth by the NMFS and the USFWS. Based on the NRC study, the Bureau of Reclamation (BOR) created a new management plan that

authorized water use, and Secretary of State Gale Norton flew to Klamath Falls to ceremoniously open the headgates of the dam.

For the next few years, the BOR operated on an annual basis, and continued to provide water to irrigators despite the listing of ESA species in the region. But in 2002, thanks to a drought year, thousands of Coho and Chinook salmon died in their seasonal migration to the ocean, and a slew of conservation groups filed a lawsuit that led to the rejection of the Bureau of Reclamation's operations. The stand-off between Klamath farmers and the federal government softened with the dawning recognition of a potential bigger threat – the Klamath tribes, who had managed to secure the most senior water rights in the basin in the adjudication process. In 2005, talks commenced between irrigators, government officials, environmental groups, and tribal members, to come to an agreement around water use. The resulting Klamath Basin Restoration Agreement (KBRA) took years to produce, and remains a contentious arrangement (Doremus & Tarlock, 2008).

Despite the complexity of the case, the publicity around the Klamath Basin crisis relied on the “fish versus farmers” trope. Signs held by protesters at the time read, “Call 911, some sucker stole our water” (in reference to the endangered sucker fish). A headline from an article from SF Gate declared, “Fish versus farmers in conflict over Klamath River: Spawning fish vie with farmers in dispute over Klamath waters” (Fimrite, 2013). Resource management scholars Doremus and Tarlock (2003) wrote what is perhaps the most frequently cited academic article on the Klamath case entitled, “Fish,

Farms, and the Clash of Cultures in the Klamath Basin.” Although the title of their piece indicates that there is more to the story than fish and farms, the public has overwhelmingly characterized the event as a crisis centering around these two entities, writing out the conflict between Klamath tribes and farmers,²¹ the ways in which the deliberations ultimately (although anemically) enhanced Indigenous rights, and the general antagonism between rural white workers and welfare state politics that I refer to above.

“We don’t want to be the next Klamath!”

In the first few minutes of my interview with Carrie, restoration manager for the National Forest Service, she asked if I had considered conducting a comparative case study between the Deschutes and the Klamath Basins. “It would be pretty interesting,” she said, “They’re so close together, you know we’re only two hours apart, and it’s probably the most famous.”

Unbeknownst to Carrie, before launching into my field research, I had initially considered such a plan. The two neighboring basins have experienced similar pressures on their water supplies, but one water management scenario had resulted in what most observers characterized as crisis while the other had become a model for emulation. After

²¹ Although not the primary argument I make in this chapter, the omission of tribal presence from much of the mainstream media’s consolidation of the story is glaringly obvious and bespeaks of the cultural oppression and silencing of native people that persists to this day. This is not to say that those familiar with the complexity of the Klamath case are not cognizant of the tribal factor; to the contrary, they recognize tribal conflict as a key part of the conflict (see Buchanan, 2010; Doremus & Tarlock, 2008; Gosnell Erin, 2010). But it is safe to venture that the summarized version of the story made palatable to lay people leaves aside the presence of tribal members and instead narrates it as a tale of fish versus farmers.

a bit of investigation, I changed my mind. Although neighbors, the two basins are strikingly different from one another. The economy of the Klamath relies primarily on agriculture and ranching, not on tourism and recreation. The Klamath River is flashy, responding to drought conditions by immediately dropping its levels, whereas the Deschutes has one of the most stable flows of any river in the western United States. And the relative power of tribal interests in the two regions is also significantly different; the Warm Springs Tribal members managed to maintain access to some of the most economically valuable waters in the west, while the Klamath lost not only their land but their tribal recognition.

But while I initially considered the two basins to be too different to warrant a useful comparison, it became clear that an account of the Deschutes could not be complete without acknowledging the Klamath. My interlocutors in the Deschutes incessantly referred to the Klamath as a case that motivated the unique water practices in the Deschutes. Conversations with various staff members and board members of the DRC indicated that the ability of the organization to secure funding and encourage collaboration was due in part to witnessing the events that unfolded in the neighboring basin. For example, the DRC's public relations director said: "We're focused on a water management strategy so that in 50 years we're not a Klamath Basin."

Likewise, Davie, DRC board member, Warm Springs tribal member and director of Natural Resources, said,

We have one of the best collaborative groups in the state [the DRC]...Everyone is coming together and identifying challenges before they arrive...That's the

group that says we don't want to be the next Klamath. We don't want that situation to play out.

According to several of the irrigators I interviewed, avoiding a situation akin to that which unfolded in the Klamath figured heavily into their decision to collaborate with the DRC. Jen, a local farmer, told me that the sole reason that farmers in her area signed on to the DRC's canal piping program was to avoid a Klamath-like event. When asked if farmers chose to pipe in order to maximize hydropower benefits (one of the perks to piping canals is that the resultant pressure can be utilized for hydropower facilities), she responded, "I don't know. That [hydropower] came after. The [piping] project was sold on retaining our water. We were looking at Klamath Falls and thinking we were going to lose all our water... There's no way we would have done it if we hadn't seen what happened in Klamath Falls."

Matt, restoration manager for the Upper Deschutes Watershed Council (UDWC), meets regularly with farmers to entice them to participate in restoration or leasing projects. Similar to the DRC (and, in fact the two organizations share an office building and frequently work together on projects), the UDWC provides financial incentives to irrigators who help augment flows for fish passage. According to Matt, the Klamath case helped to encourage farmers to sign onto these conservation projects:

I can say, hey, you've heard of the Endangered Species Act, you've heard that anadromous fish are coming back into the basin. There's no pressure on you now, but we can help you get a screen²² or something [so that you're not in trouble in

²² A fish screen prevents fish from swimming or being drawn into an aqueduct, cooling water intake, dam or other water diversion.

the future]. We want to help, are you interested? And a lot of times that's the way to get our foot in the door. A lot of times they've seen the writing on the wall, they've seen the Klamath and other places, and that's ideally where they start the discussions.

Eric, the director of the UDWC, also described the Klamath incident as pivotal in terms of motivating water users to cooperate with environmental institutions. He referred to the Klamath as part of the watershed council's "evolutionary history:" "Evolution occurs culturally, linguistically, and all sorts of other ways...People were saying, 'I don't want that [what happened in the Klamath]!' and it became the cultural evolution." According to Eric and Matt, irrigators felt threatened by the potential of a similar situation unfolding in the Deschutes – enough so that they chose to change their personal water management practices.

In contemplating a comparative account of the two basins, I came to a new understanding of the practice of comparison. We live in a world that is invariably entangled – where Klamath sucker fish and BOR projects show up in the Deschutes landscape in unanticipated ways. While geographically distinct, it was clear that narratives, activities, and emotional sentiments traversed the watershed boundaries, disrupting any illusions I may have had about designing an empirical project that could keep entities separate from one another.

How can we approach comparison in such a way that allows for these kinds of iterative relationships, for "a realism that can engage a paradoxical world of simultaneous connection and divergence" (Clifford, 2013, p. 23)? STS scholar Karen Barad (2007)

uses the neologism of diffraction to describe how ideas pass through one another and are changed in the process.²³ It is the methodological act of choosing the object of analysis (making an “agential cut”) that intervenes in this web of interrelatedness and separates out one thing from another in the making of knowledge. Herein is a new way of thinking about comparison. In the making of two study sites we have a Klamath Basin and a Deschutes Basin, separate entities that we can analyze and compare. Their differences are those that matter, in that they speak to the ways in which we have chosen to understand phenomena as bounded even while separate in particular ways. They also are interrelated in that ideas and narratives pass between them, changing them in the process. This approach to comparison is contingent upon relationships and encounters – the contact rather than the divisions between things.

In addition to illuminating the ways in which things are always constituted in relation, the Klamath/Deschutes comparison highlights a second fundamental theoretical point, less visible in STS scholarship but central to my main argument. It demonstrates the world-making capacity of public feelings and emotions. In the case of the Klamath/Deschutes, the narrative of “fish versus farmer” travelled, and with it travelled affective expressions of fear, worry, and anxiety. It is perhaps ironic that the fear of becoming “the next Klamath” became so prolific given that, as I note above, the likelihood of a similar situation occurring in the Deschutes is slim. Those working closely with local water politics agreed that while the Klamath served a role in motivating new

²³ My colleague Alexis Kargyl notes that although Barad uses the term “read” to describe how ideas are “read” through one another, she prefers to avoid this terminology in order to make the point that diffraction does not always occur textually or linguistically. I prefer to use Kargyl’s terminology of “pass through” rather than “read” for the same reason.

water policies in the Deschutes, a parallel story could never unfold in a basin so fundamentally different from its neighbor. Lisa, from the DRC spoke to this:

You've probably encountered this, and I don't know if it's true or not...Everyone points to the Klamath and says, 'we don't want that to happen here.' And folks in the Deschutes say that's not going to happen here because we're organized and have consensus groups and institutional ways that we work through these problems. I think that's an interesting hypothesis – if we have the right mix of stakeholders we're not going to have these issues. My own view is that you have very different populations you're dealing with, and some things are destiny and demographics are destiny, and issues are different and geography is different and ways issues are pressing down on you are different. These different institutional arrangements might grease the skids, but it's not the only reason. In some ways, I don't think push has come to shove in the Deschutes the way it has in the Klamath.

Lisa recognized that the threat of becoming the next Klamath was a significant motivator in the Deschutes, but acknowledged the low likelihood of it actually happening. A representative from Oregon Department of Water Resources who works in both the Klamath and the Deschutes shared a similar perspective:

It's not really a fair comparison [between the Klamath and the Deschutes]. The Klamath has multiple tribes, multiple species, the federal government is invasive, they have refuges, layers and layers of restrictions. Compared to that, the Deschutes is easy.

Likewise, a local resident and member of the DRC board articulated a more textured understanding of the Klamath, and pointed to the complexity of the case:

In the Klamath there was an ESA issue, but there was more than that. It was a cultural issue between irrigators and tribes, and it was a national issue as well that

played out in national politics between Democrats and Republicans...There it took a crisis for those parties to sit down and try to solve the problem. Here we don't have a crisis of that magnitude yet...I think the Klamath is the closest example, it's the closest to home. But every water problem I think is going to have its unique features.

This resident spoke to the unique conditions inherent in the two distinct regions, and offered an insightful observation about how, in addition to making waves in the Deschutes, the event incited partisan action at the national scale. Although the Endangered Species Act may pose a threat in both basins, there are and were a number of characteristics of the Klamath that simply do not exist in the Deschutes. Gil, fish biologist with Oregon's Fish and Wildlife Service, spoke to this as well, insisting that "The Klamath is just worlds apart from the Deschutes in terms of biology and legal exposure, absolutely apples and oranges."

Despite the perhaps unrealistic potential of the Deschutes turning into "the next Klamath," people were clearly motivated by the events that had unfolded there, and they were motivated not so much by the political legislation or the real ability of a crisis to take hold, but by the fear, anxiety and worry that proliferated around the Klamath case. In this regard, we can see the important role of feelings in generating new worlds, practices, and identities.

For example, Davie said (my italics):

I was here at that time [the Klamath case]...And I think that's the genesis. Water is controversial, and we've always had the rub with irrigation districts because they have the power, and they have the water, and we want the water, and now the stakes are really high...and not just in this basin. You go down to the Klamath, or California, I think nationwide and internationally as well, water has taken on a

new meaning for our livelihood here and as we learn more about climate change and about our finite resources and learn about how to prepare for the future, I think that people are having paradigm shifts left and right, and *fear causes people to do interesting things*, and now we're in a place where we're putting more pressure on for our agenda whereas in the past we didn't.

Others also described fear and anxiety as being important motivators. Sean, for example, said that the threat of becoming “the next Klamath” is what “keeps people at the table” to engage in collaborative practices. One afternoon I visited Jen, a progressive organic farmer who inherited her parents' ranch, and helped out weeding the rows of carrots and broccoli. We talked about the Klamath, and the new changes in the Deschutes and why farmers decided to sign onto some of the DRC's initiatives. “So it really was all about seeing what happened in the Klamath?” I persisted. Jen stood up and wiped her hands on her pants. “Does it matter?” she demanded, “I don't think it matters where the motivation is coming from. I don't know, wouldn't it be wonderful if we were all conservationists and all altruistic and everybody cared as much as me about the fish? Like my fucking republican neighbors? Yeah that would be great. But who gives a shit as long as they're making it better?”

In contrast to Jen, I suggest that where motivation comes from does, in fact, matter, and in this regard I point to the importance of feelings and the affective nature of discourse. The Deschutes River Conservancy was born from the aftermath of the Klamath crisis and as such was conditioned by the fear and anxiety that came in the wake of witnessing conflict in a neighboring waterscape. These feelings were channeled into a familiar, albeit misleading narrative – that of “fish versus farmers.” As such, the

discourse of fish versus farmers carried with it an affective charge, and its connotative power was naturalized as it traveled across sites and as people continued to use it to make sense of their relationships within and to the more-than-human world.

In describing the force of feelings, I am deliberate in using the term “affect,” and my decision to do so requires further elaboration. A concept and theory that has become increasingly compelling to cultural theorists, affect is taken up in different ways by different scholars, and its diversity of interpretations can often result in theoretical vagueness and confusion. As I note in the introduction, I describe affect as that which encompasses the breadth of public feelings, material and sensate experiences and perceptions that, unlike emotions, have not yet been linguistically or conceptually captured. I draw largely from Brian Massumi (2002, 2015), who situates affect within a lineage of process philosophers such as Spinoza, Henri Bergson, Felix Guattari, and Gilles Deleuze. Akin to Barad’s dynamic and relationship-based conception of world-making, these scholars perceive the world as an ongoing process rather than as a collection of things. Affect, like Barad’s concept of diffraction, helps us to place change at the center of our analysis.

Spinoza described affect in deceptively simple terms as the power to affect and to be affected. What this entails is both contact and receptivity or, in Massumi’s words, “to be open to the world, to be active in it and to be patient for its return activity” (2015, p. ix). What differentiates affect studies from other process-based ontologies is its emphasis on change via the intensities of feeling and emotion that invariably accompany encounters between subjects and their subsequent transformation. Affect includes

awareness, conscious thought, and cognition, but it also foregrounds embeddedness and embodiment, and the ways in which the body senses change. Emotions are central to this conception of affect. In marking moments of transition, affect accompanies (perhaps even defines) every encounter, and the feeling of change, or how it registers in the body, is often expressed via emotional states.

I turn to affect theory to better understand how the Klamath case helped inspire a new set of water policies in the Deschutes. For one, affect opens up space for considering how new experiences and new things emerge. While we have certain patterns and habits of response, in every moment we are in a place of transition, and these moments of transition are open-ended; as Massumi puts it, “[affect] brings a sense of potential to the situation” (2015, p. 3). In the case of the Deschutes, we may consider how the encounter with the Klamath created space for a form of water management to emerge that diverged from the prototypical response to water conflicts we had seen until that point.

Affect theory also offers us an alternative approach to understanding the operation of power, providing a framework for conceptualizing subjects as produced by discourse as well as by the circulation of emotion and feelings between and within objects and bodies. This move invites us to recognize the force of that which may be linguistically and conceptually evasive but experientially palpable. In the case of the Klamath/Deschutes comparison, we cannot help but acknowledge the political potential of emotions, feeling and encounters. The Deschutes emerged in distinction

from and relation to the Klamath and feelings (primarily those of fear and anxiety) were central to this process.

With respect to power, we may also notice that mainstream media, historical accounting, and even contemporary water managers described the events in the Klamath as a crisis. The “Klamath crisis” was regarded as something that should be avoided at all costs, and this narration was accompanied by fear and anxiety. But this narration and the primary affect accompanying it speak to a particular colonial history. From the perspective of the Klamath tribes, whose adjudicated water rights were recognized, and the Short-nosed sucker, the Lost River sucker and the Coho salmon, whose rights to regeneration were upheld by federal legislation, the event was perhaps not such a crisis after all.

Thus, in addition to helping us understand the ways in which feelings matter to water politics and the political potential of such feelings, we also see how certain feelings and emotions expressed by those in positions of power may dominate the public sphere. Thanks to my own saturation in waterworld, I quickly learned and assumed that a crisis like the Klamath was to be avoided, in the Deschutes as well as in basins across the western U.S., where we see similar pressures on water and more-than-humans. When I searched for any mention of alternative feeling-based responses to the Klamath “crisis,” such as excitement or relief, in mainstream media and scholarly articles, I found them to be virtually invisible. Fear was clearly the “correct” emotional response to such a set of events. In this regard, flagging moments of

hegemonic public affect are one way in which we can reveal the unequal power relations determining seemingly collaborative and equitable water management practices.

In the chapters below, I build upon this introduction to affect and the material force of feelings, recruiting theories of affect and emotion to help us better understand water management practices and the ways in which power operates in the Deschutes waterscape. In addition, in the pages below I suggest that a turn to affect may also help us to locate new opportunities for creating more equitable and just water policies for multi-species coexistence.

Chapter 4: A Peculiar River

Introduction

The Deschutes River Conservancy has been praised for managing to keep the peace between irrigators and in-stream flow advocates. This is no small feat in the world of western water management, where initiatives to conserve western waterways threaten the deeply entrenched frontier narrative that depicts water left instream as water “wasted.” For example, when Mark became manager for Three Sisters Irrigation District in the 1980s, he said that farmers routinely called and complained if they saw water flowing through Whychus Creek, a tributary of the Deschutes that provides water for Three Sisters irrigators. The wet creek bed indicated that Mark wasn’t doing his job, which was to divert water to irrigate the patrons’ fields and pastures, not allow it to be lost on a journey through the watershed and out to sea.

This change in water management paradigms is most often attributed to the changing conceptions of and approaches to nature prevalent throughout the American West. Rather than value water for its ability to create viable, working landscapes, new residents in the Deschutes value water also for its aesthetic, recreational, and ecological qualities. While the meetings of these alternative conceptions produces new tensions that contemporary water management agencies must attend to, they also pave the way for new forms of managing shared waters, such as those advanced by the DRC.

This chapter looks at the co-production of the Deschutes waterscape and the ways in which material encounters matter to waterscaping politics. As I explain in Chapter 1, I use the term waterscape to refer to something that incorporates both social relations and environmental conditions. Conflicts over nature emerge when people have different ideas about what that nature is (Angelo, 2016; Braun, 2002; Linton, 2010), for example, the contention between those who view water flowing out to sea as water “wasted” and those who lobby to secure instream water rights for ecosystem health. But water conflicts also play out on terrain that is not purely conceptual – the waterscape’s physical geography poses specific constraints and opportunities that shape water management possibilities.

Political ecologists have been active in acknowledging the dialectical relationship between material conditions and social reproduction, but they tend to focus the bulk of their analyses on social, rather than socio-natural worlds (E. Kaika et al., 2006; Swyngedouw, 2004). Likewise, the new wave of scholarship within geography and anthropology that prioritizes embodied everyday practices in order to understand the relations between humans and the biophysical environment emphasizes human subjectivities as they are shaped by more-than-human relations but rarely focuses on the more-than-human itself (Hardt, 2009; Morales & Harris, 2014; Singh, 2013; F Sultana, 2009). In this regard, human subjectivities and ways of relating to the biophysical world are seen to be co-productive, constantly (re)negotiated and (re)produced, but the biophysical world itself is often under-recognized in this dynamic and relational framework.

In order to counteract this tendency, I begin this chapter with a rich, material description of the Deschutes River, and I do this in order to explicitly acknowledge the centrality of the biophysical world in its social (re)production. The geologic and hydrological characteristics of the Deschutes are key to its waterscaping practices; it is thanks in large part to the peculiarities of this unique river that capitalism's calculus has been able to take hold.

In beginning with the river, I am not suggesting a kind of natural determinism, but an encounter-based ontology. Nature emerges through contact; it is shaped by subjective knowledges as well as by specific material conditions.²⁴ As Haraway (2008) and others remind us, the co-production of human and non-human worlds is an inevitable characteristic of worldly life. Different encounters with local waters engender different sensibilities, care, and campaigns.

To underscore this point, after providing a more comprehensive picture of the Deschutes waterscape, I introduce two frames that characterize dominant perceptions of the Deschutes waterscape – one that positions the waterscape as pristine nature and the other that regards it to be technologically harnessed and successfully managed. These waterscape framings are frequently utilized in public communication strategies and campaigns, and can be considered a form of aesthetic politics in their capacity to harness affect to meet particular political goals (Massumi, 2015). But while they do

²⁴ In making a similar point, Hillary Angelo refers to Raymond William's (1977) description of the artistic "medium." A medium is two-fold -- a material thing contingent upon the context of its production, but a thing that also "mediates" in the sense that the experience of such thing goes into the making of it.

important political work, those who rely on these imaginaries express a certain amount of ambivalence about their utilization, demonstrating that hegemonic perceptions of the waterscape, while strategically useful, may not fully capture the ways in which people understand, relate to, and make meaning of place. I close the section with an example of a contemporary water conflict that has arisen in the Deschutes waterscape where affective attachments interfere with water business as usual. I do so to make the point that moments of touching and being touched by the more-than-human are central to the dynamic co-production of local waterscapes.

Introducing the Deschutes

River of the Falls

A major tributary in Central Oregon, the Deschutes River drains the drier eastern side of the Cascade Mountains before merging with the Columbia River en route to the Pacific Ocean. The river's name translates from French into "River of the Falls," and was bequeathed by Euro-American colonists in the late 1800s, although, thanks to the construction of the Dalles Dam, the falls it refers to (Celilo) no longer exist. The original native name for the Deschutes River was Towarnehiooks. Providing abundant wildlife, including salmon and trout, Native Americans used the river so often for food and transportation that trappers and explorers referred to it as the "Indian Road" (Yake, 2003).

The banks of the Upper Basin were historically lined with a diverse array of local plants, including biscuit root, wild onion, ponderosa pine, chokecherry, service

berry, bulrush, wild carrot, yellow cress, rabbit brush, cattail, sage brush, clover, squaw current, quaking aspen, blazing star, wild mint, wild rose hips, dogwood, and yarrow. As a consequence of a history of fire suppression, the area's ponderosa pine stands have gradually been replaced by dense, multi-storied forest structures of Douglas fir and Lodgepole pine, and noxious weeds²⁵ such as spotted and diffuse knapweed, dalmation toadflax, bull thistle, mullein, and scotch broom, have proliferated. The watershed hosts an extraordinary amount of wildlife. The Upper Basin alone has been noted to support over 262 different animal species, including rare and endangered critters such as osprey, spotted frogs, and bald eagles (Yake, 2003).

The US Forest Service webpage had informed me that the river originated at Little Lava Lake, a natural lake in the Cascade Range just north of the city of La Pine (US Forest Service, 2014). But I soon discovered that while convenient to attribute a lake the status of headwaters, it's anything but that simple. The Deschutes is more aptly filled by a spattering of springs, which bubble up in various locations throughout the watershed. The large underlying groundwater aquifer, its high permeability, and the storage capacity of the water table all contribute to creating conditions wherein the snow pack on the High Cascade mountains ultimately makes its way through the porous aquifer and into the river at various sites throughout the river basin. Little Lava Lake is one such area; it fills with groundwater inflow from

²⁵ "Noxious weed" is a legal classification defining any non-native plant species that imposes ecological or economic threats to agriculture, fish, wildlife, public health or native vegetation.

the High Cascades snow-fields and then flows into what gradually becomes the Deschutes River.

The river and its tributaries have been heavily modified since the era of the “Indian Road.” From the upwellings of Little Lava Lake, the river flows south for almost ten miles before it is impounded at Crane Prairie Reservoir by a dam rebuilt by the Bureau of Reclamation in 1940 and named after the cranes and the prairie that once characterized the area. From Crane Prairie the river is shuttled into Wickiup Reservoir, the second largest reservoir in the state of Oregon, also constructed by the Bureau of Reclamation in 1949 (M. Hall, 1994). The United States Forest Service cites Wickiup as one of Central Oregon’s best wildlife viewing areas, particularly for its abundance of waterfowl and shorebirds (US Forest Service, 2014). But the region is also notorious for its water quality issues. Leaking septic systems, grazing, confined animal feeding operations and irrigated agriculture have led to increasing levels of toxins in the local streams, causing eutrophication and algae blooms. Since 2009, the Oregon Department of Human Services has been issuing health advisories warning residents and visitors that even boiled and treated, the water is still dangerous to drink (Beaven, 2009).

After being released from Wickiup the river winds northeast through the resort community of Sunriver and journeys another 60 miles before entering the city of Bend. In the early 1900s the Bend area was the epicenter for the logging industry in the Pacific Northwest, and the river served to expedite timber processing (Speroff, 2007). Once the timber industry had run its course (depleting all of the old-growth

trees), capital found another way to profit from local waters – through greenscaping practices that feature the river as a central asset in the urban landscape. Rather than industrial remains and board timber, the city’s “Old Mill” district is now filled with high-end shops, breweries and movie theaters, and green parks line the concrete riverbanks.

The Deschutes maintains a charming appearance for a limited time; on the northern end of Bend ninety-five percent of its flow is abruptly rerouted into irrigation canals via a diversion dam that is surrounded by a chain-link fence. The remaining trickle of river continues north from Bend into the high desert, where it picks up mass (91% of its recharge originates from the groundwater aquifer), carving deep canyons through dramatic basalt cliffs before it is plugged by Pelton Round Butte Dam. Lake Billy Chinook, the reservoir created by this dam, receives water from three different tributaries: the mainstem of the Deschutes River, the cold, spring melt of the Metolius from the west and the warmer Crooked flows from the east. The term “lower Deschutes” refers to the 100 miles of the river below the Pelton Round Butte Dam Project.

A Geologic Conundrum

Although they perhaps didn’t have a precise geologic explanation to account for it, Euro-American settlers immediately noticed that the Deschutes River was

unusual.²⁶ Unlike many western rivers that are prone to frequent flood regimes, the Deschutes River has extremely stable flows thanks to the volcanic composition of its basin. This oddity was documented as early as 1905, when geographer Israel Russell noted, “the Deschutes is of especial interest to geographers, as it exhibits certain peculiarities not commonly met with” (O’Connor & Grant, 2003). Ten years later, a 1914 report entitled “Deschutes River, Oregon and Its Utilization” corroborated this phenomenon, describing the flow of the river as “more remarkably uniform than any other river in the United States comparable with its size” (Henshaw, Lewis, & Mccaustland, 1914, p. 12).

But while the river’s reliability has helped augment both technological progress and irrigation developments, its unique hydrology has also been problematic for those interested in harnessing and storing its waters. When Euro-American settlers arrived in the Deschutes, they applied standardized irrigation techniques to what they soon discovered was a dynamic and variable landscape. The Tumalo Irrigation Project, begun in 1904, is a case in point. The first irrigation project under the Carey Act legislation, the Tumalo Irrigation Project was positioned to irrigate about 27,000 acres of land near Tumalo Creek, a tributary of the Deschutes River. After struggling through ten years of financial and engineering disasters, private developers gave up on the project and the state took over developing Tumalo’s irrigation system. At that time, state officials decided the best option for irrigating all of the “promised land”

²⁶ A natural resource manager for Warm Springs told me that native peoples had taken into account the particular disposition of the river for their harvest practices. He said, “I’m sure they were keen students of the habits of the Deschutes because it was to their benefit to use such knowledge to better their harvest practices.”

was to build a storage reservoir. To the embarrassment of the developers, the project was a spectacular failure – the porous volcanic rock and the subterranean lava tubes underlying the reservoir drained water from the hole in the ground as soon as it was filled. Today the reservoir holds five percent of its envisioned capacity, providing irrigation water for a third of the original Tumalo land. According to environmental historians, the project was perhaps the most difficult, costly, and frustrating Carey Act irrigation development in the nation (Winch, 1985).²⁷

Thanks to its porous aquifer that absorbs and retains excess flows, the Deschutes has the status as the river with the most constant stream flow regime of any its size in the country, as well as one of the lowest sediment yields of any river in the world (O'Connor & Grant, 2003). Although they were unaware of the layers of porous lava embedded beneath the river 300 to 700 feet deep, early explorers could see the lava flows lining the section of the upper Deschutes from Benham Falls to the mouth of the Crooked River and recognized the soil to be coarse material that gave the effect of the basin as “a huge sponge” (13). Contemporary geologists have described this as “the bathtub effect;” the basin is layered first by the low-permeability John Day formation, and then by the Prineville basalt layer, composed of a highly absorbent sediment that in some areas is up to 700 feet thick. The basin’s

²⁷ The original name for the area of Tumalo was Laidlaw, after W.A. Laidlaw, one of the main promoters of the failed irrigation project. After the disaster, settlers in the area hanged Laidlaw in effigy on a telephone pole and rejected his name, changing it to Tumalo after a local camp post office (Winch, 1985)

groundwater is contained by the John Day formation, bubbling up through springs and inflows through the Prineville basalt (Paretchan, 2003).

While early geologists noted the peculiarities of the Deschutes, the river didn't receive much attention from Euro-Americans until the mid 1990s when Gordon Grant, a geologist hired by Portland General Electric (PGE) to help the dam operators prepare for the relicensing of the Pelton Round Butte complex, published a number of articles documenting the river's oddities. Grant recognized the river's peculiar character first as a raft guide, but he didn't understand the extent of the Deschutes' unique nature until the record-breaking flood of 1996. At that time Grant was midway through his study for PGE, and a warm late winter storm dumped huge amounts of precipitation on a large snowpack, causing massive flooding. As opposed to those who experienced major property damage, Gordon was delighted. He recalled a day spent in PGE's helicopter with a reporter from the Oregonian, eager to witness the huge changes he anticipated the floods would make in the waterscape. He remembered talking to the reporter; "I was going into a poetic rant about how floods are what gives all these changes to the river." But it turned out that the flood of record didn't end up creating much change, and that stopped him in his tracks. He said in an interview, "We know floods are supposed to do stuff [but] this made everything you believed to be true to be wrong...it challenged your whole belief system."

Grant subsequently wrote a series of articles about the Deschutes River, and recalled that the studies "flew in the face of what people thought they knew about rivers." He demonstrated that the flows of the Deschutes were constant, that floods

didn't cause that many changes in the river's morphology, and that the dams on the main-stem of the river weren't as disruptive as people might assume because there wasn't a lot of sediment in the system to cause accumulation problems. According to Grant, "there were a lot of people who didn't like that [news]...[but] converging lines of evidence all pointed the same way."

An ongoing and increasing trend in natural resource management is the creation of markets for natural commodities, the argument being that without assigning a monetary value to nature, we are more apt to exploit our resource base.²⁸ But in order to be functional for capital, we need systems of measuring natural phenomena that are answerable to the naturalized authority of science as well as obedient to the institutions governing their management. In most cases, such as in attempts to create markets for wetland mitigation and carbon banks, this commensurability has been difficult to achieve (Robertson, 2004). Water in particular has been described an "uncooperative commodity" (Bakker, 2007a) in that it is difficult to transport or to measure with precision. But in the Deschutes, the unusual reliability of water's flow has streamlined its commodification, making it simpler to count, predict, and allocate waters over time as well as be legally and scientifically accounted for. In this regard, that the river is peculiar matters to its waterscaping practices and to its capacity for commodification. The DRC can abstract water and

²⁸ Some common examples of market-based environmentalism include payments for ecosystem services, emissions trading, deposit-refund systems and environmental labeling laws.

shuffle it around because the hydrological qualities of the watershed help make that shuffling possible.

Deschutes Encounters

Although the peculiar make-up of the river may make it easier to commodify its waters, the Deschutes is unable to be completely captured by political economic forces -- its source is difficult to define, making it challenging to track its trajectory from headwaters to the Columbia, and its waters don't stay predictably put, creating difficulties for long-term storage. Ironically, the river is not even captured by its current title, whose namesake (Celilo Falls) no longer exists. The river, in these cases, cannot be considered a product of social worlds nor a determiner of them. Instead, it is contingent upon the relations between biophysical composition, human histories, and the ideological and affective dimensions of natural imaginaries. As Anna Tsing describes with respect to scalability theory (that which standardizes an industry thus allowing capitalist development and expansion), "scalable projects are everywhere linked with nonscalable worlds" (2012, p. 510). Assuming the scalability of things hinders our ability to see the wild diversity intrinsic to life on earth, and the unexpected ways that "contact across difference can produce new agendas" (ibid, p. 510).²⁹

That the river is described as peculiar in the first place connotes a particular relationship with it – an encounter that matters, and one that has baffled scientists and

²⁹ Tsing (2012) uses the example of a plantation as that which exemplifies scalability theory. While a river is clearly a different kind of beast, in the Deschutes we do see how water as a raw material is harnessed and contained at larger and larger scales, becoming amenable to more sophisticated and expansive capitalist projects.

citizens alike. As a student in hydrology, one of the first lessons I ever learned was that I could gauge the age of a river based on its shape. The ancient Colorado River, for example, carves a straight deep chute through the Grand Canyon, and it has developed this path over its many years of existence. One way we know the Colorado is old is because it takes time for a river course to iron out its various bends and ox-bough loops to become straighter, wider, and more efficient at moving water downhill. In my early training I was also taught that catastrophic floods catalyze quicker, more dramatic changes of rivers than the slow erosion of water's path downhill. But the Deschutes challenges both of these understandings about rivers, in stubbornly resisting long and short-term processes of erosion.

Thanks to the peculiarity of the river we can see more clearly how humans, non-humans, and things not considered material (for example, discourse, behaviors, histories and feelings) are contingent upon each another as entangled co-participants in a dynamic world. For example, during a tour of the PGE dam complex a fish biologist for PGE told me that he had relocated to the Deschutes to work on the fish facility because the project and the river challenged him to think differently about the world. He explained:

You have to think outside the box. A lot of biologists get set in these mindsets where, they think it worked in this other basin so it should work here, but think outside the box. This is a different basin, the Deschutes River is the most stable river in Oregon...it's nothing like out there [western Oregon]. It's a different environment. That's why I like doing this stuff.

He proceeded to point out the literal box he had been thinking outside of -- a little concrete container that he had crafted to hold and release fish hatchery salmon. Perched on the side of the river, it had no stable walls. Instead, when fish were ready, they would seize the warm river currents and leave of their own volition.

As this example illustrates, the river encouraged this biologist to respond in ways that he was unfamiliar with – in working with the odd characteristics of the Deschutes, he had to “think outside the box” with the warm river currents and the fish hatchery smolts, and this both delighted and changed him. Conversely, as a fish biologist and engineer of the massive fish passage facility, he played an important role in the shaping of the river, designing various features of the fish hatchery and transportation facility. The coproduction of biologist and river can be considered a “mortal world-making entanglement” (Haraway, 2008, p. 4), where more-than-human ecologies are assembled, constituted and (re)produced in relation.

I draw upon the tropes of co-production and entanglement in finding ways to think through human/non-human relations that honor the agency of the material world but do not perpetuate a nature-culture dichotomy. For example, in the story above we see how natural elements of the waterscape such as salmon are produced through human intervention, and how human interventions, such as a box for salmon, are informed by the unique characteristics of nature (the river’s odd hydrology). Rather than perceive the fish hatchery, dam and fish shuttling project as something that counters nature, we can see it in this case as something that is constituted with and through nature. In so doing, I suggest that the best theoretical frame from which to

attend to the socio-natural world is a relational ontology – a philosophical approach that we see in affect theory that foregrounds relationships and processes rather than separate things.

Water proves to be an extraordinarily salient example for grappling with such an ontology. Impossible to pin down, water is present and is changing in every encounter. A thin, microscopic layer of water surrounds every object on earth. All living beings are made primarily of water, and this water is constantly in motion, transforming its physical form and becoming atmosphere, urine, and almonds. James Linton, for example, describes water as an “ontology of process” -- a product of engagement and practice wherein “every instance of water is secondary to the process of engagement that makes it part of our world” (Linton 2011:224). In this passage, Linton is arguing that theorizing water requires a relational ontology -- it is only by attending to water’s engagement with the world that we can understand the production of urine, almonds, and atmosphere as well as irrigation canals, salmon and water rights.

Central to such a relational ontology is the encounter, the space where phenomena meet and are changed in the meeting. Considered affectively, the encounter encourages us to recognize the many ways in which more-than-human relations are experienced – through feeling, sensing, conscious and non-conscious thought. Over the course of my time studying encounters in the Deschutes, I found myself most intrigued by the feelings that I sensed and tracked in the space of such meetings. I could not ignore the range of feelings that inevitably accompanied

peoples' encounters with and perceptions of the waterscape, nor could I dismiss the force of these feelings in influencing local politics.

For example, according to Grant, people initially expressed resistance to the news of the river's anomalous nature. He suspected that this was because, in encountering the Deschutes, hydrologists were forced to challenge conventional understandings of what a river is and what a river does. Conventional hydrological epistemologies came into contact with experiences of a new kind of river. What happens in these moments of contact? In this case, feelings experienced by hydrologists and geologists resulted in disciplinary conflict -- some felt uncomfortable, not wanting to modify their previous understandings about how rivers work, while others (Grant, for example) experienced delight. Regardless of the emotional content, in these responses we can sense the affective nature of the event.

Another example helps me to demonstrate more fully my point regarding the affective dimension of politics. For all of their involvement in and public support of the market-based model for managing water in the Deschutes, water policy participants often expressed discomfort with its very form. Their discomfort was rarely made explicit and certainly wasn't expressed in wider publics. As such, it indicates a "structure of feeling," a term utilized by Raymond Williams (1973) to describe how different ways of thinking-feeling from those promulgated by official hegemonic discourses emerge at certain moments in history and indicate the potential for new ways of being.

Structures of feeling are affective. Our description and understanding of the social is that which has an already fixed meaning (for example, the conception that water can and should be bought and sold), but our felt experience may be different from this. This not yet articulate feeling is what Williams considers a “structure of feeling” – an inchoate force that exerts pressure on present day experience. For example, despite his efforts to make water amenable to local markets, Jude, a DRC staff member, objected to its quantification. In a private conversation with me, he protested, “You can’t just approach [water] from a quantitative standpoint, you have to approach it from a social standpoint as well. The drawback is that looking at it quantitatively you focus only on the technical solutions and economic solutions. Oh, we increased the price, this goes down. You don't think about, well what happens to the person who lives on the farm, how do you get that person involved? Or how do you think about the reliance of tourism on green fields?”

According to Jude, although it characterizes the way in which the DRC and the basin as a whole navigate water politics, counting water and valuing it as a number has its drawbacks. Likewise, Rolf, DRC staff member, expressed frustration with the disconnect between what happens “on the ground” versus what happens on paper:

“...particularly with water, the situation on the ground almost never matches what it’s supposed to be on paper. And it’s no malicious intent or deception; it’s what happens when you deal with water. Water is the building block of life, but it’s also difficult to quantify, it’s difficult to store, you can’t create or destroy it. It’s one of these basic things that’s hard to manage. So this

disconnect between paper water and wet water makes the bureaucracy that much worse.”³⁰

One day in the DRC office I overheard a phone call between Rolf and a legal intern for Idaho’s chapter of the non-profit organization Trout Unlimited. As the DRC’s resident economist, Rolf fields most of the queries from students, activists, and water professionals who are interested in the DRC’s innovative “water market” approach. After he hung up the phone he heaved a sigh. He remarked on how often he’s asked to talk about the “water bank,” and said angrily, “There is no water bank! There is no water market! That’s just a way that irrigation districts and others use language to get grants and line their pockets. Water -- you can’t store it, you can’t develop a market for it. And I’m an economist. It’s just infeasible....”

I later asked Lisa, the leasing specialist at the DRC what she thought about Rolf’s outburst. She looked confused, and after a pause, said, “Water is a product, just like wood is a natural resource. Water is a resource that you can buy and sell, so why wouldn’t there be a market for it? I mean, it’s harder to transfer around because it is restrictive...you can sell a tree in two by fours to South Carolina. Here it’s a localized market but it’s still a market.” My question had clearly unsettled her. A few minutes

³⁰ The designation of “wet” and “paper” refers to how much water one is allocated legally through a water rights certificate (paper water) and how much water is actually available for use (wet water). For example, in the Deschutes, Oregon’s Department of Water Resources allocates more water than is actually available, leaving rights holders with certificates for the stuff, but no actual ability to use it. The division between “wet” and “paper” water also means that much of the politics around water and water rights involves the trading of rights and money without any significant changes in actual water use. Water, in this case, becomes a virtual commodity with little relationship to its actual transport through the canyons and pipes of the waterscape.

later, after we had changed the subject, she spoke up again, “[Water] is something with a value that you can buy and sell, so why can’t you have a water market, that’s my only question.”

The DRC positions itself in the water management world as an entity that trades water according to market principles. But ambivalence and unease characterized many of my private conversations with DRC staff, who tended to both appreciate and mistrust the tools offered by water marketing strategies. For Jude, the term water market itself was inappropriate in adequately representing water’s materiality. For Lisa, challenging the paradigm of water marketing presented a quandary that visibly upset her. Shelia, another DRC staff member, expressed a similar inner tension, said that she recognized that the DRC’s strategies often worked to achieve the goal of augmenting instream flows but was troubled by the instrumentalism, confiding in me that “Yeah, I often find the work soul-sucking. I miss being with the river and not thinking about it as CFS.”

At a city council meeting Rolf testified in support of an irrigation district that, to the dismay of landowners, had chosen to enclose its irrigation canals in pipes (see Chapter 4). Rolf defended the district on ecological grounds, commending them for making a decision that would save water and enhance instream flow. But in the office the next morning he had dark circles under his eyes and was visibly troubled:

You know, we were just too slick, and we didn’t answer their [anti-piping proponents] concern, which is legitimate. They noted that there are canals all over the place that go through farmland that could be lined to conserve water, and why this stretch of canal? Because it’s a hydropower project. And it is a

hydropower project. But that's because it's cost effective – the project wouldn't be cost effective if it wasn't for the hydro, but we intentionally didn't talk about that and I just feel dirty about the whole thing.

Rolf worried that by defending the district he had been dishonest with the public, describing irrigation districts as environmental altruistic rather than acknowledging that they behaved in ways that were economically advantageous. He said with dismay, “I feel like the DRC brand has been tarnished by this...I wonder if we haven't ruined our reputation.”

The DRC and UDWC staff is primarily composed of white, college-educated self-defined environmentalists, who, in order to engage in local water politics, feel obliged to work in a system that they may not fully believe in. Perhaps some of the expressed uneasiness, then, can partially be attributed to a sense of “selling out” to corporate interests and a mechanistic view of the watershed in order to make strategic environmental gains. Regardless, all of these exchanges indicate the affective dimensions of more-than-human encounters. It is clear that these respondents do not express hegemonic environmental beliefs or sentiments, but are instead wrestling with complex feelings around managing their personal and work priorities. In drawing attention to their ambivalence, I highlight the importance of feelings as central to socio-nature relations. Although not yet emerging on the surface of contemporary water dialogues, they indicate a perhaps growing friction between dominant water discourses and direct engagement with local waters.

Invoking the Deschutes

I began this chapter with a physical description of the Deschutes Basin in order to make the case that the waterscape's materiality is central to the making and adoption of its residents' water practices. Its peculiar geography and unique ecologies matter when it comes to understanding the movement of its waters and they matter to the ways in which those waters are represented by various interests. In the remainder of this chapter I turn my attention from the river itself to representations of it. People engaged in water politics recognize, rely upon, and utilize different visions or perceptions of the waterscape in order to motivate particular practices. These representations do work in (re)creating the waterscape, and they do work in normalizing particular feelings with respect to nature. I focus on two distinct representations most frequently utilized by policy makers – the Deschutes as a natural and wild phenomenon, and the Deschutes as an engineered and highly managed irrigation system.

The Deschutes – Special, Peculiar, and Natural

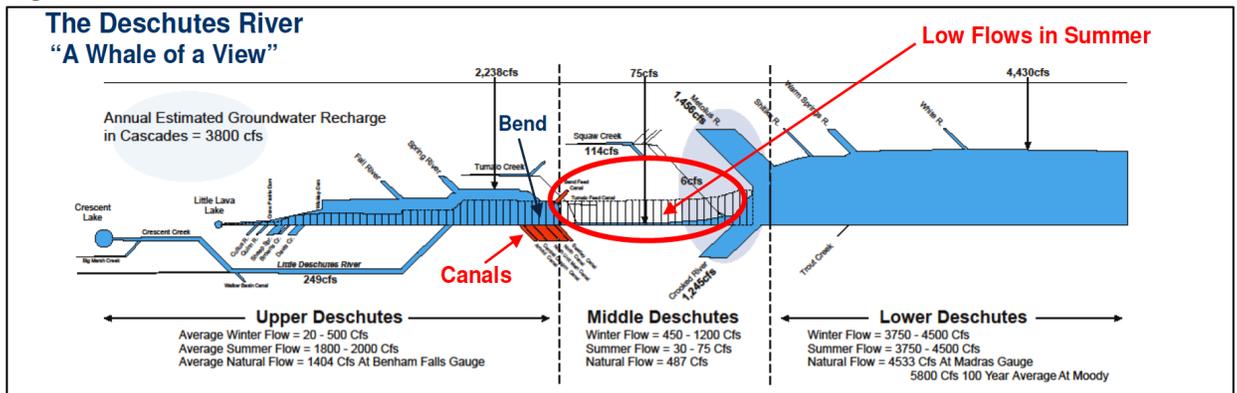
As the main institution governing water in the Deschutes basin, the DRC puts significant effort into maintaining their organization's reputation. At every Monday morning staff meeting, one of the main topics for discussion involves public relations. What should be included in the monthly newsletter? How should we advertise the big fundraising events of the year? How should the website and blog be updated to better capture the work that the DRC is doing? These are conversations that occupy as much, if not more, staff time than talk of the actual operations, such as leasing

projects or financial updates. And this makes sense -- as a public and government-funded institution, the DRC's success hinges upon convincing the public that the Deschutes needs its expert management.

In promoting their organization and its activities, the DRC pulls on a particular natural imaginary of the waterscape – describing the river, with its unusually consistent flow regime, as a unique ecological treasure whose peculiar attributes necessitate specific management practices. During one of our first meetings, Sheila, program manager for the DRC, sat me down in one of the conference rooms and showed me an illustration of the “Blue Whale,” a map created by Bob Main, Central Oregon’s previous Watermaster [see Figure 2, below]. The Blue Whale graphically illustrates the flows throughout the Deschutes Basin, with the width of the river corresponding to the magnitude of river flow. Main called it a “whale” because he thought the image resembled one swimming downstream, with the head disappearing beyond the page. The tail of the whale is severed; once it reaches Bend the water dries to a trickle, not regaining its bulk until it arrives at Lake Billy Chinook by Madras. The image makes clear two main points. For one, it illustrates the thirsty water demands of irrigation districts. During the irrigation season, close to 90% of the streamflow of the Deschutes River is diverted through irrigation canals, and this is marked by the abrupt disappearance of water from the diagram. The main irrigation diversions occur just outside Bend, reducing the summer flow of the river to about 2% of its natural flow, and winter flows to about a third.

Secondly, the diagram illustrates the importance of groundwater recharge to the river flow. The whale regains its mass right at the Pelton Round Butte dam complex, where the Metolius and Crooked Rivers dump back into the mainstem of the Deschutes. These tributaries only supply about half of the water that returns to the river. The other half comes from underground water that percolates into the tributary (groundwater recharge), most of which originates in the high Cascade Mountains.

Figure 3: The Blue Whale



Accessed deschutesriver.org

Although the Blue Whale diagram can be used to illustrate the impact of human water-use activities (e.g., irrigation withdrawals), in its public meetings and news releases, the DRC primarily uses this image to underscore the unique natural characteristics of the river. For example, at a city council meeting, Sean, the director of the DRC, emphasized the river's peculiarity in an attempt to convince council members to support one of their initiatives:

I'm going to jump back for a second – we live in a desert, we get ten inches of rain a year [but] we have the largest spring fed river in the US, maybe the world. This is a peculiar and extraordinary river...we need to take this seriously...it's a matter of distribution rather than real scarcity...

In an interview, Sean reflected on this strategy, "I'm going to start talking more about the peculiar nature of this river and its uniqueness to get people to value the river for the river...this is an unbelievable resource, this is not just any old river, it's really special, and people don't get it as really special. So part of my job is to explain this treasure, this natural heritage that is very special. That doesn't resonate with everyone, but it will with some and it's important to say."

This particular imaginary is one that underscores the "natural" characteristics of the basin and as such promulgates images of the Deschutes that are devoid of obvious human influence. Websites of the environmental organizations in town adopt a parallel strategy, referring to the unique nature of the Deschutes in order to urge people to protect and steward the watershed. A documentary of the Deschutes River produced by a local filmmaker issues a similar sentiment. The film's trajectory moves from vivid footage of the river's unique spring-fed system to the many ways the river's health has been compromised over time by human involvement. The filmmaker urges viewers to support initiatives that can reinvigorate these natural springs and "mitigate the damage that man has wrought on this magnificent river."

The Deschutes is indeed unique. I spent many days exploring the upper reaches of the river, finding myself falling through what I thought was solid ground into spongy wetlands, stumbling into unmarked springs welling up from the brush.

Accompanying Ian on his watermaster rounds I visited a number of little springs, one of which gushed so dramatically that even he was surprised by the quantity of water emerging from the ground. I asked Ian if he was familiar with all of the springs feeding the mainstem of the Deschutes and he laughed, “No!” The filmmaker who had spent the last year devoted to exploring the many reaches of the Deschutes River responded similarly. He said that in his travels he had seen a lot, but had not managed to locate all of the many springs attributed to the Deschutes. In this regard, I found the unique characteristics of the Deschutes to demand a certain respect – here was a partially unmapped river, with pockets of water emerging in unlikely places. The mystery of such things can be romanticized, but it is also a reminder of the many ways in which the more-than-human world elides human comprehension and has its own peculiar character, histories, and movements.

In this regard, it may be no surprise that policymakers and environmental advocates alike would invoke the peculiar natural characteristics of the Deschutes in order to urge citizens to adopt a particular understanding of place. Websites of environmental organizations rarely show photos of working landscapes; instead, they display images of pristine and wild waters, spring-fed waterfalls and snow-fields melting into streams. These are images that do discursive work, and deconstructing similar nature-based narratives and examining the power dynamics that hold them in place is a central project in political ecology. Scholars in this field have demonstrated how the positioning of a nature devoid of human influence has contributed to the erasure of Indigenous peoples and of local livelihoods, and upholds a conservation

ethic that links environmentalism with preserving space rather than enhancing ways of sustainably living together (Jarosz, 1996; Peet, 2004; Peluso, 1993; P. Robbins, 2004).

We can see the utilization of such a natural imaginary at play in the Deschutes. Despite the fact that the waters of the Deschutes are continually plugged and released to accommodate human irrigation projects and as such can be considered anything but “natural,” the use of a romantic nature-based rendering of the Deschutes operates as a useful strategy. For example, the fliers and promotional materials created by Bev, the communications director for the DRC, depict beautiful nature images, with the slogans “we love our river” or “healthy rivers=healthy communities.” Bev told me that these images work to elicit an appropriate environmental response. Shortly after the notorious fish kill, she and I had a conversation about successful PR strategies and how to respond to the event. She thought she might wait before responding because “no one wants to see pictures of dead fish.” In this regard, Bev worked to position the Deschutes as a natural, unique and wild place in order to encourage citizens to behave in particular ways (e.g., supporting piping projects, financing conservation efforts, etc.). These efforts can be considered a form of “environmentality” where discursive forms of power are involved in creating citizens who are concerned about the environment (Agrawal, 2001).

But while useful in shedding light on the ways in which the making of the environmental citizen is a power-laden activity, theories of environmentality tend to

leave out the ways in which everyday embodied experiences of relating to and within the waterscape matter when it comes to maintaining human subjectivities and environmental relations. In demonstrating the importance of this claim, I highlight a second invocation of the river, and the ambiguity around it, to offer an additional perspective on hybrid natures and environmental relations.

The Deschutes – Plumbed and Engineered

“The future use of this...abundant water supply, large area of irrigable land, and great water powers will transform the Deschutes Valley into a region whose agricultural importance will be enhanced by the many hydroelectric plants that will furnish power for local use or for transmission to distant power markets” – *The Deschutes River: Its Origin and its Utilization*, 1914

In all of my wanders and conversations, I picked up on a key way in which those actively involved in water politics understood the waterscape. My interlocuters referred to the basin as “plumbed” and they used the term “waterworld” to describe the political and material relationships that interfere with the transportation of local waters. Bev explained the origins of this reasoning: “Every year they [the Department of Water Resources (DWR)] literally turn the river on and off.”

One day in May I had the opportunity to witness the plumbing of the river first hand. I accompanied Ian, the Department of Water Resource’s watermaster, to Wickiup Reservoir, the main storage facility for Deschutes irrigation districts’ water. Each spring when irrigation season begins, the watermaster opens the headgates to the reservoir to release water for irrigation demands. This year the complaints of downstream residents who face the risk of annual floods had shifted Ian’s headgate protocol. Rather than open the river’s flow up to full capacity all at once, he tried to

spread out the release of the water over a week or more to accommodate a more gradual rise in the river.

When he asked if I wanted to take a turn at the wheel I jumped at the opportunity. It was an exciting prospect, but in reality it was hard work. Each turn of the heavy wheel made me gasp with effort, and because the water release happens slowly, I did not get to see a dramatic gush of water emerge from between the steel plates. Ian leaned against the railing, watching me and soaking up the sunshine; “I don’t usually get someone else to do this job for me. Are you sure you’re still doing okay?”

I nodded and gave a quick smile. “Yeah, it’s warming me up.” I had gotten chilled from the open windows of the truck during our drive from his office in Bend up to the reservoir. But really I wanted to get a sense of what it felt like to regulate a river. At that point, I had spent many months exploring the Deschutes. I’d swam in it, wandered along the banks, picked cattails and spotted great blue herons. I’d bicycled along its paths and watched the fish catch flies at sunset. I’d seen kayakers take advantage of the surfing wave just north of downtown. I tracked the rise and fall of the river, and of the irrigation canals that crisscrossed through town diverging from the mainstem of the Deschutes. And now I was playing an active role in its flow regime.

The conception of the watershed as one that is plumbed operates quite differently from the natural imaginary that I describe above. For one, it promulgates a form of expert knowledge that legitimizes the work of the DRC and assumes the

“public” to be ignorant of their local environment. For example, I asked Gil, a federal employee for the state’s Fish and Wildlife Services, if he regarded the basin as plumbed, and he responded, “Oh yeah. Most people just don’t see it. I think most people looking at the river don’t see a modified system...they don’t get that everything they see in front of them is all controlled by rebar, gates and valves.” Tess, a volunteer for the Deschutes Land Trust and a retiree who relocated from California to Sisters speculated that while those “who rely on irrigation water” probably experience the river as engineered, “my guess would be that people coming to Central Oregon for a vacation, they don’t think about [the human modifications] at all.”

At a monthly DRC board meeting, Bev explained her communications strategy in terms of her understanding of the general public as unable to grasp the complex water politics at play in the Deschutes: “Lay people can wrap their heads around simple messaging...The work we do here is very technical, but it’s how we connect to general people [that matters].”

In my own conversations with locals, I found these observations to be somewhat warranted. Rarely did I speak with a resident who described the Deschutes as intensively managed. A week after my field trip with Ian, a long-time Bend resident took me to one of her favorite spots to hike along the Upper Deschutes. The water was so high that a few places of the trail were washed out from the overflow. The woman observed the high flows and said, “Wow, all this hot weather must be melting the glaciers. The river’s so high!” Her assumption that the river had swelled from snowmelt runoff was a good one – I may have suspected the same had I not

been with Ian a week earlier wrenching open the steel headgates. Even having had that experience I still found it difficult to wrap my head around the river's bizarre flow regime, where the flows increased in the summer time and slowed to a trickle in the winter. As Grant said (although he was speaking about the river's natural, not engineered, flows) it went against everything I thought I knew about rivers. Even a few weeks later I overheard a DRC staff member describing a recent rafting trip that was possible thanks to the high flows and without thinking I asked, "Because of all the snow melt?" "No," he replied, "irrigation demands." I was embarrassed and said, "Oh right, I should know better" to which he responded, "Yeah, nothing is natural on this river."

Conflicting Narratives

In his famous essay, "Ideas of Nature," Raymond Williams describes the idea of nature as something that has changed over time, carrying with it "an extraordinary amount of human history" (1980:68). In tracing the idea of nature from antiquity to the modern period, he illustrates how nature had been considered something essential to the constitution of the world and thus to human-beingness, but came to be viewed as something separate from humans, with laws that can be manipulated for human benefit. This conceptual separation emerged historically, amidst the growth of modern science and the increasing naturalization of the capitalist market system.

In the section below, I describe how contemporary conceptions of nature and their historical underpinnings play a significant role in the management of local

waters. As Williams illustrates in his essay, certain conceptions of nature come to dominate environmental discourses and activities. The theory of environmentality describes how these hegemonic conceptions contribute to the disciplining of the environmental citizen. If nature is that which is separate from humans, then appropriate environmentalism prioritizes behaviors such as safeguarding remote, “pristine” landscapes and overlooks environmental justice issues in urban centers. But I argue that the theory of environmentality, while useful, cannot fully account for the emergence of various forms of environmental governance. Conceptions of nature are continually being contested and the environmental leanings of the human subject complex. How can we fully capture the multi-faceted environmental leanings of the human subject? I suggest that attending to peoples’ felt encounters with both ideas of nature and with their local ecologies can help us in this regard.

The complexity of the environmental subject and human perceptions of nature was evident in the ambivalence expressed by water managers and citizens, who were troubled in their attempts to reconcile two very different representations of the river – that which they idealized and that which they touched. For example, when I accompanied Ian on his rounds in the upper basin, I was consistently impressed by his ability to read the water. At one point in our journey he stopped and pointed to a mass of lumber that someone had placed in a tributary to plug and divert the water towards their hay field. “Look at that! That’s practically five CFS that they’re [illegally] diverting! That’s a lot of water.”

When I asked him how he became so skilled at seeing water in CFS, he shrugged and said, “That’s just how I think about it now.”

“What about when you’re knee deep in the water in a beautiful place?” I asked, knowing that he spends quite a bit of time wading into the river in waders to measure the river flow.

“I wish I could say, yes, I feel differently, but actually I don’t,” he responded, “I still see it in terms of CFS.”

That Ian wished he could say yes speaks to a certain inner conflict, what I would describe as ambivalence or discomfort, that several interviewees also expressed in relation to perceiving the basin as plumbed. Sheila, DRC Project Manager described her shift in perspective that occurred after working with the DRC: “I now see the river as heavily modified,” indicating that this diminished her enjoyment of it. Ash, a field worker with the Upper Deschutes Watershed Council (UDWC), echoed this perception: “I experience [the river] as plumbed... every fish that enters this basin goes through a selection facility and is tagged and then every fish that comes back gets trucked around... Every drop of water in this basin is managed, and I guess I don’t see that changing... It’s fun to be on rivers that aren’t dammed. This just isn’t one of them.”

Seth, director of the UDWC, referred also to a sense of loss in coming to terms with the highly modified plumbing of the basin:

Personally there are few segments [of the river] that I go to that don’t make me sad because of [the human impact]. Every day I think about it...It’s hard for me to see a segment of river without seeing how it’s been hammered...I think ignorance is bliss for a lot of those folks [who recreate on the river].

You know the river is pretty because it's green right now but why is it green? Because of all the leaky septic systems in La Pine. It kind of ruins it for you!

These responses from waterworld participants touch on important themes regarding human relationships with the more-than-human world. For one, they acknowledge a tendency to value that which is natural (enchanted) over that which is technological (waterworld), thus reiterating a familiar nature/culture polemic. Based on Agrawal's (2005) framework, we might engage with the discursive positioning of the river as natural as a way in which technologies of government (in this case, in the form of environmental governmental agencies and the governmentally funded water bank) help produce environmental subjects by normalizing images of a human-free nature as that which should be prioritized in conservation activities (eg., a good environmentalist/citizen is one who values the unique nature of the local river and attempts to safeguard it).

This discursive positioning is something we do in fact see in the Deschutes. The DRC's brochures display glossy photographs of bubbling springs and lush rivers, not dam complexes and dry drainage canals. Although both scenarios exist in the Deschutes waterscape, it is widely recognized that the contemporary environmental citizen cares about nature more than about industry; thus the DRC and other environmental organizations use these nature images to promulgate their initiatives.

But while the notion of environmentality may help us to better understand how environmental behaviors are shaped and disciplined, via the DRC's communication strategies or other public venues, it does not attend to the affective

nature of individuals' relations with the more-than-human world. That the water managers above expressed conflict and ambivalence around managing both their "expert" knowledge and their intimate experiences of the waterscape highlights how everyday embodied practices, in addition to environmental discourses, work to shape local subjectivities. Theories of environmentality point to the ways in which decentralized governmental policies produce intended consequences, namely, a subject position that adheres to particular environmental conservation priorities. But ideology works, or doesn't work, at the level of the body, and thus the discomfort, inner conflict, disappointment, and frustration that interviewees expressed around their interactions with the river are equally important to their decision-making around water policies.

For water managers, navigating waterworld, although deemed necessary in order to get work accomplished, can be a conflicted experience. They know that pure, wild natures are fictions increasingly impossible to maintain. And yet they also yearn for a nature that exhibits fewer signs of human involvement. For example, an employee of the UDWC told me that she prefers to kayak on undammed rivers: "It's nice to know that water is just coming out of the mountains and that the system is free flowing and the system is as natural as anything gets in our ecosystems." But when I asked her if it feels different to kayak undammed rivers, she responded, "No, it's just a matter of getting to be part of something that I know is wilder." For this woman, as well as for the UDWC director, the experience of a wild, pristine nature is longed for,

but is wedded to a particular epistemological understanding of the world -- one that their expertise in waterworld prevents them from embodying.

This inner conflict, expressed primarily by those who are professionals in the environmental arena, may be an increasingly common phenomenon. It speaks to an important moment, wherein deeply conditioned natural imaginaries and environmental subjectivities clash with the modern hybrid world. How much longer can spokespeople elicit visions of a pristine nature that they know does not exist in order to support projects made necessary by a history of human involvement? As noted above, water managers and policy makers acknowledged that communication strategies were tricky in this regard; they needed to be both reductive and complex in conveying “simple messaging” about a basin that has intensive and complicated human management practices.

The retired watermaster for the Deschutes watershed described the river as “[doing] a lot of work without losing its character.” Thanks to a need for complexity and a wish for simplicity, DRC staff and other water advocates were often conflicted around the ways in which they chose to communicate particular conceptions of the river to the wider public. Should they emphasize its “character” or its “work”? In order to gain public support for their initiatives, DRC staff members want people to understand how compromised the river has been thanks to human modifications, underscoring the waterworld version of the waterscape. On the other hand, they also want people to recognize the river’s unique and peculiar nature, emphasizing its more-than-human qualities and agency. Sheila spoke to this quandary around

communication efforts, asking, “How do you get people to understand waterworld without losing the enchantment factor?” As Williams puts it, the romanticizing of pristine landscapes conceals the ways in which these places have been, intentionally or not, shaped by human activity. He writes, “To speak of man ‘intervening’ in natural processes is to suppose that he might find it possible not to do so” (1980:74).

Perhaps one way to address this quandry is to suggest a different story that can account for the multiplicity of ways that humans experience the waterscape. For example, Tess, a rural landowner, referred to how her new understanding of Deschutes infrastructure influences her experiences of nature: “I can do both – I can walk Camp Polk and Whychus [two areas in the Deschutes that have been restored with help from the Deschutes Land Trust] and experience the wilderness aspect, and there’s the part of me that wants to see it as natural because that speaks to my soul. And then there’s the pragmatic part that says, I saw them dig these channels...I think it’s an interesting tension there, even for people who are reasonably well informed.” Tess describes the meeting of these two experiences as characterized by “tension.” But she also admits that “she can do both” – experience nature as wild and nature as maintained.

Scholars have proven the nature/culture polemic to be inadequate in helping us address and understand contemporary environmental problems (Davis & Zanotti, 2017; Haraway, 2008; Latour, 2013). The world is continually being co-constituted by humans and non-humans, as is inferred by the idioms of “naturecultures” (Haraway, 2003), “heterogenous networks” (Latour, 1987), and “human-nature

hybrids” (Davis & Zanotti, 2017). At the same time, we see from the communications quandaries faced by water managers, categorical divisions between nature and culture, city and country, and human and wilderness are deeply embedded in environmental epistemologies. As such we are forced to contend with the ways in which they influence water politics. But the ambivalence and confusion expressed by citizens and water managers around this polemic also indicates a structure of feeling – brewing beneath the surface of culture-nature binaries are potentially new ways of understanding and participating in the world.

Sean, for example, said,

From the very beginning we always refer to it as plumbing, this is a basin that’s plumbed, and that plumbing has affected the river’s ability to manage its ecological processes. It’s hampered and hindered from managing its sediment, its fish, its insects, all those things. So we see our [the DRC’s] job as bringing it back to life. Because it’s dead in some parts...I see our job as creating ecological conditions in the river so that it can repair itself in the long run. I’m never looking at natural flows, but how can we get it to the place where there is sufficient floodplain, where it can support insects, vegetation, get it to a place where it can take care of itself. It is artificial, it’s broken, and it’s our job to get it back to that.

Sean’s understanding of the river does not fit neatly into hegemonic environmentalist discourses that pit nature against culture. He describes a river that is both active and passive, reliant on human intervention but someday able to “take care of itself” and “manage its ecological processes.” In a similar vein, Jonas, restoration director for the UDWC, described the subjective nature of restoration:

Yeah, what are you restoring to? Yeah, you live in the land of compromise. We have what we have to work with. The plumbing question – we can’t go back to the natural hydrograph. That would be great! So what can we get from the altered hydrograph? Even the Camp Polk projects, which I call pure

restoration, there's no roads and bridges and you can let the creek do what it wants, the creek still doesn't have the water it had historically. It has a new flow regime. So I say that's natural, but it's natural with the fact that 80-90% of the flow between May and September is getting yanked out and thrown on the fields. So it's a compromise, but after a while you end up taking it for granted because you can go black and white and say take all the water from the irrigators and put it back in the river and I say good luck. That's not something I'm personally interested in because I don't see the merits or a positive outcome coming out of that...[It would just be] pissing people off.

In this passage, Jonas describes the waterscape as something that is dynamic and contingent upon its human and technological relations. According to Jonas, this isn't necessarily a bad thing; instead, it's "natural." And while some may want the hydrograph to return to one that existed pre-dam, he acknowledges that this scenario is unlikely. Instead he focuses on repairing a flow regime that is deeply embedded in human-nature practices and relations. This vision of nature entails compromise, and this compromise is clearly one that takes place between the two versions of nature outlined above (that of a wild, unique river and that of a plumbed basin). Other water users and managers described a similar hybrid nature. For example, Ash said:

I think we can restore a lot of function without having to unplumb the basin. It sounds like there are different strategies like off channel reservoirs that would make water use more effective but at this point returning as much water to the river at the right times of year, restore a hydrograph that at least mimics the historic one would be a good outcome.

While these passages may indicate a paternalistic tendency to claim human control and responsibility for the making of the waterscape (rather than recognize the river's own role in the matter), I call attention to these responses in that they do not

adhere to fixed notions of either a waterworld devoid of natural agency or that of a wild river untouched by humans. They instead invoke a waterscape that is relational, historical and hybrid. These responses thus do important work in demystifying and deconstructing dominant dualistic visions of nature, and perhaps portend a new form of environmentalism appropriate for the Anthropocene.

A Final Example: Irrigation Canals and Seasonal Streams

Throughout this dissertation I make the case that, despite being rendered invisible in water policy dialogues, feelings are central to local water politics. I began this chapter by introducing us to the Deschutes waterscape and documenting its human and geologic history. I suggested that we cannot isolate humans from the landscape, but instead consider how we are entangled with each other – our existence is based on our relations and our moments of encounter. In addition, encounters have reverberations that are always felt, in the form of emotions, feelings, and sensations, and these influence and inform local water practices.

I close this chapter with an example of a heated water debate in the Deschutes waterscape (that, at the time of writing this dissertation was continuing to rage) in order to demonstrate how communication strategies ultimately play out on this complicated and affective terrain. The conflict revolves around capitalist enclosure of natural resources, but alludes to much more, including discourses of nature, the affective power of such discourses and the ways in which humans make sense of place, themselves, and each other.

The grounds for the debate are couched in what, on the surface, appears to be a sensible water management strategy. Close to 90% of the Deschutes River flow is diverted through irrigation canals that carry water from the mainstem of the river to land owned by farming and ranching patrons. Half of this water is lost in transit because it seeps through the porous volcanic soil before reaching its destination. The DRC has thus financed large scale piping projects for five of the eight irrigation districts in the basin.

Un-piped irrigation canals resemble little streams, although rather than having been whittled down gradually by water's erosive properties they were carved out at the turn of the 20th century by humans who blasted the rock and dug with shovels and machines in order to transport the blue gold to irrigation district patrons. Piping the canals often takes one of two forms. In one, the canal is submerged beneath the ground in a steel sheath and covered over with dirt. In the other, a pipe is placed directly in the canal and is covered over, resulting in a steep mound of earth snaking the grounds where the stream had once flowed.

While being an expensive and time-intensive process, canal piping gives irrigation districts a significant boost in terms of streamlining their operations. For one, piped canals provide irrigation districts with pressurized water, which saves the irrigation district energy costs and also gives them opportunities to create small-scale hydropower facilities. In addition, in exchange for DRC funding the piping projects, the irrigation districts agree to put the saved water back into the streams and river,

helping to support aquatic species and ecosystems as well as to accomplish the DRC's mission statement of restoring streamflow. DRC staff members describe recouping this water as a win-win situation.

It may come as no surprise to hear that irrigation districts are motivated to pipe their canals for reasons beyond enhancing ecological integrity. The DRC operates a water bank and a leasing program because they recognize that irrigators and their district managers are not likely to voluntarily cut back their water use to "Give back to the river [they] love" (the DRC's campaign slogan). Irrigation districts did not start lining canals until the DRC secured grant money to pay them to do so, and in one-on-one conversations farmers didn't hesitate to share with me that their primary motivations for agreeing to pipe were to avoid potential ESA litigation and to reduce their pumping costs. Jess, a farmer in Three Sisters Irrigation District, said candidly, "There's no way we would have done it [piped our canal] if we hadn't seen what happened in Klamath Falls [where ESA litigation limited irrigation withdrawals]."

That irrigators and their district managers may be motivated by their pocketbooks more than by a moral commitment to nature is perhaps unsurprising. The DRC's trademark approach is one of market-based environmentalism, where environmental outcomes are achieved by translating nature into a commodity with market-based values and by creating economic incentives for corporate interests to be more environmentally responsible. As I noted in Chapter 2, this dynamic has often

been a difficulty one for DRC staff members, who wrestle with their decision to put a price tag on nature.

Despite interlocuters' expressions of ambivalence and unease, the piping initiatives are often presented to the public as a cost-benefit no-brainer. The river gets more water to support ecological health, farmers and ranchers get pressurized, reliable water combined with the security of avoiding federal involvement over ESA listed species, and irrigation districts often manage to set up small hydropower facilities on their new pressurized systems, providing them with an extra income source. And it's all financed by the DRC's grants. But across the watershed, landowners have consistently pushed back against the piping initiatives. While true that the projects significantly alter the waterscape (substituting glittering streams with mounds of landscaped earth and bicycle paths), the streams, as pretty as they are, are seasonal. When irrigation demands dry up in the winter, the canals quickly transition from glistening waterways to muddy ditches lined with trash. That said, property owners have sued irrigation districts, protested at public council meetings, and voiced their anger by writing editorials in local newspapers, all in the hopes of stopping the piping projects.

In simple terms, the canal piping debate illuminates a claim made by cultural geographers – that emotional attachments to place are fundamental in providing a sense of self and of belonging (A. S. Cheng, Kruger, & Daniels, 2003; Yung Patterson, Michael and Freimund, Wayne, 2010). In formal and informal interviews, Deschutes residents nearly always (unsolicited) spoke to their love for

their home place. Many declared their love for the river or the area in general in straightforward terms (e.g. “I love this place,” “I never want to leave,” “When I went to the Meadow Creek [along the upper Deschutes] I knew this is where I would settle down.”). In describing their relationships with place, they often identified with it in terms of their sense of self or belonging. For example, people told me, “I’m someone who fishes, so of course I love it here,” “My family has farmed this land for three generations,” and “This place really speaks to me. I feel at home here.” One resident described herself as an outlier from those in her community, confessing that she never had felt at home in the Deschutes. She said, “I’ve never felt comfortable in the high desert. Once my kids move out, I’ll head back to western Oregon.”³¹

In the case of the canal piping initiatives, we can see how significantly encounters with and relationships to place matter. The magnitude of anger and emotion expressed over these projects signifies more than an allegiance to a natural imaginary; it indicates just how deeply certain landscaping projects threaten peoples’ sense of place, and concurrently, their sense of self. For example, at the city council meeting held to discuss the Juniper Ridge piping project, one irate landowner was so upset he could hardly speak. When he did manage to express himself, he said,

Suddenly, last summer, with just two months notice, we were given a notice from COID (Central Oregon Irrigation District) stating their plans to destroy the crown jewel of our community. They had previously done the same

³¹ I thoroughly enjoyed talking with this woman, who I met in the waiting room at a doctor’s office. The city of Bend, where she lives, is known for its outdoor recreation and community of young, sculpted athletes. The woman I met said that as a form of rebellion to the local culture, “On beautiful days I get inside and pull the blinds, go to bed and watch Netflix.”

downstream with Phase One [a previous piping project], replacing several miles of open canal and a thundering waterfall with a graveyard. They scorched the earth, creating a hydroelectric plant as a revenue generator for themselves and their customers... [In this projected project] COID chose the most pristine, historically intact and unique three quarter stretch in the whole system to destroy.

Another citizen's testimony began with him describing himself, "Our family with five daughters chose twenty years ago to settle along the Pilot Butte canal. Quiet setting, open spaces, wildlife, natural beauty. It was livability that brought us here, and we paid a significant premium to live along the canal." The open canal in this case is more than a natural feature; it is a central way in which this man understands himself, his family, and his relationship with the waterscape.

But attachment to place is just one reason that landowners may adamantly defend the open canals. The citizen above noted that he paid a significant premium to live in his stream-side home, and a considerable portion of the Juniper Ridge hearing was devoted to addressing the economic anxieties faced by landowners who worried that their real estate values would plummet if they no longer showcased a waterfront patio in their backyards. In these cases we see how the production of place plays out on capitalist terms, where district managers and citizens alike are motivated by economic gain.

Regardless of whether pro- and anti-piping advocates were more motivated by environmental altruism, economic profit, or place attachment, their public testimonies demonstrated a level of emotionality and passion that I had rarely encountered in more professional resource management arenas. The city council meeting room for

the Juniper Ridge hearing was packed to the brim with residents, irrigators, environmentalists, and real estate developers, many of who clapped, cheered and hissed at the various speakers. It appeared undeniable that the issue was an emotional one, and in interviews even a year later I found that the level of animosity or solidarity directed towards various individuals and their testimonies had lingered in the community for long after the meeting had adjourned.

This observation underscores one of my main points, which is simply that decisions and debates around water are often accompanied by strong emotions, and that the intense emotional testimonies of irrigators and residents alluded to something much more precarious than a backyard irrigation canal. The upset, rage and disdain can be seen as reactions to economic anxiety about the future, to a sense of powerlessness in the face of an inequitable water law, or to ways in which a person's sense of self is deeply related with and to their local place. Whatever the source, I suggest that the tracking and attending to the emotional valence of water issues may be necessary for peaceable and equitable water management.

But we learn even more when we dig deeper into the operation of affect – the *how* of emotions rather than the *why* of them. Residents and irrigators alike translated their expressions of care, anger, confusion and frustration into specific arguments for the establishment of specific landscapes. In this regard, we see an ironic similarity between proponents and objectors, both of whom mobilized hegemonic visions of nature and notions of the “ecological good” to make their arguments. But in a surprising twist, while evoking the essentialist, human-free visions of remote, wild

landscapes that have characterized contemporary environmentalism, they simultaneously described a nature that is hybrid. They promulgated visions of a pristine nature while concurrently acknowledging the ways in which the natural world is (re)produced through human activities.

As I note in the introduction, a number of scholars from diverse disciplines have endeavored to challenge the divisions between nature and culture, demonstrating the impossibility of examining either one in isolation (Haraway, 2008; Latour, 2004; Lien & Law, 2011). Political ecologists have built upon these ideas, drawing attention to the ways in which nature-culture binaries routinely inform mainstream conservation practices, resulting in the marginalization and undermining of local livelihoods and perspectives. Romantic visions of the American western frontier as a wild, rugged place devoid of human inhabitants have typically colored management practices in the west, typifying the fetishism of a remote, untouched nature and reproducing and stabilizing the false dichotomy between nature and culture. But in the canal debate we see how different ways of knowing the world cannot be separated from participation within it. In order to defend their water management positions, residents and irrigators were forced to construct new forms of nature that acknowledge the human histories contained within the contemporary waterscape. For example, Matt, a golf-course owner who sued his local irrigation district over the canal piping, said:

The bottom line is you've got canals that have been here a hundred years and systems reliant on them...No one has studied environmental impacts to birds and wildlife. Fish, yes, but not deer and songbirds and raptors and all the

critters that rely on open river ways. My understanding is that piping all the canals is making problems for the rest of the animals.

In this testimony, Matt describes a nature that has been both untouched (the long-time existence of open waterways supporting wild ecologies) as well as touched (the canals were created by human hands). At city council hearings for the Juniper Ridge piping project, an angry homeowner whose property lined the Pilot Butte canal gave a similar argument. He addressed the over 200 member audience of Deschutes citizens, and described the canal ecosystem as a wild, rare, and biodiverse community: “The canal supports river otters, endangered pigmy rabbits, bald eagles, deer, foxes, and myriad bird species...and I have pictures!” This landowner, in arguing that piping the canals would jeopardize native habitat and species that have habituated to the new waterways, called upon the discursive power of nature as wild and untouched to make his case. But he also was forced to acknowledge that the landscape as having a distinctly human history.

The rebuttal coming from Central Oregon Irrigation District’s lawyer scorned the residents’ descriptions of the canals as natural, arguing that lining the canals would restore an even more authentic nature – the river itself. In addressing the concern that landowners expressed with respect to the wildlife that depend on the human-made riparian ecosystems, she said, “While I’m sure that neighbors have seen deer and possibly rabbits up along the canals, the principle habitat we should be concerned with is the habitat in the river itself. And I think that if you weigh the value

of the habitat and the 38 homes of the assessed zone, what we'll be able to do with the habitat of the Deschutes River [outweighs the habitat lost through canal lining].”

The lawyer, and others supporting the canal piping, implied in their testimonies that landowners who objected to the project were defending an artificial nature when what should be protected, and what the piping projects assist in doing, was restoring a more legitimate form of nature. They urged citizens to adopt a larger geographic and temporal perspective and recognize how sacrificing their backyard streams would benefit the greater natural waterscape. Akin to the objectors, the proponents enlisted a natural imaginary to defend their position, while also acknowledging that supporting river ecology required significant human intervention. Matt pointed out this main conundrum: “My primary objection to piping is ecological. And pro-piping [arguments] are ecological as well.”

Based on these responses, one straightforward way to understand the debate around canal piping is as a case where the normative values attached to a nature-based epistemology work to influence local environmental politics albeit in different ways. While neighbors expressed deep attachment to the beautiful (although seasonal) water feature in their backyards and all of the critters that rely on it for habitat, others articulated a loyalty to the resilience of the Deschutes River itself, positing it as more natural, and worthy of preservation, than the canal ecosystems. We saw a similar evocation of nature in the DRC's public relations strategies above.

That spokespeople rely on a natural imaginary to plead their cases (rather than admit to motivations inspired by strong emotions, attachments to place, and/or self-

interest) is important. The case of the irrigation canal debate exemplifies the positive valence of natural imaginaries, as well as their political leverage in communication strategies. In addition, it signifies the reprioritization of values in the American West that I refer to in the introduction. No longer is the landscape primarily valued for its resource productivity; ecological priorities have eclipsed those of resource extraction. Accompanying this shift is what geographers have described as the neoliberalization of nature, where facets of the natural world are increasingly assigned marketable exchange values (Braun & Castree, 1998; Davis, 2014). In many natural resource management cases, these values have become the primary lens through which different ecological states are evaluated, leading to new conceptions of what is ecologically good and creating new relations between residents and their local places.

But this example also illustrates what can happen when human-free natural imaginaries meet landscapes that have long been modified by humans. Those who opposed piping projects had to concede to a vision of nature that has an unquestionable human history – they could not characterize the canals that they wanted to save as fully “natural,” in that they had so clearly been created by human hands, the water flowing through their banks closely monitored and managed by a series of dams and water storage facilities. As one irrigation district manager explained in an interview, “It’s [irrigation is] what made the West. Everybody forgets that’s why we’re here.”

Likewise, the pro-piping advocates who defended their actions by claiming that they were contributing to the ecological integrity of the Deschutes River had to

acknowledge that conservation required human intervention – hundreds of miles of steel pipe, bulldozers, and millions of tax dollars would be needed to transform the irrigation canals from meandering streams to underground pipes. How do we make sense of these hybrid natures and the odd mix of knowledges that these ontologies require? Thanks to the multi-layered histories of human involvement, manipulation, and exploitation in all of earth's processes, it has become progressively more difficult to characterize nature as something that exists in isolation to humans. I suggest that as we plunge deeper into the Anthropocene, our natural resource management practices will have to confront the complex questions that arise when we consider landscapes as networks of relations, rather than as timeless and universal realms that exist independent of culture. This may often emerge, as we see in DRC staff members and water managers, as a kind of inner conflict and disquiet– an affective moment where the structured subject position of the environmentalist clashes with a contemporary world in which everything the environmentalist stands for (wilderness, purity, nature) has come into question. We may also begin to see more clearly through the strategic use of such nature-based epistemologies, where advocates pull on the nostalgia for a human-free nature in a time where such distinctions between culture and nature are increasingly difficult to uphold.

Conclusion

This chapter makes a number of central points that I carry through the remainder of this dissertation. For one, I recognize the multiple ways in which a river comes into being and is perceived within the waterscape, and in so doing, I underscore the recognition of nature as fundamentally a relational experience. As noted in the introduction, the nature/culture polemic is symptomatic of our relations with each other and the world, and is a central discourse with a long history in environmental management. From origin stories that begin with labor as a source of destruction in a pristine nature (Moore, Kosek, and Pandian 2003) to conservation efforts that attempt to (re)create landscapes devoid of human influence, the nature/culture dichotomy has shown up historically in a multitude of explicit and implicit ways. The American West is a prime site to witness the ways in which evaluative understandings of nature operate in a working landscape. While there is a normative call to “improve” the land (such as in making the desert bloom), a nature-based environmental discourse often erases the labor that goes into shaping seemingly natural landscapes. The concept of nature, in this sense, maintains particular identities and natural imaginaries, such as that pertaining to the environmentalist, the native, and to wilderness.

In this regard, various perceptions of the river carry with them particular affective charges. Interviewees involved in water politics expressed sadness and disappointment in recognizing the river as heavily modified, and enchantment and awe in recognizing its unique hydrogeological characteristics. These affective

components of place are central in developing subsequent communications efforts, which discriminated between different versions of the river to strategically gain public acceptance and recognition for various projects. That said, this was also tricky territory – water managers and advocates both relied on dominant discourses and resisted them. They recognized the power of natural imaginaries but also the power of intimate encounters in motivating actions, thus highlighting the basin’s hybridity.

All this points to the recognition that people’s experiential and affective relationships with place are central to understanding the success and failure of particular environmental policies. Environmental studies scholar Andrea Nightengale (2011) makes a similar point, arguing that common property debates in the field of natural resource management are dominated by approaches that understand cooperation among people over commonly shared natural resources to be “rational” and neglect the emotional and affective motivations behind peoples’ cooperation. As the Juniper Ridge case illustrates, conflict over natural resources is not necessarily fought over predictable stakes. Citizens, water managers, and irrigators alike expressed attachments to particular natural imaginaries, particular human subjectivities, and particular legacies of power.

I close with two clarifications. For one, by foregrounding intimacy and affect, I do not intend to deny the ways in which environmental discourse operates as a form of biopower (as Agrawal’s framework makes clear). Instead, I engage with affect as something that helps complicate our understanding of discourse. Sarah Ahmed asks the question, “What do emotions do?” (2004, p. 4). She describes emotions as shaped

by contact; they circulate between bodies and they tend to congeal and emerge in particular ways predicated by existing relations of power (for example, fear and/or hate that emerges in contacting someone seen as “other”). Emotions in this regard are material and discursive – they help us better understand how and why certain public relations strategies succeed or fail, and they also shed light on the political nature of feelings. And while there may be certain affective tendencies that are repeated over time (for example, an attitude of defensiveness around settings seen as natural), the encounter is something that always carries with it the opportunity for something new to emerge (Massumi, 2015); it does not foreclose certain water management decisions or limit what it is to be an environmental subject. Moments of contingency are rather seized as political opportunities. In this regard, biopower itself can be considered a participant in rather than an explanation for waterscaping practices.

In addition, while I describe the river as multiple, in that it is identified with and leveraged for particular purposes, I do not intend to suggest that the more-than-human world is simply a social construction or a backdrop to social worlds. Instead, the river intervenes in its own representation, its biophysical characteristics and movements active participants in the dynamic making of the waterscape. The Deschutes, as water machine, river of lost falls, tourist destination, and real estate asset, is central in shaping hydro-social worlds. Focusing on the encounter allows me to not lose sight, as political ecologists and cultural geographers have been apt to do, of the world’s real materiality.

Chapter 5: Affective Encounters: Salmon, Lamprey and Spotted Frogs

Introduction

I began this dissertation with the image of Oregon's largest hydroelectric project – the Pelton Round Butte dam complex, constructed on the Deschutes River by Portland General Electric (PGE) in 1962 to augment Portland's power supply. The complex is composed of a sequence of three dams that sit right at a gathering place where the cold, snowmelt from the Metolius River and the warm desert origins of the Crooked River merge into the Deschutes from the west and east respectively. At the time of the dam's inception, fish were considered a worthy sacrifice for the generation of hydroelectric power, which produces enough electricity to power a small city. A fish passage system had been part of the dam's initial design, but thanks to the anomalies in the river's currents and temperatures from the merging and stalling of the three rivers, fish could not navigate the gondola/tramway that had been built for them to be able to bypass the dam in their upstream migration. Dam operators eventually abandoned all pretense of accommodating the fish, and in the place of the historic migration runs of salmon and steelhead, they built a fish hatchery below Round Butte Dam.

In the last chapter I introduced us to an encounter-based ontology, where nature is shaped by social relations, material histories and physical conditions. This is

a nature that emerges through contact, and I argue that these encounters, although often overlooked in contemporary water management schemes, are central to water politics. In this chapter, I expand upon the theme of the encounter, and I do so by exploring the Pacific salmon. The salmon is central to water management in the west – it has been the centerpiece for contemporary environmental politics as well as emblematic of a regional identity. The monumental efforts that went into the modern redesign of the Pelton-Round Butte dam complex were primarily motivated by concerns surrounding this one charismatic creature, as were the founding of the Deschutes River Conservancy and all of the complicated water scenarios that followed the institutions' emergence.

That the revitalization of a salmon run was regarded as important enough to warrant such elaborate and expensive infrastructure raises the question: how and why has this particular critter (and not others) become an object of care in the Deschutes waterscape? I begin this investigation by documenting the history and life cycle of this famous and beloved creature, and describe the political and technological maneuvering that its existence has inspired. I then recruit theories of affect to explore how feelings about, with and of salmon (and others) are generated in the moment of an encounter, and suggest that these feelings have important political consequences.

To write about the Pacific salmon is also to write about the impact of imperialism and capitalism on the western landscape. Warm Springs tribal members maintained and continue to maintain significant cultural connections with endemic salmon. These long-standing place-based notions and practices have had to adapt to

an increasingly privatized and environmentally damaged waterscape. In closing this chapter, I return to the scene from which I began – the fish tower at the PGE dam complex. In addition to symbolizing the successes of a future where salmon are numbered, counted, and celebrated, the PGE infrastructure also can be seen to represent a history of violence and multi-species losses. This is a landscape where some and not other historical subjects matter. I present this alternative history in order to demonstrate how histories of power endure in the material landscape and are felt in everyday life.

Salmon Nation: The Biology and History of the Pacific Salmon

The Deschutes is historically home to a number of anadromous fish species classified as Pacific salmon (*Oncorhynchus*) – the Chinook salmon (fall and spring varieties), the sockeye salmon, and the steelhead trout. Often denoted as “the cultural and spiritual soul of the Pacific Northwest” (Blumm, 2002, p. 1), images of the salmon grace statues, fountains and murals in urban areas, and local tourist agencies and government offices use its picture to decorate public brochures and websites. Natives of the Columbia basin, including the Warm Springs tribal people, call themselves “The Salmon People,” and the Pacific Northwest has been referred to as “Salmon Nation,” a territory that is bounded not by political lines but by the terrain that is home to the salmon’s migration (Woody, Lichatowich, Manning, House, & Zuckerman, 2003). One of the most ancient of animals, salmon traversed Oregon’s waters for over three million years before being extirpated from their local rivers in

the 1960s with the construction of the Pelton Round Butte dam complex (Lichatowich, 1999).

But what counts as a salmon? While commonly regarded as one particular being, this fish is far from singular, in name or in number, and its iconic status is a relatively new phenomenon in the context of its expansive scope of existence. Even its unique biology gives the salmon a mysterious multiplicity. Salmon are anadromous, from the Greek anadromos, meaning “up” (ana) “running” (dromos), and this designation refers to their migration between salt and freshwater habitat. Salmon hatch in freshwater tributaries, then travel to the ocean to mature, finally returning to their birthing grounds to mate and die. This is no small feat. Sockeye and Chinook can ascend 900 miles upstream and gain a mile of elevation in their homebound return. And while the riverine journey of salmon is well documented, their ocean wanderers are less understood. Biologists believe that Chinook can travel over 10,000 miles through the cold Pacific, and during this time perhaps meet up with their Siberian and Japanese neighbors (Blumm, 2002).

After their sojourn in the ocean, which takes between one and five years depending on the species of fish, the salmon return to their home rivers to spawn. This process is also shrouded in mystery; biologists suspect that salmon use their sense of smell to guide them to and through the fresh water, but this endeavor is not fully understood (Woody et al., 2003). What is clear, however, is that these fish require very specific conditions in order to reproduce and survive. Each population of salmon, or “stock,” has adapted to the conditions of its specific home river, and thus

populations rarely interbreed, although there are cases of salmon straying between river systems from time to time (Woody et al., 2003).³²

In addition to its contingency upon local waters, the contemporary Pacific salmon is entangled with its colonial history. The first Pacific salmon cannery appeared on the Sacramento River in 1864, and within a few years, transcontinental railroads, fish traps, drift nets and weirs abetted a burgeoning industry that shipped canned salmon throughout the continent. The huge harvest of fish resulted in a steep decline of Columbia salmon runs, and lawmakers responded with policies that provided no relief for native fish runs, but did prevent native people from fishing in their traditional sites. The “salmon preserves” restricted native harvests by closing discrete freshwater areas, but kept saltwater open to fishing, allowing mobile commercial interests to simply move farther north and out to the saltwater, a practice that “foisted the burden of salmon conservation on the tribes, while allowing white fisheries in the sound and ocean to continue largely unrestrained” (Blumm, 2002, p. 6).

Fishing regulations failed to offset the effects of overfishing, and land use activities such as timber harvesting, livestock grazing, hydraulic mining and the dredging of wetlands all contributed to the decimation of salmon runs. Biologists and policy makers developed a solution to this tragedy: artificial propagation. The first

³² For those interested in more of the details: once arriving at the waterways of their inception, the female fish digs a depression in the gravel to lay her eggs, and the male, hovering close by, fertilizes them before they are covered in a protective coating of gravel. This incubation nest is known as a “redd,” and the fish that hatch (known as “fry”) become “fingerlings,” feeding on small aquatic insects until they are strong enough to swim downstream to the ocean (Woody et al., 2003).

salmon hatchery was built in 1872, in the birthplace of the first cannery on the Sacramento River, and by 1905 62 million hatchery smolt were released in the Columbia Basin, comprising 75 percent of the Columbia River run. Despite the influx of lab raised and reared fish, by 1909 the salmon harvest declined by more than one third. Fish managers responded by upping the production of hatchery fish, whose rise was met by an equal decline in commercial harvest, thanks to disease and adverse effects of hatchery fish on wild stocks. The development of large federal dams in the mid 1900s was perhaps the most devastating blow to fish passage. In the Columbia Basin, dams became responsible for approximately 80% of human caused salmon deaths (Blumm, 2002).

The history above helps situate the co-production of human/salmon waterscapes within their local ecologies and within contemporary practices of fish management. The devastating consequences of integrating salmon into the new frontier economy did not go by unnoticed. The growing environmental movement and the increasing recognition of the rights of tribal governments influenced several pieces of important U.S. legislation, which made some headway towards protecting the thwarted salmon. For one, the Supreme Court's "Boldt Decision" of 1979 reallocated fifty percent of salmon harvests to native tribes. This decision instilled panic among commercial fishermen, and federal and private funds were quickly invested into fishery sciences in order to better understand the migratory patterns of the endemic fish. The knowledge gathered in the process influenced the activities of a

second piece of legislation: the Columbia Basin Fish and Wildlife Program, a basin-wide restoration program established by the Northwest Power Planning Council in 1980 with the goal of augmenting river flows, improving fish bypass, and developing habitat protection and restoration measures to preserve and restore spawning salmon. Around this same time, a third legal decision affecting salmon populations came about: the Pacific Salmon Treaty of 1985, an agreement between the U.S. and Canada to cooperate on management and research of Pacific salmon stocks (Blumm, 2002).

Despite the best efforts of these three acts, they did little to resurrect a viable salmon population. The Endangered Species Act (ESA) had been established in 1973, and this legislation mandates that once a species is categorized as “endangered” by the federal government (in the case of aquatic species, this is invariably the National Marine Fishery Service) any impediment to their life cycle is placed under federal scrutiny. In the 1990s a coalition of environmental groups filed ESA petitions to list spring, summer and fall runs of Chinook and Coho from the lower Columbia River as endangered species and by 2000 the National Marine Fishery Service had listed 12 Columbia Basin salmon runs and 26 Pacific salmon species as endangered (Blumm, 2002).

Fish Without Rivers: The Making of the Deschutes Fish Facility

“New simplified methods of salmon egg incubation [and] predator and hydraulic control in water areas, plus the impoundment of migrating salmon at or near the rearing ponds for the artificial taking of spawn, may provide the reality – salmon without rivers” – Washington Department of Fisheries, 1960 (Lichatowich, 1999)

What did the listing of endangerment mean for the salmon in the Deschutes?

Every fifty years dams must relicense their contract with the Federal Energy Regulatory Committee (FERC), an agency with jurisdiction over hydroelectricity, natural gas, and oil pipelines. In 1995, the Pelton Round Butte dam complex came up for relicensing and thanks to ESA legislation, in order for their license to be approved, PGE operators needed to demonstrate that they could provide protection for fish passage. In many similar cases where dams that have historically sabotaged fish passage have come up for review with FERC, dam operators have chosen to truck and barge salmon over the dams rather than attempt to make salmon passage accessible in the rivers themselves. In others, hydroelectric operators determined that the financial cost of retrofitting old dams was higher than decommissioning them and they chose to destroy their old dams. In the Deschutes, the relicensing of the dam initiated not only a massive fish shuttling engineering project but a number of unique collaborations, including the formation of the DRC and its water marketing strategies. Below, I describe in greater detail the fish facility and the political history of its inception in order to set the stage for thinking more deeply and critically about the role of feelings in human-salmon relations. In this case, the dam complex brought together hopes for a Promethean future, nostalgia for a past ecosystem, and fears over federal enforcement – producing a new kind of salmon previously unseen in the Deschutes Basin.

Socio-political Entanglements and Uncanny Infrastructure

In order to appease FERC, PGE dam operators knew that they had their work cut out for them. They did not anticipate that another opponent would challenge their task. To their surprise, the Warm Springs Tribal Council announced that they planned to file a competing license with PGE to manage the entire dam complex, which sits directly on their reservation land. At the time, the tribes were the sole owners of the re-regulating dam, the smallest of the three dams in the complex; PGE owned the two larger dams. Prior to the settlement, PGE paid the tribes about \$10 million in annual rent, but the income of the dams enjoyed by license holders was approximately five times that amount (Jud, 2006).

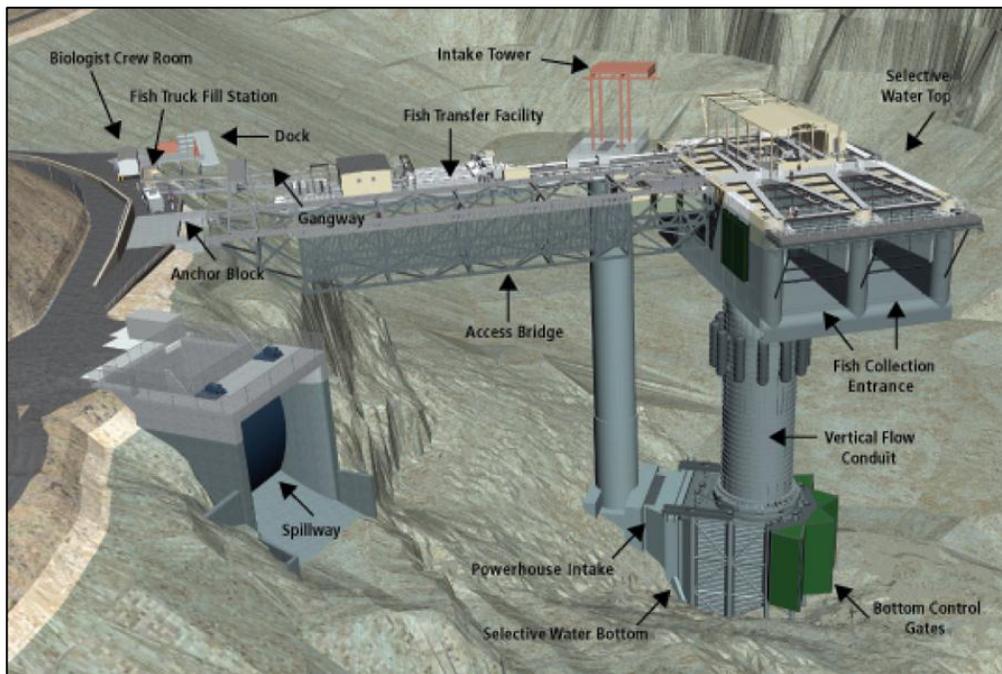
According to the Warm Springs tribal members that I interviewed, PGE representatives were skeptical that the Warm Springs Natural Resource division could produce a proposal that would be on par with what their own fleet of well-bred biologists and hydrologists could come up with. But when they saw a rough draft of the Warm Springs proposal, they recognized quality work that had a good chance of competing with their own. To avoid the possibility of losing their entire operation in the stand-off, PGE suggested an alternative: the corporation and the tribes could file a license together, and in the process the tribes would gain one-third ownership of the entire complex with the opportunity to purchase it in its entirety by 2029 (Wright & Bell, 2014).

The Warm Springs Tribal Council agreed, and subsequently the two entities came together to develop the terms for the shared relicensing proposal, the results of

which I document in the opening to this dissertation. Rather than either dismantle the dam or go through the symbolic but often ineffective motions of restoring a fish run, the contract aimed to establish self-sustaining populations of summer steelhead, spring-run Chinook and sockeye – a proposal that required waterscape engineering the likes of which had never before been seen (Wright & Bell, 2014).

To accommodate for the baffling eddies, PGE and the tribes designed a 273-foot underwater tower that altered the water currents in the lake in order to direct fish into a sorting facility. Once there, the fish would be placed in a holding pen before being drugged, marked (some even equipped with radio transmitters), loaded onto trucks, and then driven around the dams to be released in the lower Deschutes, where they would be more likely to make their risky journey back to the ocean.

Figure 4: Computer generated model of the underwater tower and fish collection station at Round Butte Dam



Accessed <https://www.portlandgeneral.com/>

This fish saving contraption, which includes the water tower, fish sorting facility, fish shuttle, and fish hatchery was completed in 2010.³³ By most accounts it is described as a stunning technological success, narrating a story of progress, where capital interests, modern technologies, and competing desires for resource extraction and environmental sustainability are all met through human ingenuity and cooperation. Activists, scholars and politicians alike claimed that the settlement proved the ability to “retain substantial economic benefits while committing to reinvigorate damaged ecosystems” (Jud, 2006, p. 1079). Researchers at Oregon State University wrote, “After a two-year construction process and numerous setbacks, this unique facility at the Pelton-Round Butte Dam is helping both fish and humans reach their goals” (Wright & Bell, 2014). As noted in the introduction, even Secretary of State Gale Norton commended the project, stating “With sound science, cutting-edge technology and creative solutions, we can have both healthy rivers and thriving communities” (Hydropower Reform Coalition 2010). Environmental advocates, politicians, engineers, and biologists have been fastidiously tracking the salmon and steelhead that have passed through the dam complex en route to the ocean, and when the first adult salmon made it back upstream in 2012, its arrival was documented and celebrated across the west as a sign that anadromous fish may once again take up residence in the Deschutes.

³³ Although in 2009 half the conduit sank to the bottom of the dam and the project’s completion was delayed by a year – an embarrassing structural failure.

Fish Without Rivers Still Swim

What and who are these new fish? The Washington Department of Fisheries quotation above describes the contemporary salmon as something that, thanks to modern technologies, can now be separated from its surroundings as “fish without rivers.” But can we ever truly abstract a salmon? Anthropologist Heather Swanson recounts her childhood in Astoria, Oregon, a salmon fishing town along the Columbia River, where salmon were not only eaten for dinner, but were in school curricula, public artwork, and local museums. These are salmon that can’t be separated from rivers nor from their other entanglements. Swanson writes, “salmon were not just an economic resource; they were the stuff of our lives” (2013, p. 2); they are embedded in “tectonic movements, colonial histories, climate patterns, and resource management practices” (2013, p. 1). Far from being a stable object, she describes the salmon as multiple and relational, the very materiality of which informs human subjectivities.

Like Swanson’s Astorian salmon, the salmon that has made big waves in Deschutes watershed politics is a slippery thing, contingent upon its ever-changing relations and contexts and yet fundamental to the normative regional identity of the Deschutes. Borrowing from Donna Haraway’s (1985) use of the term, I refer to these salmon as cyborg in that they represent the transgression of boundaries, between nature and culture, humans and animals, organisms and machines, and physical and non-physical worlds. The fish reintroduction efforts illuminate how natural or

ecological conditions and processes are not separate from social or technological processes and in this regard demonstrate the mutual imbrication of binary categories such as nature and culture, rural and urban, and human and non-human.

In addition, salmon exemplify the ways in which nature can become a key object around which state actors and local residents organize. In this regard, naming and counting practices are central to understanding how and why salmon, and other critters, are assigned value. But salmon are not simply discursive phenomena – they are living, breathing creatures whose bodies encounter other bodies. In the previous chapter I looked at the ways in which discursive understandings of the Deschutes River have been mobilized to support various environmental agendas. At the same time, I demonstrated how felt relationships between humans and others make a difference in the (re)production of the waterscape. Below, I make a similar argument. The efforts to recreate the salmon run in the Deschutes were not solely motivated by desires to retain hydropower profits or fears of federal litigation, although these were certainly central factors. The engineered salmon run can also be considered a product of fears, desires, and yearnings for a regional identity, a historic past, and countless other affective attachments, all of which I suggest are best examined through the lens of the encounter.

Affective Encounters with Salmon

Affect is “found in intensities that pass body to body (human, nonhuman, part-body, and otherwise), in those resonances that circulate about, between, and sometimes stick to bodies and worlds.. Affect... marks a body’s belonging to a world of encounters” --

(Gregg & Seigworth, 2010, p. 2)

Entanglement, emergence, co-production, and hybridity are all tropes that get at the ways in which humans, salmon, rivers, and other phenomena emerge in relation to one another. Although a number of theoretical approaches to the social have adopted such relational ontologies, I turn to affect theory specifically for a few specific reasons. For one, affect foregrounds transitions and relations, leaving aside notions of fixity and singularity. Put simply, according to theories of affect, a subject is one who has the capacity to affect and to be affected; as such affect “marks a body’s belonging to a world of encounters” (Gregg & Seigworth, 2010, p. 2). This body is not something that is stable – it is constantly changing based on its meetings, relations and encounters. Subjecthood, in this sense, is a contingent effect of touch and contact – dynamic and ongoing processes that include and exceed moments of physical pressure. In this regard, theories of affect can be seen as fundamentally ecological, if we read ecology in its definitional sense as that which studies the relationships and interactions between organisms, other organisms, and their environments.

Along these lines, affect helps us to incorporate the non-human, such as cyborg salmon and peculiar geomorphologies, into our conceptions of agency. STS scholar Bruno Latour (2004) described an actant as one that has the ability to act in the world, keeping in mind that this actant can be human, non-human, living, or non-living. Likewise, theories of affect acknowledge the ways in which complex relations between various human and non-human entities create catalysts for movement and

change, recognizing that which *moves* us (in ways not always easy to empirically validate). This broad conception of agency opens up possibilities for what Jane Bennett calls a “vital materialism” (2010, p. x) – a way to rethink the idea of matter and the non-human as alive and dynamic rather than as passive and inert. By seeing matter itself as vibrant and by blurring the difference between subjects and objects, Bennett argues that engaging with the liveliness of matter “can inspire a greater sense of the extent to which all bodies are kin in the sense of inextricably enmeshed in a dense network of relations” (2010, p.13).

How do we attend to this living ecology and recognize the network of human and non-human relations that make life possible? How do we track affect as that which “marks a body’s belonging in a world of encounters” in this waterworld of salmon, fish towers, irrigation canals and anglers? I suggested in the introduction that one useful method of getting at that which moves us (in ways that are often ineffable) is to look at everyday practices, and the feelings and emotions that accompany these practices. In doing so, we see how affect places the individual in a circuit of feeling and response, rather than as a body distinct from and/or at conflict with others.

When applied to the extravagant salmon-making machine in the Deschutes, we can see this circuit in motion -- the co-production of salmon and humans and the feelings and practices that emerge in their encounters. For example, despite the abstraction and quantification of fish normalized by ESA legislation and engineering initiatives, when the first anadromous fish made it back to the Pelton Round Butte dam complex in 2012, people appeared less interested in quantity than they did in

glorifying the single fish that had survived the arduous journey back upstream. Photographs of that single sockeye circulated through news articles and press releases. One local resident was quoted saying, “It’s pretty exciting...It’s like our first grandkid just got to college. This is what we all dreamed about” (Profita, 2013). The fish biologist who spotted the first sockeye recounted his experience with awe, “I stayed very still so I would not disturb the fish and watched it swim over its redd; I snapped a few photos and was able to see the radio tag antenna trailing out of its mouth.” This fish, radio tagged and tracked, had become more than numbered biomass or symbolic icon. For those who encountered it, through news stories or as direct witness, it took on a real materiality and its return was met with delight, pride, and excitement.

That the salmon have become so deeply wed to the meanings and sense of place of the Pacific Northwest shows up in the affective qualities of these encounters, wherein contact with salmon engenders pride and excitement in humans (and perhaps terror and/or stupor in fish). In these cases, fish-human experiences are felt in the body and as such are deeply implicated in boundary making practices of self and other. Warm Springs tribal member Davie suggested as much: “Well, we’re a fish people, we come from the Columbia ...It’s something we’ve practiced for thousands of years... the use of water in daily lives... It’s probably not something that you just talk about but it’s just who you are.” His words highlight the ways in which everyday encounters with water contribute to the affective co-production of more-than-human worlds and subjects.

I suggested above that affect theory can be considered quintessentially ecological, in that ecology is primarily concerned with how organisms and environments relate to and interact with one another over time. Likewise, affect foregrounds the processes of contact and change. For the most part, however, affect theory has more often been applied to understanding human, rather than more-than-human sociality (Ahmed, 2004; A. Cheng, 2000; Massumi, 2002; Sedgwick & Frank, 1995).³⁴ In contrast, scholars characterized as post-humanist have highlighted the parallels between ecological and relational ontologies (Barad, 2007; Haraway, 2008; Latour, 2004), but tend not to focus on the physical, tangible nature of the senses and how these feelings make sense and come to matter in more-than-human relations.

Like Bennett, I am committed to an environmental politics that has the capacity to decenter the human. Water politics have long been dominated by human priorities, and it is only in the last few decades that we have begun to see changes in this regard, with the recognition of in-stream water rights and endangered species legislation. How much more livable can our world become if we embody an affective ecology – one that recognizes the non-human as a co-constituent human-beingness?

What is clear about the extravagant efforts to recreate a salmon run is that many people care about salmon, about the places they call home, and about the ways in which they are accustomed to relating with the more-than-human world. This care was evident in the energy invested in the fish reintroduction project, and in the media accounts documenting these efforts. In tracking encounters with salmon in the

³⁴ There have been notable exceptions, for example works by Jane Bennett (2010), Mel Chen (2012) and William Connolly (2011).

Deschutes, I learned that despite the seemingly dry and disconnected practice of shuttling, counting, and abstracting fish, biologists, citizens, and dam operators expressed awe, delight, and pride in contacting, via sight, story, or direct touch, the salmon who managed to journey upstream. The salmon salvaged by such feats of technology were not simply salmon as commodities; they had become co-participants in a more-than-human world of thinking-feeling.

But while the dominant affective response to fish reintroduction efforts that I witnessed in the media and in my interviews was overwhelmingly positive, there were others who, in private settings, did not express the same level of enthusiasm. Reviving a fish run in the Deschutes has a significant impact on irrigators and irrigation district managers who would be forced to manage their water for multiple uses. The recent turning of the tide away from an ethic of “water instream is water wasted” towards an investment in ecologically intact waterways forced irrigators to share – something Euro-American farmers had never had to do before.

In meetings and interviews I could sense how irrigators wrestled with these shifts in values. On the one hand, their increasing socio-economic precarity forced them to be good sports about the fish-saving initiatives in order to maintain a positive reputation in the public eye. Already residents and environmentalists were apt to accuse irrigators for being environmentally insensitive and entitled water wasters. For example, one of the kinder letters to the editor from a resident fly-fisherman attributed all of the water woes in the area to irrigation operations and followed up by writing, “With all these users and their economic contributions [he mentioned

tourism, recreation, hotels, and real estate] it makes little sense to manage the river solely for irrigation” (Perin 2015). Others expressed more acrimony, accusing irrigators of being “water barons,” “arrogant,” “deceitful,” and “corrupt.” In fending off these accusations, irrigation district managers described themselves in the media as actively working to improve and restore river flows. One irrigator defended his district, saying “COID is committed to being a good neighbor in the next 100 years” and that over the years “we increased the flow considerably.”

But when I attended the monthly meetings for the irrigation districts and when I talked privately with resident farmers and ranchers, I could sense in many cases resentment and fear around the reintroduction of fish in the basin. Many times these residents expressed a panicked desire for “more time” in order to adapt to the incoming fish. At others, farmers would say point blank that water should be used for farming above all other uses. And in others, slight eye rolls or nods of the head would accompany a comment that expressed a tentative disdain for environmentalists and fish, as if these interlocutors were testing the waters to ensure I was on “their” side before launching into a more vicious attack. In all cases it was clear that not all residents felt similarly around the iconic salmon, although it was clear that the dominant, and most “appropriate” responses to the revival of the fish run should be excitement, pride, and happiness.

As we saw in Chapter 3, anxiety and fear can be central in motivating contemporary water marketing and collaboration practices. Likewise, pride, care, and emotional attachment to place can be forces in initiating new ways to accommodate

fish migration. But despite their forceful presence in water politics and waterscaping efforts, contemporary water management practices tend to evacuate emotions from mainstream natural resource management debates. In their study of the relations between the endangered snub-nosed monkey and local farmers in southern China, Aitken and An describe resource management institutions as dominated by notions of linear development and progress, “placing rationality, efficiency and optimism at the forefront of [the] regime” (2012, p. 6). They illustrate how these seemingly rational models fail to account for the place-based relations within an ecosystem that transcend scales and organize spaces.

Likewise, political ecologist Sara Breslow (2014) offers an ethnographic account of the Skagit River Valley in Washington state, noting how, akin to the Deschutes, communities in this rapidly changing region of the American West spend enormous amounts of energy and resources defending and creating moral and cultural relationships with a river basin (contrary to the construction of the environment as made of strictly economic, recreational or aesthetic relationships). To help answer her question (how does sense of place play a role in the restoration practices of the Skagit Valley) Breslow (2014) traces the discursive origins of habitat restoration, finding that it inherits an interesting combination of both romantic environmentalism as well scientific managerialism.

While Breslow (2014b) regards the discursive underpinnings of restoration practices as central components of sense of place (which I interpret as a term that speaks to the affective relation between residents and their locales), she notes the

sociocultural complexity of environmental problems as affective; “the application of environmental science through habitat restoration engender the anger and resentment of place-based farmers whose cultural as well as economic attachments are eclipsed from scientific models of the landscape, even as they see it being reshaped according to urban ideals” (750). Her ethnographic study illustrates how her respondents are not just motivated by economic gain, but are committed to a particular sense of place, and the omission of these place-based commitments in management policies caused farmers to feel underrepresented by restoration managers.

How and why do people mobilize around particular issues at particular times? As Breslow’s case demonstrates, affect and emotion are central variables in motivating particular environmental behaviors and political agendas. But what emotions are legitimate? Sociologist Deborah Gould uses the idiom “emotional habitus” (2009) to explain the ways in which feelings and their expression become normative in particular situations and contexts. An emotional habitus arises from social conditions and is shaped by social factors, and provides us “with schemas for interpreting and naming our affects and for figuring out what to think and do about what we are feeling” (2009:37). Feelings, in this case, can be considered productive of subject positions to which people feel they belong, and these subject positions subsequently dispose people towards certain emotional responses and towards particular behaviors and actions. That Deschutes locals routinely expressed pride and happiness to see the return of the salmon indicates a particular norm around felt

relations with the fish that may also render alternative ways of sensing and feeling less acceptable.

In addition, in calling attention to change, affect gives us a more nuanced understanding of classifications, taxonomies, and identities as always in motion or becoming, providing us with an ontology better suited to apprehend ecological complexities such as cyborg salmon and seasonal streams/irrigation canals. Cultural theorist Brian Massumi suggests that “In affect we are never alone;” affects are “ways of connecting, to others and to other situations” (2015, p. 6). Analytically then, affect offers a different starting point from which to understand the world than that typically adopted by natural resource management practices. Rather than begin with different individuals and entities all of whom must cooperate and compromise in order to meet their individual needs (and subsequently reiterating seemingly polarized interests), affect theory begins with the event, where subjectivity is predicated on embeddedness, connection, and the ever changing present moment. In the following chapter, I elaborate on how this different vantage point might be applied to help generate a more creative and just water politics. For now, I simply suggest that I find its perspective of subjectivity particularly useful in theorizing multi-species place-making.

In the remainder of this chapter I make the case that while often subtle and difficult to represent, feelings matter, and feelings are always present in an encounter. In this regard, felt relations with the more-than-human world are woven into local management practices and norms. To illuminate my point, I provide two examples of

fish-human encounters in the Deschutes – fishing and shuttling. These are two modes of relating with salmon that I witnessed frequently, and as such they help us to better understand contemporary management practices around the Pacific salmon than what we might glean from simplified political economic arguments and explanations.

Fishing

Fishing is a big deal in the Deschutes. The region contains a slew of non-profit and for-profit fishing centered institutions, including the Native Fish Society, Trout Unlimited, Central Oregon Flyfishers, Upper Deschutes River Coalition, and various guiding companies and flyfishing shops. Photographs of people clutching newly caught fish are everywhere – in tourist brochures, on office desks, taped onto refrigerators, and on computer home pages.

For a relatively small basin, the recreational fishing industry is arguably one of the most powerful constituents urging for fish passage protection and instream flow increases. Jeff Perin, a Sisters fly-fishing guide who owns The Fly Fisher's Place, serves on the board of WaterWatch Oregon, which recently filed a federal lawsuit against the Bureau of Reclamation and a handful of irrigation districts in order to prevent the annual low winter flows that kill thousands of fish every year. In an interview with the local newspaper Perin was quoted: "I would say with absolute certainty that the majority of the fly-fishing community, including my colleagues that own fly shops and guide the rivers and lakes of the region, would agree that something needs to be done to protect a resource that brings us income. It's our economy too" (J Ditzler, 2016). In line with this argument, anglers have primarily

leveraged the economic benefits of maintaining a resilient fishery. For example, one local hydrologist and fisherman prepared a paper for Trout Unlimited that proposed a restored Upper Deschutes River fishery would have the potential economic value of \$50 to \$75 million annually.

But the contact between anglers and salmon can be considered more complex than what is summed up by one of the many economic reports commissioned by the city council, which cites fishing as an industry vital to maintaining the region's ever-growing tourist industry. The activity of fishing is one that engenders a particular form of contact, and a particular affective charge that differs from that which might emerge were it solely an economic relation.

In considering the affective ecologies that arise in the contact between anglers and fish, it is clear that there is much more to the story than these two entities. A focus on affect turns our attention toward the multi-faceted, countless relations incorporated in an act such as fishing, such as ones bodily engagement with line, water, and fish, a love for a particular water body, place-based memories, and the water itself. For example, the spring-fed Metolius is well-known for being a first class sockeye river, with fish that are virtually impossible to catch. This doesn't stop even the most inexperienced flyfishers from spending time on its banks, flicking flyrods into the glassy water. Only once on my many trips to the Metolius did I spot an angler actually nab a fish and pull it out of the water. When I stopped to commend the man, he deflected the compliment; "It's a difficult river to fish because they're [the fish

are] so savvy. But that's not the point, it's the fishing not the catching. It's just being on the river that matters."

I interviewed another man, a self-identified fisherman and active member in Deschutes water politics. He laughed, remembering an experience on the Metolius that he had had a number of years ago:

I would go out on the Metolius with my dog Floyd...and don't know if you're familiar with [the river] but it doesn't get sunlight much [which makes it difficult to see the fish]. I decided to give up fishing and eat lunch, ate about half of my sandwich and suddenly the sun hit the water and there must have been 20-30 trout sucking off those flies. So I put away my sandwich and pulled up my waders, and quiet! They were all gone. But you know, I didn't need to catch them to enjoy it. It was just so enjoyable. And then I went back up and pulled my waders down again and shared a sandwich with Floyd. I think if you really get into fishing it gets to where catching the fish is not the main thing. I go fishing mostly for connection to the rivers.

For these men the experience of fishing is about more than catching and counting fish from the waters of the Deschutes tributaries. Fishing is made up of a collection of relations and is a phenomenological experience that cannot be summed up by any one of the parts. And although the cultural politics of fishing can result in particular personal and collective identities, such as "fisherman" or "world-class fish run," these structures do not determine the kinds of connections people and non-humans make in the activity we call fishing.

Along these lines, I found that it was not just self-identified fishermen who expressed love for the activity of fishing. I talked with a farmer who told me that his favorite place in the basin was the Metolius: "I love flyfishing. I've grown up doing

it. I live on the Metolius and flyfish on the Deschutes. I would say I flyfish on the Metolius but I've never caught anything. I've enjoyed the Metolius since I was a kid, just like I do now." This farmer's affinity for fishing points to just one way in which stable categories fail to capture the complex and dynamic nature of identity and complicate the assumption that farmers and anglers are always or should be at politically odds with one another.

While people I interviewed expressed a love for fish, for fishing, and for the water bodies in which they fished, it did not necessarily follow that their encounters with such entities invariably engendered sentiments of care or environmentally responsible behaviors. Although many anglers catch and release fish, the activity of hauling a salmon away from its watery home is invariably a violent one. And while some anglers expressed a care for rivers and salmon that surpassed financial self-interest, others objected to activities that would supposedly help the fish but harm their economic livelihoods. Jeff, the PGE fish biologist, described the changes that ensued once the fish passage technology had been installed, and the pushback that dam operators received from the guiding community:³⁵

Now the river is warmer at a different time of year and cooler at a different time of year, which causes fish to come at different times. The majority of fish that [guides] were catching were strays out of the Columbia that had different timings of coming in. And [since the installation of the tower, the guides] are like, "you're ruining the fishing, and you're ruining my job," and you know, it's huge!...I understand where [the guides] are coming from. I totally understand. We've been fishing on June 2nd for thirty years and now there's

³⁵ Fishing guides typically take paid clients to catch fish (line and fly-fishing) – this has become a big business in the Deschutes.

no fish to catch [laughs]. You know, it's hard to change, nobody likes change. It's always hard to get used to.

In this case, fishing guides resented the salmon reintroduction efforts for upsetting their seasonal routines. Along a similar vein, one fisherman described his fellow anglers as more interested in catching a fish than in experiencing the simple pleasure of being on the river:

A lot of fishermen are just into the catching. A lot of the flyfishers here, it's how many fish they've caught. I have a number of good friends who are in it mostly because they enjoy the experience, but I'd say that most license holders in the state of Oregon, that's 10-20 percent of them. That's why you have to appeal to the people who want to catch a big fish to eat it. Steelhead are big! And that's why [in order to get political leverage] you have to show that there are economics there because there are big [influential] people, boards of directors and outfitters, and flyshops and they're good people!

In this case, the angler above describes some flyfishers as those who enjoy the fishing experience and are unattached to what they take home at the end of the day. Others, he claims, are motivated to catch trophy fish (steelhead), and it is their tourist dollars that end up influencing politicians and outfitters.

While I doubt that anglers fall cleanly into these two categories (those who are motivated by the winnings and those who simply love the activity), this man's observation that the same thing does not motivate all anglers alludes to the limitations of identity categories and the politics ascribed to them. This unraveling of identity categories also complicates the assumptions made by some geographers that familiarity and intimacy with place (such as via the activity of fishing) may lead to

deeper understanding of and care for local places (Beatley 2004, Norton and Hannon 2003, Nabhan 2004). On the contrary, political ecologists have found this relationship to be much more complicated, revealing that people may either exploit or urge for the conservation of local places for multiple reasons (Bakker, 2001; Gosnell & Kelly, 2010; Peet, 2004; P. Robbins, 2006). James McCarthy (2002), for example, describes the Wise Use movement in the American West as a self-identified grassroots social movement that appealed to local knowledge and local rights in opposing environmental regulations and interference from federal agencies. The 2016 occupation of the Malheur Wildlife Refuge presents a more recent case of a similar dynamic, where ranchers claimed that their direct experience gave them a privileged understanding of what was best for both the social and ecological community.

What is it to be a fisherman? Someone who cares deeply about fish, about spending time on a river, about the regional identity of a place called home, or about a particular financial livelihood? We see from the new cyborg salmon that resides in the Deschutes and the elusive motivations, vastly different experiences, and wide variation in those who sit by, stand along, or glide on top of different tributaries with lines, poles, or flyrods, that pinning down a definition for either fish or angler is impossible, despite the tendency of contemporary water management practices to do so. Below, I offer a second example of how the categories of fish and human are (re)created in the Deschutes, and the shortcomings of this approach.

Shuttling

Jeff, the Pelton Round Butte Dam's fish biologist, encounters fish on a daily basis. During one of my visits to the dam complex, he acknowledged that since the tower's completion, he had become "more of a tour guide than a biologist." In typical tour-guide fashion, Jeff led me around the sorting facility, a five-million pound floating concrete contraption, where fish are shuttled through a maze of chutes and ladders, eventually ending up in a little room where they are sorted and tagged by student biologists while rock music blares from speakers on the wall. Those fish deemed appropriate for ocean travel (the small ones that still have their maturation ahead of them) are deposited in a holding tank of placid water, which is eventually hitched to a truck and transported over the dam. The others are tossed back into the lake from which they were taken to live out their days as easy prey for anglers.

It was clear during my tour of the labyrinthine fish facility that dam operators in the Deschutes were interested in numbers. The success of the fish passage project was measured by the "yield" of returning fish, and the sole purpose of the facility was to capture, sort, and count. But while the ecology and life worlds of local fish can be in this way reduced to body counts, my time spent with Jeff illuminated how contact with fish in the form of what I call "shuttling" engendered, for him, a surprisingly vehement relational intimacy in the form of protectiveness and care.

For example, during the tour, Jeff frequently empathized with the "poor little guys" that get wrung around so much in the gears of the contraption, and said that one of his main contributions to the facility was a fish handling procedure that reduces

fish harm and attrition. He reported with pride that thanks to his innovations, the fish were treated as kindly as possible. As we walked, Jeff pointed to the fish that were in the holding tanks, and he paused for a while, peering into the tanks with curiosity and thoughtfulness, indicating both a pride in and an appreciation for their size and vitality. At one point he warned me to avoid the electric wiring that bordered the various fish pipes and tanks. Apparently before implementing the electric fence, local critters discovered that easy meals could be secured by visiting the fish facility. Jeff said that great blue herons, mountain lions, and raccoons were all frequent visitors, but he was particularly offended by one creature – the river otter, who broke into the facility and used the fish holding tank to teach its young how to kill fish. “Within minutes,” he told me, “it had killed like 100 fish” which it left uneaten and scattered about the facility. The incident had deeply upset him, and in recounting it he demonstrated a paternal protectiveness over the fish generated over years of intimate contact and encounters with them.

How do we sense and relate to the more-than-human world? Akin to the anglers I describe above, it would be overly simplistic and idealistic to assume that contact is synonymous with kindness or care. While Jeff’s tour around the facility demonstrated a care and paternalism towards the individual salmon captured and shuttled through the dam, a tour offered by one of the main engineers on the project was characterized instead by pride. The engineer described in detail the many stages of the dam’s development, noting the thousands of pounds of concrete and steel, and elaborating upon the ingenious design of the water tower and the floating fish station.

Like Jeff, this man was also a key collaborator in the fish rescue project, but his words expressed attachment more to the technological contraptions that intervene on behalf of humans than to a fondness for the fish themselves.

In both cases, we witness how feelings emerge in contact with more-than-human others, and in both cases we see how such feelings matter when it comes to salmon-human practices. These are salmon that are not simply counted and commodified, nor are they salmon that are just a regional icon. This is not to say that iconicity and commodification do not matter – they very much do – but these salmon are more than their status and/or price. Following a cost-benefit analysis, the tremendously expensive water tower would have been considered simply ludicrous. Feelings help me to make sense of electric fences, water towers, and contemporary politics in ways that natural resource management paradigms—with their cost-benefit analyses—currently fail to do.

That water management practices rest on identity categories remaining stable serves to reproduce these categories and the policies and activities that they represent. According to this form of politics, an angler and a farmer are naturally at odds with one another, a salmon is a creature that naturally resides in the waterways of the Pacific Northwest, and a fish biologist is naturally motivated by numbers more than affection.

These examples tell a different story, illuminating how, thanks to the dynamic relations between fish and humans, such hegemonic categories do not determine the kinds of connections that are made. Instead, new subjectivities and ways of being

continually emerge from these multi-species happenings and encounters. In the following chapter, I follow this argument, suggesting that taking advantage of these changes may help us (and environmental managers) to better understand ecological complexities and new possibilities for collaboration around shared waters. But first, I continue with the salmon and the politics of naming.

The Politics of Endangerment

In January 2010, after the first steelhead made it back to the dam complex, the National Oceanic and Atmospheric Administration (NOAA) announced that although it met the criteria, rather than label the species as “endangered,” they chose to name it “experimental” -- a new designation for Deschutes steelhead that will last for 12 years. Irrigators must have heaved a sigh of relief. Having to contend with a listed endangered species is not easy. If the federal government decides that particular behaviors, such as irrigation withdrawals, are posing a threat to a listed species, then they have the authority to interfere with those practices. The activities that unfolded just south in the Klamath Basin were a case in point, wherein federal agents forced irrigators to stop their water withdrawals in order to save the recently listed sucker fish. A press release from the DRC expressed a similar sentiment of appreciation for the experimental designation, writing that it “will allow water users and partners dedicated to reintroduction efforts to more easily work together for the mutual benefit of fish, farmers, and cities.” But when I asked Jeff what he thought of the new ruling for Deschutes salmon, he was visibly upset. “We put so much money into

this...having some folks be half assed doesn't feel right...We're not putting 100 million dollars into an 'experiment'! We're giving it our all.”

This chapter revolves around the salmon because the water markets, the collaborative practices, and the multi-million dollar technologies in the Deschutes are all contingent upon its material and discursive presence in the waterscape. How do we understand these salmon-human relations and subsequent waterscaping practices? Above, I make the case that feelings, engendered through fish-human contact, are key to understanding contemporary water politics. These material engagements are not outside discourse; as Foucault (1979) demonstrates, bodies are shaped by discursive technologies. Likewise, Ahmed (2004) describes discourse as central to affect, in that it helps explain why certain emotions often circulate and “stick” in particular ways. Jeff’s concern about the naming of salmon as experimental rather than endangered speaks to this interrelationship between discourse, feelings and power. The designation of a critter as endangered gives it a particular status in the world of environmental politics, enabling and justifying certain management practices as well as particular feelings.

As we see from the new “experimental” ruling, endangerment categorization is a tricky endeavor. In order to be listed as endangered, a critter must be catalogued as specific (in terms of a singular species) and endemic (to a particular area). This practice has traditionally been left in the domain of biologists, who increasingly rely on advances in genetic science. But classifying Deschutes salmon according to endemism, or their relationship to place, is a challenge. Salmon originally evolved

with particular traits that correlate to the place where their parents spawned, and salmon populations thus historically maintained a close link with their specific tributaries and rivers. Hatchery fish do not maintain a genetic link to a particular river (Lichatowich, 1999), and the travels of the fish that have been ushered back through the Deschutes are still not fully understood.

Despite its blurry definitional status, endangerment carries a particular affective charge, conjuring normative sentiments such as fear of federal involvement, loss of a sense of place, commitment to a normative environmental politics, and nostalgia for that which is disappearing (Choy, 2011). In the Deschutes, headlines of news articles associated with the reintroduction project all resonate with this romantic nostalgia, alluding to the implicit value of restoring a lost run: “At Pelton Round Butte Dams, \$100 million later, a steelhead returns,” “Fish Return After 45 Years,” “The Deschutes: A River Used to Run Through It,” and “Return of the Sockeye Salmon: After decades of absence, sockeye are running again.”

In the same vein, it is common to see organizations and individuals in the Deschutes strategically utilize sentiments of loss and longing to garner support for their fish reintroduction initiatives. For example, a video produced by a local anglers association evokes a sense of nostalgia, showing underwater images of sockeyes, steelhead and bull trout paddling furiously upstream to reach their spawning grounds. The background narration describes the “historic salmon runs” that will “once again be restored in this precious watershed.” Jeff’s reaction to the attempts to categorize

introduced fish as experimental rather than endangered indicates his recognition of the affective political power of endangerment discourse.

That all said, while politically powerful and affectively charged, the relationships between humans and salmon in the Deschutes waterscape cannot be entirely explained by the salmon's status of endangerment. Pacific salmon seem to have accrued a charismatic appeal that is not shared by other species, even those that have been put in a similar category of threat. For example, PGE's CEO described the incentive to provide salmon passage as a normative act, saying, "We are going to pass salmon over Pelton Round Butte because it is the right thing to do." Likewise, nearly all of the water managers and environmental advocates I interviewed referred to the moral uprightness of revitalizing a salmon run, describing the restoration of the historic salmon fishery as central to their long-term vision for the Deschutes Basin. In response to a question regarding long-term goals, many referred explicitly to salmon reintroduction efforts:

- "[I'd like to see] enough water in the rivers to meet fish biological requirements"
- "[A basin where] the fish come back and we stop stocking with hatchery fish"
- "[I'd like to see] a native population as genetically close as possible to the historic population that is self-sustaining and reproducing."

- “We would love to see the world-class steelhead and salmon fishery that was available to anglers 40 years ago restored, and we urge everyone who cares about the Deschutes River to take action to ensure adequate flows in the upper river for a successful reintroduction.”

These responses cannot be fully explained by the discursive politics of endangerment, which conjures nostalgia and sympathy for that which is disappearing (Choy, 2011). There exist other aquatic critters in the Deschutes that share the designation of endangerment but are denied the nostalgia and attentive management practices bequeathed upon the salmon. These are creatures that are less visible, less charismatic, and less wedded to the regional identity of the Pacific Northwest. Below I address two of them: the Pacific Lamprey and the Spotted Frog, in order to explore how it is that more-than-human others accrue value and are seen as worthy of care.

The Pacific Lamprey

The Pacific lamprey (*Lampetra tridentate*) is a creature that shares much in common with the salmon. Like salmon, the lamprey are anadromous – born in freshwater streams, they migrate to the ocean and then return back to their streams to spawn. Lamprey and salmon share a common fate in the Pacific Northwest. For both creatures, dams, diversions, and grazing and logging practices have contributed to severe habitat decline, interfering with their ability to spawn and complete their life cycles.

But while similar on a number of counts, salmon and lamprey are treated quite differently in the Deschutes. Whereas the salmon have become a cultural icon in the

Pacific Northwest with significant economic status, the lamprey is rarely acknowledged. Perhaps this is partially due to the lamprey's mysterious behavior as well as its unsettling appearance. It is nocturnal, only traveling at night, and parasitic, using sharp teeth to grab onto passing fish from which it sucks nutrients. Not fish nor amphibian, the lamprey is similar in appearance to an eel – it has a round, elongate and flexible body made of cartilage, and its skin is smooth, scale-less and slimy to the touch. At full adulthood, the lamprey can be over 30 inches long and weigh more than a pound. Even fish biologists confess that they find the lamprey to be a little creepy.

According to the US Fish and Wildlife Service, the Pacific lamprey has little or no economic value, and this dismissiveness is reflected in subsequent management practices. Whereas more than \$100 million has been spent on ensuring safe passage of salmon through the maze of dams on the Deschutes, when I asked Jeff if engineers thought to accommodate passage for the Pacific lamprey, he said no. They had enough on their plate with the salmon, he said, and there was less public pressure to respond to the fate of the lamprey.

As part of the relicensing of the Pelton Round Butte dam, PGE and Warm Springs developed a Fish Passage Plan, a component of which evaluates lamprey passage. Thanks to the iconicity and economic value of salmon, there have been countless studies documenting the ins and outs of fish passage, including the water temperatures, flows, and food sources that salmon need to survive in the watershed. In contrast, *western scientific* understanding of the lamprey is limited, in that its ecological range has been documented via oral histories with tribal members rather

than via fish sampling. Because of what has been considered a lack of adequate data, the fish passage plan proposed no actual plan to safeguard the lamprey but instead called for a series of assessments to identify potential habitat and the creature's potential range. Jennifer Graham, who works with the Warm Springs Department of Natural Resources on the lamprey research, shared a comment that spoke to the prioritization of care among aquatic creatures in the basin. She said that her lamprey action plans were limited by one thing: "Anything done to help lamprey can't result in harming salmon."

I introduce lamprey biopolitics to explore the question I pose above: How do various non-humans accrue value and become worthy of care? Stories related to the Deschutes salmon demonstrate the capacity and willingness of humans to support a non-human other, financially, emotionally, and politically. The lamprey, on the other hand, can be considered a case of negligence. That said, not all human communities ignore the endemic eel-like critter. I learned that while lamprey do not engender the same kinds of environmental safeguards as their neighboring anadromous fish, the creature is revered by the Warm Springs Tribal people. Matt, one of the Warm Springs fish biologists, told me that tribal members value the lamprey as much as they do the spring Chinook. For many years, the succulent lamprey served as a staple food source for native peoples, and Matt said that elders would begin tearing up as they recounted the days of abundant lamprey populations. According to Viola Kalama, a Warm Springs tribal elder, children were fed lamprey before picking

huckleberries because the taste left in their mouth would ruin their appetite for berries, ensuring that they would fill their baskets rather than their stomachs.

Indigenous residents used to give their babies pacifiers made from dried lamprey tails, and used lamprey oil in their hair to keep it shiny and soft (Harber, 2010).

That there is less public incentive to safeguard lamprey points to the continued marginality of native peoples, whose cultural values are consistently under-acknowledged in public policy (as well as in culinary tastes). In the section below I explore tribal-salmon relations in greater detail and the twinned disenfranchisement of native peoples and native creatures. In this passage, however, I follow my curiosity around care. The simultaneous safeguarding of salmon and negligence of lamprey demonstrates how capacities and tendencies to care about various aspects of the more-than-human world are complex, motivated by more than simply the discourse of endangerment. As sociologist Deborah Gould notes, “Power certainly operates through ideology and discourse, but it also operates through affect, perhaps more fundamentally so since ideologies and discourses emerge and take hold in part through the circulation of affect” (27). And affect, interpreted as the capacity to affect and to be affected, emerges in the encounter. To signify the importance of such encounters, I share two vignettes – the first is my own encounter with the lamprey, and the second concerns the spotted frog.

I learned about the lamprey in the company of a dozen other water managers and activists during a field trip to a restoration project in southern Washington. From

a grassy bank above a little tributary, we peered down at a new weir that had been designed to facilitate anadromous fish passage. Matt, the fish biologist, lifted a bucket from the back of his pick-up truck and we gathered around what turned out to be a teeming mass of several adult lampreys. These creatures could not get past the new structure, and Matt had rescued them in their futile attempt to migrate upstream, holding them in a bucket of water before releasing them upstream of the diversion. I had never seen a lamprey before, nor had several of my companions. I was transfixed by the creatures – their slick, smooth skin, and their odd mouth parts. As we stood around the bucket, Matt told us what he knew of their biology and their history, and as he did they became less the stuff of stories and more a co-habitant of the waterscape – one for whom I found myself developing a sense of affection.

Carpooling back to town with a number of other water managers, I discovered that I was not alone in my emergent care. These politicians and advocates also expressed a newly developed fondness for a creature that they had never before encountered. One woman said explicitly, “Yeah, nothing like actually seeing a lamprey face to face to really get you to care about the weird little guy.”

Studies in environmental education have explored the connection between hands-on learning and the development of an environmental ethic in young people (Dupuis & Ball, 2014; Moran & Rau, 2014; Vaske & Kobrin, 2001). This work has always interested me, but I have also been deterred by the normative assumptions implicit in these studies that perpetuate a division between human and non-human realms. My experience with the lamprey could, on one hand, be a case study in this

regard, demonstrating the efficacy of environmental education for helping to cultivate an ethic of care. But I hesitate to make that case, and instead suggest that contact with lamprey does indeed have the capacity to incite care, but also has the capacity to incite disgust, disdain, or fear – feelings that don't necessarily induce environmental altruism. My second story illustrates this point, and I use it to demonstrate the often un-predetermined and thus unpredictable force of feelings in more-than-human encounters.

The Spotted Frog

Prior to the fish reintroduction efforts, the irrigation districts had routinely drained the upper reaches every season to provide water for their patrons, a practice that had been met with few objections. But once the salmon repopulation initiatives got underway, irrigation district managers were forced to modify their water withdrawals to ensure that the salmon would survive their new home. After all the efforts taken to provide for the returning salmon, no one expected the emergence of a new federally listed species in the basin. But in August 2014, the U.S. Fish and Wildlife Service listed the Oregon spotted frog as threatened under the ESA, and irrigation district board members appeared to take the news as a personal offense. In several DRC and irrigation district board meetings, I observed sighs and eye-rolling when the agenda turned to problem-solving around the Oregon spotted frog. The implied sentiment was of victimization and resentment. How could irrigation districts be expected to deal with yet one more impediment to their operations? They had

already gone out of their way to accommodate the returning fish, and now they were being asked to bend over backwards for a frog.

The Oregon spotted frog (*Rana pretiosa*, meaning “precious frog”) is endemic to the Pacific Northwest and was historically well distributed throughout the region. Studies suggest that the frog has lost 70-90% of its historic range, thanks primarily to the elimination of habitat through human activities such as water diversions and the drainage of wetlands. Considered rare and listed as endangered in many parts of the state and country, it has already been extirpated in California, but has hung on in small patches in parts of Deschutes, Lane and Klamath counties (Mortenson, 2015).

The spotted frog is considered the most aquatic of all native frog species in the Pacific Northwest. They are not large frogs; the adults range in size from about 4 to 10 centimeters snout to hide. Juveniles are usually brown or green and adults blush as they age, sometimes becoming almost brick red over most of their bodies. They sport black spots and a red or orange stripe running along both sides. The frogs seldom stray from bodies of water, and tend to prefer wetlands, lakes, and slow-moving streams with mats of aquatic vegetation (Advocates for the West, 2015).

In the Deschutes, the wetland margins of Crane Prairie and Wickiup Reservoirs serve as breeding areas for the spotted frog. Water levels reduced during their breeding season can result in the loss of all the new egg masses while rising water levels can wash them away. Thus, the rapidly changing water levels imposed by the dam management pose a significant threat to the frog’s ongoing survival (Advocates for the West, 2015).

A few weeks after my lamprey experience, I attended the monthly board meeting for Central Oregon Irrigation District (COID), the most powerful irrigation district in Central Oregon. That same year the U.S. Fish and Wildlife Service had listed the Oregon spotted frog as threatened under the ESA. In order to be better equipped to negotiate with environmental proponents, Arthur, COID's district manager, took it upon himself to study every detail he could about the amphibian. Towards the end of the meeting, after wading through water leasing agreements, budgeting concerns, and a box of donuts, Arthur gave an update on the habitat conservation plan for the spotted frog. Thanks to the shutdown of the federal government,³⁶ he announced, the public comment meeting with Oregon Department of Fish and Wildlife, the entity responsible for filing the frog's endangered status, had been cancelled. The man sitting next to Arthur smirked, "Does this mean that we can go out and get rid of all the spotted frogs while the feds are away?" With the frog out of the picture, the effort and expense of dealing with them would vanish as well. Everyone laughed and the district's lawyer, after a pause, said, "Well, some people have..."

In the silence that followed I sensed that this was perhaps not a joke after all. And then Arthur spoke up. He didn't address the hanging invitation to exterminate frogs, but instead he shared his appreciation for the creature. "The frog is actually

³⁶ Between October 1-16th 2013, the US federal government curtailed its routine operations because legislation appropriating funds for fiscal year 2014 was not enacted in time. During the shutdown, approximately 800,000 federal employees were furloughed indefinitely.

kind of interesting,” he said in a diplomatic voice, “It’s a cool little guy...it’s rare, and requires a very specific habitat...”

I was stunned by Arthur’s words. Arthur is an authority in water-world, a staunch defender of the local farming community, and someone who enjoys a great deal of respect from his farming colleagues. He is also physically imposing – a large, beefy man with a booming voice and a no-nonsense attitude. In backrooms DRC and watershed council staff often accused Arthur of misusing his power, hoarding and wasting water at the public’s expense, although face-to-face these critics were unfailingly cordial and polite, well aware of the liability of ending up on the receiving end of this man’s animosity. I was shocked to see a such a figure standing up for a critter that a year earlier he hadn’t known existed and that, based on his position as irrigation district manager (a.k.a. farmer defender), he was supposed to oppose. Was this a moment that spoke to the capacity of the encounter to elicit care or value for the more-than-human other?

My answer to this question is – yes. But it is also not quite so simple. Moments of encounter have the potential to incite care, but also the potential to incite countless other feelings and emotions, and I was reminded of this in the months that followed, as the spotted frog became an increasingly popular conversation topic, media star, and object of contention.

The irrigation district managers met for over a year behind closed doors to draft their habitat conservation plan for the frog, and the outcome frustrated environmentalists, who felt shut out of the process and unhappy with the result. To

the dismay of those who pride the collaborative, non-litigious reputation of the Deschutes, the Center for Biological Diversity and WaterWatch of Oregon eventually sued the Bureau of Reclamation and local irrigation districts for violating the ESA and harming the spotted frog in their water withdrawals (Advocates for the West, 2015).

Suddenly, all anyone talked about was the spotted frog. News headlines read, “It’s frogs versus farmers in the Deschutes” (Joseph Ditzler, 2016). For a solid week, various photographs of the frog graced the front-page of the Bend newspaper, accompanied by fact sheets about frog biology and history. All of this coverage did not appear, however, to elicit more care. I spoke with several residents of the upper Deschutes (where the frog resides) who told me that the frog is everywhere. “There’s hundreds of them!” one Sunriver retiree reported, “I don’t know why they’re listed as endangered. I see them all the time. They’re practically a nuisance!” An online comment to a newspaper editorial about the frogs read, “I found a frog in my backyard, I told my wife I think mowing will harm the frogs habitat. She did not think I was funny.” Another editorial comment expressed a similar irreverence for this endangered critter; “How about relocating the damn frogs? Simple solution? ...What is happening with these frogs is called evolution people. Learn about it” (KTVZ, 2016).

These responses, elicited by frog-human encounters, did not simply demonstrate new forms of care, but ranged from patronizing to hostile. That intimacy with frogs did not naturally result in greater desire for their survival is important to

recognize both theoretically and politically. As I note above, Ahmed (2004) describes emotions as attachments that take place through movement and connect us to certain things. But these moments of encounter do not always elicit care or an ecological ethic. For example, it has become customary to express a particular emotional stance towards the salmon, and this emotional habitus is supported by the ways in which salmon show up as endangered species in political legislation and as regional icon in local paraphernalia, historical accounts, and artwork. But this mobilization of care for the salmon can also suppress care for unseen others. In this case, the stories above explore the possibilities for initiating opportunities for care, but even more importantly, they encourage us to recognize the complexity of the encounter, and the material weight of the feelings that emerge therein.

Ahmed suggests that justice is not about converting bad feelings to good ones; instead “challenging social norms involves having a different affective relation to those norms” (2004, p. 196). The narratives underlying contemporary water management practices are those that separate water and beings from their entangled encounters; huge fish saving contraptions count and shuttle salmon while water policies trade and market CFS. But the abstraction of “resources” has its own affective consequences, and an affect-based analysis gets us to better understand their political effects. In the section below I explore such an approach, highlighting the ways in which the entanglement of water, fish, and others over time has had

consequences that are seldom recognized but are central to the evolution of the contemporary waterscape.

Salmon and Imperialist Nostalgia

I began this chapter with a description of the PGE dam complex and the massive infrastructure that has been engineered to reinvigorate the historic salmon runs. This multi-million dollar project and the resulting collaboration around water allocation and restoration have been commended for initiating equitable and sustainable water management strategies. In closing this chapter, however, I tell an alternative story. For many Deschutes citizens, the fish rehabilitation project represents success. But I suggest that it also represents something else that requires recognition -- a legacy of colonial violence towards native inhabitants, both human and non-human.

In her book, *Ghostly Matters*, Avery Gordon argues that historical legacies of power live on in our contemporary world, and that these are palpably felt in our everyday experience as “constituent element[s] of modern social life” (2008, p. 7). Gordon introduces a new lexicon to describe this phenomenon. Haunting refers to the ways in which the impacts of systemic structures that seem to be removed from us are felt in everyday life. Ghosts are thus signs that a haunting is taking place.³⁷ I suggest

³⁷ In fleshing out her approach to understanding the social, Gordon refers to Raymond William’s concept of a “structure of feelings” – the ways in which different ways of thinking emerge in history that are outside official or hegemonic discourse.

that the fish reintroduction project of the Deschutes signifies such a haunting, where violent histories of colonial and capitalist expansion are rarely made visible but “exist as a seething presence” (Gordon 2009, p.8) in the material and affective architecture of the site.

Akin to Gordon, I argue that paying attention to these gaps between what is visible and what is palpable does not simply constitute a nostalgic form of storytelling. Mainstream narratives of the Deschutes Basin focus on technological innovation and quantitative markers of success and in doing so often deflect attention from the immaterial, unquantifiable repository of public and private loss that went into the making of the contemporary waterscape. But as I’ve illustrated throughout, we live in a co-produced world, where human and nature, and past and present, are irrevocably and inevitably entangled in ways that are not neat or symmetrical. Relying on mainstream narratives to make sense of the Deschutes thus leaves us with an impoverished understanding of complex multi-species landscapes as well as limits our political capacity to recuperate, communicate and collaborate around shared waters.

Since its inception the Warm Springs Tribal Reservation has existed within and outside of the realm of commodification. From the main highway that cuts through the reservation, the signs of poverty are easy to miss, but turning off onto any side street, they are all too obvious: abandoned buildings with boarded windows, signs with missing letters, men and women curled up in sleeping bags under awnings.

Most of my time on the reservation, was spent at the tribal office of Natural Resources, which is housed in a run-down trailer on a bluff overlooking the reservation neighborhoods. It's a hot and dusty area, with no water as far as I can see, except for an old rusted drinking fountain next to a soda machine that trickles with water pressure so low it's impossible to drink from. The dilapidated state of the governmental offices is indicative of the economic disenfranchisement of the reservation as a whole. The unemployment rate of Warm Springs is 70 percent (79% for those between 18 and 25 years old), and the main industries on the reservation provide limited numbers of jobs for the approximately 4,200 residents. Many reservation houses contain two or more families, and a local bus driver reported that she routinely sees "...kids coming out of some houses with no coats, ripped-up shoes, their hair not combed, no lights in the house" (Kent, 2015).

The reservation does maintain a number of industries – Kah-Nee-Ta hot springs resort, the Jefferson Plywood Company Mill, Indian Head Casino, and of course co-ownership of the Pelton Dam -- but none are doing well, and the casino, built in 2012, came at a high cost when revenues in hydropower and timber were beginning to fall. In 2015, Warm Springs tribal members added another income stream to the mix, overwhelmingly approving legislation legalizing marijuana sale in the state of Oregon. According to tribal member Martha Winishut, she and others didn't necessarily approve of marijuana, but she voted yes because she hoped that it could provide residents with a new source of revenue. She emphasized how important

this was, explaining,, “We’re dying. There’s no jobs here” (Kent, 2015).³⁸ Mike Clements, the tribal government's human relations director and former head of economic development, described current economic conditions on the reservation as worse than during the 1980s recession (Read, 2009).

Throughout this chapter I demonstrate the importance of affective relations with the Pacific salmon in motivating water management and everyday behaviors within the waterscape. I describe anglers, engineers, and environmental advocates and the ways in which their water politics are influenced not only by efforts to abstract and market resources but by their more-than-human encounters -- encounters that are shaped and qualified by particular affectively weighted definitions and categories such as endangerment and iconicity.

But what about tribal relations with fish? Even more so than lamprey, salmon are central to the cultural identity of Indigenous groups across the Pacific Northwest. A recent report by the Columbia Basin Tribal Council described salmon and other fish species as “paramount” to the well-being of Indigenous and First Nations peoples (Columbia Basin Tribes, 2015), and documented the loss of salmon as an “irreparable harm” to native peoples who, in experiencing the disappearance of the traditional salmon runs, suffered “an emotional loss, a loss of connection, confidence, and sense

³⁸ Another project pushed by the tribal government has failed to be approved by residents, despite the promise of more jobs and revenue -- a quarter million dollar motor sports park. A reporter for the Weekly Bend newspress interviewed one resident after the most recent rejection of the referendum, who said, “People voted against it because it’s too close to the watershed. There are a lot of Indian foods that grow there. There’s a lot of game out there” (Rook, 2014).

of self-worth...a spiritual and ceremonial loss, a loss of spiritual guidance.” An intertribal group that coordinates management policy and technical services for the fisheries of Yakama, Warm Springs, Umatilla and Nez Perce tribes writes on their website: “The loss of salmon into the upper Columbia Basin was a monumental, inadequately mitigated, and bilateral infringement on the cultures of native salmon peoples and a loss of economic opportunity for all residents of the Pacific Northwest” (Columbia River Inter-Tribal Fish Commission, 2015).

Warm Springs tribal members that I interviewed spoke of a deep affinity, respect for and identification with salmon and the waters in which they swim, annually celebrating the return of the salmon in the spring with the First Salmon Ceremony. Davie, head of the Natural Resources Division for the Warm Springs Tribes, told me, “Fish are important to us. We’re salmon people.” The Warm Springs Tribal Water Settlement underscores this sentiment in its prioritization to safeguard salmon runs, indicated in the following clause that opens the document: “The Tribes have a long-standing history of protection of Instream Flows on the Reservation to sustain, preserve, and enhance fisheries and have as *their most important objective* [my italics] the maintenance of healthy, viable fish stocks, both resident and anadromous, in the Deschutes Basin.”

Euro-American settlers were not blind to the spiritual and cultural connection between native peoples and native fish. Across the west, tribal people fought to maintain their traditional relationships with salmon, but these efforts were consistently met with failure as colonists proceeded to dam historic fisheries, deplete

salmon stocks through commercial enterprises, and contaminate local waters through mining and logging practices (W. Robbins, 2004). That salmon have begun to be recognized as something worthy of saving is not a small thing, for local ecosystems or for local peoples. But public acknowledgement of the engineered modifications to restore salmon runs tends to celebrate new technologies as win-win situations with little recognition of or responsibility for the harms inflicted on local people and waterscapes. Ironically, the very obvious visibility of the fish project conceals the abusive systems of power responsible for its creation and necessity. We are distracted by the news-press publicity, the opportunities to tour the facility, and the celebrated returns of the fish. The fanfare leaves little space to ask the simple question: but why and how did elaborate fish passage technology become necessary in the first place?

Anthropologist Renato Rosaldo (1989) uses the term “imperialist nostalgia” to describe the affect adopted by western anthropologists who lament the multifaceted losses in the global South without recognizing that what they mourn is something they participate in destroying. We know that human-salmon relations in the Deschutes are saturated with strong feelings of care, loss, and regional and personal identity for new and for native residents. But the efforts to recuperate these relations are represented as a story of success, where we are assured that the market, society, and salmon can co-exist and thrive. Lost in this account of fish reintroduction and rehabilitation are the activities that initiated the damages these new technologies and social coalitions attempt to repair. Although intended for a different geographical context, imperialist nostalgia is a useful trope for considering the ways in which

dominant conversations around salmon loss and salmon returns tend to disregard that which is complicit in their decimation – the devastating impact that colonial settlement had on native peoples and ecologies. In this regard, we can consider the technological advances to recreate a salmon run in the Deschutes as markers of human failures as well as of human ingenuity.

Gordon's concept of haunting can help us to recall what has been lost amid the mainstream narrative of ecological modernization. Haunting challenges our linear notions of progress and time, allowing us to honor the ways in which histories are congealed in the present moment. In a haunted landscape, ghosts emerge as signals that the past lives on, presenting us with a reality that is indebted to history but not separate from it. The emergent relationships between cyborg salmon and tribal members demonstrate this dynamic co-creation, where past histories help create conditions for new ways of relating to a changing landscape, for example via fish hatcheries and sophisticated dam passage.

These new relations between salmon and tribal members also serve to challenge common assumptions of Indigeneity. To be clear, in suggesting that we acknowledge the Deschutes River as that which signifies historical losses and traumas, I am not romanticizing a natural past supposedly defiled by modernity. As noted in previous chapters, notions of "purity" and "defilement" can be dangerous, in that they so often cause us to fall back on the well-worn, mutually exclusive categories of nature and culture that have been the underlying assumptions guiding countless acts of injustice and inequality over time. Numerous accounts have

documented how people of color have been written out of the landscape to uphold symbolic ideas of untouched nature (Brahinsky, Sasser, & Minkoff-Zern, 2014; Cronon, 1996; Merchant, 1980). The U.S. National Park system is a case in point, wherein human inhabitants were moved onto reservations to make way for the creation of a wilderness that was then valorized as pristine, uninhabited land (Cronon, 1996). When Indigenous peoples are acknowledged as legitimate residents of particular landscapes, there can emerge the racialized assumption that they should demonstrate a particular ecological nobility. This “oppressive eco-authenticity” can lead to behavioral expectations and become coercive when Indigenous peoples are policed or managed to ensure their engagement in the assumed norms of what it is to be “native” (Satterfield, Gregory, Klain, Roberts, & Chan, 2013, p. 104).

In his book *Returns: Becoming Indigenous in the 21st Century*, anthropologist James Clifford claims that “Any attempt to survey the social landscape of Indigeneity [is one that] confronts diversity and contradiction” (2013, p. 21). Clifford (2013) describes colonization as an ongoing process – one that is uneven and unfinished, despite the progressive storylines we read in history books that trace the demise of Indigenous peoples through capitalism, schooling and contagion. Recognizing this ongoing-ness helps us to better understand contemporary relations between cyborg fish and tribal members in the Deschutes, where the activities of Warm Springs tribal members challenge one inclined to romanticize tribal people and their stereotypical wilderness aesthetic.

As noted above, the Warm Springs Tribal council was central in helping design the fish passage technology for the Pelton Round Butte dam, two-thirds of which they now own. Tribal members working in Natural Resources expressed pride in dam ownership, and in its new fish passage technology. In not one of my conversations with tribal members did I hear a sign of doubt or consternation over the dam's existence.

Given the reservations' high level of poverty, it would not be surprising that, like the sacrifices made to accommodate a growing cannabis industry, tribal members might exchange hydropower income for salmon runs. But this would be telling a familiar political economic story, and this story of commodification does not work to explain the entangled relations among fish, tribal members, colonial histories and dam infrastructure. When referring to the dam complex, Warm Springs members did not celebrate (or even mention) hydropower income. They spoke only of the salmon. For example, while waiting for Jeff to meet up with us in the PGE dam complex lobby, Lee shared with me the news from that year's autumn run.

"The first sockeye made its return!" he exclaimed, "Taa daaa! It was with great fanfare. The first adult fish." I asked who was aware of this, and he said that everyone on the reservation knew about it right away. This was the sockeye clipped, tagged, and shuttled through the dam complex, the cyborg phenomenon whose relations are much more complicated and rich than simple body counts.

Salmon reintroduction efforts straddle a complicated line. The typical ways in which contemporary management practices attend to both salmon and tribal histories

is through either retribution or restoration, both of which require a calculus of abstraction via fish counts as well as the naturalization of stereotypes associated with tribal life. These political approaches fail to adequately recognize and account for difference, change, and encounter. The relations between tribal members, the dam complex, and cyborg salmon are complex, and their complexity demonstrates how practices of heritage renewal and Indigenous attachments to place are constantly in flux, emerging in different forms at different moments. That Warm Springs tribal members co-own one of the most damaging ruptures in Oregon's waterways is not a sign of "eco-inauthenticity" but instead can be seen to constitute a creative, commingled reinvention fish politics that responds to the violent histories of colonization and capitalist expansion. For example, when I asked Lee if tribal members felt conflicted around the dam's operations, he responded matter-of-factly, "Sure, the naturalness of the system has been corrupted. Back in 1958, with Bonneville dam they created lake habitats, so species have adapted to this system, changed temperatures, changed the flow regime. You have manmade problems so you have to have manmade solutions."

Lee's words indicate how in embracing cyborg salmon Warm Springs tribal members are "rearticulating tradition" (Clifford, 2013, p. 279) – engaging in cultural renewal and heritage revival through ever-changing relations with new multi-species landscapes and post-colonial histories. These new articulations do not erase long-standing power imbalances, as Gordon's concept of haunting makes clear. For example, Sheila, with the DRC, said that at meetings with irrigation district managers

and tribal members, irrigation district managers will often attempt to leverage their seniority in the basin and say, “We’ve been working this land for three generations!” Sheila laughs because then the tribal folks respond, “We’ve been here since time immemorial.” Sheila said, “No one blinks an eye. I don’t understand how the irrigators can’t feel ashamed, or how the Warm Springs folks don’t feel bitter.”

That according to Sheila no one blinks an eye when Warm Springs tribal members refer to their long-standing presence in the basin speaks to the ways in which particular histories (and particular wounds) are rendered invisible in the waterscape. The new alliances between the Warm Springs Federation and PGE have presented tribal members with opportunities to actively engage in water politics and to recreate tribal identity. What is given up in this process and what future possibilities are enabled? These are questions that emerge in the Deschutes but that are also present in most of the world, where forces of capitalism and colonialism have devastated native ecological and human communities. I thus offer this alternative rendering of the cyborg dam complex (as that which designates loss rather than gain) not to suggest that we make efforts to regain what we have lost, but to recognize what it is that we have inherited from the past, and in so doing approach tradition as a historical practice rather than a backward looking inheritance. When we do this, we may open to a new form of response-ability (Barad, 2010) – a capacity to respond that is enhanced and inspired by a clear understanding of our interconnected lives and the histories that are congealed within them. This responsiveness to the present holds a place for the transformative potential of what can emerge in damaged multi-species

landscapes.

Conclusion

In 2016 Don Ratliff, PGE's retired fish biologist, gave a public slide show that documented the history of the Deschutes River and provided an overview of the salmon reintroduction program. The presentation was crafted as a historical chronology. Radcliff showed photographs from the 1800s of traditional fishing platforms and described how prior to the dams, the Deschutes used to be a major historic Native American fishing and cultural site. As the slide show progressed, we saw images of the recent changes – aerial photographs of the dam complex, the water tower, and delighted white fishermen and women casting lines in waters that now harbor newly introduced salmon. By the end of the show, we learned and celebrated the fact that salmon once again occupy the Deschutes waterscape. Photographs of tourists, white anglers, and fish hatcheries had replaced images of Native Americans and historic fishing platforms.

In attempting to document the living affective history of human-salmon relations, I introduce an alternative approach to understanding time and subjectivity than the chronology and subjects that characterized Ratliff's talk. As I demonstrate above, the cyborg salmon is a different creature from that which existed before dams and before Euro-American colonialism. This salmon is contingent upon our relations with history but is not separate from it, bringing together past legacies and future dreams. The impressive new infrastructure in the Deschutes not only symbolizes

progress, but also signifies how the past is embedded in the present, and very much a part of the fabric of our everyday material lives. Reckoning with time in this way introduces a paradigm that counters the linear narrative prototypical of contemporary natural resource management practices where a pre-modern past is eclipsed by modern progress. As Clifford, writes, when we apprehend tradition as historical practice, “tradition is freed from a primary association with the past and grasped as a way of actively connecting different times: a source of transformation” (Clifford, 2013, p. 29).

In addition, in contemporary Deschutes water politics, it can be argued that humans and non-humans have become objects of exchange, where salmon can live without wild rivers, and fish counts and yields are markers of success. But I propose that there is more than exchange value at play in these more-than-human relations. The fish stories I tell above point to more textured and diverse understandings of fish and water, where fish biologists and dam operators celebrate the return of a single iconic fish, fishing guides worry that their livelihoods will be jeopardized by new modifications, and resource managers debate naming practices. These stories point to how emotions and feelings produce significant material effects in the world.

Theories of affect and emotion also help me to think through a central question – how and why do we care? Whereas the dominant logic guiding fish and waterscape restoration policy is related to progress and profit, we live in and experience worlds that cannot be reduced by such universalizing worldviews. By emphasizing interspecies encounters, I have attempted to tell small stories of local

connection that point to our interrelatedness, which may affect our capacity to care for the more-than-human present. As Donna Haraway suggests, when we experience the world as “a knot in motion,” “we engage in a joint dance of being that breeds respect and response” (2000; 62). This “joint dance of being” requires and engenders multi-species relationships with the more-than-human world, and in these new encounters are possibilities for new ways of living, feeling, caring, and collaborating.

Chapter 6: Water Governance

“Whiskey is for drinking, water is for fighting over” – Mark Twain

Water has been described as “hydro-social” (Bakker, 2007b; Perreault, 2014; Schmidt, 2014); it exists not only as rainfall and runoff, but is also produced and enacted through human labor and given meaning through cultural beliefs, historical memory, and embodied practices. Water circulates through hydrological phases of rain, air and rivers as well as through networks of pipes, laws, quality standards, consumers, and drainage canals. In this regard, water is inherently political -- its movement indicates and reproduces social power relations, themselves revealed in the rules, norms and laws underlying the distribution process.

During my time in the Deschutes, I heard Mark Twain’s above assertion at least a dozen times. I described my work to those I encountered in general terms – “I’m studying western water politics and using the Deschutes Basin as a case study” – and shortly after this introduction someone would respond, “Well, you know what they say? Whiskey is for drinking...” Across the board, people recognized that water was a weighty topic, emotionally and politically, locally and globally. And people loved to talk about it. At the end of a long day I met up with some friends at a local pub and ended up sitting next to a lawyer hired by a local irrigation district. When he heard what I was up to, he subsequently gave me an earful of local water gossip and then drunkenly demanded that I not share the stories with anyone. I understood his

request – he had shared with me a world of dirty water politics, where people behaved in ways to obtain or maintain their water access and rights that they would certainly want to keep confidential.

As Mark Twain glibly noted, water allocation is widely regarded to be a contentious issue. But there is ambiguity around why this is the case. The most pervasive understanding is that there simply isn't enough water to go around. Particularly in the American West, water has always been considered to be a limiting factor to human development, and thus its structures of governance (western water law and federally subsidized infrastructure) were established based on these perceived limitations. As I note in the introductory chapter, environmental media accounts and natural resource advocates tend to adhere to this assumption, whereas political ecologists tend to deconstruct it. But in focusing their energy on the deconstruction of water scarcity as a phenomenon and trope, political ecologists have lost sight of a new transition in western water politics: the turn of attention in management arenas from framing the problem as that of scarcity to one of efficient allocation.

In this chapter I turn from rivers and salmon to focus more directly on water politics and on human systems of water management that have come to predominate water policy in the American West. Foucault described governmentality as the way in which governments attempt to create citizens that behave and act in particular ways suited to fulfill governmental policies, and Agrawal (2005) utilized this formulation in his elaboration of the environmental subject as one who is interpellated to care about the environment in specific ways. Contemporary paradigms for managing water

can be understood in these terms, in that they generate, legitimate, and exclude particular forms of response and particular subject positions with respect to human-water relations. They also can be understood through the framework of affect, in that they enable and limit particular forms of encounter. I turn to these theoretical approaches in order to explore the resonance and impact of one particular water management paradigm that has trademarked the water practices in the Deschutes Basin – the paradigm of collaborative governance. I describe its main characteristics, its primary limitations, and suggest a number of ways that the paradigm can be expanded to better represent the diverse constituents of a shared basin.

Collaborative Water Governance

Historically, the Upper Deschutes had a stable flow regime that supported a robust fishery...The flow regime in the river has been highly altered by the storage and delivery of water for irrigation. Seven irrigation districts deliver water from the Deschutes River above Bend to approximately 123,881 acres, generate a crop value of approximately \$99 million, for a total economic impact of \$346.6 million, and have significantly shaped our cultural and physical landscape. However, flow alterations have changed the geomorphology of the river, impacted water quality and fish habitat...We believe that with collaboration and creativity, we can expand the tools available to restore instream flows in the Upper Deschutes while meeting needs of out of stream uses. We believe this will only happen within an open and inclusive process that seeks to develop a comprehensive water management plan for the Upper Deschutes River (*Upper Deschutes River Background Paper*, 2012, p. 17).

This section from a white paper published by the DRC in 2012 refers to the new approach to water management that I allude to above. For one, the DRC describes allocation rather than dwindling supply as central to addressing water

distribution conflicts. The authors recognize the importance of water for irrigation, for water quality, and for fish habitat, and argue that both instream flows and out of stream uses are needs that can be met through “collaboration and creativity.” The collaboration that they refer to in this case is reflected in the contemporary form of natural resource governance increasingly instituted across the American West – that of “collaborative governance,” also known as “collaborative management.”

Ansell and Gash (2008) define collaborative governance as “[a] governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (544). Described as the “dominant paradigm” in natural resource management in the United States (Walker & Hurley, 2004), collaborative governance claims to bring together state and non-state actors to solve complex environmental problems.³⁹ The approach gained popularity following neoliberal policies in the 1970s and 80s, where less government funding for environmental management shifted these responsibilities to non-state actors (Brown et al. 2015).

A number of scholars in the fields of public policy and natural resource management have identified collaborative governance as fundamental to solving

³⁹ Participatory governance and collaborative governance are similar concepts and the terms are often used interchangeably. I use the term collaborative governance because it is the dominant trope used in public policy circles. Participatory governance is a term used most often by development scholars and is associated with the decentralization of resource management rather than with inter-scalar involvement.

policy disputes, complex problems, or long-term management issues with respect to water (Ansell and Gash 2008; Connick and Innes 2003). Others express reserve, cautioning that collaborative governance strategies can reinforce power imbalances, devolve problems to community members, and reiterate persistent inequalities (Morales and Harris 2014; Morinville and Harris 2014; Goldin 2013, Walker and Hurley 2004).⁴⁰

Oregon's watershed council model perhaps best epitomizes this move towards decentralization and participatory collaboration. In 1995 the state legislature passed a bill that established watershed councils as locally organized, voluntary, non-regulatory groups that are established in order to improve the conditions of watersheds in their local area (NOWC, 2016). In addition, the fact that western water management efforts are increasingly asked and expected to be collaborative is reflected in contemporary governmental funding practices. For example, one of the most competitive federal grants awarded to water management agencies, the WaterSMART Basin Studies (awarded to the Deschutes Basin in 2014), must be collaboratively designed and implemented, and incorporate an outreach plan in order to include varied stakeholder representation. Likewise, the U.S. Department of the Interior implemented the Cooperative Watershed Management Program in 2009 as

⁴⁰ The website describing Oregon's watershed councils describes them as: "Bringing together local stakeholders from private, local, state and federal interests in a partnership, councils plan watershed protection and restoration strategies in a holistic way – from ridge top to ridge top and from headwaters to mouth. Through this watershed partnership, council members collaborate to identify issues, promote cooperative solutions, focus resources, agree on goals for watershed protection and enhancement, and foster communication among all watershed interests" (NOWC, 2016).

part of the Cooperative Watershed Management Act, which authorizes the Secretary of the Interior to establish a grant program that supports the formation and development of locally led watershed groups and “to facilitate the development of multi-stakeholder watershed management projects” (U.S. Bureau of Reclamation 2015). The call for proposals states “priority may be given to watershed groups that represent a maximum diversity of interests.” The water managers that I interviewed demonstrated an unfailing adherence to the rhetoric of collaboration. For example, Leah, a project manager for the Deschutes Land Trust, spoke to the perceived value of collaboration during an interview, “Partnership is important. [The Land Trust] is working with the landowners, and the DRC is looking at instream flows, and the watershed council is doing restoration work, and the Forest Service is providing technical expertise...It’s been really successful [in terms of securing funding]...you can garner more funding when you have strong collaborations.”

The DRC is paradigmatic of contemporary watershed management initiatives that emphasize participation and collaboration. The institution relies on funding from numerous sources and receives the bulk of its income from the national Fish and Wildlife Foundation (32%), 6% from other federal entities, 13% from the state of Oregon, 16% from individuals, 27% from foundations and corporations, and 6% from consulting and other projects. The DRC’s ability to secure funding from state and non-state sources is without fail contingent upon its ability to demonstrate its wide stakeholder representation (e.g., its ability to collaborate across interest groups). Likewise, the agency brands itself in terms of collaboration. The home page of the

organization's website describes the agency as "a collaborative, multi-stakeholder organization" in the sense that "the DRC's Board of Directors makes decisions by consensus and is comprised of key public and private interests including farming, ranching, timber, development, hydro-power, recreation, tribes and environment" (DRC 2015).

The innovative water management strategies in the Deschutes have been regarded as epitomizing collaborative management at its best (S. L. Collins et al., 2011; King, 2012; Neuman, 2004). As I note above, the water agreement with the tribes helped facilitate this collaborative approach to water management, where irrigators, municipal representatives, environmental organizations, recreators, and tribal representatives are encouraged to work together to ensure adequate water for ecological health, agriculture, human development, recreation, and cultural needs. It is not my intent to criticize this process, nor do I intend to ignore the ways in which Deschutes water politics have managed to recruit participation and representation from a variety of geographic regions and demographics backgrounds. But, similar to my suggestion that a market-based system for water allocation fails to account for how people make meaning of their local waters, I am concerned that the system of collaborative management as it now stands fails to account for humans and nature in ways that are truly equitable and democratic.

Others have written about this at length, criticizing participatory governance and collaborative management for reinforcing rather than overcoming existing inequalities, addressing power dynamics superficially through quantitative goals (e.g.

counting attendance of underrepresented groups at meetings), and devolving responsibility to communities rather than state or federal government (Agarwal, 2001; Morales & Harris, 2014; Morinville & Harris, 2014; Walker & Hurley, 2004). In the passages below, I focus on two defining features of collaborative management that I believe limit its potential in this regard: its routine evacuation of feelings and emotion from water dialogues, and its reliance on stakeholder categories as the only legitimate avenue for participation in water politics. I describe each of these features in turn.

Collaborative Governance and Communicative Rationality

One of the defining characteristics of the collaborative management paradigm is that it is expected to be “communicative rational” (Innes, 1996, p. 2), where collaboration is “reached consensually through deliberations involving all stakeholders where all are equally empowered and fully informed, and where the conditions of ideal speech are met (statements are comprehensible, scientifically true, and offered by those who can legitimately speak and who speak sincerely)” (ibid.). While this sounds like a reasonable prerequisite for equitable and just management practices, the reliance on communicative rationality assumes that when we talk about water resources, we all share a common understanding in which water is understood to be a singular entity that can be counted, tracked and assigned a monetary value and thus communicated about between human stakeholders. But water means different things to different people and beings. For example, for Davie, a Warm Springs tribal member, the most important thing given by the Creator is water: “water is always honored in all of our spirit worlds.” This is a

different water from that diverted by Central Oregon Irrigation District to maximize patron profits, and a different water from that bubbling up from the springs of the Metolius, where red kokanee make the annual pilgrimage to spawn and die.

If my research convinced me of anything, it was that debates about water are not debates about a simple and quantifiable H₂O. People are affected by water in ways that shape their meaning-making, their sense of self, their relations to place and to each other, and these relations are dynamic, multiple and deeply felt. For example, Nightengale (2011) describes how Scottish fishermen expressed pride and self-confidence when on their boats but in formal meeting rooms with policy makers and scientists felt out of place and powerless. This study underscores how subjectivities are wedded to context and productive of different emotions and sensibilities. In contrast, communicative rationality privileges a positivist view of knowledge as that which is measurable and observable rather than one based on personal, subjective experience.

In addition and related to this concern is the difficulty that collaborative management has in accounting for the affective, non-rational ways in which humans experience local waters. A number of studies have documented how decisions around natural resource use are highly subjective and influenced by emotions and by shifting relationships (Morales & Harris, 2014; Nightingale, 2011; Farhana Sultana, 2011). Tess, the facilitator for the DRC meetings, told me one of the most important lessons she learned from her mentor was that “Emotion is a facilitator’s best friend.” When I asked her what she meant, she said that in meetings, she tracks people’s expressions of emotion more than their words. “People get crazy around water.” The filmmaker who developed a

documentary of the Deschutes expressed a similar observation saying, “I’m most interested in the passion, the passion everyone speaks to when they talk about the river is astonishing...yes, the 23 miles [of the Upper Deschutes] need help, but it’s the passion everyone has for the river that I’m trying to represent.” These allusions to passion, feelings, and emotions are important, and yet they can be considered inimical to the definition of communicative rationality, which, as noted above, relies not on strong feelings but on “common information” and “good judgment.”

My attempt to understand and evaluate collaborative governance in the Deschutes presented me with a conundrum. Everyone that I interviewed acknowledged, often ardently, that emotion plays a central role in the shaping of water politics. Communication campaigns, meeting facilitators, branding practices, and the palpable tensions that would emerge in boardroom meetings around various water scenarios all indicated a general recognition that “water is for fighting over.” For example, Keith from ODWR expressed frustration that most people are “so emotionally attached to [their vision of what they want], they’re not going to even listen to the facts.”

But while everyone seemed to recognize that water politics generate strong feelings, feelings are widely regarded as inappropriate motivations for participating in collaborative management dialogues, particularly if they were associated with caring for the more-than-human world. A USGS geologist acknowledged that science, regarded as rational and value-free, is often used in the Deschutes to leverage

particular water management platforms that are motivated by strong feelings. Because science is regarded as a more legitimate grounds for decision making than emotion, he said, “Science becomes the thing you talk about, as the surrogate for the things you really want to talk about.”

Perhaps this paradox should not come as a surprise. Feminist scholars have demonstrated in a myriad of ways how emotions and particular forms of emotions have been routinely excluded from contemporary politics and from social theory (Jaggar, 2009; Lorde, 1997). In studying animal rights movements, Julian McAllister Groves (1997) found that in order to avoid being dismissed as hysterical or overly motivated by emotion, animal protection activists routinely emphasized scientific and rational justifications for their commitment to their cause. Recent sociological and political theory scholarship has thus attempted to carve out legitimate space for the role of emotions by documenting its role in social and political movements and in catalyzing and mobilizing people with or without existing networks of political engagement (C. Collins, 2001; Gould, 2009; Kemper, 2001; Stein, 2001). Likewise, geographers have argued that emotion is central to how we make sense of and move through space (Anderson and Smith 2001; Bondi 2005; Davidson and Milligan 2004; Wood and Smith 2004). Davidson and Milligan describe emotions as “a form of connective tissue that links experiential geographies of the human psyche and physique with(in) broader social geographies of place” (2004:524).

While everyone I interviewed acknowledged that strong feelings are a fundamental facet of waterworld, it was clear that in formal collaborative water

management meetings emotions were not taken as seriously as what was regarded to be impartial, scientifically informed rationality. For example, after the city council meeting on the Pilot Butte piping project, members of the DRC and the Water Resources Board criticized those who appeared to be motivated by strong emotions and commended those who presented well-reasoned and thoughtful arguments, evaluating the former as “embarrassing” and the latter as “a great presentation.” At a DRC board meeting, one stakeholder group was criticized outright because according to a staff member “they don’t use sound science.”

In this regard, I want to be clear that science and scientific inquiry are not the same as rationality, although in the Deschutes we see science being recruited by managers in order to uphold a reputation of rationality. This tendency does not incriminate science or scientists themselves. In many cases the geologists and biologists that I interviewed expressed more passion about their studies than the managers and politicians who quote their findings (for example, Grant Gordon’s enthusiasm for the unique geology of the Deschutes). The concept of rationality, like that of modern scientific knowledge, is simply the product of historically situated practices, including their interactions (Latour, 2004; Lien & Law, 2011). Thus, in upholding a notion of rationality as that which is bound to an emotion-free science, contemporary collaborative management practices retain an internal contradiction around their relationships to emotions and feelings, where such experiences are seen to overshadow “good judgment” or “common information.” One such case is with respect to the stigmatization of the advocate, an example that I offer below.

The Advocate

In the course of my research in the Deschutes I shortly discovered that in waterworld, it was a liability to be seen as an advocate. For example, the three most influential environmentally oriented non-profit institutions in the basin (the DRC, Deschutes Land Trust and Upper Deschutes Watershed Council) insist that they are non-advocacy groups. The DRC director said, “It’s our charter to avoid taking advocacy positions,” and a project manager for the Deschutes Land Trust described her institution: “We’re not an advocacy group... We don’t push people and that buffers us from [people with] strong opinions.” A number of other invested participants in Deschutes collaborative management circles routinely qualified themselves and their institutions as collaborative, explicitly stating that they were non-advocacy groups.

I was perplexed by the reluctance of these water managers to be seen as advocates and by the supposed mutual exclusivity of collaboration and advocacy. The Miriam-Webster dictionary defines an advocate as “one that pleads the cause of another” (Miriam-Webster Dictionary, 2011) According to this definition, wouldn’t an institution devoted to water rights have to assume an advocacy position in taking a stand for the more-than-human world? And wouldn’t this be a natural facet of the collaborative process? As I note above, salmon and aquifers do not take physical seats in boardrooms. Thus, they may require advocates in order to have their projected needs represented. But it became clear that to many participants in waterworld, advocacy means more than simply pleading the cause of another.

For one, the presence of an advocate implied the failure of the collaborative process primarily because advocacy was always linked with emotionality. As I described above in my accounting of communicative rationality, feelings are generally regarded as an impediment to the collaborative process. For example, Seth, the director of the Upper Deschutes Watershed Council said, “In those kind of environments (public testimony), our role is to be credible and respectful with the perspective we bring. We don’t want to be seen as an advocate where our values trump the analysis.” When I asked Seth to elaborate on what he meant by “advocacy” he said, “It’s the vilification of the enemy which is what I mean by the advocacy world.” In this case, the advocate stands in for an individual or institution that holds fast to an emotional agenda without compromising, where values or strong feelings interfere with one’s ability to see clearly and to collaborate. A more appropriate political player, on the other hand, operates via impartiality and rational decision-making.

In order to maintain their reputations in water policy circles for being non-advocates, DRC staff members worked hard to keep their personal feelings discrete, but in backrooms and at all-staff meetings they would express frustration around their perceived inability to stand up for their beliefs. For example, after the fish kill episode, one staff member said, “I hope this [event] catalyzes people. No one is doing environmental advocacy. The strength and self-righteousness that the irrigation districts have isn’t balanced by others...We need people to stay engaged and the DRC [as a non-advocacy group] can’t do that.” Another staff member talked about a

documentary he'd seen that weekend that centered on the decommissioning of Pacific Northwest dams. He exclaimed, "That's how I really feel! Pull that dam down!" He then admitted that he couldn't voice that opinion in public, "We have to keep such a balanced view over here."

In addition to standing in for one who is motivated by feelings more than by rational decision-making, I discovered that in waterworld, the advocate was a designation reserved solely for environmentalists. Every time an individual mentioned advocacy or advocates in meetings, interviews, or in newspaper articles, it was in reference to an environmental agenda. In boardroom meetings and grant applications irrigators were expected to stand up for their senior water rights and their vision of the American frontier, and they were not called out for being advocates. But institutions with environmentally oriented mission statements, such as the DRC, were put in a difficult situation. They were forced to straddle a line between adhering to their environmental mission without being seen as overly attached to an environmental agenda.

In an interview, one DRC staff member spoke to this difficulty; "It's frustrating...up until recently I felt you couldn't even say things that were objective -- everything had to be really nuanced. You couldn't say that management of the Upper Deschutes has caused major erosion issues [because that might be seen as blaming irrigators for mismanagement]. I'd get reamed [by irrigation districts] for saying that. Now we're getting to the point where we can say that, but we have to be careful how we say it." According to this staff member, if, in efforts to protect instream flows, the

DRC tried to describe how the watershed had been ecologically compromised, they could be regarded as taking an environmental stand, blaming irrigators and irrigation districts, and displaying an inappropriate impartial stance to water politics.

Bev, communications director for the DRC, described the efforts that staff members took to avoid being incriminated as advocates:

I think if you look at our partners...within our internal stakeholder board, agencies, landowners we work with, I think some people have seen us as, bullies is not the right word, but assertive in pushing our agenda, at assuming leadership when maybe it wasn't wanted. But we fill that void because we have that expertise. I think that's created jealousy in some arenas, and created a bit of distrust in others. [People are wondering] 'What does the DRC really want?' And we've made it clear that we want water in the river, that's what we want. And so there's been learning in that, how to navigate. We're handicapped in that we're not an advocacy organization and can't come out and do a safe harbor campaign. We can't do it. We would completely alienate a large portion of our board if we did that. And so for that reason I think some of our close partners wonder what our agenda is and because of the politics don't think we have their back. And in some cases we don't because it would be hard for us.

Here, Bev speaks to the difficulty that the DRC or any institution with an environmental mission statement faces if it wants to participate in collaborative management dialogues. If the organization instituted a safe harbor campaign, a legal provision that would regulate environmentally harmful actions in the watershed, they would be considered an advocate, and would alienate many of their board members (primarily those aligned with irrigation and development). But because they don't come out with strong environmental agendas, some of their other partners (who are environmentally-oriented) "don't think we have their back."

Likewise, Seth described having to chastise one of his board members for being too outspoken: “He’s a hard core river advocate. He was one of the individuals that our board had to talk to and say, ‘On our own time we agree with you. We read Ed Abby and love the river. But when we come to these meetings we need to work together and you need to put the advocacy stuff at the door.’” I spoke with the incriminated environmentalist who told me in a private interview about the interaction, “I was slowly learning that if you want to be an advocate you should be one in the shadows.”

Other interviewees expressed frustration around this double bind and their perceived inability to openly express pro-environment agendas. To do so, they believed, would risk losing their reputation in the basin as an arbitrator and credible stakeholder. For a number of individuals, this reputation was hard-won and fragile. Several DRC employees acknowledged that despite their attempts to be seen as impartial, they frequently received criticism from environmental groups for being too aligned with irrigation interests, and from irrigators for being too environmental. Conversations with other members of the community confirmed these fears. For example, Keith, OWDR’s district manager described the DRC as maintaining a non-advocacy position, but thought the staff was overly environmentally oriented. “The staff is way leaning towards environmentalism.” He paused and snorted, “I bet if you took a poll you’d see most of them voted for Obama!”

One of the primary goals of collaborative management is inclusivity. Those embracing the paradigm argue that, contrary to more top-down approaches to resource management, it opens up opportunities for more participants to engage in local politics around shared resources. But the above points to a central way in which collaborative management excludes particular forms of participation, in evacuating and stigmatizing feelings from collaborative management settings. This was strikingly apparent in the stigmatization of the advocate, a position widely regarded as one linked with emotionality.

That the advocate is a term reserved only for environmentalists reminds us also of a deeply ingrained prejudice that precedes the advent of collaborative management as a governance strategy. Ecofeminist scholars have pointed to the ways in which the earth and nature have been historically associated with the feminine and, especially in the wake of the Scientific Revolution, undermined by the rise of a market-oriented, technocratic and androcentric culture, where nature was to be rationalized, dissected and bound into service (Merchant, 1980; Plumwood, 1999). The polarization of science and emotion, masculine and feminine, culture and nature are dualisms that continue to inform social and political thought, as we can see clearly in the negative connotations of the emotional advocate. In acknowledging emotions as valid in the realm of the political, collaborative management can perhaps break from this polarized dominion model that has characterized human's relationship with the natural world for centuries and create new spaces for engagement in political struggles.

Collaborative Governance and the Stakeholder

In the introduction to this chapter, I suggested that collaborative management models are limited in two main ways. The first, which I outline above, is its underacknowledgment of feelings. The second is its reliance on stakeholder categories. I now turn to this second critique, and begin by defining and situating the stakeholder as a category of acceptable inclusion in contemporary water politics. Akin to my concern with the evacuation of emotions from collaborative management in water politics, I worry that the rhetoric of ‘stakeholders’ and the use of stakeholder categories prevent some people and interests from engaging effectively in water politics.

A 2015 issue of “The Water Report,” a monthly newsletter for engineers, lawyers, regulatory agencies, municipalities, and others interested in the evolution of western water law, showcased a review of the doctrine of prior appropriation:

The Prior Appropriation Doctrine is exclusionary by nature in that it favors those who arrive first over later arrivals. It rewards and protects economic development, diversions, and depletions while ignoring large elements of society. Those left out may have been silent in the past, but many are becoming much more vocal now in demanding a seat at the water policy and allocation table. These newly active stakeholders include those from areas of water origin where the water has been purchased and stripped from the land for use in distant communities. They include recreationists who enjoy floating and fishing in a live and active stream. They include Indian tribes who have waited far too long for their opportunity to have water developed for their benefit. In addition, the influx of new Western

immigrants bring with them a different mind-set honed in other locales, where the population is less dependent upon the diversion and consumptive use of water. Many of these stakeholders have a strong sense of the inherent value of simply leaving water running in the stream rather than diverting every available drop of water. Their notion of value and of use, however, are at odds with the basic tenets of the Doctrine — i.e., the tenets that make beneficial use the measure and limit of the water right, that validate only those rights that divert water from the stream for application to some economy-producing endeavor, and which subject the right to forfeiture for non-use.

This modern review brings to light two important points. One is the authors' recognition that in the American West old structures of power (e.g. the Doctrine) have to contend with new sets of values. A DRC project manager described the situation: "All the water was allocated in the 1800s and late 1900s when there was no concern but for development and now there is a greater awareness of different water needs." Likewise Ron, ODWR representative for the Deschutes, acknowledged that the doctrine of prior appropriation "was good for settling the west," but that "now they could make some improvements." He continued, "What I think you could say for some streams, the irrigators dry them up to the very last drop. What we need is a minimum flow so that we could stop diverting the last drop of water, that's what we need, but I don't know how we'd get there [because current water law doesn't allow for that]." Contemporary forms of resource management, such as collaborative management, have thus been introduced in order to contend with this conflict between old systems of power and new uses and practices.

But in addition to calling attention to the legal and administrative barriers instituted by western water law, the review article relies on a dominant trope with respect to collaborative water management – that of the "stakeholder." As noted above,

collaborative water management emphasizes communication and participation across interest groups. If collaboration means that humans with different interests are invited to participate in policy decisions, then stakeholders in this case are recognized as the legitimate subject positions from which to participate in water management dialogues. The ability of institutions to secure financial support for their water management efforts rests on their capacity to represent themselves as inclusive and collaborative, and this is demonstrated by claiming broad stakeholder representation.

In applying for a prestigious federal grant, the Deschutes Basin Board of Control (DBBC) and the DRC define a stakeholder as “anyone who says they have a stake in the decision - including participants actively engaged in the [Basin Study] process and those who have interest but have not been engaged thus far (e.g., the public, residents in the basin, and other interest groups).” While in theory this stakeholder definition can be considered a generous call for inclusion, it became clear to me during my time in the Deschutes that avenues for participation in water management decision-making were limited to a specific set of categories. For example, the grant goes on to provide a bullet list of the following constituents:

- Non-commercial and commercial farmers, within and outside of irrigation districts
- Land or business owners with a water right or that pump groundwater
- Potential funding sources for implementation of Study recommendations
- Political decision-makers (elected and appointed officials)

- Confederated Tribes of Warm Springs
- Recreation interests
- Riverfront property owners
- Irrigators
- Instream flow advocates
- Municipalities and other water providers
- Angler groups
- Other interested citizens

This list and others like it emerged in all sorts of water policy venues. Public meetings, grant applications, and public relations strategies all claimed to represent a variety of stakeholders in order to garner legitimacy for being inclusive. But my own encounters with these lists often left me feeling frustrated. For example, a graduate student I met who was studying the DRC's collaborative water management approach sent me a survey that she had developed to assess stakeholder participation and requested that I fill it out. The first question had me stymied. It asked me to identify myself with a particular stakeholder group from a list that resembled the one I shared above. What was I? I wondered. The closest fit seemed to be "instream flow advocate" but even that didn't feel comfortable. It's not just water flows that I'm interested in – I am also protective of water quality and issues pertaining to water equity and sustainability. After a few moments of deliberation, I chose the "Other" category and typed in the box "graduate student." The survey did not get any easier.

From then on, each question asked me to evaluate the efficacy of various aspects of the collaborative process “as a member of [my] stakeholder group.” Did “graduate students” feel adequately represented by the collaborative process? Did “graduate students” have the ability to shape the meeting agendas? Did “graduate students” feel like they could be a part of the Deschutes Basin Study process? I had no idea how to answer the questions, let alone how to speak for so general a population, and I imagined that other respondents faced similar difficulties.

Stuart Hall (1996) defined identification as dynamic and ongoing, a product of history and culture, and used the term “suture” to describe how it is that we bind to and mark symbolic boundaries in the process of representing ourselves. Identification in this sense relies on discourse, in that identities are constructed through the markings of difference. Stakeholder categories operate as discursive representations; in order to participate in waterworld, individuals are forced to choose from a predetermined set of stakeholder categories, and the subject positions and values associated with them.

In maintaining a discrete set of subject positions with which to identify, the collaborative management paradigm invariably excludes particular voices from the political process. It also makes it difficult to locate those who are excluded from politics for the very reason that those not represented within the category “stakeholder groups” are rendered invisible in the public eye. My experience with my colleague’s survey illustrated this difficulty. There was no comfortable place for me to participate; I felt awkward claiming a stakeholder group that I didn’t completely identify with, and uncomfortable speaking for the group that I did.

Stakeholder categories limit and discipline participation in politics in additional ways. For one, some stakeholders are given more credibility than others. For example, at a DRC board meeting, members discussed the Deschutes River Alliance (DRA), a new non-profit organization that is primarily composed of fishermen and guides concerned that low river flows impinge on fish health and habitat. While the new organization fits neatly into a legitimate stakeholder position (that of recreation or instream interests), several board members spoke dismissively about the DRA. “Where are they getting their science?” someone asked, concerned that their scientific methods were not to be trusted. Another board member worried that “another group on the Deschutes may cause confusion” in the public eye, and a third spoke to the group’s reputation, “Let’s just say that at some of these [DRA] meetings there’s been a lot of testosterone in the room.” That DRC board members criticized the organization for potentially being motivated by emotional attachments to place and to livelihood rather than by scientifically documented (e.g. rational) concerns indicates the implicit privileging of seemingly objective rationality over subjective experience. It also sets up parameters for what and who constitutes a legitimate stakeholder.

In a later conversation, Peter, a DRC staff member, described his impression of a legitimate stakeholder:

Water world is steeped in politics and jargon and you can’t just talk to any old person on the street and explain how water works. You just can’t...It’s hard to talk to people who are not organized stakeholders in all this because they’re

not familiar with the politics and jargon. It can be a waste of time. For those people who come in fresh off the street and want to understand because there's some issue they feel really strongly about all of a sudden, I'm sure they feel excluded. However, when it comes to bonafide stakeholders, people who are organized, people who have taken time to become familiar with the political landscape and the players, I don't think there's anyone that we've pushed out or excluded. But you have to put in your time. Otherwise you're a waste of time.

According to Peter, to be a stakeholder means more than simply having an opinion or showing up as an "other interested citizen," despite that category on the stakeholder list. Being a stakeholder entails being organized, being familiar with the political landscape and to have "put in your time." In this regard, stakeholder identities require considerable work – they are not simply about having a "stake" but are about cultivating expertise. The DRA was looked down upon in this regard – they were newcomers on the political scene, and could potentially and unwittingly step on the toes of the DRC or other organizations that had more history and expertise in the basin.

In addition to the work it takes to be regarded as a legitimate stakeholder, not all categories are treated equally. Although hypothetically stakeholders can represent a variety of interests, when push comes to shove three specific categories invariably rise to the top of the list. DRC board members often referred to these categories as the "three legged stool" -- irrigation, environment, and municipalities. In their Deschutes Basin Study, they used the terms farms, rivers and cities (see Figure 3 below). In simplifying the presumed water needs of basin inhabitants to three discrete categories, policy makers and managers give themselves an easier task. This streamlining also characterizes public relations communication strategies. When people ask: Where does the water go? DRC

staff members can respond: to farms, cities, and fish. Implicit in this response is that these are the sole water constituents in the basin, or at least the sole constituents that really matter.⁴¹

The Paradox: Identity, Feelings, and Stakeholders

From the above examples we can see how participation in water politics in the American West is enabled and constrained by one's ability to claim emotional neutrality as well as by one's ability to claim a credible stakeholder position. But there remains a question that I believe is central to this discussion. How do the stereotypes of stakeholder categories operate and resonate with individuals who identify with them? I suggest that the process of identification is both affective and dynamic, and that by recognizing it as such we keep ourselves attuned to historical processes of connection and disconnection, making space for a performative politics that goes beyond predetermined stakeholder categories.

Hall recognized that identification is not a one-sided practice — it entails an active engagement of attaching to a particular subject position. Identity in this case does not refer to a core, stable self, but instead is about “using the resources of history, language and culture in the process of becoming rather than being” (1996; 4). As he puts it, identities are “points of temporary attachment to the subject positions which discursive practices construct for us” (6). In addition, Hall described stereotypes as emotionally-

⁴¹ While it may be simpler to work with three discrete categories (rather than a dozen), I do not intend to presume that it is simple to satisfy these three constituents. This task continues to daunt and perplex water managers across the west.

laden symbols of power relations, where particular (repressed) emotions are associated with particular images. In this regard, feelings are central to the act of discursive identification.

As I note in the previous chapter, affect scholar Sarah Ahmed (2004) describes subjectivity in precisely this way -- as that which is contingent upon the circulation of feelings. According to Ahmed, emotions are the vehicle through which surfaces and boundaries are made. As such, emotions are what “allow us to distinguish between an inside and an outside in the first place” (Ahmed 2004:10). It is her theory of affective economies that explains how the circulation and accumulation of particular affective states and emotions produces subject positions to which people feel they belong.

Hall and Ahmed both help me to make sense of stakeholder positions in a number of ways. For one, their theories allow us to acknowledge the affective nature of the alliances and identifications with stakeholder positions that characterize water management. Stakeholder positions are central to how it is that people negotiate and make sense of water management practices. The emotional attachment to such positions and the normative emotions attached to them are impossible to ignore. Consider the following example: Tess, the facilitator for the Deschutes Basin Study project, compiled a memorandum that she sent out to members of the study group. In it she acknowledged that she “lumped stakeholders together and what I am describing will not apply to everyone equally or precisely,” and then proceeded to outline what she observed to be the main beliefs and desires from the “three legs of the stool.” Her findings were the following:

Instream flow advocates:

- “care about sufficient instream flow for healthy fish and ecosystem processes”
- “wonder if the DBBC is truly committed to a collaborative process...”
- “feel that the instream flow subgroups were working together well on a technical basis and then were shut down...for no good reason...”
- “felt they had a commitment to a collaborative process for the Deshutes Basin Habitat Conservation Plan and believe that now that process is not collaborative

Deschutes Basin Board of Control (Irrigation District boards) members:

- “care about the economic viability of the patrons and their districts, and maintaining the history and way of life of their patrons”
- “believe that instream flow advocates want the irrigation districts’ water rights and don’t care about the districts’ survival or whether they or their patrons thrive”
- “wonder if the instream flow advocates are truly committed to a collaborative process. They fear that instream flow advocates will sue over the DBHCP and or the BSWG process”

Municipalities:

- “care about having an adequate, reliable, and cost-effective water supply to meet the demands of current and future customers”

- “care about the sustainability of the Deschutes River and its tributaries so that Central Oregon continues to be an attractive place to work, live, and visit”
- “want to be part of a process in which their needs and interests are taken seriously and addressed”

This explicit rendering of stakeholder categories illuminates how feelings operate as key variables in the act of identification. According to Tess, municipalities “care” about sustainability issues and instream flow advocates “feel” a commitment to a collaborative process. Stereotypes in this case are clearly emotionally-laden discursive categories, and these emotions can be considered central to the making of individual and collective boundaries.

Stuart Hall’s work on identification reminds us that representations through which people come to understand themselves do not reflect an objective reality but are shaped by relationships of power. In this regard, Hall claims that people do not always passively accept the meanings associated with the subject positions that are most available to them. For example, despite Tess’ disclaimer, she received an onslaught of criticism for her attempts to summarize the three main positions of the three-legged stool, with various stakeholders resisting the associations she had made between an emotional habitus and their assumed subject positions (I describe this in greater detail below). That said, stereotypical representations can also gain affective resonance with those who experience them, and thanks to their intelligibility they can be used strategically for political gain.

For example, water managers frequently relied on, transformed and amplified the emotional associations with stakeholder stereotypes in order to shape and reshape the discourse around contemporary water issues. As water use increasingly transitions from rural to urban users, the political leverage of irrigation district managers in the legislature has waned. In order to maintain ageing infrastructure, cope with the effects of climate change, and implement new fish passage technology these districts increasingly rely on public support. Robin, a resident active in water politics, spoke to this transition, “[Irrigation districts] need to be more efficient, not to get water back in the river, but to meet their supply....To solve these problems is going to take major expenditures. If the [irrigation districts] do it on their own it’s going to be too expensive. To solve their problems they’re going to need people with deep pockets and public support.”

But while the irrigation districts rely more on assistance than ever before, the new public from which they want to receive it has also changed. Less inclined to buy into the old adage of unused water as water “wasted,” new residents express care for water left in rivers, where it can support environmental habitat and recreational amenities. Robin said, “The public, in many ways, is less supportive of irrigators than they were 100 years ago when these laws were established.”

In this context, in order to uphold their reputation with this new population of residents, irrigation district managers rely on communication strategies and media campaigns that pull on emotionally evocative images of an idealized American farmer. This branding practice can be a challenge, particularly because the salt of the earth

industrious farmer is difficult to find in the Deschutes Basin. Aside from some successful enterprises in Jefferson County, agriculture is not a lucrative industry in this harsh desert region. Farming is more generally adopted as a recreational past time, where wealthy newcomers (known pejoratively as “hobby farmers”) purchase large acreages to fulfill a long-time fantasy of farming or ranching.

Despite the paucity of “real” farmers, irrigation district managers attempt to characterize themselves and their patrons as such. Websites hosted by irrigation districts all exhibit photos of idyllic rural landscapes dotted with irrigated farmland, even though their users have become increasingly linked with municipal use and destination resorts. Irrigation district managers actively discourage residents from using the term “hobby farmers,” insisting instead that landowners who farm as a past-time should be called “lifestyle farmers.” Photographs and images associated with these “lifestyle farmers” emphasize hard-work and long days, not air-conditioned homes and wealthy retirees living out a long-time fantasy of owning a large piece of land in the country, and they pull on the emotions that such images evoke – the nostalgia, appreciation, and gratitude that we are expected to feel towards the family farmers who put vegetables on our plates and keep our local industries vibrant.

The DRC’s media campaigns also produce and reproduce emotionally evocative stakeholder positions. One of their recent fundraising videos highlights three white, young adult recreators – a river kayaker, a trail runner, and an angler – who beautifully and gracefully engage in their activities, respectively slipping a kayak into the sunrise lit river, running across a bridge overlooking the water, and tugging a fishing line from a

glinting trout-filled pool. At the end of their day, the three glowing and vibrant young people meet up at a local Bend brewery for some beer. As they exchange warm and exuberant greetings, the screen overlays the words, “Give Back to the River You Love.”

The communication strategies employed by the DRC and the irrigation districts illustrate some of the ways in which stakeholder categories are developed and maintained, and the emotional work that they uphold. The DRC’s public citizens “love” the river for providing beauty, exercise, and companionship. These are people characterized by youth, privilege, and leisure time. Likewise, irrigation district campaigns recruit romantic visions of the American farmer that emotionally resonate with modern day publics.

Ahmed describes how the repetitive circulation of emotions with particular objects causes them to “stick” to these objects, where people then increasingly assume that the emotion is innate to that object – hence, an emotional-laden stereotype becomes increasingly hegemonic. This account of circulation helps explain why the above campaigns work, and why people may feel more or less like they belong to a certain subject position.

But we see a double-bind here in the world of water management. As noted above, everyone I interviewed acknowledged that feelings are an undeniable component of and provide motivation for water politics. But in actual collaborative water management venues we are faced with the expectation for a communicative rationality that leaves emotion at the door. For example, Ron works with the Oregon Department of Water Resources at the Bend office. A man who misses his days of

working in the field as a water master, he was eager to share his opinions and stories from his years of experience with waterworld. He described water stakeholders as difficult to work with because, “Well, so they’re so emotionally attached to [their agendas], they’re not going to even listen to the facts... For the larger public, those that don’t have a stake in it, yeah, education is always a good thing and there’s never enough.” Sean, the DRC director, agreed, “If you look around the west, information is not the problem [to getting collaborative initiatives accepted]. There is lots of information, reams and reams of reports.” But according to Sean, the problem with getting agreement among water stakeholders is that people make decisions based on emotional attachments, which are not necessarily consistent with empirical scientific findings.

What if, rather than rely on emotions to do the work of normalizing particular behaviors and subjectivities outside boardroom walls, emotions were welcomed in collaborative management meetings? Tess’ document was an attempt in this direction, in explicitly recognizing that stakeholders often experienced strong emotions. But whether she intended to do so or not, this document also contributed to an emotional habitus where some emotions could be regarded as more legitimate, acceptable, or expected than others.

According to Ahmed’s theory of affective economies we can see how the repetitive sticking of particular emotions to particular objects conditions people to use the same emotional language in articulating their encounters with the object (e.g., irrigators fear urban growth). But as theories of affect suggest, not all feelings can be

captured in language. As Gordon reminds us in her description of haunting, that which is erased by dominant narratives still arises “creating the possibility of making a life, of becoming something else, in the present and for the future” (2008, p. 142). Likewise, Raymond Williams (1977) described “structure of feelings” as that which signals the incongruence between a past inherited tradition and the changing experiences of the present.

In reading water politics through these theorists we can see how attending to feelings allows us to better understand how they can be sources of both reproduction and of change. We know that the encounters between people and local waters are by definition affective, and are accompanied by conscious, unconscious, and nonconscious feelings. Some of these are articulated and may be neatly attached to a stakeholder position and its associated normative emotions. But as conditions change, this inherited habitus may no longer resonate with the present moment, and the feelings instead may constitute a collective unease. I saw hints of this at the DRC office when staff members grappled with the ethics of quantifying water or felt obligated to sacrifice their wilderness values. Occasionally these feelings of unease exploded in exclamations of anger, frustration or grief, such as when Jude shouted “Take that dam down” or when Bev broke down in angry tears on our trip to witness the massive fish kill.

This is all to say that recognizing the power of emotions is an important intervention in collaborative management as long as emotions themselves do not then

get fixed to particular subject positions. According to Gould (2009) in her study of social movements, affect, or the inchoate, ineffable feelings engendered in an encounter, may be captured and used towards transformation (although she acknowledges that these feelings can also be used to reproduce rather than transform current structures).

I'd like to suggest that honoring feelings and recognizing their contingency may be key to engendering greater political participation and inclusivity in water management venues. As we see from the examples above, communications efforts and boardroom meetings rely on the seeming stability of particular stakeholder categories and the affective resonance of such categories. They contribute to a hegemonic understanding of what constitutes a stakeholder, and what it is to be a good environmentalist (e.g., one who is not an advocate). But I also observed that while these categories appear to be stable, they were continually being challenged and renegotiated, illuminating that the process of identification is dynamic and ongoing. For example, I mentioned that Tess was criticized for her attempts to define the affective qualities of the three stakeholder groups. Over the year that I worked with the DRC, I spoke with a number of people who felt that their particular stake was not represented by the "three legs" of the stool. Those who had been identified as an "instream flow advocate" for example, argued that there was quite a bit of variation in that category, and wanted to differentiate between those who supported recreation or tourism, those who were active in the fishing community, and those who identified as environmental advocates. This debate actually resulted in a proliferation of

stakeholder groups. By the end of my year with the DRC, the “three-legged stool” became obsolete. Now the front page of the DRC website highlights four main stakeholder groups: agriculture, communities, environment, and recreation.

That these categories were challenged and renegotiated is important to recognize for those invested in inclusive governance practices, where stakeholder categories can easily become rigid and preclude alternative ways of feeling, thinking and participating in water politics. Unfortunately, even a month later Tess was still receiving backlash from upset participants who had not felt captured by her attempts to describe the three stakeholder categories. She confided in me how tired she was navigating the Deschutes waterworld, and that she was planning to hand over the job to her assistant soon so that she could get some time to recuperate from the toll the assignment had taken on her health. Her bold attempt to make sense of stakeholder categories resulted in damage to her reputation in the field, but it also illuminated a very important finding about the dynamic nature of identity and provided an example of an activity (something like Tess’ document) that might illicit such opportunities for adaptation and change.

Beyond the Stakeholder – New Opportunities for Representation

Avery Gordon describes “complex personhood” to denote the ways in which individual lives are never straightforward, but are filled with subtleties, complexity and various meanings. She writes:

Complex personhood means that all people (albeit in specific forms whose specificity is sometimes everything) remember and forget, are beset by contradiction, and recognize and misrecognize themselves and others...Complex personhood means that even those called 'Other' are never never that. Complex personhood means that the stories people tell themselves, about their troubles, about their social worlds, and about their society's problems are entangled and weave between what is immediately available as a story and what their imaginations are reaching toward (2008, p. 4).

That people are complex and that life is complicated is, for Gordon, a theoretical approach to understanding dynamics of race, gender, and class as more textured than that offered by conventional sociological categories. As I discuss in the previous chapter, Gordon uses the trope of haunting to illustrate the complexity of life and people: to adequately study the social means changing how we know and think about the world, from concrete categories of analysis to oblique and affective ways of apprehending people and events. My encounter with the stakeholder survey forced me to recognize my own complex personhood, and it caused me to reflect on the limitations inherent in the stakeholder model.

But what would a politics of water governance that recognizes the shifting and variable nature of identity look like? In this section, I experiment with two alternatives to the stakeholder model, and suggest that these may be potential avenues for creating greater opportunities for participation in water politics. In the first, I introduce the concept of "geographies of practice." In the second, I work with the trope of assemblage, which is a neologism increasingly utilized by social theorists who attempt to analyze components of society through their relationships rather than

via the individual parts or society as a whole. Both are attempts to honor the affective and dynamic nature of identification within contemporary governance strategies.

Geographies of Practice

One of the most striking ethnographic findings I had in my exploration of the Deschutes was how differently water is experienced, managed, and encountered by different people in different regions. There are significant variations in the geography of the basin, and the humans who live in them respond to those socio-ecological geographies in strikingly different ways. What if, rather than hinge a collaborative approach on the representation of individual stakeholders, we took a step back and looked more generally at what I am calling “geographies of practice” – the different regions that shape differing forms of human-water encounters? To be sure, this approach presents its own problems, and I don’t regard it as a direct substitute for the stakeholder model. There is significant variation and diversity throughout the Deschutes, and geographies of practice runs the risk of essentializing inhabitants based on their locale. But by introducing geographies of practice, I am offering a different category of analysis from the conventional stakeholder model and in so doing, suggest that we can and perhaps should revision who is and how one becomes a political subject. I thus take us on a familiar journey through the landscape of the Deschutes, and I pause in several places in order to illustrate what human/water encounters can bring to the table that a stakeholder model cannot.

The Last Worst Place

Tracing the trajectory of the water in the Deschutes basin we begin in the south with the upper Deschutes. It is in the upper Deschutes that Wickiup and Crane Prairie reservoirs immediately catch the waters flowing from beneath the Cascades, and it is the dams holding them back that are deliberately contained and released every season for irrigation demands, dramatically altering the river's natural flow. The banks in the upper Deschutes are scarred with deep water lines, indicating the drastic annual fluctuations in water levels that regularly flood private property and confuse fish.

Compared to the luxurious manicured lawns and brand new real estate developments of the Bend area, the aesthetic of the southern part of the river is strikingly different, with its rows of trailer homes, odd shops selling old machinery and wooden crafts, broken neon signs and rusted gutted cars dotting the sides of the road. Pejoratively called "the last worst place" by those in water management positions, managers characterize it as such not because of the inhabitants' high rates of poverty but because this stretch of the river, from the headwaters at Wickiup to the diversions in Bend, contains the most over-allocated, polluted, and contested water in the basin. According to DRC staff, their projects in the northern area have mostly been successful – they've managed to negotiate enough water back into the tributaries below Round Butte complex to accommodate the reintroduced fish and their mazelike journey through the dam passage. But in the southern end of the watershed, water has yet to be shuffled around in ways that enhance instream flows, and the consequences

have been increased water pollution, property damage from flooding, and the loss of endemic species and devastation to the native fishery.

It's a perplexing combination of people in the Upper Deschutes. On my first venture to the towns of La Pine and Gilchrist I wondered who, in this desert of burn piles and pawn shops, cares about instream flows. I was initially relieved to learn about the existence of the Upper Deschutes River Coalition, a community group that occasionally sends representatives to sit at public water meetings. The fact that there was a local institution devoted to issues concerning water comforted me – perhaps these residents, despite their lack of economic resources, had a voice in water management decisions. But in talking more with the director and in researching the organization, I learned that the coalition represents only a fraction of the residents in the upper Deschutes, and not one of their initiatives attend to the pernicious issues of poverty or polluted tap water faced by many of the rural residents. Instead, the organization's main mission is to reduce tree growth (to safeguard private property from forest fires), maintain water flows for “abundant recreational opportunities for residents and visitors” and support wildlife habitat. It was clear that the residents participating in and represented by the coalition were homeowners, primarily from the wealthy tourism based neighborhood of Sunriver, not the poorer renters, squatters, or commuters who lived in the fringes of the watershed.

I knew little about these residents. La Pine, the largest community in the area (except for Sunriver which swells during tourist season to accommodate recreators), was unincorporated until 2006 and remains a loose collection of homes and

businesses set back from Highway 97. I asked members of the DRC if they ever hear from those in the area who do not own vacation rentals or summer homes on the expensive waterfront property. Bev said that a few years back residents discovered dangerous levels of nitrates in the well water, and they “were really upset with the watershed council” for not doing enough to ensure clean water. But she said that after the scare subsided these folks pulled back from water politics.

One day I stopped at a little thrift store off the highway in La Pine. After absently wandering through the shop, I chatted with the owner, an elderly woman who lived in a trailer on the same property. I told her that I was studying local water issues and asked if she had any thoughts. She paused, then responded, “I’m on a well, I don’t think about it at all.” “What about the nitrate contamination in your well water?” I asked. “Nitrate problem?” she responded, “I don’t know. That doesn’t sound good.”

Others I encountered, in grocery stores and gas stations, expressed similar sentiments. They regarded me suspiciously, and expressed distrust for government agents and academics alike. Water problems? They didn’t want them, but they also didn’t want to confide in a graduate student scholar, nor did they want to attend water management meetings (Responses included “I don’t have time” and “I’m not interested”). Ian, water master for the state of Oregon, told me that it was in the upper basin that he had experienced the most animosity from residents. When I accompanied him to the area to check up on illicit water diversions, we never knocked on resident doors; we crept through barbed wire fences and ducked under

willows, taking photographs that we would later use to enforce penalties and fines. He told me that a few months ago a 70-year-old woman had chased him off her property with a shotgun.

How does “the last worst place” get represented at the collaborative management table? This stretch of river is marked by rural poverty, and as with most glaring inequities in class, this kind of rural poverty tends to be pushed under the table, away from public visibility and definitely out of public politics. Likewise, the people I encountered expressed a desire for privacy and an antagonism for government intervention. A geography of practice model would need to acknowledge these difficulties, allowing locals to define their own terms for involvement while providing opportunities that do not reek of institutional oversight. What exactly this looks like, I can’t say. But it does leave an opening for creative investigation.

Ex-Urban Paradise

Following the river on its northerly journey we arrive in the Bend area, an urban destination that has become a brewery capital of the west and whose real estate prices now rival California, the origin of many of its new residents. The rapid growth of Bend allegedly caused the economic slowdown of LaPine, and it is in Bend that the main organizations participating in water issues are located.

As I’ve discussed throughout, residents of Bend are clearly attached to their local waters for a variety of reasons, including aesthetic beauty, recreation, and the tourist industry, and this is reflected in the strategic placement of riverfront parks and

kayak runs as well as the financial resources devoted to maintaining such aquatic amenities. The waters that are valued in the Bend area tend to be those that foreground aesthetics and recreation rather than those that help promote extractive industries.

For example, Mirror Pond is a human-constructed lake situated in the middle of downtown Bend. Framed by a wide expanse of lawn and a cobbled courtyard, with wooden benches positioned towards the water, the pond drained in a few days when the small dam holding the water sprung a leak. Sediment build-up behind Mirror Pond's dam has been a consistent problem since its inception in 1910 and its maintenance has required expensive dredging every few years. Thanks to the most recent malfunction, city officials began to evaluate whether or not it made economic sense to keep dredging the pond versus removing it completely. PacifiCorp, the electric utility that owned the dam, tired of financing the dam's relentless silt problem, even turned over its responsibility to city officials.

From an ecological and from an economic perspective, it made most sense to remove the dam completely and allow the river to resume its original course. The small amount of hydroelectric income could hardly compensate for all the expensive upkeep, and undammed rivers are more ecologically diverse and resilient than those plugged by concrete. But Bend residents came out in full force, demanding that Mirror Pond be restored as a "long-lasting vision for our community," an "iconic symbol of our city," and "a vision that will pass on a better Bend and healthier river for our children and grandchildren" (Buehler, 2015). The case even inspired state

legislation from a State Representative to secure \$5 million in state funding to subsidize the dredging and replacing of the dam.

The Mirror Pond example illustrates a different set of water practices than those that we witness in the “Last Worst Place.” These are different relationships to place, afforded by a demographic that tends to have more money, resources, and political savvy than its southern neighbors. Again, I do not intend to generalize for an entire population of people, but as an exercise in pulling back from a stakeholder model, we can see how geographies of practice may help us understand with greater perspective how various water ontologies are (re)enacted in different places, and how these (re)enactments are often associated with important sociological factors such as race and class.

Extractive Industries

Just south of Bend is Jefferson County, the only region in the basin that has a thriving agricultural industry, although the water district (North Unit) supplying these operations with water is ironically the most junior user. The central part of the county produces seed, potatoes, hay and mint, the eastern has dry wheat farming and grazing land, and the western part of the county is considered timber country, containing part of the Warm Springs Forest Products Industry. Much of the county’s success in agriculture was due to the advent of the railroad, completed in 1911, and the development of irrigation projects in the 1930s (Speroff, 2007).

Jefferson County can be characterized by its farmers and ranchers, staunch individuals who tend to defend patriotic values, private property rights, and federal assistance for farming practices. Redmond, one of its largest municipalities, is known as the “town of the flags” because American flags line the streets year round, and the majority of Jefferson County voters are registered as Republican, which politically is more aligned with the politics adopted by eastern, rather than central, Oregonians. Thanks to the rapid development of Deschutes County to their south, farmers and ranchers in Jefferson County express concern that they might lose their water rights to destination resorts, golf courses, and increased municipal demand from the Bend area. In Jefferson County we find a different geography of practice, where the resource value of water is linked with a frontier history. As I’ve documented in previous sections of this dissertation, Central Oregon farmers can be considered to be the most water rich in terms of rights, prestige, and the inheritance of a water law that prioritizes extractive uses. But they are also forced to increasingly defend their water rights from a new population of western residents who express different values for ecological integrity and wilderness aesthetics.

Hunting, Fishing, Common Property Regimes

In tracing the river’s northerly path past Jefferson County, we come to the Warm Springs Reservation. As I note in Chapter 2, although Warm Springs tribal members have been awarded through the Tribal Water Settlement senior rights to water in an overallocated basin and as such can be considered water rich, they bear

the burdens of a legacy of colonial exploitation. In 1855, the Warm Springs and Wasco tribes gave up ownership rights to 10 million acres in exchange for basic health care, education, and other forms of assistance, the promise of which was never delivered.

How do Warm Springs residents engage with their local waters? One provision of the treaty of 1855 was the assurance that tribal members would retain hunting, fishing, and forest management rights in the ceded area. Apparently, this has been a difficult concept for non-tribal residents to respect or to wrap their heads around. I learned from Lee, natural resources director at Warm Springs, that non-tribal members often express overt racism towards the tribal members at local fishing areas, accusing them of exercising rights that they don't deserve. In addition, tribal members that I interviewed indicated frustration with having to continually train federal and state agents about the existence of their entrusted tribal rights. Davie, director of Natural Resources at Warm Springs, said that part of his job is commenting on everything that's happening on the 10 million acres of ceded lands:

We hunt on these lands and see ourselves as co-manager with the Forest Service and so we are in dialogue with them and are constantly training them on what that means. What always stumps them [Forest Service employees] is the public trust issue. We tell them that you have a responsibility here, these lands are a trust of Warm Springs and a trust in the tribes. And they say, we know we have a public trust, and we say, no, you also have a Tribal Trust Doctrine and that trumps public trust. They always think that the public trust supersedes the tribal trust but it doesn't.

Thanks to the rapid turnover of those in governmental positions, Davie's division

organized a workshop to educate federal and state employees on the Tribal Trust Doctrine and the Tribal Water Doctrine, both of which are different from the Public Trust Doctrine, the latter of which is a federal common law of the US that ensures that the government protects the public's right to lands under "navigable waters" and to natural resources. The workshop was intended to be an annual event, but in the last couple of years Davie said that the tribal council was too busy to organize it, and that federal agencies didn't have the money to send representatives to be trained.

This attempt to educate non-tribal members on tribal issues and rights is one way that Warm Springs council members demonstrate the value of a geography of practice approach to water management. Tribal-water relations are seldom represented by conventional metrics and while Warm Springs members are on the DRC board, the conversations therein are predicated on being able to discuss water and other natural resources as abstract entities fit for trade. Lee, a staff member within the Warm Springs Natural Resources division recounted a conversation that he had had with a non-tribal member from the Bureau of Indian Affairs (BIA):

There was a conversation about traditional foods and the manager [of the BIA] said, well show us on a map...That's often the tenor of what they want from us, "Put for us on a map where you fish, where you hunt," and we have to say it's not like that. It's part of a longer conversation. There's all these variables. The plants – you don't go to the same place every year. The huckleberries, whether they're good or bad that year, whether they're here or someplace else. So it's part of the conversation, all the right angle professional

agencies and traditional people trying to reference a common language in discussing these things and it's an ongoing education.

Lee's comment indicates how the prototypical accounting practices in natural resource management do not adequately represent the variability and dynamic nature of subsistence based livelihoods and economies. That said, in order to retain their rights, Warm Springs tribal members have accommodated to these demands for quantitative analysis. Davie said that the Tribal Water Doctrine was based on "having flows in the river for fish because fish are important to us." But importance is one thing, and quantifiable numbers is another. Davie described the doctrine to me: "It's broken down in pieces: a certain CFS for the Metolius River, a certain CFS from the Deschutes that we say will stay instream, then we have 200 CFS for the Warm Springs community, we have 200 CFS to develop into the future, and another 200 CFS of water that we can market if we want.."

As I note above, in order to participate in collaborative management practices, one needs to adopt the role of a stakeholder. One also needs to share a common language, and this is most frequently based on "waterspeak," the hybridization of western water law and contemporary water metrics (e.g. hydrologic science). We see in their Tribal Water Doctrine that Warm Springs Tribal members can and do engage with water politics through "waterspeak," But Davie also described relations with water that are not easily accounted for by this vernacular, telling me that; "[Our history with water is] probably not something that you just talk about but it's just who you are." Here, Davie's words speak to a relation with local waters that is difficult, if

not impossible, to be captured by the waterspeak vernacular characterizing most collaborative water management meetings.

A number of political ecologists have documented the misunderstandings that arise when different ways of knowing the world collide. Some of these have focused in particular on the difficulties of integrating Indigenous Knowledges (IK) into conservation and development agendas (Braun & Castree, 1998; Escobar, 2008). Tribal activities and encounters with water are central to the ways in which tribal members understand themselves, their histories, and their place. And yet how do these encounters show up in collaborative management stakeholder settings? Like the ever-shifting huckleberry fields, locating the number of CFS that would signify a native stake in the watershed is an impossible task.⁴²

Ironically, what we see in collaborative water management settings is Euro-American farmers claiming localism and traditional practices to defend their resource use, while Warm Springs tribal members leverage western science and state regulations. The Warm Springs Federation used legal and scientific strategies in order to get their water rights recognized as senior in the eyes of western water law, and they rely on fishery science to help replenish the fractured aquatic ecology of the area. This is not unique to the Deschutes – Sarah Breslow (2014) notes that recognized tribes throughout the west begun to embrace a rare and significant access

⁴² Anthropologist Mario Blaser coins the term “political ontology” to refer to the conflicts that ensue as different ontologies “strive to sustain their own existence as they interact and mingle with one another” (2009, p. 11). He does not focus on epistemology (ways of knowing the world), but on how power-laden negotiations bring different worlds into being – an insight in line with the encounter-based ontology that I introduce throughout through the lens of affect theory..

to power, and western science and state power are not necessarily in these cases threats to Indigenous culture.

In studying human/environment relations in a Chinese nature reserve, development scholars Aitken and An warn that placing “rationality, efficiency and optimism at the forefront of a regime...may characterize Indigenous peoples’ work as inferior, backward or invisible” but that “a focus on local values de-stabilized the grand terms of enlightenment-based, universal development but...may also romanticize ‘the local’ and ‘Indigenous’ to the extent that political power is lost at the local level” (2012, p. 6). In focusing on relationships rather than individuals, a geographies of practice approach gets us beyond this essentializing dilemma and as such can help us to not lose sight of the complex ways in which Indigenous peoples and local ecologies are affected by relations with each other, state governance and hydrologic science.

We know that complex place-based relations cannot solely be explained via seemingly rational models and it may be that the incapacity of waterspeak to account Indigenous ontologies is one reason that I rarely saw tribal members at collaborative management venues. When I asked Sheila why tribal members, although often invited, rarely showed up at these meetings, she said that thanks to leveraging their senior water rights in an out of court settlement, tribal members maintained a seat of power, whether or not it was widely recognized. Because of this, they “keep an eye on the process” and intervene only if decisions are made that would interfere with their tribal rights. Davie said that he didn’t attend more of the meetings because of

limited time and resources (which of course is another important structural limitation in the world of collaborative management, in that to be a stakeholder not only requires credibility, but also time and resources to get to meetings that are often scheduled in the middle of a workday). But I also wondered if the absence of tribal presence could be attributed to the conflict between different ways of understanding local waters, as is evidenced by the examples I share above.

I propose that “geographies of practice” can help us to think outside of the stakeholder model box. Geographies of practice emphasize place based encounters, and the ways in which conventions around water vary according to different regions in the waterscape, and the practices that prevail in those different regions, rather than according to an individual’s “stake” in water as resource. They offer us a way of attending to political ecology’s traditional concerns with respect to power and conflict that recognizes the multiple ontologies that come into being around water.

Below, I offer a second alternative to the stakeholder model. In addition to examining how differences in space matter to the ways in which humans relate to and understand local waters, as the geographies of practice approach suggests, I contend that temporality, or differences in time, also matter to the ways in which humans relate to and understand their waters. People tend to catalyze around specific events, and become politicized based on various moments in history. I begin with a recent example of how this has occurred in the Deschutes, and use it to suggest that by foregrounding events rather than stakeholders we can open up space for greater participation in water politics.

Assemblage and Coalitional Politics

In Chapter 3 I described the public outrage that ensued after the dramatic fish kill incident of 2013. For almost a week local newspapers, television stations and environmental websites blazoned photographs of dead or dying water-starved fish that had been stranded in the river. Public comments at the end of online news articles described the sight of the dead fish as “disgusting” and “makes me sick” (J. Williams, 2013). Members of the public also blamed the DRC for the state of affairs. Comments flared up on the DRC’s Facebook site, including those that said, “This is completely messed up” and “Get it fixed, geez!” (DRC, 2013b). Some even posted photographs of dead fish alongside angry text: “It’s your job to make sure this doesn’t happen. What the hell are you guys doing?!!!” and “Why can’t they keep the river levels at sustainable level for our fish populations to thrive throughout the year regardless of irrigation season? Not rocket science to keep the cfm [sic] up, not cut it down to nothing to kill our precious fishery, horrible mismanagement!” (DRC, 2013b).

Sean, the DRC director, attempted to defend his institution in a press release, describing the legacy of irrigation withdrawals as something out of the organization’s control: “We have policies that allow for this to exist...the state of Oregon has over-appropriated our water for 100 years...We still suffer from that” (DRC, 2013a). He was careful in writing this statement, deliberate not to incite anger from irrigators by blaming

the fish kill on their water demands while attempting to accurately explain the history behind water allocation in the west in order to redeem the DRC's reputation.

In private settings, DRC staff were less tentative to express personal feelings around the loss. The day after the fish kill hit the news-press, I accompanied Bev, the Communications Director for the DRC, to the river to take photos of the carnage. As we encountered the heaps of dead fish, Bev turned to me with tears in her eyes, and shared the intense feelings she had in the face of the tragedy. "Sometimes I can't do this. It's this guttural feeling that I have, it's so strong in my body, I have to just stop and calm myself down. I just get so angry!" She shared with me later that she sometimes feels trapped by the emotional neutrality expected of her in her job at the DRC. As I note above, she and others with the DRC and the UDWC often kept silent about their own personal feelings in their attempts to maintain good standing with other stakeholders.

But despite feeling that their own hands were tied, DRC and UDWC members saw the fish kill as an opportunity to help fuel the political activism that they could not participate in directly. At a staff meeting later that week, one member said, "I hope this [event] catalyzes people." As difficult as the event was for her to stomach, Bev later expressed gratitude for the fish kill, observing that it had encouraged members of the general public to be more involved in water politics. Sean expressed a similar sentiment, noting appreciatively how members of the local flyfishing clubs were "bringing in the rage" to subsequent meetings.

As I demonstrate above, stakeholder categories operate as a way of both disciplining and enabling participation in water politics. In a Foucauldian sense, subjects are formed through discourse -- social practices, behavioral expectations, and relationships that emerge in specific institutions, then filter through society to become the generalized practices of everyday life (Foucault, 1979). Power drives these practices and is organized through these practices; stakeholders are those who are given the power, authority and legitimacy to participate in collaborative natural resource management practices.

The fish kill episode exemplified this Foucauldian relationship between power and knowledge (i.e., political leverage associated with particular identity categories). Shortly after the story went to the press, citizens began to align with particular stakeholder positions. Anglers, fishing guides and real estate agents identified themselves as “instream flow advocates,” and began convening at a local brewery to strategize around political actions to prevent future occurrences. “Environmentalists” litigated; two environmental groups sued the State of Oregon for faulty water management, and Oregon Department of Fish and Wildlife began organizing annual volunteer efforts to rescue the trapped fish.

In this case, stakeholder categories helped people to be recognized as legitimate political players. The event galvanized participation by those who may otherwise have abstained from local politics, and revealed opportunities for those identified as environmentalists to demand greater political representation in waterworld. But the politicization of citizens in the aftermath of the fish kill illustrates more than the

discursive power of stakeholder positions; it points to the capacity of assemblage-based/coalitional politics.

A coalition tends to be comprised of diverse individuals or groups often seen to have their own individual investments; their participation is thus often attributed to the securing of these varied interests. According to Di Chiro, coalitional politics create “transcommunal alliances and communities of practice forged in the knowledge that survival depends not on the retreat to the comfort of ‘home’ (what some refer to as identity politics), but on the worldly and laborious engagements with the fleshly realities of socio-ecological interdependence” (Di Chiro, 2008, p. 279). Stakeholder positions are defined by the assigning of particular values and interests, and we can continue to understand the fish kill story as perpetuating the disciplining of identity – battles waged around the veracity or accuracy of subject positions. But we can also regard the story as a case of coalitional politics, where people, in encountering an event, assemble around particular issues they care about, or using Puig de la Bellacasa’s (2011) terminology -- “matters of concern.”

As I elaborate upon in the previous chapter, what I hope to bring to light in my work is the affective nature of the encounter. Identity politics are based on the unity of identity, requiring a definition of what that identity is and is not (S. Hall, 1996). But if we think about the social as a constellation of intersecting discourses we can consider how people and their multiple, ambivalent identifications may engage in dialogue based on affinities and hybridity rather than on unity. As Hall (1996) claims, in moving beyond the

unity of identity and engaging with hybridity and difference we have more possibilities for political engagement and coalition building.

Focusing on contact, where something new emerges in the space of an encounter, offers us one way of moving beyond identity politics and attending to difference. The fish kill is an example of a moment of contact – between a number of entities including the legacy of western water law, Deschutes residents, endemic fish and climatic changes. As Bev’s clear distress made clear, the event elicited strong feelings. Those who responded to the fish kill became active, concerned, and upset via their encounters with pools of dead fish, directly and through images and news reports. Their responses can be regarded as mobilized and motivated by affect; people became political and politicized in experiencing the felt intensity of the current event. The alignment with a stakeholder category is part and parcel of this affective response; as I note above, identification itself is a process saturated by affect. Identification is also strategic; those who are moved affectively into action choose (or are chosen by) particular subject positions from which to respond.

The above provides us with a relational rather than a categorical approach to politics, where subjects acquire meaning through connections and encounters. As such, this approach emphasizes feelings, attachments, and identity formation over seemingly stable identity categories. Scholars have used the heuristic of assemblage (Deleuze, 1987; Gray, 2013; Puar, 2005) or of coalitional politics (Di Chiro, 2008; Gould, 2009; Haraway, 2008) to get at this kind of entanglement. Both frameworks offer us a different perspective of collaboration from that assumed by collaborative resource management

frameworks. The paradigm of collaborative management might regard the story as one that demonstrates how key events can serve to galvanize citizens to engage in collaborative management venues by claiming stakeholder status. But a relational ontology provides us with a way of seeing more to the story – where political possibilities are open-ended and not pre-ordained.

According to social theorist Deborah Gould, “Coalition provides a space to be and do together, and become differently as a result; to sense other possibilities, open toward the unknown, experiment, and learn from mistakes; to develop trust and practices of solidarity; and to build new collectivities and new worlds” (Gould, 2017, p. 10). What would it look like to recognize coalitions/assemblages as political in their own right? In this case it would not be necessary for those who felt moved to participate in water politics to claim stakeholder status, nor would we anticipate in advance the interest of an active participant based on their identification. Citizens could participate in politics not because they are an instream flow advocate or an irrigator, but because they care about a particular issue or event. Identification, in this regard, is dynamic.

Gould (2017) describes a case in the late 1990s where a coalition emerged in Uptown Chicago in response to rising property values and gentrification between a conservative Christian based community called Jesus People USA and a group called Queer to the Left – two entities with strikingly different political agendas and values. Gould suggests that this uncanny coalition exemplified how encounter itself “is a realm of experiment and of possibilities not yet actualized, that is, a realm of

potential” (2017, p. 3). While this does not mean that coalitions always move us in the direction of greater freedom and justice, staying open to these new arrangements allows for initial alignments to change and for new ones to emerge – a flexibility not afforded to stakeholders, whose status implies consistency around a set of shared views. Caring could itself be enough to warrant legitimate political participation, to “creat[e] new collective eco-political entities in the hopes of ‘surviving together’” (Haraway 1992, p. 311).

Taking a relational approach to collaborative politics thus leaves us open to the potential of becoming something and someone new, and creating a new politics through our encounters. Events that catalyze assemblages bring humans and others in contact with one another in ways that may otherwise not occur. This contact may not take a dramatic event, like a fish kill. It can be a product of everyday behaviors that include chance encounters and gradual brushes with one another over time that accumulate in such a way that overcomes judgments, projections, and assumptions associated with one another’s stakeholder status and that change the very ground upon which decisions are and have been made.

For example, Bev, in describing the work of the DRC, said, “So much of it is about relationships!” She followed up: “We’re all human beings, and being able to communicate from a human level rather than a stakeholder level all the time [is important]. I think we get really mired in our own camps because we don’t always remember that we’re human beings.” This ability to communicate “from a human

level” is seen as so important to collaborative management’s success that the DRC hires a mediator to attend and facilitate their Basin Study meetings.

Several others shared stories about how being and doing together over time led to increasing levels of trust and greater capacity to create new politics. For example, Lisa said that when she first began attending farm fairs all of the farmers would routinely ignore her because she represented an “environmentalist” stereotype that they found threatening, but that after a number of years of interaction, farmers became familiar with Lisa and more amenable to her water-leasing program. Now they engage her in conversations and ask her opinion about different conservation practices.

Likewise, Keith from OWRD described a couple of environmental advocates:

When they first got into the water business they thought we [OWRD bureaucrats] were such buffoons [for giving water to irrigation rather than keep it instream]. Now they’ve sat in meeting after meeting...and they realize we’re trying to get something done and this is how to do it. So they’ve made a huge turnaround in their attitudes. The first time I met [one of the environmentalists] he said he wanted to sue me for flooding the river or something. And the last time I met him he complimented me.

These reflections provided by waterworld participants demonstrate how, despite the stereotypes associated with particular stakeholder categories, the maintenance and creation of human relationships over time plays a large role in overcoming such stereotypes and in developing new and creative ways of addressing shared issues and concerns. As Keith’s quotation makes clear, being and doing together does not mean that power differences are ignored or accepted or that collaborations are free of conflict (I address this in greater detail in the section

below). To the contrary, the very nature of crossing difference engenders opportunities to clearly face and if appropriate challenge these differences. It also means that the stereotypes associated with difference are given an opportunity to change and erode. Over the years that I spent attending water policy meetings in the Deschutes, I witnessed first hand the softening of feelings between participants who, when I first had met them would bristle if they had to sit in the same room with one another. Interestingly, although I do believe that time can also spark increased dislike and animosity, I never once saw this phenomenon in reverse. The deepening of human-to-human bonds thus constitutes another way in which assemblage opens up greater space for participation in water politics, redefining and reshaping the very system within which water politics operate. Coalitional politics gives us the opportunity to turn away from politicians, experts, and technocrats, and toward one another – organizing new political collectives.

Collaboration and Power

“A collaborative table allows you to use things like peer pressure and other social processes because you can create relationships, and ultimately people do business through relationships.” – Director of the DRC

“Again, I’m speaking plainly with you here, I think that as long as the situation and as long as the ways that the DRC can influence the situation...is such that we can understand what motivates various stakeholders and partners, and create a platform based on that understanding, that allows for an overlap across different stakeholders...as long as we can set the table, collaboration works great.” – DRC staff member

“What makes collaboration work better is when there are threats out there keeping people at the table. Particularly when you’re looking at something like water where

things have worked in the same way for a hundred years and asking them to change is a challenge” – DRC staff member

In theory, the consensus based, collaborative approach to water management sounds ideal. Collaborative water governance implies that everyone with a stake in the issue gets an opportunity to share their divergent opinions and reach a compromise that meets everyone’s needs. In the previous passages I have suggested that this approach is limited for two main reasons: 1) its omission of emotions from the political and 2) its reliance on stakeholder categories that tend to constrain participation in water politics.

The quotations that I display above suggest that the concept of collaborative management may be deficient in an additional regard. According to Innes (1996), collaboration is reached when all stakeholders are “equally empowered” and “equally informed.” But contemporary modes of governance are forced to contend with and adapt to political-economic histories and power dynamics that have shaped water access and management practices since the colonization of the American West. As the above respondents make clear, these dynamics of power are central to the workings of water politics and overshadow attempts at the equality that collaborative management is supposedly based upon.

In moving away from traditional, conflict-based politics and towards policies set forth by negotiations among technocratic specialists, collaborative governance reflects a new form of politics, what some scholars refer to as “post-political,” wherein politics are largely reduced to social administration (Checker, 2011; Swyngedouw, 2004; Zizek, 1999). Collaborative management as a post-political phenomenon is presumably

consensus-based, but in accepting neoliberal capitalism as the organizational foundation of society, it can be seen as both sidelining questions of what it is to be truly inclusive and inhibiting actual resistance. Below, I share a story to illustrate this point. In this vignette we can see how the outcome of a process widely regarded as collaborative hinged on deeply entrenched power dynamics, and in many ways prevented truly collaborative participation.

Whychus Restoration and the Wild West

The Three Sisters Irrigation District (TSID) has garnered a reputation as a model for collaborative water management in the Deschutes. The first district to partner with the DRC and pipe their leaky canals, the manager has since collaborated with the Deschutes Land Trust on restoration projects for fish habitat and with the Upper Deschutes Watershed Council, who have provided fish ladders and screens for their resident farmers. Thanks to all of these efforts, in the last twenty years, Whychus Creek, the main tributary that courses through the district's acreage, has grown from a dry creek bed to a full-blown river, generating hopes that it will once again support its long-lost salmon fishery. A number of politicians have visited the district in order to learn more about how to enact successful collaborative water management strategies and Jess, a Three Sisters farmer, described the region as "a huge poster child solution to a freaking huge problem in the whole arid west."

But while TSID has been commended for being the frontrunner for the water exchange initiatives taking place in the Deschutes, a number of interviewees shared

stories that indicated that the water politics in the district were far from congenial. A resident golf course owner expressed resentment towards the district manager:

Our irrigation district manager went out and bought millions of dollars of equipment, and he sees himself as a contractor even though he doesn't have a clue of what he's doing....Those guys are like a kid with new toys...the stuff he bought, expensive stuff he didn't need just so he could say he has the fanciest stuff in central Oregon and now he has to do more projects to use the equipment and keep hiring people...And then you can go to your meeting and brag to other irrigation districts. A lot of ego gets involved in it.

According to this interlocutor, the district manager was motivated not by a desire to support his clients, but by his own interest in buying “new toys” and attracting capital and prestige. A number of irrigation district patrons resisted the piping project for other reasons. Several felt deprived of their private property rights and expressed resentment towards the district manager for strong-handling the situation. One woman, furious to lose the canal that lined her property, put her car in the way of the construction project. An irate farmer, eager to continue the construction, illegally removed it with his backhoe. A resident recalled that when the construction was happening, “There were guns, there was a lot of alcohol. People were hauled off to jail. It was old west!”

Ten years after the completion of the Three Sister's piping project, in private interviews residents continued to express simmering dissatisfaction and anger over the ways in which the project was carried out. At the same time, Oregon State University students in Natural Resource Management classes regularly tour Whychus Creek to learn from what is largely referred to as a collaborative management success

story. The Three Sisters district manager frequently fields phone calls and visits from out of town scholars who are eager to document the story as a golden child in the collaborative management archives.

What do we make of these differing accounts? The resentment expressed by landowners conflicts with the Pollyanna-like picture painted by the district manager and other government officials who helped fund the restoration project. In this case opposition to a particular vision for the waterscape (one supported and funded by granting agencies and government officials) could not compete with the more powerful agents in the basin (the district manager and the funding agencies). Is the erasure of this opposition in the public eye the expected outcome of a process said to be “collaborative”?

As noted above, Ansell and Gash (2008) define collaborative management as “[a] governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (544). But the Three Sisters story, and the quotations at the preface of this section, suggests that collaboration may not be as neutral a process as some would like. In these cases, successful collaboration relied on peer pressure, threats, and utilization of power dynamics – not on communicative rationality, equity and equal opportunities.

Since the colonization of the western frontier by Euro-Americans, water in the west has always been the stuff of conflict. Its management early on was laced with unequal power dynamics, where the politically strong managed to work waterways to their advantage through irrigation schemes, mining, and land-grabbing. This history laid the groundwork for inequity and injustice in terms of water access and ecosystem resilience. Because of this, it may be foolish to assume that tackling issues of water management could be free of conflict or controversy. If we want truly just and democratic systems of managing water, we are required to examine old seats of power and redistribute wealth – tasks that likely will be resisted by some. But the paradigm of collaborative management implies that the outcome of such a process will have universal benefit that everyone, every group, and every interest should support. Has it, like the hollowed out concept of “sustainable development,” become an empty slogan pinned to a political strategy in order to enlist its support? Does claiming that a process has been and is collaborative undercut the possibility for real reform?

By resisting the piping project, residents were seen by water managers as obstacles in the path of collaborative development. But what if those who objected to the project were not ridiculed and silenced but actually welcomed in the decision-making process? On one hand, the outcome might be a stalemate of hostility. But we’ve also learned that when people with diverse perspectives spend time with one another and as Bev suggests, “remember that we’re all human beings” there can emerge new relationships and with them new ways of attending to contemporary

water issues. What different ecological and socioeconomic futures might emerge from a truly inclusive political formation? How might a just and equitable water politics incorporate more-than-human representation? As we increasingly turn to collaborative management as a governance strategy for water resources in the west and internationally, these are questions that demand our attention.

Conclusion

A discussion of contemporary water management practices is at heart about politics. The ways in which water is managed, allocated, and contested are addressed in the realm of the political, where certain actors are awarded more or less power to engage in civic matters. Given the variability of access to power, the political is inevitably a contested terrain, and water politics are, as Twain and my interlocutors recognized, notorious in this regard.

In this section I describe water governance in the American West as operating via a variety of institutionalized strategies and practices, the most pervasive of which is the paradigm of collaborative water management. As a paradigm, collaborative management helps and hinders equitable water practices. Its defining characteristics of inclusivity, communication, and representation are clearly democratic ideals and offer a commendable starting place from which to engage in political dialogue. But in priding itself on these characteristics, the reputation of collaborative management glows to such an extent that the contentious and political nature of its subject (water) is thrown into the shadows. Participants in waterworld know that water is fraught

with such power dynamics, but rarely, if ever, was this explicitly acknowledged in boardroom meetings – the venue for collaborative management initiatives.

In addition, collaborative management as a normative approach to water politics makes a number of problematic assumptions. For one, it positions water as a single entity that has particular values (e.g. monetary, ecological, cultural, etc.). Secondly, it sets parameters for acceptable inclusion in management meetings (e.g., the stakeholder). Third, collaborative governance is characterized by public forums where various stakeholders are expected to embody emotionally neutral standpoints in order to reflect preordained sets of needs. And fourth, perhaps most importantly, in its very identification as “collaborative” it shies away from conflict and in so doing disables opportunities for meaningful resistance.

In this chapter I suggest several ways that contemporary water politics can be augmented to better accommodate multiple values and livelihoods. I argue that if we continue to insist on emotional neutrality as the grounds for collaboration we are set up for failure, or at least for missing potential opportunities for enhanced equity and participation. One of these opportunities is to attend to the ways in which people and others come together around particular sites, events and shared feelings. I have suggested that geographies of practice and the heuristic of assemblage may be helpful tropes for expanding our acceptance of who and what is a legitimate political subject. In their attentiveness to time and space, they may also help us better contend with, rather than ignore, contradictory legal principles and conflicting historical legacies that shape current power dynamics around water.

Foregrounding the encounter makes one more intervention that I have not discussed in the pages above: it inevitably brings the non-human back into the story. This is because the encounter is inevitably a more-than-human phenomenon. In the Deschutes, cyborg salmon run through a river swollen with unmapped groundwater, resident fish get stranded in plumbed waters, and suburban neighborhoods are designed around irrigation canals. These are stories and constellations that denote the interrelationships inherent in the world, where divisions between nature and culture don't adequately capture the coproduction of human and non-human, animal and machine. In this regard, collaboration around water involves not just humans but the multi-species relations with which humans are embedded.

In concluding this section, I suggest that both natural resource management paradigms and sociological scholarship on environment-human relations can benefit from a repositioning and reprioritization of the human subject as part and parcel of the more-than-human world. Contemporary natural resource management paradigms emphasize the human and human agency, which is understandable, in that it is easier to put humans around a boardroom table than salmon, lamprey and groundwater aquifers. But I suggest that this foregrounding of the human and of static stakeholder categories limits our ability to recognize, respect, and respond to the variable nature of being human – as that which is contingent upon more-than-human relations.⁴³

⁴³ How do we give standing to more-than-human others? This is a question that environmental philosophers and activists have long debated, and I do not attempt to answer it here. That said, a promising avenue for exploration is in the anthropological work on Indigenous cosmologies, which often serve to decenter the human and provide new ways of

Chapter 7

Conclusion: Water Ethics and Water Connections

Hope is an openness to the future that arises out of our evolutionary history. Hope is an impulse in the evolution of humanity. We continually die and live and die into forms that are ever more complex, with greater capacities for sensitivity, intelligence and responsiveness. The story of biological organic life on Earth is this movement toward ever-greater responsiveness on the part of living systems. This is the thrust of living systems. Hope is not hope for any particular thing, or an attachment to an outcome you desire. It's an openness toward what you don't even have the capacity to think yet because you're still in the present. Hope is a radical openness to what can be. It is a posture that leaves us flexible and adaptable and alive – Joanna Macy (2017)

I'm an optimist. The only way I can do endangered species work is to be an optimist. It's helpful. I don't give up until we get something happening...Sometimes I go home and want to go fetal...But I keep saying to myself, there's not many voices for what needs to happen out there, so I can't give up. – Veronica, USFS Fish and Wildlife Biologist for the Deschutes

This dissertation is an analysis and case study of contemporary water management practices as they have taken hold in the Deschutes Basin in Central Oregon. I discovered the Deschutes a number of years ago in my search for a field site for an experiential course I was crafting on western water politics. I did not realize at the time that I had hit a gold mine. The Deschutes is unique -- its inhabitants and its geomorphology are found nowhere else -- and yet it is also similar to many rural basins in the American West. It exemplifies a growing trend in these regions, where resource extraction, farming and ranching have given way to recreational amenities and an influx of new wealth from ex-urban migrants.

understanding ourselves as always in relation (Clifford, 2013; Dunbar-Ortiz, 2014; Tallbear, 2011)

Colonial western water policy was formulated to enhance irrigation, not to safeguard native species. But due to the recent demographic and economic transitions in the rural American west, most current residents are not farmers or ranchers but retirees, athletes, and IT developers -- people with different sets of values from those whose livelihoods depend upon resource extraction. New management strategies have thus emerged to contend with these conflicting priorities for western water use -- between an old guard protective of private property and extractive industries and a new upper-middle class eager to enjoy the nature-based amenities that lured them to the area. Two different Euro-American populations thus battle over water rights on a landscape initially entrusted to tribal members, creating a nexus between Indigenous residents, Bend recreators and Jefferson County alfalfa growers. DRC formed in response to these connections and collisions in water use priorities and its innovative strategies are being replicated across the American West.

As someone deeply invested in issues of water justice, the new ways of managing and marketing water pioneered by those in the Deschutes Basin piqued my interest. What were water managers doing in the Deschutes that was so commendable? What were the repercussions of explicitly incorporating something as slippery and contested as water into a capitalist system of value? How were different inhabitants learning to live together amidst such changes? In attempting to answer these questions, I explored the Deschutes waterscape in depth. I talked with residents, worked as an intern with the region's preeminent water arbiter, walked along the river and its waterways, and witnessed the change of the seasons, the mating and migrating

of the critters that resided there, and the ways locals fought, loved and identified with place.

In the introduction to her book, *When Species Meet*, Haraway asks, “How is ‘becoming with’ a practice of becoming worldly?” (2008, p. 3). For Haraway, this question has ethical implications; as “entangled, co-shaping species of the earth” (2008, p. 5), human beings are constantly being (re)created in their encounters with other beings. It is the act of recognizing our co-constitution with others that provides us with an ontological understanding of the world as that which is always indeterminate, untidy, and situated. It also obligates us to participate responsibly in the world, where “we engage in a joint dance of being that breeds respect and response in the flesh, in the run, on the course” (62).

My own work parallels Haraway’s ethical call for a relational ontology from which to reflect upon the more-than-human world. Aquatic ecosystems and the beings that rely upon them are increasingly compromised by human technologies. Industrial pollution, dredging, mining, damming practices, unsustainable groundwater pumping, the impacts of global climate change, and the increasing division between rich and poor have all contributed to a contemporary situation where more than 360,000 children die each year from drinking unclean water, 2.4 billion people lack adequate sanitation, and women and children spend on average 200 million hours a day collecting water for their families (much of which is contaminated) (Johnston, 2012). More-than-human inhabitants across the globe suffer similar deprivations of access to

fresh clean water. Many of these beings have lost the capacity to regenerate, thus terminating their ability to continue existing as co-inhabitants on earth.⁴⁴

It is in response to these contemporary losses that I investigate the increasing and troubling trend in water management of commodifying local waters. Each chapter of my dissertation documents what it is that we lose when we turn the variable and relational element of water into a commodity. I describe the springs, snowmelt and irrigation canals that participate in co-constituting the Deschutes River, the cyborg salmon that are assisted on their journey from ocean to fish facility, and the board room meetings where people rely on technocratic methods to shuffle waters around to meet various stakeholders' needs. I tell these stories in order to make two central and related points.

For one, in tracking how a river and its inhabitants come into being and are perceived, I describe nature as something that is fundamentally relational. One particular moment illustrates this point. The DRC invited me to attend a three-day water conference in Hood River, Washington, a small town located on the Columbia River, the largest tributary in the Pacific Northwest that drains the Deschutes and all the other rivers west of the Cascades. On the last morning of the conference, Lisa and I walked from the hotel to a nearby overlook with a view of the river. We stood in silence for a few moments watching the wide, dark swath of water move silently below us, and then Lisa turned to me and said, "It's so amazing. All of our projects

⁴⁴ The devastating ongoing extinction of species taking place in the present epoch has been described by scientists as the Sixth Extinction or the Anthropocene Extinction, where large numbers of plant and animal species are vanishing due mainly to human activity (Kolbert, 2014).

pass through this river – all the fish that we’re helping get up into our tributaries, in Montana, Oregon, Washington, Idaho – they all pass through this river. It’s totally amazing.”

I stood next to Lisa gazing down at the river and reflected on how it was that this water below me participated in the creation of the tagged and tended salmon, the scrappy lamprey, and the bushels of alfalfa that line the roads in Jefferson County during harvest season. It truly was amazing. Perhaps even more extraordinary, however, was the fact that we had just spent the past three days in a conference room with no windows, describing the stuff below us through the metrics of American dollars, CFS and acre-feet.

The water stories that I tell in this dissertation attempt to get us beyond such abstractions and instead to recognize that we are part and parcel of this world – that our very existence is based on our relations with more-than-human others. This is not a unique project in the social sciences. A number of scholars have used idioms such as hybridity, coproduction, entanglement, and assemblage to make a similar argument. My work extends their theoretical claims into the realm of politics. I demonstrate how even those engaged in the abstract marketing of their local waters have the experience of directly relating with such waters. While for some this double experience can spark a sense of disquiet and/or ambiguity, that people recognize their own entanglements creates potential space for incorporating such relations into current water management paradigms.

The water stories that I tell in this dissertation make a second point – that feelings matter when it comes to water politics and that more-than-human relations are, by definition, affective. Water is not simply metaphorical; it is alive with embodied human experiences and practices, and these experiences and practices are felt, through non-conscious affects and through manifest emotions. My interviews and time with water managers and citizens illuminated how felt connection and encounters with the more-than-human world were central to their participation in water politics.

For example, Ron, manager for OWRD, confided in me during an interview:

I've spent hours in the stream below Wickiup measuring streamflow and wondering how we are going to fix this [problem of insufficient water for instream needs]. Now this might sound funny, kind of philosophical, but getting out all of these years, being in the water, for hours and weeks and years, standing in the water -- the water just gets into you and it has this energy that gets into you. That hydrologist who testified at the Juniper Ridge hearing, he only knows what he's read, he's never stood in the streams, even in snowstorms when you didn't know the water could get so cold. I call those guys "Johnny Come Lately." Now he's a so-called expert. But you only get that [expertise] from being in the water year after year, and really feel its power.

The above quotation, from the same fellow who criticized DRC staff for voting for Obama, demonstrates the affective dimensions of more-than-human connections. Ron admitted with some embarrassment that what he shared perhaps sounded "funny," but he also recognized that his experience of connecting directly with the water "gets into you" in ineffable ways.

As Ron's comment also makes clear, these ineffable, affective experiences of more-than-human relation are not necessarily regarded as legitimate in collaborative water management circles, where the main currency is a communicative rationality based on scientific evidence. But while in political venues water managers tended to elevate scientific knowledge above emotions (and create a polarization between the two), these same respondents were far from stoic when describing their work. In addition, although a supposed objective and passionless scientific perspective is held to be the vanguard for legitimate stakeholder status, the field scientists I spoke with expressed perhaps the most adamant sentiments of love, care and grief for their local waters and the creatures within.

For example, Veronica, the fish and wildlife biologist responsible for designating critical habitat for the Spotted Frog, is a fiercely intelligent woman who worked tirelessly to track frogs and their habitat in order to get them listed as threatened species. I asked her what drove her work, and she immediately changed the course of our conversation from a discussion of biological requirements and federal agency mandates to share with me her passion for defending non-humans:

I've been driven since I was probably 18. I live and breathe this life, and probably have since before environmentalism was cool...I was a biologist when I was a little girl. I'm gonna give it what I've got. I don't know any other way to be. People always ask me that..., people are like, you're the face of the frog! I don't like being in the limelight, and I don't want to be, it's not about me, it's about them and what's happening out there.

The other biologists, geologists and ecologists that I interviewed expressed similar sentiments of care for their studies and commitments to persevere with their work

in spite of being forced to witness first-hand the increasing losses to biodiversity and ecological health. Their emotional investments came as no surprise to me -- my own love for more-than-human natures is what inspired my decision to study Environmental Science as an undergraduate, and my colleagues without exception shared my care for non-humans and the complex ecosystems upon which they depend. I quickly learned however that to be credible the human had to be taken out of our science – even the “I” must be evacuated from scientific writing. How might we maintain the emotional connections, the encounters and the practices of care enacted through science as that science finds its way out of the field and into the boardroom? The water managers also expressed passion for their local waters, and yet in order to do their jobs properly they felt obligated to repress their strong emotions, wanting to avoid being seen as advocates. This dissertation is an attempt to give voice to these sentiments -- to the affective content that lies below the surfaces of spreadsheets.

In highlighting affect as an important and necessary variable in the creation of water politics, I am not suggesting that emotions should necessarily determine the outcome of a particular water management scenario. As I illustrate above, most of the white ranchers and farmers I interviewed felt no need to repress their emotions, instead expressing vehement anger in their intolerance for federal oversight or environmental protections. Their resentment emerged in ways that were often visible – erupting in collaborative management venues, in public conversations, at irrigation district meetings, and in the social media. I do not mean to imply that these expressions of emotion are always useful in determining just politics. Instead I am interested in why it is that some

but not all stakeholders are given or assume the right to care, and how it is that these divisions play out along political lines, excluding particular motivations for some and not others.

This paradox around the legitimacy of emotions in public politics is not unique to the Deschutes. On the contrary, we see it playing out on the national scale in our current historical moment, where a growing political (primarily white) right appears to have no trouble mobilizing their anger in ways that can appear completely irrational (according to the terms for rationality that I describe above) taking over wildlife refuges, harshly criticizing those who believe in global warming, and name calling professional journalists. In response, liberals have learned to repress their emotions in order to be seen as rational problem solvers and good politicians. This is a politics of repressed passion, and the consequences seem to be direr than just the personal psychological implications of withholding any evidence of care. The 2016 U.S. presidential election was driven by affect, not by what I have been defining as rationality. In this regard, we might consider the disciplining of water in the Deschutes as a case study that illuminates our particular political circumstances and underscores how both the recognition and suppression of affect matters.⁴⁵

While public expressions of emotion are thus complicated, perhaps what I am pointing to more than anything is the importance of honoring, acknowledging and legitimizing the experience of care. Herman Gray describes political work as taking place in “the heavily mediated and affective spaces of concern and care” (Gray, 2013,

⁴⁵ I credit this insight to my mentor Anna Tsing and to our discussion about the politics of whiteness in creating American culture.

p. 6). By foregrounding moments of connection and everyday practices over fixed stakeholder groups and water as commodity, I bring our attention to the political potential inherent in our capacity to care and the liability of hiding this care from public scrutiny. This is a care that extends beyond the separate self and encompasses what Massumi (2015) calls the “relational field” (202) – events that emerge in the creative act of living together.

I don’t mean to suggest by the above that turning to care is by any means an easy task. The more we recognize our interconnectedness the more we also are vulnerable to the grief inherent in losing our relations. For example, Judith Butler (2009), in “Violence, Mourning, Politics,” claims that we identify with those in life whom we love, and that the existence of others makes us who we are. In losing the other, be it place, person, or relationship, Butler argues that “I not only mourn the loss, but I become inscrutable to myself “ (388). In that we understand ourselves with respect to our relations, the loss of a loved one forces us to redefine what and who we are without this other being in our lives. Grieving loss is not in this sense self-indulgent or an act of powerlessness; it is instead an acknowledgment of our collective vulnerability and thus of our relationality and responsibility towards each other. As teacher and writer Martin Prechtel puts it, grief is “the natural way love honors what it misses” (2015, p. 3).

An affective politics that opens to care and to grief is open-ended, and as such it may be that the actions that unfold are not always just or equitable. But by focusing our attention on relationality and on felt encounters, we may avoid reducing politics

to individual self-interests and instrumental values and instead move towards a water politics based on embeddedness, interconnection and belonging. This is a form of politics better suited for our intrinsically interconnected, multi-species world – one that gets us beyond the maps provided by laissez-faire environmentalism and into a new terrain with no sign posts, where our primary task is to stay open, responsive and engaged in our connections across multi-species difference.

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