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Recognizing “reciprocal relations” to restore community access to land and water

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Abstract: Reciprocal relations underscore the mutual caretaking obligations held between nature and society, as intertwining entities that are co-constituted with one another. In this paper, we draw from scholarship on human-nature relations, which emphasizes the intrinsic value and agency of non-human beings and the landscape. Building on this literature, we investigate the practice of reciprocal relations for exemplar communities in Hawai‘i, British Columbia (Canada), the Appalachian mountain region (U.S.), and Madagascar that are all actively cultivating stewardship of natural resources in the face of economic, political, and ecological pressures. Our cases illustrate the diverse ways individuals and communities enact reciprocal relations and examine how these acts may increase community access to land and water. We show how communities mobilize reciprocal relations through both formal governance actions (e.g. management planning and legislation) and informal avenues (e.g. daily human-environment interactions).

Our findings expand upon Ribot and Peluso’s theory of access by considering the multi-directional flows of benefits and responsibilities between people and places exemplified by reciprocal relations. By reframing environmental governance around mutual responsibilities, we hope to increase recognition of existing reciprocal place-based relationships, and facilitate greater community access to land, water, and resources.

Keywords: Common property resources, community-based natural resource management (CBNRM), ecological and cultural restoration, environmental governance, environmental politics, human-nature relations, indigenous knowledge, reciprocity, relational values, sense of place, theory of access

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1. Introduction

Many place-based and Indigenous communities with strong connections to local landscapes have created sustainable resource management institutions that respond to changing social and environmental conditions (Ostrom 1990). Given the intensification of global economic pressures, however, communities are struggling to maintain their connections to land and water. Current community efforts to maintain, restore, and create place-based relationships are often unfolding in the context of increasing globalization, industrial development, and resource extraction. As a response to such community struggles, we consider recentering environmental governance around reciprocal relations, or the mutual caretaking between people and place.

In this paper, we focus on four examples of communities practicing reciprocal relations with natural resources, ranging from forests to fresh water to coastal

fisheries in Hawai‘i, British Columbia, Madagascar, and Appalachia. Through our cross-case analysis, we ask: what do reciprocal relations look like in practice? How and why are they enacted by diverse communities in relation to specific places? And how do reciprocal relations impact environmental and social outcomes? In doing so, we examine how practicing reciprocal relations can help transform environmental governance. For example, a recent New Zealand decision to grant legal personhood to the Whanganui River led to significant changes in status quo management practices. This legal settlement is rooted in the reciprocal relationships between the Maori people and the river, expressed in Maori language as “*Ko au te Awa, ko te Awa ko au.*” (I am the River, and the River is me.) In this case, reframing river governance through reciprocal relations enabled direct representation for the Whanganui River within a new environmental governance institution (Whanganui River Maori Trust Board 2014; O’Donnell and Talbot-Jones 2018).

Reciprocal relations invoke intimate, mutual obligations between place and people that are part of everyday local practices (e.g. Haraway 2003; Kimmerer 2013; Vaughan 2018). The concept recognizes the social norms that encourage individuals to pursue environmental caretaking, and the sociopolitical factors that lead people to abdicate such responsibilities. Furthermore, the language of mutuality reflects deeply held beliefs that shape human thinking and behavior towards nature (Chan et al. 2016). In contrast to “ecosystem services,” a concept that attempts to externalize the benefits and values people obtain from nature, reciprocal relations underscore the mutual caretaking *obligations held between and among* nature and society, as intertwining entities that co-constitute one another. While much effort has focused on the importance of rearticulating human-environment relations, there is a gap in our understanding of how such efforts affect environmental governance outcomes more broadly.

Through our cross-case analysis, we further develop the concept of reciprocal relations. We explore its broader implications and consider how bringing reciprocal relations to the forefront of environmental governance may affect environmental sustainability and community well-being. Building on Indigenous epistemologies of reciprocal relations (e.g. Kovach 2009; McGregor 2014; Arsenault et al. 2017), we seek to understand potential material effects of its practice. We specifically consider how practices of reciprocal relations can provide a powerful mechanism for helping communities regain access to land and water, thereby expanding upon the theory of access (Ribot and Peluso 2003).

We begin by considering existing literature on reciprocal relations from different fields. We then examine how particular communities practice reciprocal relations, and the resulting outcomes for communities and the environment. Our comparative case studies include Native Hawaiian communities restoring local level fisheries governance, First Nation communities in British Columbia (Canada) practicing restoration forestry, coastal fishers in Madagascar responding to marine enclosures, and community watershed organizations in Appalachia rehabilitating former coal mining areas (U.S.).

2. Literature review: reciprocal relations and community access

To develop an inclusive concept of reciprocal relations, we build on discussions of reciprocal relations within Indigenous studies (e.g. Roberts 1998; Deloria 2001; Kovach 2009; Armitage et al. 2010; Berkes 2012; McGregor 2014; Arsenault et al. 2017). We then link Indigenous epistemologies with relevant work on human-environment relations from political ecology, science and technology studies, and “sense of place” scholarship. We also draw on scholarship discussing the rights of nature in an increasingly corporate society (Mitchell 2002; Haraway 2003; Cruikshank 2014), and investigations of Indigenous community practices for harvesting, caretaking, and being on the land (Deur and Turner 2005).

Interpreting reciprocal relations through multiple lenses helps us to examine practices of reciprocal relations across a range of contexts. It also helps us to consider how practicing reciprocal relations may affect environmental governance, e.g. how might enacting reciprocal relationships with place help increase community access to land and water? We link these varied knowledge systems in the spirit of “two-eyed seeing,” a philosophy described by Arsenault et al. (2017) as learning from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of western knowledges and ways of knowing—not integrating, but weaving knowledges so that each way of seeing maintains its own integrity, while enhancing perspective and broadening understanding.

Many Indigenous worldviews position people as just one part of the natural world, co-existing in a web of relations that includes land, water, animals, and other non-human entities, including spirit beings (e.g. Lake et al. 2010; Craft 2013; Simpson 2014). Hawaiian scholar and kumu hula, Aunty Pua Kanaka’ole Kanahale (2016) describes natural resources as “elemental forces which to us as a people are the deities that sustain our lives.” Nancy Turner describes these relationships in the contexts of Indigenous communities across North America as “kincentric” relations, in which caring for the natural world is a form of caring for family, who in turn help people to feed their human families (Turner 2005). As opposed to emphasizing human power over the environment, many Indigenous stories illustrate the importance of maintaining interdependent familial relationships with the natural world that are mutually respectful and balanced (Wilson and Inkster 2018). For example, Cajete (2000, 287) describes Indigenous science as being based on principles of “mutually reciprocal relationships”. In his analysis of Indigenous worldviews, Deloria, Jr. (2001) emphasizes the importance of spiritual beliefs and cosmology that underlie interconnections between humans and non-humans. As Deloria writes, “the realization that the world, and all its possible experiences, constituted a social reality, a fabric of life in which everything had the possibility of intimate knowing relationships, because, ultimately, everything was related” (Deloria 2001, 2). Wilson (2008, 87) adds additional insight, stating “there is no distinction between relationships that are made with other people and those that are made with our environment. Both are equally sacred.” For Wilson

(2008, 87), “knowledge itself is held in the relationships and connections formed with the environment that surrounds us.”

Discussions of interconnected, reciprocal relations between humans and nature are also prominent in the fields of science and technology studies and political ecology. Multiple scholars problematize “separation thinking,” or what Latour (2002) calls the “Great Divide,” where “natural” and “social” processes are treated as distinct from one another, as both inaccurate and dangerous in depoliticizing environmental and social change (Harding 1991; Haraway 2003; White 2006; Peluso 2012; Nightingale 2014). Concepts like *natureculture* or *socionature* challenge utilitarian Western knowledge traditions that legitimize separation and power differences between humans and non-humans, perpetuate social hierarchies, and normalize sociocultural processes that harm vulnerable human and non-human communities (Swyngedouw and Heynen 2003; Zwartveen 2008). The ethics underlying the natureculture concept follow an egalitarian thread. As Haraway writes, “we are a knot of species coshaping one another in layers of reciprocating complexity all the way down. Response and respect are possible only in those knots, with actual animals and people looking back at each other, sticky with all their muddled histories” (Haraway 2008, 42).

Reciprocal relations also speak to the common-pool resources (CPR) literature, which emphasizes reciprocity as a key factor affecting environmental governance decisions among local resource users. Increased reciprocity helps motivate collective action to manage the commons by influencing social norms and individual decision-making, thereby shifting environmental policy and outcomes (Ostrom 1990). In the CPR context, reciprocity may incentivize individuals to contribute additional resources to provision a CPR system, and help address shared social dilemmas. In contrast to reciprocal relations, however, CPR scholarship focuses on reciprocity *among resource users* as a key factor shaping interactions between resource users, e.g. by helping people overcome incentives that favor short-term, individual benefits at the expense of resource health (Ostrom 2010). This paper looks beyond reciprocal relations between individual persons or user groups, however, and instead emphasizes reciprocal relationships between *people and the environment*. These relationships are based on our ethical obligations to care for, restore, and protect the land and resources that, in turn, support our existence.

Sense of place, defined as the bonds between people and places that can arise through lived experience in places (e.g. Tuan 1990; Relph 1997), contributes an additional lens to reciprocal relations. Sense of place scholarship relates to a wide range of community experiences that can generate different forms of place-attachment, often extending beyond ancestral ties to place. This approach includes more transient place-based experiences, peoples’ connections to industrial environments, and novel place attachments that develop when people move to new towns and cities (Tuan 1990; Relph 1997). Scholars describe how place-based experiences affect human consciousness (Feld and Basso 1996), and play an important part in establishing an individual’s land ethic, i.e. their personal values about caring for the land (Leopold 1949). In addition, scholars assert that place-based

experiences can transform both people and places (Lukacs and Ardoin 2013). For example, both natural and civic dimensions of sense of place motivate place-protective actions (Scannell and Gifford 2010), thereby suggesting one mechanism through which reciprocal relations can impact environmental sustainability and community well-being.

Within the ecosystem services literature, a related concept called “relational values” encompasses how people understand and express multiple values of nature (Chan et al. 2016). Some scholars suggest a “relational” approach where “instrumental” and “intrinsic” values of nature coexist (Raymond et al. 2013; Fischer and Eastwood 2016; Fish et al. 2016), in part through cultural ecosystem services (Comberti et al. 2015; Himes and Muraca 2018). As with our reciprocal relations concept, this work highlights ethical human-nature connections, and calls for “a culture change in environmental policy and practice” that can move our society beyond a singular focus on unidirectional, human-centric benefits (Chan et al. 2016, 1465). Reciprocal relations take the concept of reciprocity a step further to describe human-environment connections that are not just co-existing, but are rather intimately interdependent through a two-way flow of benefits and *mutual responsibilities*. Rather than starting from a framework focused on defining “value,” our concept of reciprocity grows from Indigenous worldviews centered on *practices of embodied caretaking* held between people and place (Littlebear 2000, 2009; Craft 2017; Vaughan 2018). Just as people develop relationships through collaborative activity with one another, reciprocal relations arise through the ongoing interactions between people and place—as “emotional and physical exchanges ... that are social in nature” (Littlebear 2009, 23).

Many communities around the world are working to maintain, regain and restore intimate and embodied relationships with the places they inhabit, but these relations are contingent upon the level of community access to these places. Ribot and Peluso (2003) define access as “the ability to benefit from things—including material objects, persons, institutions and symbols,” with an emphasis on gaining the *ability* to benefit, rather than simply establishing the *right* to benefit (Ribot and Peluso 2003, 153). Changes in “social-relational mechanisms” (e.g. access to knowledge, authority, technology, markets, capital, or labor) can affect a community’s ability to access natural resources—even without a shift in formal rights (Ribot and Peluso 2003, 160). In this way, the theory of access offers important insights into the web of power relations shaping resource extraction, benefit distribution, and community resistance movements. However, the approach focuses primarily on human-centric benefits, and emphasizes benefit flows from nature/place to humans. Our conception of reciprocal relations extends Ribot and Peluso’s theory of access beyond unidirectional thinking, and toward a relational understanding of people and place.

In summary, our reciprocal relations concept builds upon a range of multifaceted human-environment relationships that challenge human-centric concepts of nature (e.g. Chan et al. 2016), emphasize the agency of nature including non-human beings and the landscape itself (e.g. Mitchell 2002; Haraway 2003;

Cruikshank 2014), recognize Indigenous cosmologies and embedded kinship relations with the natural world (e.g. Deloria 2001; Turner 2005; Wilson 2008), and acknowledge the transformative power of experiencing the land through place attachment (e.g. Feld and Basso 1996). Our case analysis draws upon the multiple lenses discussed above: Indigenous epistemologies, natureculture, socionature, relational values, and sense of place scholarship. These perspectives converge on the idea of reciprocal relations based on mutual responsibilities between resources and people, where the flow of benefits is not uni-directional. Such insights further suggest that access may differ for those communities seeking to regain not simply *benefits*, but rather *mutually beneficial relationships and responsibilities* to land, water, and resources.

3. Case studies: enacting reciprocal relations

To create a broad understanding of reciprocal relations, our four case studies encompass a diversity of resources ranging from forests to fresh water to coastal fisheries in Hawai‘i, British Columbia, Madagascar, and Appalachia. Despite their differences, all cases describe community members with long-term relationships with the landscape that are embedded in deeply rooted community management practices. The Appalachia case also includes some newcomers to the region that are building strong place attachments. These cases all arise from communities that are “wrestling with upheavals experienced across the globe” (Vaughan 2018, 4), including intense pressures from global real estate markets, industrial forestry, commercial fishing interests, coal mining, and other extractive industries.

Reciprocal relations are always changing, and given the social and political realities of living in a highly corporatized society, many communities are now losing deeply held connections to the land and waters. To this point, the historical context of all four cases includes significant community struggles against status quo policies that have facilitated resource extraction and community dispossession of land and water. This analysis, however, maintains a focus on community resurgence (e.g. Simpson 2017), and highlights communities working to protect and restore reciprocal relations, despite pressures to go the other way. We draw on these exemplar cases to discuss how a diverse set of local communities understand, articulate, and practice reciprocal relations between people and place. We also consider the material effects of enacting (or being unable to enact) reciprocal relations and implications for environmental governance.

Because the researchers have all approached our work through community-engaged scholarship, reciprocity is also an underlying principle of the research methods applied to each study (see Diver and Higgins 2014; Gupta and Kelly 2014). The authors are both Indigenous and non-Indigenous scholars working in their own home areas, as well as non-Indigenous scholars who are visiting their study sites and working in collaboration with community partners. Each case study used mixed methods, including interviews, focus groups, community mapping, observation of community meetings, policy analysis, and archival work.

The authors engaged in ongoing relationships with community collaborators for five to ten years, and even longer in cases where the researcher was working in her home community.

3.1. Restoring reciprocity to fishing and governance in Hā‘ena, Halele‘a, Kaua‘i (Hawai‘i)

In the islands of Hawai‘i, Native Hawaiian community fishing practices and local level fisheries governance are based on principles of mutual caretaking, reciprocity, and sharing—interacting with nature as family. Despite the commodification of resources, loss of community access to coastal lands, and the shift towards formal state governance, local fishing communities continue to perpetuate ancestral practices and reciprocity (Vaughan 2018). Fishing in the community of Hā‘ena and throughout Hawai‘i historically depended upon respectful, reciprocal relationships and the exercise of *kuleana* with the ocean and with fish. In the Hawaiian language, *kuleana* means both rights and responsibilities, which stem from longstanding relationships with resources and specific parcels of land (also referred to as *kuleana*) within a family’s care.

As an illustration of the intimate and reciprocal relationships between people and place, Hā‘ena *lawai‘a*, fisher men and women, do not say they are going fishing. Instead, many use the general euphemism *holoholo*, cruising around, so as not to alert the fish to their plans. They also say that fish can not only hear, but the fish can choose whether to be caught by a particular *lawai‘a*, based on whether he or she exercises respectful fishing behaviors. Fisher men and women respect the species they harvest by letting some go and not wasting their catch. Harvest also comes with responsibility to share and feed the community. Generous *lawai‘a* are described as catching more fish. “The more you share, the more you catch” (Hashimoto, personal interview, 2010). In some families, ancestors who have passed are said to reappear as particular sharks that help their descendants harvest by chasing fish into their nets. In turn, families feed the sharks some of the catch.

Reciprocity and responsibility have guided customary relations between people and resources, including respectful harvesting behaviors and caretaking of specific areas. Just as with *kuleana* lands, which Hawaiians were historically expected to farm and make productive, local families were responsible for tending and caring for nearshore marine resources in their areas through practices such as rotating harvests, resting species during spawning periods, and enhancing habitat through building rock shelters for fish. Hā‘ena fishers describe harvesting mainly in specific family areas, often small patches of reef fronting their homes. *Lawai‘a* showed respect for one another by refraining from harvesting in other families’ areas, except by invitation, and practiced reciprocity by sharing the unique catch of their particular reef. In Hā‘ena the most accessible reef on the coast was informally reserved for elders to harvest seaweed.

To respect the rights of others, Hawaiian fishing communities balanced decision-making power with responsibilities. Historically, in Hawai‘i, fisheries

governance occurred at multiple levels. Individual families exercised management and decision-making rights over their own harvest areas. At the community level, head fishermen and *konohiki*, local overseers, made decisions to close or open particular species based on abundance and spawning times (Jokiel et al. 2011). *Konohiki* could also reserve one species for their own exclusive catch (Higuchi 2008). However, these decisions were made in consultation with area residents and could not infringe on their rights and ability to feed their own families (Akutagawa et al. 2016). *Konohiki* held distinct responsibilities that were inextricable from their decision-making powers. They were expected to ensure the entire community was well fed; oversee specific forms of fishing such as surround netting which required collective labor; maintain equipment such as boats and nets; and distribute catch from communal harvests (Vaughan and Ayers 2016).

Formal management authority for fisheries has shifted to central government over time, especially following Hawai‘i’s annexation as a territory of the U.S. The values practiced by Hawai‘i fishers have shifted as well, with people traveling regularly to other islands to fish, and supporting their families through commercial harvest. Hā‘ena fishers and community members are now restoring local governance through co-management, while simultaneously contributing to a statewide effort to restore reciprocal relations to fishing. For twenty years, community members have worked to create new state regulations for near-shore areas based on ancestral norms of responsible harvest and reciprocity. As part of this effort, fishers conducted an assessment of vulnerable species and resources, then drafted rules to protect them. Their proposed rules included bans on destructive practices such as lay nets and spear guns, a ban on commercial harvest, along with rests on key species (Vaughan et al. 2017). Community leaders spent nearly three full years gathering input on these draft rules, adapting them and building community agreement through meetings, informal gatherings like backyard parties, and outreach to fishermen and other user groups within and beyond the community, some of whom initially opposed the rules. After twenty years of community efforts, these regulations were passed into law in 2015, despite substantial opposition from commercial fishermen from across the State of Hawai‘i. The willingness of Hā‘ena fishers to sacrifice, for instance by giving up key fishing areas that would have been covered by community-driven regulations, helped to negate opposition by outsiders who perceived community efforts as acting only in their own self-interest (see Vaughan and Ayers 2016; Vaughan 2018).

Since Hā‘ena’s rules became state law, one other community, Ka‘ūpūlehu, on the Big Island of Hawai‘i has succeeded in passing their own rules package. It is a straightforward ten-year ban on all fishing in the area, a community-imposed rest period to let the resources recover for future generations (HAR 2014). Another community is preparing its rules for public hearing, and others are still creating formal rules packages, while engaging in informal actions to protect local fisheries, such as coastal monitoring, education, and outreach (Ayers and Kittinger 2014; Hui Mālama O Mo‘omomi 2017; Montgomery 2018; Vaughan 2018). Together, these communities advance a rallying cry of *lawai‘a pono*, responsible fishing, a powerful

message that elevates the position of fisher men and women from takers to caretakers, working for the protection of the resources that sustain them (see Figure 1).

Hā'ena today has become a vacation retreat for movie stars and millionaires. The once open coast is now lined by luxury homes enclosed by walls. Most of these are vacation rental investment properties sold through global real estate markets to owners who live far from Hawai'i. Few Hā'ena community members can live in the area due to escalating property values and land taxes. However, local families continue to fish and to serve as caretakers for the coast, and they are now working to enforce their rules that have become state law (see Vaughan 2018). A large part of enforcement may occur through simply letting others know that Hā'ena is a place that is cared for by the local community, where people continue to have a presence and serve as hosts to visitors. Though not all the rules that the community wanted were approved by the state, such as reserving certain reefs for elders to harvest, the rules will be reviewed annually and can be adapted. By affirming community-level caretaking and responsibility, the current law provides a foundation from which to learn and build. Just one year after establishing community rules as state law, preliminary data show enhanced abundance of most fish species (Rodgers et al. 2017).



Figure 1: Community members gather together prior to the public hearing for Hā'ena's community-driven rules package, many wearing "lawai'a pono" t-shirts (a Hawaiian phrase that translates to "responsible fishing") to show their support. Photo by Kimberly Moa. Used with permission.

Here, reciprocal relations are a means of relearning, reclaiming and reasserting community connections to place. Reciprocal relations enhance future resource abundance, based on responsibility rather than ownership. Community organizing has achieved both formal governance and informal education and enforcement efforts that recognize and perpetuate reciprocal relations, while reestablishing local care and presence along Hawai‘i’s coasts.

3.2. The Xáxli’p community forest: redesigning forest policy based on Xáxli’p community values

This case study involves the Xáxli’p First Nation community, one of eleven Indigenous communities that make up the larger St’át’imc Nation (British Columbia, Canada). Based in Fountain Valley, near Lillooet, the Xáxli’p community continues to assert its aboriginal title, which has never been legally extinguished through a treaty or otherwise. Given ongoing pressures from industrial forestry, mining, and other development interests, Xáxli’p initiated an intensive community mapping of unceded ancestral lands in the mid-late 1990s, which led to the Xáxli’p Traditional Use Study/Our Way of Life Study, and the Xáxli’p Ecosystem-based Plan. After 10 years of negotiations between Xáxli’p and the B.C. Ministry of Forests, this community mapping and planning process culminated in the 2011 Xáxli’p Community Forest (XCF) Agreement, thereby establishing a tenure shift, and greater community control over forest management on Xáxli’p aboriginal territory. The effort required three attempts, in order to overcome opposition from the Ministry of Forests and others (see Diver 2016, 2017).

Guided by Xáxli’p land use plans and the values articulated within them, the XCF primarily strives to protect sensitive ecological and cultural resources, followed by balanced use. The community-driven initiative is designed to maintain and restore intact habitats and healthy ecosystem processes, which all beings within Fountain Valley depend on for their existence. For Xáxli’p, the land, the people and the language are all powerfully tied together, a premise that is embedded in the St’át’imc language. *Tmixw* is the land. *Úxwalmixw* means the “people of the land.” And *Úxwalmixwts* refers to the language (Xáxli’p 2009, 30). Xáxli’p elders emphasize that if you damage one part of the three—land, people, language—you damage all. As Xáxli’p elders explain, it was the ancestors of Xáxli’p people today that “learned the rules of proper land use from the place that is Fountain Valley” (Weinstein 1995). These ideas reflect natureculture concepts that emphasize the co-constitution of human and non-human relations (Haraway 2003).

Xáxli’p land management values encoded in their management plans emphasize limited use of the landscape, in order to protect the water, plants, animals, soil, rocks, and all the interconnected elements of Fountain Valley (Xáxli’p 2009). Xáxli’p land managers follow the principle that those who benefit from the land must share those benefits and take responsibility for land stewardship, in order to ensure benefits can be passed on to future Xáxli’p generations. Protecting the water, and the hydrologic connections between trees, people, salmon and other

animals, is a main priority. It is these relationships that have sustained Xáxli’p people within this territory for generations, e.g. by taking care of water and food sources, wildlife habitats, and spiritual places (see Figure 2). As community member Herman Alec explains, “The elders always used to say... we have to look after the animals. We have to look after the four-leggeds, the birds, the land for the berries, the river for the fish, and the mountains for the deer” (Diver 2016, 53).

Xáxli’p maps and plans were important tools for expressing Xáxli’p reciprocal relations in a format that could influence forestry regulations and state agency negotiations. Xáxli’p plans specifically helped legitimize a lighter timber harvest on Xáxli’p Territory within provincial government frameworks, and established a new form of forest tenure for Xáxli’p territory. While Ministry plans claimed 70% of the area was appropriate for logging, Xáxli’p plans determined that only 30% of the area could be sustainably logged. Xáxli’p advocates accomplished this shift in dominant knowledge by using more stringent categories to identify sensitive cultural and ecological zones, illustrated in community plans. Then, community leaders negotiated a legally binding agreement with the Ministry of Forests, which recognized Xáxli’p plans as governing policy for the XCF area, which encompasses the majority of Xáxli’p territory.

Legitimizing Xáxli’p reciprocal relations through the Xáxli’p mapping and planning process was vital to internal community negotiations over the XCF. Given the diversity of Xáxli’p community members, many of whom had previously worked in the timber industry, the idea of developing a Xáxli’p forestry initiative that placed restoration as a first priority was not an easy one. To facilitate participatory, community-driven decision-making, Xáxli’p leaders organized internal planning workshops, which helped cultivate a collective identity based on reciprocal relations between Xáxli’p people and the land. The community workshop process, along with additional fieldtrips, and community meetings, has had a transformative impact on Xáxli’p environmental governance. As one Xáxli’p community member noted, “We have traditional values, and then there’s those economic pressures to harvest the other way that’s not sustainable. And that’s so much a part of the society we live in. So they have to learn to either balance or be aware of both values to effectively maintain our territory. If they aren’t aware of it, it’s so easy to just buy into the commodified culture of the dominant society. There’s so much pressure to go that way.”

Now Xáxli’p land management values are being enacted by the Xáxli’p Forest Crew. Despite challenges with funding and maintaining community support, XCF forest operations are applying a landscape ecology approach to protect water sources, enhance forest health, and maintain cultural sites. The Xáxli’p Forest Crew has treated over 200 ha of Xáxli’p forests, work that includes restoring former forest plantation sites to favor traditional foods, like *xusum* (soapberries), deer, and moose. The XCF follows an adaptive management approach, which solicits and responds to community feedback about shifting community needs and changing environmental conditions. A key part of the XCF governance is involving elders, who go out on the land with young people. This facilitates

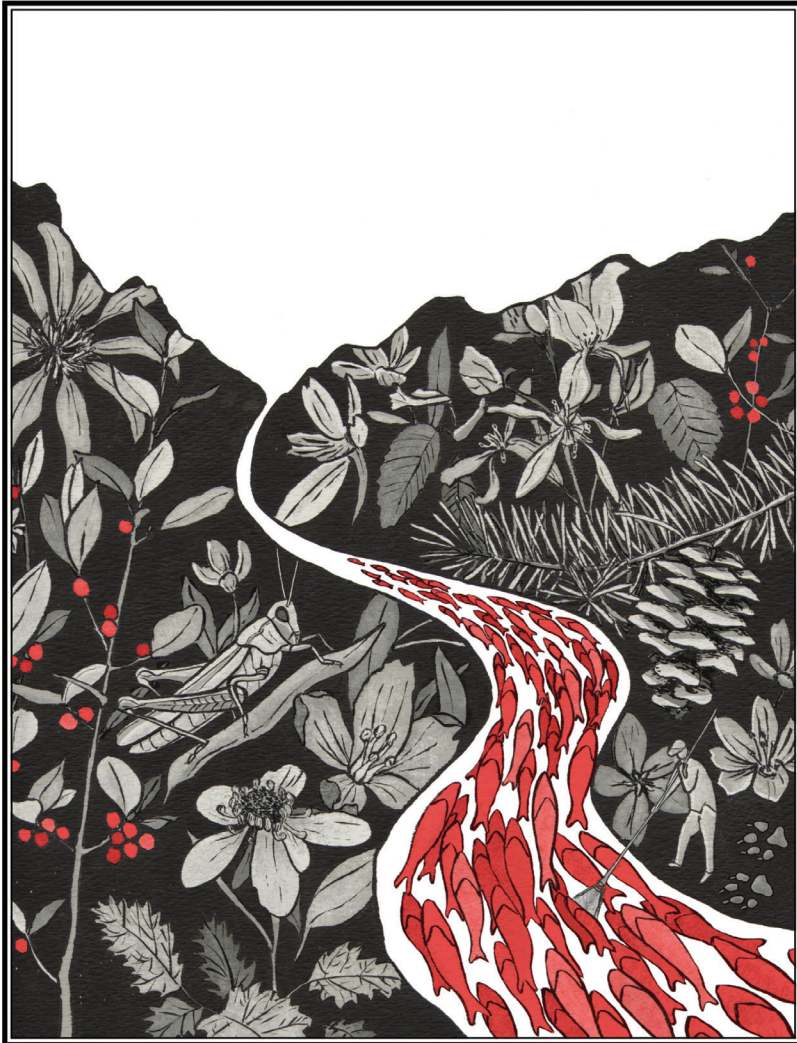


Figure 2: This conceptual image represents some of the reciprocal relations between the Xáxli'p First Nation community and Fountain Valley. It is mountain snowmelt that ultimately flows into the main stem, Fraser River, to help keep the water cool for migrating salmon in the summer. The buttercups flower in the spring and signal that the Spring Salmon is coming up the river—the yellow of the buttercup evokes the yellow of the salmon's eye. When the grasshoppers start singing, this means that it is time for drying the summer sockeye along the river. Traditionally, sticks from Tsáqwəm bushes (Saskatoon) were gathered by Xáxli'p people and used for many parts of drying the salmon. You can also see Coyote's footprint at Six-Mile (Sxeil'), where the mythical figure Coyote created one of the Xáxli'p community's main fishing places—a place where Xáxli'p people continue to dipnet for salmon today. Concepts depicted here were shared by Herman Alec. Illustration was provided by Lichia Liu. Used here with permission (see XCF Memorandum on Information Sharing).

intergenerational learning, and a new connection between the younger generation and the land that is tied to sustainable and meaningful livelihoods offered through XCF jobs.

This work describes the longstanding relationships between land, people, and language at Xáxli’p, as well as the community mapping and planning processes articulating Xáxli’p values, in order to affect forest policy negotiations. By generating internal community consensus and establishing legal recognition of Xáxli’p values rooted in reciprocal relations, Xáxli’p has produced an important shift in power dynamics to increase community access to land and forest resources.

3.3. Reef walkers: socionatural intimacy in Madagascar’s marine environment

In the past few decades, marine conservation in Madagascar has garnered a great deal of interest and funding due to a rise in anxiety concerning declining fisheries production (Le Manach et al. 2012; Venter et al. 2014), and the steady globalization of the small-scale fisheries trade (Crona et al. 2016). One way by which conservation organizations working in Madagascar and the Malagasy government are trying to address this collapse and increasing pressure from commercial fishing is through the establishment of marine protected areas (MPAs). In 2014 at the World Parks Congress, Madagascar’s president committed to tripling the marine and coastal area under protection by 2020 (Amia 2014). With the arrival of many MPAs across the island, the rights and access of local fishers to the marine environment have dramatically decreased, and local environmental knowledge is often overlooked (see Baker-Médard 2017).

Starting long before the rise of governmental and non-governmental organization sponsorship of marine conservation, Malagasy fisheries have practiced a form of marine conservation rooted in local cultural value systems and traditional practices. One prevalent theme in coastal community folklore (*tapashiry*) is the ills of being a greedy and selfish fisher, and the blessings of being a moderate and generous fisher. Another is that breaking local taboos (*fady*) will result in the ocean punishing the fisher, which may entail decreasing a fisher’s catch, or even taking the life of a fisher. Through *tapashiry*, young people learned, and are still learning (although fewer follow) about the principle of taking only what you need, respecting the ocean and the resources it provides, and respecting local taboos that are often clarified and upheld by the elders of a community.

Fishers use the word *mahazatra* to describe their relationship to a given spot in the ocean. The word *mahazatra* roughly translates to “to be accustomed to” or “to be familiar with.” When taken at face value, this word simply implies that the more one frequents a place, the more one is familiar with it and therefore likely able to harvest more resources from it. However, when asked about what makes someone *zatra* (adjective form of *mahazatra*) to a specific place, fishers did not answer in terms of simple frequency of visitation. Instead, they highlighted the agency of nature, describing instead a reciprocal socio-natural intimacy (Peluso

2012; Arias-Maldonado 2015). Fishers said that the octopus or fish reveal themselves in the places where a fisher is *zatra*. They would emphasize how catch is less contingent on the skill or gear of a fisher than on the relationship a fisher has to a particular place. Fishers assert that a place will provide for a fisher if the individual knows how to interact with the place, and respects the place; for example, not just where and when to fish, but also how to walk (if fishing on foot), where to be quiet, where it is OK to be loud, what gear a section of the reef responds best to, etc. Some fishers even used verbs such as *tia*, meaning “to love” or “to like” to explain how certain areas of the ocean like some fishers more than others. The preference of a given place is not simply up to the fisher, but instead, they assert that it is contingent on how the ocean feels towards a particular fisher.

Although these relationships are highly individual, they tend to be shared across family lineage. This is especially true for women fishers who tend to go out fishing on foot in groups (see Figure 3). Younger women follow their mothers, aunts, and older sisters out on the reef to areas where their family members are *mahazatra*. Often, although not always, fishers say the ocean eventually “opens itself” (*misokatra*) to these new young family members, and then the new fisher becomes *zatra* to the area of the ocean that other family members already have an established relationship.

Mahazatra helps signify a form of customary property rights. The language fishers use signals a mutual recognition of informal boundaries around customary fishing areas. This is important because clearly delineated marine property does not exist in a way that is legible to most conservation organizations, who consider Malagasy fisheries to be “open access.” Unlike land-based property systems introduced in colonial Madagascar, fishers do not have *de jure* or legal rights over areas of the ocean. While there are no formal claims to areas where one is *zatra*, fishers know the areas where other fishers (and often family lineages) have these intimate relations.

Unfortunately, an understanding of *mahazatra* and the kinds of reciprocal socio-natural relations that exist within the fishing community is largely absent from MPA management systems in Madagascar. The nuance of these customary socio-natures has not been considered in delineating protected area boundaries. This lack of recognition has the capacity to perpetuate inequality within the community. Some groups within the community, especially women fishers, do not have a seat at the decision-making table. Decision-makers in marine resource management are disproportionately male, wealthier, politically stronger, and more formally educated than the larger fishing population (Baker-Médard 2017). In addition, most MPA managers are not coming from within fishing communities. Often, they are not aware of, or in some cases look down on, traditional knowledge and Malagasy fishing taboos that have previously formed the basis for local fisheries management and customary marine property.

By overlooking local practices of *mahazatra*, conservation organizations working to establish MPAs may unwittingly erase a nuanced form of customary property. In terms of policy-making, if conservation organizations were attuned



Figure 3: Women from a coastal village in southwestern Madagascar who go out and fish together. There are multiple generations within a family line in this photo, plus another woman who has married into the family. Photo by Merrill Baker-Médard.

to the dynamics of *mahazatra*, they would recognize that in some areas, the seemingly fair act of enclosing an area of the ocean for the “good of the community,” may disproportionately impact some families. Based on preliminary studies, the families most likely to be negatively impacted by the spatial enclosures are already marginalized in the decision-making process based on education level,

gender and socio-economic status. If studies of marine reciprocal relations were a prerequisite to the decision-making process for siting marine reserves, some form of compensation to the individuals or families most heavily impacted could be implemented, or perhaps policy makers could work with local community members to devise a new marine conservation strategy altogether.

In this case, *mahazatra* illustrates a strong form of socionatural intimacy between Malagasy fishers and coastal fishing places. A lack of recognition for existing reciprocal relations has led to a decrease in access to marine resources for some; however, individual fishers and families continue to practice and teach reciprocal relations through informal, and sometimes illicit behaviors.

3.4. Community watershed groups: place re-making and participation in commons governance in Appalachia

In the Appalachian mountain region of the United States (U.S.), including the state of West Virginia, coal mining has long impacted local people and the watersheds where they live. The Appalachian region is one of three remaining major coal-producing regions in the U.S., a nation where coal still supplies about 30% of electricity (U.S. Energy Information Administration 2014). In many watersheds, coal mining began prior to the enactment of federal environmental regulations, including the Surface Mining Control and Reclamation Act (SMCRA) of 1977. Thousands of miles of streams in Appalachia have been impacted by acid mine drainage from abandoned mine lands (U.S. Department of the Interior 2014). Even as coal miners have suffered from black lung disease, injuries, and other debilitating health issues, large economic and political forces push for continued fossil fuel extraction in Appalachia, while lessening regulations.

Community watershed organizations across Appalachia engage in *de facto* or informal commons governance by voluntarily taking action to improve the water quality of streams in highly degraded watersheds (see Lukacs and Ardoin 2013; Lukacs 2014). Despite funding challenges, these watershed groups have contributed to the reappearance of species like river otters and trout in streams that had been unable to support aquatic life only decades earlier (Lukacs and Ortolano 2015). Streams that once acted as “waste conveyer belts” and hollows where people dumped trash have become places that community members regard with pride.

While the prior case studies focus on relatively intact ecosystems, coal mining and natural gas extraction have indelibly impacted the landscape, economy, and economic identity of some Appalachian communities (Bell and York 2010). Still, Appalachian people survive in part through their strong connections to and reliance on the land. Early settlements (1730–1860) were relatively self-sufficient, relying on local subsistence-barter-and-borrow systems. Later, families supplemented the low wages from labor-intensive coal mining with harvests from household gardens and the woods (Salstrom 2015).

The relationships between Appalachian watershed group members and the watersheds they care for illustrate the many forms of reciprocal relations between

people and place. In a study of thirteen Appalachian watershed groups, Lukacs and Ardoin (2013) found that individual participation in watershed groups was motivated by places themselves. They further categorized places based upon the extent to which and how places that motivated participation had been impacted by human activity. Group members were motivated by “remade” places that would not exist in their current form if it were not for the watershed group’s restoration projects and events. Places that encouraged watershed group participation included both relatively uncontaminated “natural” places, as well as degraded places, termed “made” places by Lukacs and Ardoin (2013), such as “straight pipes” that directly convey raw sewage into streams, trash dumps, or mountain top removal areas.

To understand the impact of reciprocal relations between group members and their watersheds, it is important to consider how places motivate participation, and how participation, in turn, re-makes places (see Figure 4). This positive feedback cycle allows for the possibility of creating new reciprocal relations across a wide range of social and environmental contexts. Experiences in place, as well as the social interactions that are part of a place-based experience, play a key role in deepening and establishing reciprocal relationships with place for watershed group members (Lukacs and Ardoin 2013). For example, group members fundraised to install a treatment system to address acid mine drainage, then observed a stream that had previously run orange gradually became clear again. Repeat interactions with particular streams also motivated restoration actions. Some watershed volunteers observed certain streams over time as they became threatened by the continuous onslaught of abandoned mine pollution. An effective response required volunteers to continually identify new ways to maintain treatment systems and engage new partners.

In another instance, group members described being told not to go near the creeks near their homes when growing up. Volunteering with watershed groups often changed their perception of these waterways, and the possibilities for restoration. For example, planting trees on an abandoned mine transformed it from a degraded place into a restoration site (see Figure 5). Planting trees with other people turned the place into a “volunteer site” and a visible reminder of work done together.

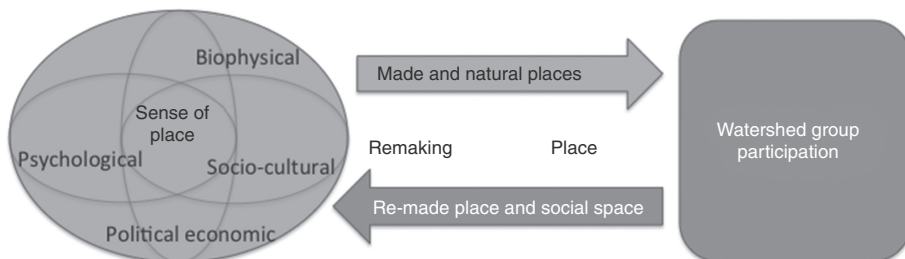


Figure 4: Places motivate participation, and participation in place-protective actions re-makes places. Source: Lukacs and Ardoin (2013, 6). Used here with permission.



Figure 5: Watershed group volunteers, foresters, and others plant trees on a valley fill at a former surface coal mine site in southern West Virginia as part of the Appalachian Regional Reforestation Initiative. Photo by Heather Lukacs.

Some watershed residents reported that they, at first, did not believe change was possible. It took actually seeing a fish swimming in the stream to demonstrate that the watershed group was effective. Some residents watched the local group's efforts for years before joining as a group member themselves. Other non-member residents supported the group in many, often invisible ways, such as cooking for watershed events or reporting sudden stream changes to a watershed group leader (Lukacs et al. 2016). Visible results of watershed group success—projects, events, meetings, and environmental outcomes—motivated the initial and ongoing participation of local residents in watershed groups. Through many forms of participating in caring for impacted watersheds, group member perceptions of these places, and of their own ability to clean them up, changed. Thus, the restoration process, and increased watershed health resulting from restoration activities, motivated caretaking actions, thereby generating a positive feedback loop between watershed group participation and place re-making.

Through these opportunities for local residents to restore severely polluted watershed areas, the term *watershed* has taken on a new meaning. “Watershed,” which is often defined as all the land area that drains into a receiving water body, is now also used in the daily speech of some watershed group members to signify the group itself. Thus, “watershed” is referred to both as a place and the group of people working to protect that place. This reciprocal relationship extends beyond the watershed and the people working to protect it to include the larger watershed community.

This case illustrates the ways in which people, places, and the reciprocal relationships between them can contribute to the re-making and restoration of places with a history of resource extraction. Community watershed groups have provided opportunities for local residents, including newcomers to the area, to participate in cleaning up their home watersheds, which has, in turn, motivated further community engagement in the watershed restoration movement.

4. Discussion: recognizing reciprocal relations

Our research explores practices of reciprocal relations across different community contexts, and seeks to understand environmental and social outcomes associated with these practices. Here, we develop our theoretical concept of reciprocal relations, and discuss its broader impacts. We specifically consider the multi-directional flows of benefits and responsibilities between people and places that are exemplified by reciprocal relations, and apply this insight to the theory of access (Ribot and Peluso 2003).

4.1. Building an inclusive concept

Our analysis highlights common elements around community practices of reciprocal relations, while leaving room for a diversity of approaches. We seek to understand how reciprocal relations can flourish in multiple community contexts, given a wide diversity of resources, cultures, and place relations. At the same time, we recognize that reciprocal relations require a deep and ongoing engagement between people and places. Our hope is that the range of cases presented here can help broaden our understandings of what constitutes reciprocal relations between people and place, without our losing sight of the concept’s core tenets. We also consider how communities and their allies can cultivate and support ongoing practices of reciprocal relationships.

Our cases emphasize multiple lenses for understanding the interdependence of human and non-human beings through reciprocal relations. These lenses include strong place attachments occurring through embedded, kinship relations with place, and ongoing place-based experiences. In the Hawaiian, Canadian, and Malagasy examples, Indigenous communities with ancestral and spiritual connections in a place maintain family-based relationships with specific areas. As demonstrated by the Appalachia case, non-Indigenous communities also practice reciprocal relations based on strong place connections, with multi-generational residents as well as newcomers to the area strengthening place-attachments through their participation in watershed restoration.

While all cases emphasize interdependence between nature and society, local communities use different language to articulate particular elements of reciprocal relations, such as Indigenous cosmologies and the agency of nature. In Hawaiian language, *kuleana* emphasizes the importance of mutual caretaking between people, the land, water, and other living entities that sustain human life. For the Xáxli’p community, *mixw* conveys the idea that the land cannot be treated as

distinct from the people who came from that land, or from the living beings that came before them. In Madagascar, *mahazatra* speaks to the agency of non-human beings and the natural world. In Appalachia, community watershed organizations have led some local residents to understand the word “watershed” both as a place and the group of people working to protect that place. This reflects sense of place, and the experiential component of human-nature relations.

Precise local terminology used to describe reciprocal relations also speaks to the working rules that make up local management institutions. In the parlance of common property resource management, such working rules often convey “common knowledge (that can be) monitored and enforced” (Ostrom 1990, 51). Yet when considering community practices of reciprocal relations, rules of behavior are often intimate and interconnected, rather than procedural or prescriptive. In addition, rules guiding community practices of reciprocal relations are multi-directional, meaning that certain people take on caretaking responsibilities for a place, at the same time that the place provides for those people.

4.2. Evaluating the transformative power of reciprocal relations

In considering reciprocal relations as a mechanism for shifting environmental governance, our cases suggest a range of outcomes that are associated with the resurgence of community caretaking practices. These outcomes include the restoration of coastal fisheries (Hawai‘i), the creation of new institutions for conducting ecologically and culturally sustainable forestry (Canada), the ongoing teaching of traditional fishing knowledge to family members despite community displacement (Madagascar), and increased local capacity and motivation for watershed clean ups (Appalachia). While such community gains have arisen from a complex set of shifting sociopolitical and environmental conditions, we see the mobilization of reciprocal relations as an important contributing factor.

In our case studies, communities mobilized reciprocal relations through both formal governance actions (e.g. management planning and legislation) and informal avenues (e.g. daily community-environment interactions). For example, in Hawai‘i and Canada, communities created policy change by negotiating legally binding agreements and changing state laws to formally recognize reciprocal relations. These communities leveraged state structures as a mechanism for advancing community-led management practices. In Madagascar and Appalachia, communities had less success influencing formal law and policy. Yet these communities still practiced reciprocal relations informally (e.g. through family fishing groups and watershed restoration projects) in ways that helped maintain their place-based identities. These examples illustrate the importance of informal community practices where reciprocal relations are embedded in a way of life that cannot be fully expressed through state-driven law and policy.

Rather than trying to demonstrate whether such outcomes are a direct result of reciprocal relations, our analysis suggests that increased visibility of reciprocal relations as an ethical practice helps build community governance authority,

in part by generating external recognition and respect for community institutions (e.g. Ostrom 1990). In other words, building awareness of a community’s practice of responsibilities towards nature can enhance the social and political influence of community-led institutions. Cultivating decision-making cultures and norms that favor reciprocal relations can encourage greater commitment among resource users to self-regulate for sustainability. Inserting reciprocal relations into legal agreements and regulations can also help carve out space within dominant state policy frameworks for community-led stewardship. Thus, reciprocal relations can open the door for environmental policy negotiations that focus less on rights and more on responsibilities.

Although we see many positive effects of cultivating human-environment relationships in this way, reciprocal relations are no panacea. Across all cases, communities experienced structural barriers to enacting reciprocal relations. In Hawai‘i, colonial legal structures and ownership-based property regimes imposed under U.S. occupation continue to challenge the implementation of many traditional caretaking practices. In Canada, limited resources and the siloed structures of state bureaucracies constrain XCF restoration forestry efforts. In Madagascar, NGO staffers and international conservation groups are implementing marine reserves without adequate respect for family harvest areas or local knowledge, thus creating significant negative consequences for communities (e.g. the erasure of customary property regimes, denied access to family fishing places, and increased social inequity). In Appalachia, thousands of miles of streams are still contaminated, and community watershed groups struggle to maintain and repair acid mine treatment systems with little government support (Lukacs and Ortolano 2015). As Wilson and Inkster (2018) point out, state-community conflicts over resource development are “rooted in ontological differences,” which are shaped by ongoing struggles to overcome settler colonialism and corporate influences. Thus, cultivating reciprocal relations must be understood as one component of broader community resistance efforts.

In addition to external pressures, reciprocal relations can be threatened by internal community tensions. As discussed in the Canada and Hawai‘i cases, communities are not homogenous, and reciprocal relations are not always practiced by all within a community. It is often through the work of a few dedicated community leaders that place-based communities relearn and recommit to practices of reciprocal relations in the face of ongoing change in local cultures, livelihoods, and political economies. We have observed this as an adaptive process that can occur when communities have opportunities to negotiate differing views among themselves. Community consensus-building around environmental stewardship can be supported through intergenerational learning, including efforts to protect and regain knowledge of reciprocal relations.

All four cases underscore the importance of strengthening relationships across generations to cultivate ongoing community relationships with the land and water. For example, Hawaiian grassroots organizations are bringing together community members of all ages to learn and pass on practices in fishing camps, as well as

engaging young leaders through workshops, resource monitoring, policy advocacy, and fisheries restoration (Cadiz 2017; Montgomery 2018; Vaughan 2018). Indigenous youth and elders in Canada are coming together to apply traditional knowledge and western scientific knowledge to restoration forestry (Diver 2016). Malagasy fishers teach their children traditional harvesting practices, by passing on their understandings of reciprocal relations in areas where they maintain existing place relations, sometimes in new fishing areas (Baker-Médard 2017). Appalachian community watershed groups engage elementary school students in raising trout in their classrooms to release into cleaned streams, once unable to support life. These groups also connect younger watershed volunteers with local retirees to re-make communities near former mining sites (Lukacs and Ardoin 2013). The nurturing of intergenerational relationships to restore Indigenous and local knowledges typically occurs on the land, and less so in classrooms, boardrooms or at public meetings. This is because it is the place, as well as caretaking actions for that place, which often inspire learning, restoration, and community participation (Lukacs and Ardoin 2013; Vaughan 2018). As Kimmerer (2013, 338) writes, “restoring land without restoring relationship is an empty exercise. It is relationship that will sustain the restored land”.

4.3. Mutual benefits and responsibilities: building on access

Reciprocal relations are predicated on reinforcing connections between people and places through repeated interactions that enhance mutual responsibilities. Our case studies illustrate that the flow of benefits and responsibilities is far from uni-directional. Further, focusing on “benefits” alone is insufficient to capture the essence of reciprocal relations: the ability of an individual or community to benefit from resources is contingent upon having the ability to care for those resources, and the ability to give something back to place (e.g. through weeding, cleaning, monitoring, replanting, protecting, teaching, honoring through ceremony or prayer, etc.)

These ideas of reciprocity are embedded in the premise that one cannot take without giving. By reinforcing embodied community ties to place, the practice of giving—along with the reciprocity required for people to live sustainability in and from a place—can help increase community access to land and water. Reciprocal relations also highlight the importance of addressing legacies of community dispossession, in order for communities to adequately exercise their inherent responsibilities toward the land and water. It is only after state agencies and additional groups address the structural barriers around land ownership and use rights that communities will be able to access the full benefits that can arise from their practicing reciprocal relations with the natural world.

In reframing environmental governance around reciprocal relations, e.g. “I am the River, and the River is me,” we privilege human-nature relationships as being co-constituted with one another. Thus, natural resources go from being “the ‘things’ in question” providing benefits (Ribot and Peluso 2003, 154) to

co-relations sustaining mutual abundance. By shifting the concept of natural resources from a passive object to an active subject, we broaden our understanding of the range of processes that enable people to access benefits, both from and for the environment.

This shift in thinking builds on Ribot and Peluso’s (2003) theory of access. Consistent with existing access theory, we see the practice of reciprocal relations as extending beyond formal rights-based struggles. For example, community identity and knowledge are important mechanisms that can shift power dynamics, and community access to land and water. As our cases demonstrate, a community’s ethical views on nature, and explicit community articulations of such views, can be a source of political and social influence. However, reciprocal relations also depart from some applications of access theory, which has typically emphasized political or economic gains, such as increased community access to market share (Ribot 1998). Reciprocal relations deepen our understanding of the non-economic benefits inherent to human-nature relations (e.g. Vaughan and Vitousek 2013). In contrast to emphasizing a community’s “ability to benefit” from natural resources, reciprocal relations emphasize the “ability to exercise responsibilities” through mutual caretaking between people and place.

5. Conclusion

In this paper, we develop an inclusive concept of reciprocal relations. Reciprocal relations are built upon the inherent responsibilities people have to the places that sustain them, and upon which future generations depend. We show how reciprocal relations can facilitate community efforts to maintain, restore, or create access to particular places. Our findings expand on Ribot and Peluso’s (2003) theory of access by demonstrating that mutual benefits and responsibilities arise from ongoing relationships between people and place, as opposed to more uni-directional benefits. The power of reciprocal relations stems from the particular knowledges and mutual responsibilities held by place-based communities, as well as the places themselves.

Given its emphasis on caretaking responsibilities for place, our reciprocal relations concept may help communities intervene in unbalanced rights-based struggles over resource allocation. Reciprocal relations highlight how some groups give back to a given resource or place, while others primarily extract benefits. By more fully recognizing those fulfilling stewardship responsibilities to land and water, foregrounding reciprocal relations may help communities to delegitimize rights holders who are violating resource health. Reciprocal relations privilege restorative, *place-based actions* to increase health and abundance. How can we tend before we take? Have we fulfilled our obligations towards the places with whom we are co-constituted? In this way, incorporating reciprocal relations into resource management decisions may help move policy-making beyond a singular focus on property rights and individual benefits.

Finally, we view reciprocal relations as an important mechanism for increasing the legitimacy of community caretaking actions that facilitate greater social

equity and environmental sustainability. This raises an important question: Do conservation practitioners and resource managers have the ability and authority to integrate reciprocal relations held by place-based communities into management practices and policies? We recommend further research and development of environmental policies that recognize and make visible reciprocal relationships with place as a helpful starting place to strengthen and perpetuate the caretaking of our earth as a mutual responsibility.

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