Ecological Restoration for Community Benefit: People and Landscapes in Northern California, 1840-2010

By

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Abstract

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Restoration has important ecological work to do, particularly maintaining biological diversity and repairing impaired ecological functions. In addition, many people anticipate and hope that restoration will also produce changes in and provide benefits to human communities. Although these expectations are widespread, relatively little is known about how well restoration projects achieve their goals generally, and even less about the social and cultural consequences of restoration work.

This dissertation draws on the experiences of two communities in northwestern California—the American Indians and non-Indians who are part of the United Indian Health Services (UIHS) and the resource managers, scientists, and landowners who work together to implement restoration projects throughout Humboldt County—to explore the impact of ecological restoration on human communities that undertake, use, or are home to restoration projects. I used qualitative interviews along with a review of historical and contemporary documents to develop an understanding of restoration goals and outcomes that is grounded in the experiences of UIHS community members and members of the broader Humboldt County restoration community.

UIHS community members share a vision of restoration that is rooted in cultural understandings of the relationship between people and the environment and in historical changes to the local landscape and American Indian communities that have affected their ability to enact this relationship and to apply key cultural values. In the contemporary cultural landscapes of northwestern California, UIHS community members' access to culturally significant places and natural resources is restricted. Restoration offers one way to restore a role for American Indians in the landscape through active management, traditional activities, and applications of cultural knowledge. I find that the process of restoring and using the Ku' wah-dah-wilth Restoration Area has had at least six outcomes that contribute to community wellbeing. These are: encouraging healthy behaviors; offering opportunities for cultural and environmental education; serving as a source of inspiration; facilitating community interaction; providing a culturally meaningful place that produces a range of positive emotional responses; and acting as positive symbol of living American Indian

cultures. However, the Restoration Area's potential for meaningful change is constrained at present by the limited number of people who access the site or receive information about it and the relatively small number of opportunities to actively engage with the site.

Members of the Humboldt County restoration community are also motivated by the hope that restoration will benefit communities culturally and economically. Although restoration contributes significantly to the county's economy and has led to relationship building and improved knowledge about local ecosystems, general uncertainty about restoration's community impacts suggests that restoration goals are not necessarily reflected in restoration outcomes. Taken together the experiences of these two communities indicate that restoration has a range of social and cultural outcomes. They also suggest that more effectively realizing cultural and social goals will take active planning, engagement with the broader political and social forces that have contributed to current conditions, ongoing involvement with restored sites to create opportunities for education and use, monitoring and evaluation of social outcomes, and attention to who is and who is not benefitting from restoration.

For my grandmothers, Virginia O. Boochever and Avalyn W. Diekmann

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CHAPTER 1. INTRODUCTION

To hear the most impassioned advocates tell it, a modern day Thoreau might say, "In *restoration* is the preservation of the world." As defined by the Society for Ecological Restoration International (SER), ecological restoration "is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed" (SER 2004). Restoration's promise to secure environmental benefits for future generations rests on the simple idea that humans can undo the environmental harm that they have caused (Hall 2005; Lave, Doyle, and Robertson 2010). Although restoration certainly has critics, who worry that it produces "fake nature" and provides a justification for unfettered development since any losses can be offset or undone (C. Katz 1998; E. Katz 2000; Higgs 2003), their concerns have not held back the growth of the ecological restoration field. In the United States restoration has proliferated over the last 40 years (Christian-Smith 2006; Lave, Doyle, Robertson 2010). At present, projects occur from coast to coast, and target many ecosystem types and species, ranging from the Florida Everglades (Light, Gunderson, Holling 1995) to Ponderosa pine forests in the southwest (Allen et al. 2002), and from urban creeks in northeastern cities (Casagrandes and Vasquez 2010) to salmon habitat in the Pacific Northwest (Nehlsen, Williams, and Lichatowich 1991).

Restoration has become an important part of the American environmental movement for two reasons, one ecological and one social. From an ecological standpoint, it has been argued that restoration is a critical strategy for preserving life-sustaining ecosystem services and conserving biodiversity (Dobson, Bradshaw, and Baker 1997; Hobbs and Higgs 2001; Rey Benayas et al. 2009). As Hobbs and Higgs (2001, 239) write, "The extent of human-induced change and damage to Earth's ecosystems renders ecosystem repair an essential part of our future survival strategy." Similarly, Dobson, Bradshaw, and Baker (1997) argue that anthropogenic impact on the environment is so great that preserves and parks alone cannot stem the loss of biodiversity; habitat must also be restored on land that has been converted for agricultural, industrial, and other human uses. Importantly, interest in restoration, biodiversity, and ecosystem services represents a shift away from the "enclave theory of conservation," under which Americans pinned their environmental hopes on protected lands, towards an environmental concern that "embrace[s] the entirety of spaces in which we live and work" (Sax 2001, 3).

In addition to these ecological imperatives, restoration owes a large part of its popularity to its core premise, that people can have a beneficial impact on the environment (Jordan 2000). In contrast to those models of environmental action centered on protected areas, which presuppose the need to separate valuable natural areas from humans' destructive influence, restoration revolves around the idea that human intervention in nature can be positive. Thus, restoration is often seen as a win-win environmental practice because it adds value to lands that people use (Higgs 1997). Furthermore, as part of a new wave of American environmentalism, restoration recasts the human-nature relationship in a more positive light than the declensionist narratives that were dominant for much of the twentieth century (Jordan 2003; Lave 2008; Tomblin 2009a). In a view reminiscent of Aldo Leopold's (1987[1949]) land ethic, humans are seen as members of the natural community with great

influence and great responsibility. Advocates believe if this new understanding becomes widespread, that restoration has the potential to transform how people act on and relate to the natural world (Higgs 2003; Hobbs and Harris 2001; Jordan 2000). Others hope that restoration can also contribute to more sustainable natural resource-based livelihoods (SER 2004) and be a tool for promoting environmental justice (Moran 2010; Rogers-Martinez 1992; Tomblin 2009a).

Because of its appeal and the urgency of its mission—delivering ecosystem services, conserving biodiversity, and perhaps advancing more sustainable human management and use of the environment, all in the face of enormous anthropogenic environmental change—restoration work in the United States is now quite extensive. Since the 1970s, restoration has grown into a multi-billion dollar industry (Bernhardt et al. 2005; Christian-Smith and Merenlender 2010) in which a wide range of actors, including private industry, community organizations, environmental nonprofits, and all levels of government participate.

Despite the significant commitment of resources to restoration, surprisingly little is known about either its ecological or social impacts. As Rebecca Lave (2008, 1) has discussed in her work on the role of scientific expertise in stream restoration, the demand for restoration projects has so far surpassed our knowledge of how to implement them effectively and of how well they achieve the desired results, a problem that is compounded by both the complexity of the ecosystems that are the object of restoration and the diversity of goals people have for these projects. A nationwide survey of river restoration projects (Bernhardt et al. 2005), for instance, revealed that few projects are being monitored or evaluated for either their ecological or social outcomes. This trend, however, is beginning to change. The need to learn from restoration experiences is now widely acknowledged (Follstad Shah et al. 2007; Kondolf et al. 2007). From within this groundswell, a small, but growing number of people are calling for more attention to restoration's human dimensions. For this group, assessing restoration projects' social contributions (Aronson et al. 2010; Davenport et al. 2010) and improving our understanding of how social and ecological processes intersect in restoration work and restored landscapes (Christian-Smith 2006; King and Whisenant 2009; Palmer 2009) is critical for effective restoration.

Research Objectives

This project began because I was intrigued by the idea that unlike earlier conservation efforts, which have been criticized for their social costs and cultural biases (deBuys 1985; Jacoby 2001; Merchant 2003; Spence 1999; Warren 1997), restoration might be good both for the environment and for the people who participate in it. Thus, the overarching question that this dissertation seeks to answer is, how does ecological restoration, as a form of environmental management, impact human communities—those that undertake, use, or are home to restoration projects? I focus on the restoration experiences of two particular communities in northwest California: the community of American Indians and non-Indians who are part of the United Indian Health Services (UIHS) and the community of managers, scientists, and landowners who work together to implement restoration projects in Humboldt County. Using interviews with community members, archival sources, and

contemporary restoration studies and accounts, I specifically address the following questions:

- How have landscapes and communities changed so that restoration has become a desirable management intervention?
- What non-ecological goals do these communities hope to achieve through restoration?
- And, finally, to what extent have these goals been realized?

In the literature on restoration, much attention is given to the foundational idea that people can have both harmful and beneficial impacts on the natural world (Hall 2005; Jordan 2000). By expanding the range of possible outcomes from human intervention in the environment, restoration is supposed to shift how people relate to and act on the environment. This point of view arises from the understanding that people are *a part of* not *apart from* the natural world. Yet this framework fails to fully encapsulate the complex environmental and social setting in which environmental problems develop and are resolved.

If restoration is to take seriously the deep, reciprocal, interdependent relationships between people and their environment, then it must attend not only to the myriad ways in which people affect their environments, but also to the ways in which those environments affect people. From the perspective of an individual, these connections are mediated by personal experiences, cultural identity, and political, economic, and social position (Dodge 2007). Because most often it is groups that undertake restoration, it is important to look beyond the individual and also consider the community value of restoration (Gobster and Hull 2000). What communities want from and how they are affected by restoration depends on their cultural frameworks for interpreting the natural world, their history, and their position within the current social-ecological system (Nadasday 2007). To fully understand restoration's human implications, it is important to consider not only how cultural beliefs and social practices shape landscapes (Higgs 2003), but also how landscapes are implicated in the production and reproduction of cultural and social practices, community wellbeing, and health.

The Research Setting

The two communities at the heart of this dissertation are centered in Humboldt County, California. Although some UIHS community members live and work in Del Norte County, UIHS's central clinic and the associated restoration area are located in Arcata, just a few miles from Humboldt Bay. The majority of people in northwest California live in the towns along the 30-mile perimeter of the Bay: Eureka, Arcata, McKinleyville, and Ferndale to name a few (Sawyer 2006). Humboldt County offers an excellent setting for a study of the community outcomes of ecological restoration because it has been home to restoration projects with the dual goals of rehabilitating ecosystems and supporting communities for nearly 40 years. Ecological restoration in Humboldt combines multi-disciplinary scientific knowledge from institutions like Humboldt State University and Redwood National and State Parks with the knowledge of experienced practitioners to accelerate the recovery of ecosystems and native species from the effects of past land use and management practices (Baker 2004). Restoration has flourished there because of a supportive populace that places

a high value on the natural environment, a wealth of practical and academic expertise, an institutional infrastructure for carrying out projects, and a precious and threatened resource, most prominently salmon. This type of "critical mass" (Huntsinger and Hopkinson 1996) has been key to the formation and continuation of a vibrant and viable restoration system.

The goals, processes, and outcomes of restoration in Humboldt County are also significant because this area is in many ways a state restoration leader. Termed the "Silicon Valley of restoration" by one member of the local restoration community (author interview #1000, 11/10/08), Humboldt County is at the forefront of the restoration field in the state and the wider region. Statewide, the county is unique for the amount of restoration work done and the accumulated experience of local restorationists. For example, local restoration experts are helping to set state restoration guidelines through their contributions to the Department of Fish and Game's Salmonid Stream Habitat Restoration Manual (2010). Furthermore, some restoration approaches that were pioneered in Humboldt County are now employed throughout the West. These include the watershed restoration techniques developed in Redwood National Park and spread to other public and private lands by Pacific Watershed Associates (Hight 1998).

In the remainder of this chapter, I introduce the landscape and communities of study, outline my research methods, and provide a roadmap to the dissertation.

Humboldt County Environment

Humboldt County, the geographic focus of this study, is located in northwestern California (Fig. 1). In delimiting the boundaries of northwest California and the North Coast, I follow the definition of ecologist John Sawyer (2006, xiv-xvi). Sawyer uses the Cascades and Central Valley Provinces as the eastern boundaries of northwest California, but breaks from convention by using the Eel River watershed as the southern boundary. This is not a geological or topographic distinction, but rather an ecological and cultural one, separating the northern timberlands from the southern vineyards. Sawyer further divides northwest California into the Klamath Mountains and the North Coast. The North Coast includes the Del Norte County coastline and Humboldt and Mendocino Counties west of the crest of the North Coast ranges.

Powerful geological and hydrological forces shape this landscape, making it home to some of the United States' newest and most dynamic watersheds (House 1999). The Cascadia subduction zone, where the North American and Pacific plates meet, runs alongside California's north coast and produces frequent, strong earthquakes as well as occasional tsunamis. These earthquakes are responsible for the uplift of the region's coastal mountains (Ozaki 2004). However, the steep hillslopes that result are unstable because the local bedrock is comprised mainly of highly erodible sandstones and shales, formed from the compression of materials at the sea bottom.

Not only is this area the most seismically active in the state it is also the wettest (Sawyer 2006). When heavy winter storms pound these steep, erosive slopes, they wash large quantities of sediment back into the ocean at rates nearly equal to those at which the

mountains are being lifted up. Given these geological and hydrological conditions, mountain slopes in this region are prone to land slides and high rates of erosion (House 1990; House 1999; Osaki 2004). Nevertheless, dense forests have historically helped to stabilize slopes and buffer erosive soils from heavy rains. Thus, until recently, water moving through these watersheds generally eroded only as much sediment as it could effectively carry to the sea, although a ten-year storm on the heels of an earthquake can trigger a landslide that will affect a river's course for decades (House 1999; Sawyer 2006). Although erosion is commonplace in Humboldt County watersheds, numerous studies indicate that people's actions have accelerated erosion rates above what is normal for this region (Schrepfer 1983). The accelerated mobilization of sediment from hillsides and its accumulation in coastal streams has degraded salmon habitat and interfered with salmon reproduction (Salmonid Restoration Federation 2011).

Despite the possibility of earthquakes and tsunamis, Humboldt County is best known for its towering redwood trees (Sawyer 2006) and once abundant salmon runs. Redwoods and tanoak are characteristic of the North Coast's low elevation, coastal regions, while the higher elevations of the interior are home to mixed stands of Douglas-fir, ponderosa pine, and white fir. These forests are interspersed with prairies and woodlands. Within these ecosystem types, the North Coast houses incredibly plant diversity, the result of its heterogeneous climate and topography and its location at the meeting point of several mountain systems. Currently, northwest California is experiencing a loss in terrestrial plant and animal species because of habitat deterioration as well as the ecological effects of invasive nonnative species. Some aquatic species, such as lamprey species, sturgeon, and candlefish, are also on the decline. Of these, the region's threatened salmon species, which are culturally, economically, and ecologically significant, are the most high-profile. In northwest California, Coho salmon is federally listed as threatened along with some Chinook salmon and steelhead populations.

The many different groups engaged in restoration in Humboldt County share the goal of improving ecological conditions, especially restoring salmon and steelhead runs as well as forest and other native plant communities. Restoration projects typically focus on salmon, watersheds, or particular ecosystems (i.e., forests, meadows, coastal dunes, and estuaries). Common restoration activities include upslope watershed restoration work aimed at controlling erosion; fuels reduction; control and removal of invasive species; instream fisheries habitat improvement; and restoring flow regimes in streams and estuaries (Baker 2005).

The Communities of Interest

In the chapters that follow, I provide an in-depth look at the origins and outcomes of the restoration work performed by the United Indian Health Services (UIHS) at the Ku' wah-dah-wilth Restoration Area. This case study is complemented by a broad survey of the Humboldt County Restoration community to see how a diverse, but integrated network of restoration practitioners conceives of the relationship between restoration and community as well as the social context and implications of their work. Considering one community's restoration project longitudinally alongside a snapshot of another community whose

members are involved in many different restoration projects gives depth and breadth to this analysis.

The United Indian Health Services (UIHS) Community

The United Indian Health Services (UIHS) is a nonprofit healthcare organization run for and by the American Indians of Humboldt and Del Norte counties. The governing board is comprised of representatives from nine federally recognized Tribes: the Bear River Band of the Rohnerville Rancheria (Wiyot/Mattole), the Big Lagoon Rancheria (Yurok), the Blue Lake Rancheria (Wiyot), the Cher-Ae Heights Indian Community of the Trinidad Rancheria (Coastal Yurok), Elk Valley Rancheria (Tolowa), Resighini Rancheria (Yurok), Smith River Rancheria (Tolowa), Table Bluff Reservation - Wiyot Tribe (Wiyot), Tolowa Nation (Tolowa), and Yurok Tribe of the Yurok Reservation (Yurok) (UIHS website, Board of Directors). UIHS serves over 15,000 American Indians and their families, has over 200 employees (Butler 1995), and has 6 clinics in the two county area. In addition to providing culturally appropriate medical services, UIHS strives to promote wellness. One facet of the organization's holistic approach to health is the 20-acre Ku' wah-dah-wilth Restoration Area—a restored prairie site that integrates cultural, educational, and health goals. It is located at UIHS's central clinic, the Potawot Health Village, in Arcata, California.

For the purposes of this study, I define the UIHS community as the organization's staff, clients, and their families as well as organizations and individuals who have partnered with UIHS in support of their restoration goals. Many but not all UIHS community members are American Indians. Most are from local American Indian groups, but other Tribes in California and the nation are represented as well. Community members recognize that the UIHS community is heterogeneous and point out that they belong to many, sometimes overlapping, communities. Although the Tribes of northwest California each have their own culture and history, UIHS and the Traditional Resources Program, which manages the restoration area, focus on their commonalities—the values and experiences they share.

Many of the people UIHS serves are Tolowa, Yurok, Karuk, or Wiyot. The homelands of these Tribes occupy present-day Del Norte, Humboldt, and parts of Siskiyou Counties. UIHS community members live throughout this region, in urban centers and towns as well as on reservations and in Rancherias. Historically the Tolowa occupied the coast from the California-Oregon border to south of Crescent City, a territory of roughly 640 square miles that includes coastal and riverine habitat as well as redwood and Douglas fir forests (Bommelyn 2002 [1985], Gould 1978). The Yurok's indigenous territory centers around the lower reaches of the Klamath River as well as the coast between present-day Crescent City and Trinidad. It encompasses more than 400,000 acres of redwood forests, Douglas fir, oak woodlands, and prairies (Huntsinger and McCaffrey 1995; Piling 1978; Waterman 1920). In 1855, the Yurok Reservation was created by executive order; at its peak it encompassed 56,000 acres, which had been whittled down to approximately 6,000 acres by the mid-1990s (Huntsinger and Diekmann 2010).[1] Upriver from the Yurok, the Karuk occupied the middle

[1] The Tribe is actively trying to restore its land holdings, and recently purchased 22,000 acres of its ancestral territory from the Green Diamond Resource Company ("Yurok Acquire 22,000 Acres of Ancestral Territory on Lower Klamath," *Indian Country Today Media Network*, April 15, 2011,

stretch of the Klamath River, where they relied on the river, Douglas fir forests, and oak groves (Bright 1978). The Karuk have only 300 acres of tribal land, but many tribal members continue to live along the Klamath (Lang 1994). Furthest south, Wiyot territory falls almost entirely within the coastal redwood belt, where villages were located along the shores of Humboldt Bay and near the mouths of the Mad and Eel rivers (Elsasser 1978; Heffner-McClellan 1994). Today the Wiyot live in towns throughout northwest California and on three Rancherias: Rohnerville, Table Bluff, and Blue Lake.

The Humboldt County Restoration Community

In Humboldt County, there are many different groups that engage in restoration, all with the hope of accelerating ecosystems' and native species' recovery from the effects of past land use and management practices. Typically, restoration projects bring together funders, regulators, public and private landowners and managers, and restoration workers. Thus, successfully completing a restoration project requires tapping into the skills, expertise, and resources distributed among the various entities within this restoration system (Baker 2004). In restoration on private lands, for example, nonprofits often play a pivotal role coordinating landowners and regulatory and funding agencies. In addition to involving an organization with the capacity to navigate the permitting process and secure funding, expertise in restoration planning, implementation, and monitoring is also needed. Within the restoration network exists a self-identified restoration community, which "is comprised of an extremely diverse assemblage of individuals who occupy very different positions within the restoration system. Diversely positioned members of the restoration community know each other and understand that only through their concerted actions and mutual cooperation will restoration work be sustained" (Baker 2004, 36).

The organizations and individuals involved in these various capacities include federal, state, and local government agencies, tribes, nonprofits and watershed groups, private contractors, consulting firms, and applied scientists (Baker 2005). The institutions involved in funding and permitting provide an example of the size and complexity of the restoration system. In Humboldt County, restoration is primarily funded by thirteen federal and state agencies. Federal support comes from the Bureau of Indian Affairs, Bureau of Land Management, National Fish and Wildlife Foundation, National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. State support is provided by the Department of Water Resources, the Coastal Conservancy, the California Conservation Corps, the State Water Resources Control Board, the Department of Fish and Game, and the Wildlife Conservation Board. Depending on the nature of the project, consultations and permits from a number of agencies may be required before restoration work can proceed, among them the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, Army Corp of Engineers, the California State Water Board, the Regional Water Quality Control Board, the California Department of Fish and Game, Humboldt County Coastal Development, and the California Coastal Commission as well as local planning departments (Baker 2004).

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http://indiancountrytodaymedianetwork.com/2011/04/yurok-acquires-22000-acres-of-ancestral-territory-on-lower-klamath/, last accessed August 12, 2011.

Many of the groups and landowners now involved in restoration have long played a role in shaping the landscapes of Humboldt County. Industrial timberland owners, the Forest Service, the National Park Service, California State Parks, the California Department of Fish and Game, and the US Fish and Wildlife Service have affected different aspects of North Coast watersheds over much of the twentieth century and are now engaged in the ecological restoration of those places and species. In some cases, even the same equipment is at work. The heavy equipment—bulldozers and backhoes—that originally created logging roads after World War II are now addressing erosion problems by upgrading or decommissioning those same roads (Hight 1996; Hight 1998).

A Note About Communities

Although it is common to see the label community applied to create categories of people around identity (e.g., the poor community) or issues (e.g., the environmental community), a community is not a static grouping that is determined by outsiders, but rather people coming together to share and act on their experiences (Labonte 2005, 84). A sense of shared identity unites definitions of community. As a unit of identity community is continually being created through social interactions (Israel et al. 2008, 49). Community, as defined by the Toronto Department of Public Health (cited in Labonte 2005, 84) is

> a group of individuals with a common interest, and an identity of themselves as a group. The essence of being a community is that there is something 'shared.' We cannot really say that a community exists until a group with a shared identity exists.

Other common elements of community include a sense of belonging; connection between members; a sense of purpose; common values and norms that unite diverse groups and activities; participation; mutual although not necessarily equal influence among members; and a commitment to addressing shared needs (Israel et al. 2008, 49; Kusel 2001; Walter 2005, 71). Communities can be further categorized as geographic, centered around a particular spatially defined area, or communities of interest, which have a sense of identity around shared interests or characteristics but may be geographically dispersed (Minkler and Wallerstein 2005, 29).

Although communities are easily romanticized, they are not an exclusive or homogeneous grouping. Typically people identify with multiple communities and communities contain considerable diversity (Kusel 2001). This fact calls attention to the power differentials that exist within and between communities (Labonte 2005). Communities are embedded in a larger web of relationships and processes; thus, they are affected by and are often responding to actions that originate outside the community (Baker and Kusel 2003; Kusel 2001; Minkler and Wallerstein 2005; Sayre 2005). Although community is most often thought about in terms of horizontal relationships, Cheryl Walter (2005) and others caution against viewing communities as independent, self-contained units and ignoring the vertical relationships that link them with other communities, partners, and institutions. Communities often rely on these relationships to achieve community goals (see for example, Sayre 2005,151). As a related caveat, Labonte and others point out that the current focus on

local, community-based decision making should not eclipse efforts to affect policy at state, national, or international levels. They warn that there needs to be a framework for working towards social change and environmental quality at multiple levels (Kusel and Baker 2003, 7; Labonte 2005, 86-87).

Research Methods

The research presented in the following chapters is drawn from semi-structured qualitative interviews with 31 members of the United Indian Health Services community and 8 restoration practitioners as well as the review of original documents. In semi-structured qualitative interviews, the interviewer introduces the topic and guides the discussion with specific questions, but the format is flexible and open-ended enough to pursue topics that arise during the course of the interview (Rubin and Rubin 1995, 5). In addition, I conducted informal interviews with other members of the restoration and natural resource management community and observed restoration sites and events. All interviews were conducted using a protocol reviewed and approved by the University of California Berkeley's Office for the Protection of Human Subjects (CPHS Protocol #2007-4-11). Research conducted on the Ku' wah-dah-wilth Restoration Area was done with formal approval from the United Indian Health Service's Research and Publications Committee and Board and was designed as participatory research project. Thus, this portion of the research project was guided by a combination of UIHS-identified needs and my research interests. In addition to published sources on the environmental and restoration history of Humboldt County, I used documents from the Humboldt State University Library's Special Collections, the archives of Humboldt Redwoods State and National Park, the Bancroft Library at the University of California, Berkeley, and the personal collection of Laura Kadlecik, UIHS's first restoration project manager.

Using a purposive sampling strategy, interviewees were selected to be representative of the diversity within both the UIHS and Humboldt restoration communities. At UIHS, Paula Allen and Eric Johnson of the Traditional Resources Program developed a list of potential interview subjects that included people of different ages, genders, tribal affiliations, levels of association with UIHS, and areas of cultural expertise. UIHS community members interviewed for this project included current UIHS staff as well as community members not employed by UIHS; men and women; and people of Karuk, Tolowa, Wiyot, and Yurok ancestry. Ages of those interviewed ranged from the early twenties to the early nineties. The Traditional Resources Program staff and members of the Research and Publications committee reviewed the interview request letter and interview questions. (For the questions that guided these interviews see Appendix A.) Most interviews were conducted at the Potawot Health Village, although several were conducted at the participant's home or workplace. Interviews lasted approximately 45 minutes to two hours. I either recorded the conversation or took notes. Interview recordings and transcripts will be returned to the Traditional Resources Program. Restoration community members were identified using published reports on restoration in Humboldt County as well as snowball sampling. Snowball sampling is particularly effective in identifying people who are part of the same social network (Rubin and Rubin 1995). These interviews took place at a location of the interviewees' choosing, most often at their workplace or in the field, and typically lasted 45

minutes to two hours. (For the questions that guided these interviews see Appendix A.) Restoration community members interviewed for this project represent a cross-section of this community, and included representatives from federal, state, and local government agencies; non-profit organizations; industry; and private contractors. To analyze the interview data, I coded interview transcripts and notes with the qualitative data analysis software Atlas.ti (Berlin, Germany), using the grounded theory approach outlined by Auerbach and Silverstein (2003).

Interviews with UIHS community members provided information about the relationship between environmental change and local American Indian communities, particularly their engagement in cultural practices and the preparation and consumption of traditional foods. These interviews also covered community members' perceptions and use of the Ku' wah-dah-wilth Restoration Area. Interviews with members of the Humboldt restoration community provided information about how restoration practitioners presented and assessed the connection between their work and local communities. The historical literature helped to identify changes in the landscapes of the North Coast as well as various communities' responses to these changes. Published restoration reports provided valuable information about restoration projects' goals, practices, and accomplishments.

Roadmap to the Dissertation

Chapter 2 provides the conceptual framework for my analysis of the community context and impacts of ecological restoration. I review the literature on the human dimensions of ecological restoration, identifying the principal ways in which restoration is expected to produce beneficial outcomes for human communities as well as critiques of restoration's ability to produce positive social change. To make sense of such a wide range of possible outcomes, I suggest using cultural landscape analysis to analyze the broader context in which restoration takes place. Elaborating on the cultural landscape concept, I explore the ways in which human communities influence landscape, and landscapes influence communities.

In Chapters 3 and 4, I explore the origins of a particular restoration project, the Ku' wah-dah-wilth Restoration Area, from the perspective of its intended beneficiaries: United Indian Health Services (UIHS) community members. Focusing on the period from 1849 to 1960, Chapter 3 documents how changes in the cultural landscapes of northwestern California have impacted local American Indian communities. Chapter 4 picks up as American Indian activism and supportive national policies usher in the present period of local cultural and political revitalization. Despite these changes, UIHS community members report that their access to culturally significant places and resources is constrained in the contemporary cultural landscape. Restricted access affects the quantity and quality of traditional foods and materials available to community members, limits their opportunities to engage in cultural practices, and ultimately impacts their experiences and emotions. Linked ecological and cultural restoration is one way to address past environmental injustices that continue to have a hold on the present through the ways in which the landscape is regulated, managed, and interpreted.

In Chapter 5, I describe the goals of and process for restoring the Ku' wah-dah-wilth Restoration Area in order to situate this project in its social and cultural context. Then, using interviews with UIHS community members, I discuss who uses the restoration area and for what purposes and I assess the community impacts of this project. Considering the Restoration Area's community impacts, I find that it has had a number of outcomes that contribute to community wellbeing. This finding is tempered by the fact that UIHS community members feel that the Restoration Area's potential for meaningful change is constrained in two ways. First, the number of people who use or are knowledgeable about the restoration area and its purpose is limited. And second, opportunities to actively engage with the restoration area—the types of uses that UIHS community members believe are the most transformative—are limited largely because of funding constraints. Nevertheless, community members' enthusiasm for the Ku' wah-dah-wilth Restoration Area indicates that in their experience this model of restoration is effective for realizing community and cultural goals, but needs only to be implemented on a wider scale.

In Chapter 6, I broaden my analysis, scaling up from the UIHS community and its restoration project to consider a cross-section of the Humboldt County restoration community. Using interviews with restoration practitioners and published and archival restoration studies, I describe the common narratives that link ecological restoration and community goals. Although linked ecological and community goals are a common part of restoration discourse in Humboldt County, the social benefits of restoration remain largely abstract. Restoration's economic impacts prove the exception. Interviews also revealed two unanticipated outcomes of ecological restoration: social learning and relationship building. The lack of clarity about restoration's other benefits for local people is due, in part, to the difficulty of monitoring and evaluating these types of outcomes. In contrast to their nebulous discussion of restoration's impact on people, restoration community members were acutely aware of the social and spatial constraints on restoration practice.

I conclude in Chapter 7 by reflecting on the potential and limitations of ecological restoration as a means for improving community wellbeing. I discuss the implications of my research for the management of restoration projects with joint ecological and community goals and more generally for understanding feedbacks between natural resource management, landscape change, and human communities.

CHAPTER 2. THEORETICAL APPROACHES TO ECOLOGICAL RESTORATION

In this chapter, I review the literature on the human dimensions of ecological restoration and provide a theoretical framework for understanding how restoration as a form of natural resource management might influence human communities. I begin by introducing the social and cultural forces affecting restoration practice. After this general overview, I narrow my focus and outline the five principle ways in which restoration is expected to produce beneficial outcomes for human communities. This review reveals, however, that people have as many concerns about as hopes for restoration's community outcomes. In the next section, I suggest that understanding such divergent results requires attention to the broader context in which restoration takes place. In particular, I find that cultural landscapes are a useful construct for examining that context, because they encompass not only how people shape the character of places, but also how the character of places has significant implications for people.

Human dimensions of ecological restoration

Like other forms of natural resource management, ecological restoration cannot be understood separate from its social and cultural context. Many have made this claim about natural resource management generally, including environmental historians (e.g., Lewis 1994; Warren 1997; Worster 1992), political ecologists (e.g., Robbins 2004), geographers (e.g, Prudham 2005; Sayre 2005) and environmental anthropologists (e.g., Nadasdy 2007); here I examine what it means for ecological restoration. At their broadest contours, restoration projects are defined both by what is socially acceptable and ecologically feasible (Buckley and Crone 2008; Flitcroft et al. 2009; Reeves and Duncan 2009). Recognizing that restoration relies on social support and acceptance, restoration advocates have repeatedly declared that for restoration projects to be successful they must combine ecological, social, and cultural goals (Aronoson et al. 2010; Davenport et al. 2010; Flitcroft et al. 2009). Additionally, both social and natural scientists acknowledge that if restoration is to address the causes as well as the symptoms of degradation, then the social drivers of ecological change (e.g., land use change, additions of new species) must be addressed (Christian-Smith 2006; King and Whisenant 2009; Palmer 2009). Social considerations, however, are not confined to strategies for restoration success. Some of the most frequently cited limits to restoration's potential outcomes are political, regulatory, institutional, and economic constraints (Buckley and Crone 2008; Hobbs, Higgs, and Harris 2009; McCool 2010; Palmer 2009; Rosenberg and Margerum 2008).

If restoration's social and ecological setting determines what is possible, then culture drives what outcomes are desirable (Tomblin 2009a; Westphal, Gobster, and Gross 2010). Ecological health and its converse, ecological degradation, are not universal concepts; people's perceptions and definition of them vary widely across time and space (e.g., Hall 2005; Robbins 2004; White 1983). Within the United States, Kondolf (1995) has argued that a deep-seated cultural preference for meandering channels drives stream restoration decisions that purport to be scientific. In a transnational history of ecological restoration, Hall (2005) finds that Americans and Italians hold very different ideas about what

constitutes restoration and ecological health. Viewing their country as gardened or ungardened, Italians focused on ungardened lands and looked for ways that culture could improve them. Viewing their country as wild or unwild, Americans focused on unwild lands in the hopes of restoring natural processes to places that culture had degraded. This distinction has far-reaching implications, including influencing whether or not protecting cultural activities has a place alongside preserving biodiversity in restoration activities.

Because of social and cultural considerations such as these, the decision about what condition to restore to or which trajectory of change should be the goal of restoration requires human input and cannot be determined through scientific analysis alone (Gross et al. 2010; Hall 2010; Palmer 2009). Two developments in ecology theory and science reinforce the idea that the selection of restoration targets is a subjective decision that must take into account human values and priorities. First, non-equilibrium models of ecosystem change posit that there are a number of viable ecosystem states that can occupy a site (Bartolome, Jackson, and Allen-Diaz 2009; Westoby et al. 1989). These frameworks are contrasted with successional models of ecosystem change, which posit predictable, directional change toward a stable, climax community (Holling and Meffe 1996; Suding and Hobbs 2009). In addition to complicating the number and types of pathways for achieving restoration (Suding, Gross, and Houseman 2004), non-equilibrium models suggest that multiple states may have existed in the past and that multiple states or trajectories of change are possible in the future (Suding and Hobbs 2009). Therefore, managers and stakeholders, looking for a guide for their restoration efforts, must select from among many possible states. Second, more ecologists are coming to expect that the pervasive impacts of climate change combined with changing species distribution will create "novel ecosystems" that differ from any present or past ecosystems (Hobbs, Higgs, and Harris 2009). Consequently, restorationists will soon confront conditions where the benchmark or targets for restoration cannot be based on the conditions of the past alone. When approximating historical ecosystem states is not possible because of novel environmental circumstances, determining suitable goals for restoration will require restorationists to balance shifting local environmental conditions, cultural norms, and social priorities.

Restoration as an agent of social change

Not only is restoration influenced by the communities that implement it, it also promises to transform them as well. Now a widespread practice and an important part of the environmental movement within the United States, ecological restoration owes much of its popularity to the idea that people can repair damaged ecosystems while simultaneously forging a mutually beneficial relationship with the natural world (Higgs 2003; Hobbs, Higgs, and Harris 2009; Jordan 2003; Lave 2008). Restoration has transformative power because it opens up "the prospect of a positive relationship" with the environment (Jordan 2003, 32). Most often the change restoration represents is defined against earlier American environmental efforts, which were premised on the idea that human activities in nature are inherently destructive. Therefore, they aimed to physically separate people from significant natural areas, what Sax (2001) has called the "enclave theory of conservation." The human-nature dichotomy encapsulated in this approach has been widely criticized for its failure to safeguard protected landscapes or to allow for constructive and sustainable ways for people

to interact with the world in which they live (Jordan 2003; contributions to Cronon 1995). In contrast, restoration—which does not lock people away from nature materially or rhetorically—promises an alternate orientation toward the environment by allowing more constructive ways to engage with nature (Higgs 2003; Jordan 2003; Moran 2007) that can serve as the foundation for a new environmental ethic. Some forecast that human-nature relationships will be remade to such an extent that the spread of ecological restoration represents a new paradigm or a cultural shift (Hall 2005; Higgs 2003; Jordan 2003; Sax 2001).

Under the broad umbrella of a "positive relationship" with nature, the proposed outcomes of restoration for human communities—those that undertake, use, or are home to restoration projects—fall into four main categories: 1) ecosystem services, 2) investment in human and natural capital, 3) human-nature relationships, and 4) environmental justice (Table 2.1). These categories are not mutually exclusive. Instead they represent theoretical approaches to understanding restoration outcomes and differ in their framing of the nature and origins of the problems that restoration can address. The many restoration projects undertaken by American Indians represents a fifth set of restoration perspectives and practices. The anticipated community benefits of restoration span a continuum of tangible (e.g., flood control) to intangible (e.g., developing a sense of place) results. Beneficial results, however, are far from inevitable. A number of studies that address restoration in its human context have found that at best restoration fails to affect significant change and at worst undermines goals of environmental quality and social equity. In this section, I review the potential positive and negative developments for each category of community-related results to set the parameters for my own research on the restoration's impacts on human communities in Humboldt County.

Ecosystem Services

Frequently, the community benefits of ecological restoration are framed as ecosystem services, which are defined as "the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life" (Daily 1997, 3). Ecosystem services are further divided into provisioning (e.g., food, water, timber), regulating (regulation of climate or flooding, waste treatment), cultural (e.g., recreation, aesthetic enjoyment), and supportive (e.g., pollination, soil formation, nutrient cycling) services. Commonly cited benefits of restoration that fall within these categories include flood control (Teal and Peterson 2005), water quality (Carpenter and Cottingham 1997), and providing places for outdoor recreation and education (Simentstad et al. 2005) among others. Conceived this way, restoration provides a direct benefit to society by reversing declines in ecosystem services that support human life (Aronson et al. 2010) and help make it enjoyable. Furthermore, by assigning a value to the benefits ecosystems provide to society, the ecosystem services concept is intended to help people make more sustainable environmental and economic decisions than they have in the past (Daily 1997) and can help to justify the investment in restoration (Aronson et al. 2010).

Critics contend, however, that attaching payment for ecosystem services to restoration may do more harm than good because of the difficulties and consequences of commodifying

Table 2.1 Restoration's Proposed Outcomes for Human Communities. Outcomes are arranged into categories based on different theoretical approaches to understanding environmental problems.

Ecosystem Services	
• Provisioning services (e.g., clean water) • Regulating services (e.g., flood control) • Cultural services (e.g., improving recreational access and educational opportunities)	Aronson et al. (2010), Eden et al. (2000), McCool (2010), Simenstad et al. (2005), Teal and Peterson (2005), Watt (2010)
• Incentive for further degradation • Miscalculate quality of restored services • Oversimplify ecosystem complexity • Promote economics over other ways of valuing ecosystems	Higgs (1997, 2003), Kosoy and Corbera (2010), Palmer and Filoso (2009), Robertson (2000)
Investment in Human and Natural Capital	
• Source of funding (e.g., over $1 billion spent annually on US restoration) • Provide full or part-time employment • Sustain natural capital • Training in restoration planning & implementation skills • Build capacity to engage in environmental work	Baker (2004, 2005), Bernhardt et al. (2005), DellaSala et al. (2003), Doyle et al. (2008), Gustaitis (2004), Higgs 2003, Izakson (2007), Tomblin (2009a, 2009b)
• Restored species & processes incompatible with surrounding land uses • Loss of revenue	Buckley and Crone (2008), Davenport et al. (2010)
Human-Nature Relationships	
• "regenerate old ways or create new ones that bring us closer to natural processes and to one another" • Raise environmental awareness • Strengthen sense of place • Psychologically restorative • Encourage stewardship • Increase environmental advocacy	Casagrandes and Vasquez (2010), Eden et al. (2000), Geist and Galatowitsch (1999), Higgs (2003), Jordan (2000, 2003), Lave (2008), Rogers-Martinez (1992), Moran (2007), Tomblin (2009a)
• Fail to affect root causes • Perpetuate old attitudes	Christian-Smith and Merenlender (2010), Higgs (2003), Kondolf (1995), Lave (2008)
Environmental Justice	
• Improve linked social and environmental conditions • Acknowledge community history • Equitable distribution of environmental amenities • Engage marginalized communities in environmental planning and decision-making	Casagrandes and Vasquez (2010), Long et al. (2003), Moran (2007, 2010), Smith-Cavros (2006), Tomblin (2009a)
• Ecological imperialism • Reinforce existing political & economic inequalities	Higgs (2003), C. Katz (1998), Long et al. (2003), Moran (2007)
American Indians and Eco-Cultural Restoration	
• Sustain cultural practices and local environmental knowledge • Integrate community values into management • Contribute to individual health and community wellbeing • Build political capital, management capacity	Casagrandes and Vasquez (2010), IPRN (2011), LaDuke (1994), Long et al. (2003), Rogers-Martinez (1992), Tomblin (2009a, 2009b)

ecosystems. To turn ecosystem services into objects for trade, an ecosystem process must be scientifically and spatially abstracted, assigned a monetary value, and entered into an established exchange process (Kosoy and Corbera 2010; Robertson 2000). Palmer and Filoso (2009, 576) argue that the first stage of this process is flawed because current ecological science cannot adequately link "restoration actions to changes in biophysical processes and ecological features that result in the delivery of specific ecosystem services." Examples from wetland restoration provide support for their concern. For instance, while many wetland restoration projects have the goal of restoring hydrological processes, few actually measure processes, assuming instead that measures of structure are a reasonable proxy (Palmer and Filoso 2010; Palmer 2009). Robertson (2000) finds that measures of wetland ecosystem services, which are meant to be commensurate, are a poor basis for valuation and exchange because they are so dependent on place-specific linkages with the larger landscape. Also, because offsets are available, markets for ecosystem system services may perversely create an incentive for additional environmental losses (Palmer and Filoso 2009; Higgs 1997). This pattern is evident in the "no net loss" policy for wetlands, under which replacing wetlands has become a standard feature of developments that destroy wetlands (Robertson 2000), an especially problematic outcome when the ecosystem services provided by restoration or mitigation are less than those that were lost (Palmer and Filoso 2009).

Questioning the wisdom of the larger project of quantifying and valuing ecosystem services, Kosoy and Corbrera (2010) argue that commodifying ecosystems causes people to perceive complex ecosystems in an overly simplified way, to prioritize the exchange-value over all other ways that humans value and relate to nature, and possibly to reproduce "unequal power relations in access to wealth and environmental resources" (1234). In addition to pointing out the negative implications of commodification for people and places, Kosoy and Corbrera (2010) question whether market-based environmentalism, of which payment for ecosystem services is just one expression, and its reliance on attaching prices and property rights to ecosystem goods and services, is the right way to address social and environmental problems.

Investment in natural and human capital

Restoration and economics have been interrelated since at least the days of the Civilian Conservation Corps, which had the dual goals of alleviating unemployment and reclaiming damaged land (Higgs, 2003, 78). Viewed through the lens of investing in natural and human capital, restoration can be seen as response to historical resource extraction regimes that threatened ecosystems and weakened communities (Baker and Kusel 2003, 2). Ecological restoration may contribute to a community's economy by attracting outside funding and creating jobs (Baker 2005), bolstering the natural resources that are the foundation of the economy (SER 2004), and building the skills of individuals and the capacity of organizations to engage in natural resource management (Izakson 2007). Restoration is a large and growing industry: conservatively, $1 billion is spent annually on river restoration alone in the United States (Bernhardt et al. 2005). If restoration projects are successful, this investment should contribute to future economic productivity in other natural-resource dependent industries, such as timber (Brock 2004), fishing (Baker 2004), and tourism

(McCool 2010; Westphal, Gobster, and Gross 2010). As Gustaitis (2004, 15) explains, "Like the gigantic public works of the first part of the twentieth century, natural resource restoration is investment in the state's infrastructure, investment of a sustainable kind."

Yet ecological restoration is not always compatible with surrounding land uses nor does it necessarily complement the economy of surrounding communities. Studying local opposition to restoration efforts in the Sacramento River Conservation Area, Buckley and Crone (2008) found that restored ecological processes had negative offsite impacts on nearby landowners' productive use of their properties. In this case, farmers opposed restoration activities because they believed they led to "increased habitat for pests (such as squirrels, deer, or insects), spillover and establishment of endangered species onto their farmland, flooding from channel roughening and levee neglect, and the loss of farmland and farm culture" (1120). In this and other communities, restoration can place a financial burden on local and county governments because of a reduced property tax base and lost production (e.g., agricultural) and associated tax revenue (ibid; Davenport et al. 2010). While restored sites can improve ecological conditions and reestablish ecosystem processes, when these outcomes (i.e., weeds, pests, fire) conflict with surrounding land uses they may impede rather than support other economic uses.

Human-nature relationships

A much acclaimed, but intangible, outcome of restoration is its potential to strengthen the relationship between people and their environment. So widespread is this idea that it is captured in the mission statement of the Society for Ecological Restoration (SER), whose stated purpose is "to promote ecological restoration as a means of sustaining the diversity of life on Earth and reestablishing an ecologically healthy relationship between nature and culture" (SER, accessed 5/23/11). Framed this way, restoration is, in part, a response to human alienation from nature. Some social scientists expect a cascade of secondary benefits, from the psychological to the civic, to flow from the process of restoring human-nature relationships. As an example of the psychologically restorative effects of interacting with nature, volunteers at a Chicago prairie restoration project reported that they were motivated to participate because of a sense of loss stemming from a reduction in the number of native species and that working to restore the environment was a means to address that grief (Geist and Galatowitsch 1999). It has been suggested that by doing restoration work people's investment in a place as well as their awareness of the natural world and their role in it increases (Higgs 2003; Jordan 2003; Tomblin 2009), leading to new understandings and values. As people reflect more on their connections to the environment, they may develop a new environmental ethic, become advocates for restored areas and other environmental causes, and change behaviors in other aspects of their lives to minimize their negative impacts on the environment (Geist and Galatowitsch 1999; Higgs 2003; Jordan 2003; Moran 2007; Simenstad et al. 2005).

Despite the hopes that restoration will fundamentally change the ways people conceive of, relate to, and act upon the natural world, some research has shown that restoration instead reproduces environmentally damaging social relations and attitudes. In California's Russian River watershed, Christian-Smith (2006) found that by treating physical symptoms of

degradation without also addressing social causes, restoration as practiced maintained the social relations that produced a degraded watershed in the first place. The belief that humans can control nature has been widely criticized as the source of much environmental degradation in the twentieth century (see for example, Holling and Meffe 1996; Langston 1995), yet Kondolf (1995, 133) sees evidence that the attitude behind river restoration projects is similar to when rivers were originally modified, that is "absolute faith that we can predict river behavior, that we can modify the river so that its behavior is more in accord with our notions of what is desirable, and that significant negative consequences will not result."

Environmental Justice

A small percentage of restoration projects (Tomblin 2009) attempt to rectify past environmental injustices by explicitly linking environmental and social issues. In many of these instances, communities undertake restoration "in direct, politically motivated relationships with their landscapes" (Casagrandes and Vasquez 2010, 202) because they see it as "a tool for improving social conditions by restoring the natural links between ecological and human cultural processes" (193). For example, Smith-Cavros (2006) found that Black churchgoers in Miami, Florida believed that restoring natural areas might lead to the reversal of environmental problems and social ills facing their community. In one case study, restoring a beach that had fallen into disrepair after desegregation was "an attempt at restoration of community and natural areas as well as the recognition of history. Volunteers promoted historical, physical and environmental park restoration from dune re-vegetation to educational tours to building a museum about civil rights" (38). Communities of color and low-income urban communities have undertaken ecological restoration projects with environmental justice goals to address both distributive and procedural justice (Casagrandes and Vasquez 2010; Moran 2007; Moran 2010).

Yet restoration also has the ability to perpetuate, rather than overcome, inequalities between communities and social groups. First, although restoration has been praised for breaking with earlier forms of environmentalism in the way it conceptualizes the relationship between people and nature, it has been less successful shaking charges of imposing a culturally privileged view of nature on minority groups and the landscape. Higgs (1997, 342), for example, fears that while to many, "restoration appears a fair and benign, Western middle class, pastoral practice", it may "privilege a single view of 'nature.'" Consequently, Higgs cautions that if ecological restoration is to avoid becoming another chapter in the history of ecological imperialism, then restorationists must be aware of the diversity of culturally rooted perspectives on restoration. Second, the process for allocating restoration funding and projects may reinforce existing political and economic inequities. For instance, groups that have access to fewer environmental amenities or are subject to more environmental burdens may lack the political and economic resources to attract restoration funding or projects to their communities. As Moran (2007) explains, community and other organizations often do restoration with funds provided by federal or state government agencies that are allocated through a competitive bid process. In this competition for limited resources as well as in negotiating the complex permitting process, those with less established community organizations and less experience navigating bureaucratic structures

are at a disadvantage. If restorationists disregard preexisting economic and political disparities, as well as different points of view about landscapes, their values, and their uses, then restoration may have the same consequences for ecosystems and marginalized people as earlier natural resource management efforts (Moran 2007; Long et al. 2003; Higgs 2003; C. Katz 1998).

American Indians and Eco-cultural Restoration

A subset of ecological restoration projects—those undertaken by American Indians and other indigenous people internationally— might best be described as eco-cultural restoration (Long et al. 2003) because they share a vision of combined ecological *and* cultural restoration (Anderson 2005; Casagrande and Vasquez 2010; Long et al. 2003; McCool 2010; Rogers-Martinez 1992; Tomblin 2009b) in which American Indians' "spiritual and working relationships with the land" (Tomblin 2009a, 195) are strengthened or restored. Although these projects make up a small percentage of total restoration work (Tomblin 2009a), the Society for Ecological Restoration (SER) has acknowledged their importance and supports indigenous restoration efforts globally through the Indigenous People's Restoration Network (IPRN), which was created in 1995. The mission of the IPRN is "to use the tools of ecological restoration to enhance the survival of indigenous peoples and cultures, and to use the organizational resources of SER International to support indigenous NGOs that do work in ecological and cultural restoration" ("IPRN History & Accomplishments" 2011). Traditional Ecological Knowledge and the participatory relationship between indigenous people and the natural world is at the heart of IPRN's approach to restoration.

Although American Indian Tribes have different histories and cultures, the restoration literature reveals some similarities in their perspectives on restoration. Underlying and uniting many indigenous restoration efforts is the belief that people are an integral part of the natural world (Anderson 2005; Jacobson 2005; LaDuke 1994; Long et al. 2003; Rogers-Martinez 1997). In this worldview, humans have reciprocal relationships with places, plants, and animals and a responsibility to care for them (Jacobson 2005; LaDuke 1994; Long et al. 2003). As early IPRN materials stated, "ecological restoration is inseparable from cultural and spiritual restoration, and is inseparable from the spiritual responsibilities of care-giving and world renewal" (IPRN 1995, quoted in Tomblin 2009a). This worldview gives rise to a particular understanding of the causes of ecological degradation and of the goals of restoration. Many of the American Indian Tribes and communities who have embraced ecological restoration use restoration to counteract the cultural and ecological damage caused by federal assimilation policies and the exploitation or mismanagement of tribal lands and waters (LaDuke 1994; Tomblin 2009a, 194). Often the roots of the environmental changes that restoration attempts to repair include the removal of American Indians and American Indian management (Long et al. 2003; Martinez 2004). Furthermore, because of the interdependence of American Indians and their environment, these changes have had both cultural and ecological ramifications. Writing about a Hopi restoration project Casagrande and Vasquez (2010, 195) describe how the disconnect from ecological processes—in the case of the Hopi from traditional desert farming and other elements of

their traditional subsistence base—has "resulted in social and ecological dysfunction, decline in human health and the degradation of the environment."

Because the disruption of American Indians' relationships with their aboriginal territories is seen as part of the problem in this approach to restoration, it follows that the process of restoration should not further limit human influence, but rather return indigenous management practices (Long et al. 2003). Furthermore, many American Indian restoration projects are undertaken with the expectation that reconnecting people to the land and revitalizing their cultural relationships with the land is not only good for the indigenous community and culture, but also for health. Sharing a sentiment that is common among American Indian restoration projects (see e.g., Rogers-Martinez 1997; Wolf 2004), Long et al. (2003) note, "A guiding principle from the [White Mountain Apache's] experience in confronting ecological deterioration… is that individual health, social health, and ecosystem health are interwoven." Typically, active management and use are desirable in restored areas because of the participatory model of human-nature relationships at work in restoration done by American Indians. Cultural knowledge, practices, and values are the foundation of this restoration approach and ultimately stand to benefit from successful restoration. As Long et al. (2003) conclude, when tribal members are able to harvest plants and herbs again, restoration is able to give back to the cultural tradition, knowledge, and practices from which it grew.

Interpreting Restoration Outcomes

Examples from four of these categories show that restoration projects can have vastly divergent outcomes, and that the literature contains equal measures of hope and concern about ecological restoration's social impacts. Restoration projects have the potential to produce ecosystems that provide valuable life-support services; to foster sustainable natural resource based industries; to reconnect people and the land, encouraging a new appreciation for working landscapes and the human role in them; and to contribute to environmental justice goals when communities engage politically with landscapes. But restoration also has the potential to maintain the status quo or to produce socially undesirable outcomes. It can provide a justification for new environmentally destructive activities; it can conflict with established land-uses and communities; and it can perpetuate ways of relating to nature and each other that have been identified as causing environmental and social problems.

In principle, much of restoration's social promise rests on its potential to reimagine a mutually beneficial relationship between people and nature, with all the attendant benefits that accompany this shift in thought and practice (see for example the contributions to Cronon 1995). Summing up the potential benefits of re-entwining the human and the natural, Cindi Katz (1998, 55) writes,

> "Restoration ecology offers a more promising environmental politics than preservation. Rather than enshrining nature, restoration works it; rather than ignoring, eclipsing, defacing or erasing environmental knowledge, restoration is premised on its ongoing production and exchange. In reconnecting nature

> and culture, restoration offers a politics that is more ecological than the politics that drive preservation."

From a humanistic perspective, the problem that restoration promises to redress is not a nature and culture that *are* separate—for they are not—but whether they are *treated* that way. In practice, however, American-style restoration (sensu Hall 2005) "tends to produce the natural and naturalize the produced" (C. Katz 1998, 57) thereby obscuring the human contributions, both past and present, to the landscapes of restoration. In many of the cases mentioned in the preceding section, what separates restoration projects that have had beneficial community results from those that have not is whether they engaged (in either their analysis or actions) with the broader political, economic, social, or cultural context in which restoration takes place. In other words, those projects that acknowledged that people and the environment are intertwined and interdependent by taking on political as well as ecological questions were most likely to produce desired social changes. Focusing on the connections between people and the landscapes, watersheds, and ecosystems where restoration takes place helps to keep attention on to the social and natural processes that shape these places (Higgs 2003, 12; Moran 2007, 125). While clearly acknowledging the human context and implications of restoration work is no silver bullet, it at least encourages stakeholders to be more explicit about the choices they make and the ramifications of those choices for both the natural environment and human communities.

It is my contention that the concept of cultural landscapes provides a useful framework for understanding how restoration, as a form of natural resource management, affects human communities because it integrates the environmental, social, and spatial context in which ecological restoration projects take place. Spatial context is important because ecological theory suggests that the performance of restoration activities will vary depending on their position in the landscape and their landscape context (Palmer 2009). However, context-dependence is not limited to the movement of materials and species between sites, but also applies to the social-ecological system in which restoration projects are embedded (Foster et al. 2003). Scholars applying a social-ecological systems framework to restoration find that processes driving ecosystem dynamics often operate on a larger scale than that of the restoration site. As King and Whisenant (2009, 70) write, "Restoration activities tend to be local in their spatial scale, but their success may depend on considering social drivers and ecological processes occurring at larger spatial scales." Cultural landscapes are also particularly relevant to an inquiry into how ecological restoration affects human communities because they encapsulate the reciprocal relationship between people and the environment. Landscape analysis includes both how human groups shape the landscape, and how the landscape shapes people. Although early cultural landscape studies, pioneered by Berkeley geographer Carl Sauer, focused on landscapes as artifacts of human culture, more recent scholarship gives agency to both people and landscapes, seeing landscapes as both structured by and structuring of human activity (Mitchell 1996).

Furthermore, cultural landscapes offer a way to conceptualize restored places that moves beyond judging whether they are natural or cultural. Arguments about restoration as either natural or artificial presume that nature and culture are fundamentally separate and opposed (see for example Light 2000). No matter where one stands in this debate, these discussions

reproduce the nature-culture dichotomy that many scholars and practitioners are trying to avoid. Instead, using a cultural landscape framework, it is possible to approach restored areas as nature-society hybrids and to focus on the "intertwining of social, scientific, technological, and natural actors" (Eden, Tunstall, and Tapsell 2000, 257). Doing so draws attention to the fact that restored areas were not wholly natural or cultural prior to restoration nor is achieving something purely natural or cultural the goal of restoration. Restored places were nature-society hybrids before restoration and they will remain nature-society hybrids after restoration, even as their form changes. Therefore, rather than assess restoration against what is natural, we are directed to look at it relative to other human-nature interactions. The outcome of restoration as an intervention in the landscape then is not whether the "natural" has been successfully restored, but how the actors involved, both human and nonhuman, and their interrelationships have changed (ibid.). By focusing on how people and nature are intertwined rather than separate, cultural landscape analysis enables consideration of how both the biophysical subject of restoration and the people connected to the restoration project are transformed.

Cultural Landscapes

In this section, I provide a brief overview of the key features of cultural landscape analysis. Cultural landscapes offer one framework for analyzing the interaction between people and their environment. Groth (1997, 1) defines the term as "the interaction of people and place: a social group and its spaces, particularly the spaces to which the group belongs and from which its members derive some part of their shared identity and meaning." Those involved in cultural landscape studies share the supposition that a group's values, needs, and social relationships can be read on the land because cultural ideas of how things ought to be are manifested physically through both individual and collective actions and decisions. But, as mentioned previously, this process is not unidirectional; not only do people construct landscapes in accordance with their values and worldview, but their daily lives and social experiences occur within and are structured by the landscape. Therefore, the concept of a cultural landscape recognizes that both built and natural environments—regardless of how "natural" they appear—bear the imprint of human activities and that the landscape is a field in which mutually reinforcing changes in humans and their environments take place.

While past social activity shapes landscapes, the resulting places are more than just the physical sedimentation of human relations. The environments that result from these processes, the social relations they manifest, and the values they embody all play a role in structuring social relationships in the present and therefore in social reproduction (Mitchell 1996, 27). The role of the environment in reproducing or challenging social relationships is a central consideration in landscape analysis. Because landscapes are the site where larger social forces interact with local conditions and processes and because landscapes have symbolic power, they are "central to the ongoing production and reproduction of place and identity. The cultural landscapes of the United States reflect and are symbolic of individual activity and cultural ideals, as they simultaneously are central to the constitution and reinforcement of those very ideals" (Schein 2003, 203). The places that have been shaped through individual and collective action in turn help structure activities, practices, and

opportunities in the future. While landscapes can create new opportunities, they can also constrain people's ability to have certain experiences or engage in certain practices.

Analysis of cultural landscapes has revolved around the political-economic and ideological forces that shape them. Critical geographers (e.g., Walker 1997) have argued that the interpretation of cultural landscapes must include the macro-level forces that play out at the local level. Landscapes are by definition place-based and localized, but often the decisions and flows of capital and power that most affect them originate in industries and governments that are far removed, whether operating at the regional, national, or international levels (DuPuis 1996). Many are particularly concerned with the ways in which industrial capitalism has shaped the landscape to overcome barriers to accumulation (see for example, Harvey 1996; Henderson 1999: Prudham 2005). It is not only economic interests, however, that influence the character of the landscape: racial, gendered, and colonial interests also become embedded in the landscape (Castree 2001, 11; Mitchell 1996, 3). Schein (2003, 203) for instance has written about racialized landscapes in the southern United States, which he defines as "American cultural landscapes that are particularly implicated in racist practice and the perpetuation of (or challenge to) racist social practices." He is especially interested in these places not only as socio-historical creations, but also as social-spatial manifestations of racial relationships.

Equally important to landscape analysis is the idea of landscape as ideology. In this view, landscapes embody, "the systems of meanings, ideologies, beliefs, values, and world-views shared by a group of people" (Hardesty 2000, 169). Landscapes' symbolic or normative power derives from the fact that their occupants and observers take them for granted, as something natural and unauthored, when in fact they are the co-creations of natural and social processes. As Schein (2003, 217) writes "The normative dimensions of any landscape operate at a structural level: unconsciously promoted and unrecognized as anything other than 'common sense.'" By making certain social relationships and cultural meanings appear natural, landscapes become an instrument of power (Schein 2003; Mitchell 1996). These analyses of landscape hinge on the notion that landscape gives physical form to a group's values and beliefs and that ideas can have material consequences, especially when they become naturalized and hidden from view (Henderson 2003, 194).

Normative Landscapes

The concept of a normative landscape brings together both elements of cultural landscape analysis, integrating the power implicit in the political economic analysis with the cultural meaning from the landscape-as-ideology school (Henderson 2003). Normative landscapes refer to the physical manifestation of a group's values, norms, and expectations. They also imply one group's ability to express and manifest their interests over those of other less dominant groups (Huntsinger and McCaffrey 1995, 157; Schein 2003, 217). By highlighting how a landscape reflects not just what *is*, but also a particular perspective on what *ought to be*, normative landscapes can help to explain the conflict, struggle, or controversy that results when competing interests, concepts, and meanings collide (Hardesty 2000, 177; Mitchell 1996, 29). As "the places where ethnicity, race, class, age, or gender are spatially defined, reinforced," landscapes function as instruments of power, but they are also places

where these definitions can be challenged (Groth and Wilson 2003, 17). Scholars are interested not only in how space has helped to shape and reproduce social hierarchies, but also how individuals and groups have opposed those constructions. Illuminating the normative dimensions of landscapes helps to create the possibility for individual agency to challenge the power structures behind, and embedded in, the landscape.

Although most commonly applied to everyday spaces, such as buildings, yards, and streets, in rural, suburban, and urban environments (Groth 1997), cultural landscape analysis also applies to those places that at first glance have a less obvious human touch: rangelands, forests, protected areas, and restoration sites (see for example, Higgs 2003; Huntsinger and McCaffrey 1995; Sayre 2002). One way in which a group's vision can be inscribed on a landscape is through natural resource management. Natural resource management has this effect because it "is a normative endeavour; it is based on the presumption that some ecological [or social-ecological] states are more desirable than others. Indeed the goal of all management is to promote or maintain certain desired states as opposed to others" (Nadasdy 2007, 213). Not only does management promote certain states over others, but it "is situated within a particular set of beliefs and social relations" so that the chosen states reflect "socio-political interests and agendas" (ibid.). For instance, environmental historians have shown how early conservation efforts, such as the development of state wildlife management (Warren 1997) and early forestry and fire management (Langston 1995; Pyne 1982), were part of a larger expansion of state power (Jacoby 2001; Nadasdy 2007). These programs attempted to not only control wildlife, forests, and fire, but also local and indigenous people's uses of them (Romm 2002; Nadasdy 2007).

Why Landscape Matters for Communities

The previous section on normative landscapes begins to outline the relationship between communities and landscapes. Communities matter for landscapes because it is through collective action that the norms, values, and expectations of communities—as well as other social groupings—are manifested physically. Because people require a cultural frame to apprehend landscapes (Merchant 1989; Schama 1995), group identity and culture—including but not limited to community—mediate how landscapes are interpreted, used, and represented (Dodge 2007; Long et al. 2003). Finally, the shifts in the trajectory of ecosystem change or the arrangement of landscape features that are initiated by community action can have ecological and social effects that last decades. For instance, the ecological legacy of forestry practices, which affect the age and structure of forest stands, endure at least as long as forest trees, which are organisms of considerable longevity (Christensen 1989; Foster et al. 2003). In residential or commercial settings, planning decisions about infrastructure or urban form will also last decades, since roads, buildings, power lines and the like typically have long life spans.

Landscapes matter to communities because larger social forces "from racism to capital accumulation" (Walker 1997, 167), which originate in the larger society (Henderson 2003), are manifested in particular locations, where they influence people's daily lives (Corburn 2005). As Kusel (2001, 371) explains, "all human events *take place*, all problems are anchored in place, and ultimately can only be understood in such terms." Environmental

historians have shown how historical attempts to control the character and uses of American landscapes have affected communities. Their work further demonstrates that the costs of transforming the landscape have often been distributed along racial or class lines with wide-ranging consequences for low-income communities or communities of color, including the loss of access to vital material resources, the imposition of outsiders' cultural norms on local practices, and the loss of political control over decisions affecting daily life (deBuys 1985; Jacoby 2001; Spence 1999; Warren 1997).

The field of public health has been a leader in examining the ways in which urban landscapes affect communities, particularly the role they play in determining population health (Corburn 2005). The built environment influences human health at many scales, from the view out one's window to the entire urban landscape (Frumkin 2003; Jackson 2003). Because of a renewed focus on identifying the causes of social inequalities in health, much of this research deals with larger spatial scales, such as the effects of neighborhoods on community health. This research shows that *where* someone lives matters as much to health as *who* that person is and individual attempts to maintain a healthy lifestyle (Kawachi and Berkman 2003). Place-based explanations for health outcomes look beyond individual risk factors to the contextual effects of place—to the features of the physical and social environments (Corburn 2009; Kawachi and Berkman 2003). These environmental factors, called the social determinants of health, can be thought of as "the causes of the causes" (Marmot and Wilkinson 2006). For example, rather than thinking solely of diet or the biological effects of diet as the cause of a disease, this approach goes further and considers factors that affect diet, such as access to fresh food retailers, affordability, and the food supply chain. A significant feature of this approach to public health is that it elevates the environment from a backdrop against which other factors affecting health unfold to an important player in human health in its own right (Corburn 2009). The main contribution of this work has been to show that the "inequitable distribution of well-being in cities" is caused by "a combination of place-based physical, economic, and social characteristics and the public policies and institutions that shape them—not genetics, lifestyles, or health care" (Corburn 2009, 3).

Public health research into the significance of the built environment for human health and wellbeing has yielded concepts and frameworks that may be of interest for others interested in the reciprocal relationship between people and the landscape. Those studying the social determinants of health have identified three pathways through which the social and built environment can influence health: through material conditions, through their impact on people's behaviors, and through people's psychosocial responses to these contexts. The psychosocial pathway "emphasizes subjective experience and emotions that produce acute and chronic stress which, in turn, affect biology, and hence physical and mental illness (Marmot 2006, 3). Kreiger and Davey Smith 2004 (92) have termed the cumulative effect of these pathways *embodiment*, by which they mean the process through which our histories become biologically imprinted so that human bodies "literally embody the world in which we live." Looking at health disparities, Geronimus and Thompson (2004) argue that the immune, metabolic, and cardiovascular systems of poor people and people of color are adversely affected by their exposure to discrimination and neighborhood hazards (Corburn 2009).

Environmental impacts on communities are not only negative, however. Many of the gains in life expectancy in the United States from the nineteenth century to the present are attributable to changes in the environment, such as healthier food, cleaner water, and better places to live (Jackson 2007). Indeed, the focus of the public health work outlined above is to develop guidelines for creating environments that support human health and wellbeing. Six of the eleven dimensions of a healthy community, as outlined by Hancock and Duhl for the World Health Organization's sustainable cities initiative, directly or indirectly deal with a community's environmental context (Hancock and Minkler 2005, 143).

Public health is not alone in its assumption that "environmental and community health are interdependent" (Baker and Kusel 2003, 8; see also Sayre 2005), although it has produced a considerable scholarship on the processes and outcomes of this interrelationship. Many environmental movements, such as the environmental justice, community forestry, and working landscapes movements, share this belief. Research in these fields can benefit from public health concepts and apply them outside the city. For instance Jonathon Kusel (2001), researching community wellbeing in forest-dependent communities, argues that in addition to people's biological dependence on the natural world (i.e., for meeting basic needs), the environment also has symbolic importance as part of inhabitant's sense of place. Thus, the landscape contributes to how forest-dependent communities define and understand themselves. People's lifeways—living local traditions—are intertwined with and sustained, economically, socially, and spiritually, by the landscape. A safe, clean environment is a prerequisite for healthy communities, but the relationship is more complex than that: local landscapes help to create and sustain living cultures and community identity. As Kusel's work suggests, our thinking about how landscapes influence communities should be expanded to include not just the built environment, but all the landscapes that people intentionally manipulate.

Conclusions

In reviewing the literature on restoration it becomes apparent that many people expect, implicitly or explicitly, that restoration will benefit human as well as ecological communities. Because the ecosystems and species involved in restoration hold both material and symbolic significance, the anticipated outcomes of restoration range from providing ecosystem services and jobs to contributing to community identity and environmental justice. Although restoration is a conscious human intervention in human-modified landscapes, the human side of restoration has been undertheorized (Palmer 2009). In this chapter, I suggest using a cultural landscapes framework as starting point for understanding the impacts that restoration projects can have on human communities. Cultural landscapes offer a useful analytic lens because they incorporate not only how people affect and shape landscapes, but also how landscapes influence and support human communities. Equally important, a landscape focus can foreground the spatial context in which these dialectical relationships unfold.

In the chapters that follow, I am particularly interested in the ways in which cultural landscapes affect my communities of study through the materials they provide or lack and

the practices, behaviors, and experiences they either interfere with or enable. In addition, I am concerned with their symbolic significance and community members' emotional response to the landscape conditions they encounter. Employing a cultural landscape perspective I look, in Chapter 3, at the political, economic, and cultural processes that have affected landscape change in northwest California in the past and the significance of these changes from the perspective of UIHS community members. In Chapter 4, I examine how the contemporary landscape, as a product of the changes outlined in Chapter 3, interferes with the aspirations of UIHS community members by limiting their access to culturally significant natural places and resources. In Chapter 5, I situate the Ku' wah-dah-wilth Restoration Area in the surrounding landscape, which largely obscured the region's American Indian history and its contemporary American Indian communities, to help explain the symbolic importance of the restoration project. I also assess how the restored site affects the UIHS community, with attention to the materials it provides, the practices and experiences it supports, and the feelings it elicits. Finally, in Chapter 6, I examine the Humboldt restoration community as a whole. Out of interviews with restoration community members, local cultural landscapes emerge as a constraint on restoration practice. In inhabited and managed landscapes, human and natural communities do not exist separate from each other, but are entangled and mutually interdependent. Therefore to fully understand how ecological restoration projects affect, and may benefit communities in the present, we must acknowledge and engage with the social, cultural, historical, and ecological processes shaping the landscape.

CHAPTER 3. PEOPLE IN PLACE: CHANGING AMERICAN INDIAN LANDSCAPES, 1840-1960

Introduction

Unless they are guided by a vision of the past, efforts to modify and improve ecosystems are not considered restoration. Restoration implies past changes that need to be remedied, making both ecological and historical information necessary for this type of environmental management. Historical knowledge can illuminate desirable past states or processes as well as the historical developments that led to present conditions (Hall 2005, 127; Higgs 2003, 1). Typically human actions have caused, at least in part, the damage that restoration seeks to repair. Therefore, whatever the goals of a restoration project—whether its objectives are conceived of as purely ecological or as both ecological and social—it is important for this history to include not just places, but people too. As Eric Higgs (2003, 41), a philosopher who specializes in ecological restoration, has written, "Knowing the history of a place is a prerequisite to understanding it, and knowing its history means taking people as well as ecosystems seriously." In this chapter and Chapter 4, I look at the environmental history of the UIHS community to identify the environmental and cultural origins of contemporary ecological restoration projects.

These chapters explore the interrelated changes to the environment and local American Indian communities that have led those communities to pursue ecological restoration as a means of achieving both ecological and cultural goals. Although the history covered in this chapter predates the United Indian Health Services (UIHS), UIHS community members provided much of the information and it is the UIHS community that is the focus of this work. To begin, I outline how cultural landscapes relate to historical trauma and healing. Guided by this framework, the body of this chapter deals with three cultural landscapes. I provide, first, an overview of the indigenous cultural landscapes that existed at contact with Euro-Americans. This characterization of indigenous cultural landscapes is intended to include only the past which might reasonably be expected to be represented by the accounts of informants recorded in early ethnographies and in oral histories. It is not meant to imply that these landscapes or the people who helped shape them were static prior to the arrival of Americans. Both the cultures and the environments of northwest California are dynamic. Then I look at the changes that occurred during the post-Gold Rush era (1848-1910), a time of great social and environmental disruption, and during the first two-thirds of the twentieth century (1910-1960), a time when state and federal policies marginalized American Indian people and the ecosystems they relied on. In each of these sections I consider both large-scale forces that influence conditions on the ground as well as more personal responses to the physical and social environment. I conclude that environmental changes have impacted community members' ability to carry out and pass on cultural activities, but that access to and management of the environment can be changed in ways that support rather than impede cultural practices.

Historical trauma and cultural landscapes

For the American Indian people of northwestern California, an important aspect of their recent history is the experience of intergenerational trauma (also called historical trauma) associated with colonialism and the ongoing reproduction of conditions that perpetuate trauma. Attempted genocide, assimilationist policies, and the devaluation of American Indian identity, knowledge, and ways of life have all been identified as causes of traumatic experiences. In many American Indian communities, the effects of intergenerational trauma—or "the reproduction and accumulation of traumatic experiences across generations" (Middleton 2010, 7)—have been expressed as violence, addiction, and illness, which undermine community wellbeing (Brave Heart and DeBruyn 1998; Ferreira 2006).

Trauma in American Indian communities also has an environmental dimension. Natural resource policies and institutions as well as ecological changes have interfered with cultural practices and restricted American Indians' access to the environment. These circumstances constrain the opportunities for American Indians to maintain their living cultural relationship with the environment, which is at the core of their identity. Loss of land and resources; lack of access to gathering, hunting, and sacred sites; and the inability to interact with natural resources and to steward the landscape have all been identified as sources of trauma. Recognizing and addressing the trauma their communities have experienced in recent history, including those aspects of intergenerational trauma connected to the environment, is at the core of contemporary efforts to promote healing and community well-being (Middleton 2010; UIHS, "Who We Are," accessed November 6, 2011, http://www.uihs.org/about-uihs/who-we-are).

The phenomenon by which hierarchies established during a colonial period remain past that period has been termed coloniality. While colonization is bounded in space and time, "coloniality survives colonialism. It is maintained alive in books, in the criteria for academic performance, in cultural patterns, in common sense, in the self-image of peoples, in aspirations of self, and so many other aspects of our experience" (Maldonado-Torres 2007, 243 quoted in Middleton 2010, 2). Particularly important for this study, which has an environmental focus, is how social relations or cultural hierarchies put in place during a colonial era can remain in place past that time through the ways in which nature is constructed, managed, and regulated (Middleton 2010).

Over the last 160 years, the cultural landscapes of northwest California have undergone dramatic changes. In the immediate aftermath of American colonization, American Indian access to and management of the landscape was violently interrupted. Subsequently, natural resource policies, management, and related environmental changes have reinforced the attempted separation of Indian people from the land and resources of their aboriginal territories. Because new managers have initiated ecological changes as they manipulate the landscape to produce desired goods and services, the changing social order was physically inscribed in, and subsequently reinforced by, local ecosystems (Huntsinger and McCaffrey 1995, 157). Even in recent decades when American-Indian-driven cultural and political activism has thrived in northwest California and federal Indian policy has promoted self-determination, the landscape does not always support American Indians' practices or aspirations for their communities.

The concept of a normative landscape is useful for understanding how these environmental conditions function and persist (Schein 2003). Powerful social groups and institutions are able to manipulate the environment in accordance with their beliefs, values, and worldviews (Hardesty 2000; Huntsinger and McCaffrey 1995). Normative landscapes not only reflect the values and interests of the dominant group, but they also shape the opportunities for engaging in cultural, economic, and spiritual activities for all people who claim or use those landscapes. Landscapes do not support all possible uses equally well and because people create landscapes in their "own cultural and social images," it is not uncommon for problems to arise when people have "conflicting cultural meanings that dictate, permit, or prohibit alternative uses, treatment, or concepts of landscape" (Hardesty 2000, 177).

Natural resource access and management play an important role in how normative landscapes are formed and function. As Lynn Huntsinger and Sarah McCaffrey have demonstrated in the forested landscapes of the Yurok Reservation, those who control access and management influence the trajectory of ecosystem change.[1] Both access to and management of natural resources are shaped by the social and cultural context in which they take place. While many UIHS community members see no separation between natural and cultural resources, for much of the twentieth century professional land and water managers focused on the economic value of resources and disregarded their community value. As opposed to their economic value, the community value of natural resources (Brown and Ingram 1987; Ingram, Whiteley, and Perry 2008) encapsulates the links between natural resources and independence, community wellbeing, security, identity, fairness, and opportunity. Shifting attitudes toward the natural world have shaped landscapes across the United States, often with dramatic consequences for those whose environmental values and uses were not recognized (see for example, Cronon 1983, Warren 1997, Spence 1999, Jacoby 2001). The ties between resources and a culturally situated sense of community wellbeing and sustainability help to explain how natural resource management regimes and the landscapes they produce might contribute to trauma. For example, this may occur when resources that are very closely tied to tradition, sovereignty, and identity are devalued by the dominant society.

As part of the process of addressing intergenerational trauma, it is important to look at historical events and how they affect people's lives in the present (Middleton 2010). This endeavor should include how landscapes have been shaped and how they have impacted people's lives both past and present. Landscapes are powerful because they have the ability to make social or cultural relationships look natural and fixed. Drawing attention to how landscapes have been created and how they have functioned in structuring social and cultural relationships can make their normative aspects visible. Opening the normative dimensions of landscape to discussion can create opportunities for change.

Indigenous Cultural Landscapes

[1] Natural resource managers affect, but by no means control the trajectory of ecosystem change. Several environmental histories have explored the unintended ecological consequences of management regimes. An excellent example is Nancy Langston's *Forest Dreams, Forest Nightmares* (1995) which explores how despite the Forest Service's best intentions, their management led to an ecological crisis in the forests of the Blue Mountains in Oregon.

Noted for its incredible diversity (Sawyer 2006), the natural world of northwestern California has been the basis of local American Indian groups' economic, cultural, and spiritual life since time immemorial. This region, which includes the aboriginal territory of the Wiyot, Yurok, Karuk, and Tolowa peoples as well as other American Indian Tribes, includes coastline, productive estuaries, rivers and creeks, prairies, oak woodlands, and conifer forests. The Karuk, Tolowa, Yurok, and Wiyot all identify themselves as place-based cultures. The relationship these American Indian groups have to the lands and waters of their territories, which developed over thousands of years as people learned to live and care for a particular place (community member interview #21117, 2/3/09), is the foundation of their identity, their sense of themselves. Several UIHS community members echoed the idea that the environment is the "source of who we are as a people" (community member interview #21105, 3/19/09).

All of these groups relied on access to a diverse set of resources that became available at different places and seasons throughout the year. Salmon and acorn were staples, but diets included other fish, crustaceans, mollusks as well as deer, elk, other game species and many berries, fruits, herbs, seeds, and nuts (Bommelyn 2002). In addition to the materials which are so important for sustenance as well as cultural practice, each tribe has a spiritual bond to the natural world and a unique cultural geography: specific sites for spiritual training and performing ceremonies; landmarks that embody stories; and for each Tribe a sacred Center of the World, where World Renewal ceremonies are held to restore balance to the world for the benefit of all living things (Margolin 1993). Through a system for allocating rights of access to various resources, active management, and spiritual actions for maintaining balance, American Indians helped to create and maintain the landscapes that sustained them for thousands of years. As a foundation for understanding the changes that came later, this section reviews the role of access, indigenous management, and ceremonial practices in structuring life and landscape.

Access and Management

Each of these Tribes regulated their members' access to the environment, but in contrast to structures of access in the late nineteenth and twentieth centuries, control and maintenance of access were negotiated within a common social system. Use of the landscape was structured by rights to use places for hunting, fishing, and gathering that were owned by individuals, families, or villages and might vary according to the season of use or the resource to be harvested (Hunstinger and McCaffrey 1995; McEvoy 1986; Norton 1979). The Yurok author Lucy Thompson (1916, 25-26) described how

> "the land was divided up by the boundaries of the creeks, ridges and the river. All open prairies for gathering grass seeds, such as Indian wheat, which looks similar to rye, besides other kinds of seed; the oak timber for gathering acorns, the sugarpine for gathering pine nuts, the hazel flats for gathering hazelnuts and the fishing places for catching salmon."

American Indians actively managed the landscape, relying heavily on their primary management tool, fire, to shape ecosystems as well as particular species (Lightfoot and Parrish 2009). Because fire has many ecological effects, including consuming detritus and releasing nutrients, controlling insects and plant pathogens, modifying vegetation structure, and maintaining open habitat for shade-intolerant species, American Indian burning served many purposes (Anderson 2005). Its uses included keeping down underbrush for ease of travel, gathering, and hunting; preventing the accumulation of fuels that fed larger fires; increasing forage production for wildlife; and stimulating the growth of plants that were important sources of food and fiber (Anderson 2005; Bommelyn 2002; Drucker 1936; Huntsinger and McCaffrey 1995).

Uses of fire that targeted plant communities and species were essential for ensuring the abundance and quality of important resources and maintaining access to them by keeping down brush. Examples from oral histories and early ethnographic reports about the Tolowa, Yurok, Karuk, and Wiyot demonstrate the importance of fire and its varied uses. These include setting fires to increase forage for wildlife; to make hunting in a densely vegetated landscape easier; to increase berry, nut, seed, and forb production; to stimulate the growth of better basketry materials and increase nut production on hazelnut shrubs; to remove duff and undergrowth around the base of oak trees, making it easier to find acorns; and to improve the quantity and quality of the acorn crop by controlling pests that consumed acorns and pathogens that attacked oaks (Anderson 2005).

At the landscape scale, American Indians in northwest California used fire to preserve the extent of grasslands and oak woodlands and to maintain a landscape matrix of patchy, diverse habitats. In redwood forests, fire was used to maintain forest openings and promote the growth of plants for food and basketry. As L.L. Loud observed in 1918 (230),

> "within the forests, at all elevations from sea level to the top of the ridges, there were small open patches, known locally as prairies, producing grass, ferns, and various small plants…. [M]ost of these patches if left to themselves would doubtless soon have produced forests, but the Indians were accustomed to burn them annually so as to gather various seeds."

These openings also provided forage for game. Fire was also used to manipulate the extent and condition of Douglas fir stands. Burning can open the Douglas fir canopy, which encourages oak growth and reproduction as well as a more diverse understory that appeals to wildlife. Fire can also keep oak woodlands from being shaded out by overtopping Douglas fir trees and halt Douglas fir encroachment into prairies (Huntsinger and McCaffrey 1995; Thompson 1916).

The American Indians of northwest California managed and sustained their salmon fisheries by controlling access and regulating individuals' and communities' uses of aquatic resources (Collins 1998; McEvoy 1986). Ceremonies, which included strict rules about the nature and timing of harvest, helped to govern the relationship between people and salmon and were an important element of managing the indigenous salmon fishery (Most 2006;

Thompson 1916; Waterman and Kroeber 1938). As one UIHS community member (Yurok) proudly explained,

> Our history with that fishery will show that we managed it, we didn't overharvest, we always allowed the people upstream to have their fair share and they always allowed enough to go on and reproduce so that everyone would have fish regardless of the Tribe or the area in which they lived in. Again, it's well documented that we would put up fish stands that almost blocked the river, but they were for a short period of time and they never completely blocked the river… so fish could always find a way around…. It's also well-documented that we had, as well as the neighboring tribes, a first fish ceremony that would take place when the first spring salmon appeared in the river…. But from the time that we had our first fish ceremony until the time that the last people upriver started harvesting fish, we weren't allowed to harvest any more than what we needed to live for that day…. And then, and only when, the last tribe up river started receiving their share of the fish, did we start to harvest for the winter and putting fish away and that way we assured that everyone got the fish and there was always fish for the next time" (community member interview #20116, 3/17/09).

It is possible to underestimate the importance of American Indians' fisheries management, if one mistakenly assumes that Indians did not have the technology or numbers to significantly impact salmon runs—that they lived so lightly upon the land that they had little effect (Taylor 1999). Instead American Indian fishing technologies had the potential to be as effective as the fishing methods employed in the twentieth century. Weirs for instance could block all passage (Taylor 1999, 20; McEvoy 1986, 19). Food storage extended salmon consumption throughout the year, well beyond the annual spawning runs when fish were harvested (Taylor 1999, 13). On the Klamath River, estimates of how much salmon Indians harvested range from half a million pounds per year to two million pounds per year (McEvoy 1986, 22-23). The largest harvest in the post-contact period was 1.4 million pounds in 1912. These estimates suggest that the size of aboriginal harvests were comparable with later harvests by commercial fishermen (McEvoy 1986). More importantly, they suggest that Indians exerted significant pressure on fish populations, but still managed their use so as to sustain their consumption for centuries (ibid., 23).

Nature-Culture Interactions

For UIHS community members and their ancestors, cultural knowledge, values, and practices are closely tied to the land, its use, and management. Conducting a ceremony, burning vegetation, or making a basket all expressed and reinforced cultural values, such as permanence, sense of place, ecological and community health, balance, respect, and healing (Wolf 2004; Buckley 2002). In addition to major annual or biennial ceremonial events, cultural values and spirituality were woven into daily life. Baskets, for instance, not only serve artistic and utilitarian functions (e.g., as dishes, storage containers, or caps), they are also considered to be living beings with a spirit and purpose. Similarly, the plants that make up the baskets are considered a kind of people and must be treated respectfully (Johnson and

Marks 1997; Margolin 1993; Redwood National Park nd). Based on this kind of personal interaction with the natural world and the objects produced from it, people are seen as a part of the world they inhabit with complex relationships to all other things. Both in day-to-day activities and in ceremonies, people are recognized for their ability both to take care of the natural world and to upset it, a power that brings with it a responsibility to maintain balance not only for the good of humans, but all life (Redwood National Park nd).

Although each Tribe has distinct religious beliefs, the Karuk, Tolowa, Yurok, and Wiyot all consider themselves "fix the world" people and share a responsibility to ceremonially restore harmony among people and between people and the natural world (Lang 1991). For the Tribes along the Klamath River, the Jump and Deerskin Dances are the main ceremonial events for fixing the world (Buckley 2002). Jack Norton (1979, 12-13) has described these dances as a spiritual exchange with the physical world: "When man and the world become unbalanced, then we must dance the great dances, rhythmically stamping upon the earth, exchanging with it and balancing all that brings health, strength, food, honor, good luck and happiness for all." These ceremonies of healing and renewal reflect local American Indians' obligation to take care of the place where they live and have retained their significance through the present day (Buckley 2002; community member interview #20113, 1/30/09; community member interview #21121, 1/30/09).

While world renewal dances strive to achieve balance, they also are a powerful recognition that balance between people and the earth can become lost and need to be restored. The Tolowa story of Test-ch'as (The Tidal Wave) provides an example of the destruction that can occur when people do not live properly. As Loren Bommelyn explains in the introduction to his translation of this story,

> At the time of our genesis, K'wan'-lee-shvm laid out the universe and the laws we are to live by. To live correctly brings us blessings. To live outside these laws is to invite strife and trouble into one's life. The Test-ch'as account is a testimony and a warning to us of what happens when we fall outside the balance of the universe (Bommelyn 2002 [1985], 70).

In this story, after community members violate the laws, a giant earthquake and tidal wave kill all the people except for two teenagers and almost all of the plants and animals.

There is a tendency to idealize American Indians' pre-contact social and environmental relationships (Krech 1999). My account of indigenous cultural landscapes is not meant to imply that life was perfectly harmonious in the past, only that balance and respect were important values that people strived to realize. One community member elaborated,

> in American history, sometimes the Native people are viewed as mysterious or romanticized because somehow we have knowledge that's sacred… But really—and I take this from the elders that I work with—there's not a lot of mystery. It's just having those rules, and abiding by them, and living them to the best of your ability. Indian people are by no means perfect. And even pre-contact cultures were by no means perfect. But they did value those rules,

> which are based on respectful use and respectful awareness of the environment in which we live, the places in which we live (community member interview #20113, 1/30/09).

Contemporary community members readily acknowledge that ceremonies for restoring balance are necessary because humans easily fall out of equilibrium. To illustrate this point, one community described an exchange he had with his brother about the need to hold the Pikiawish (World Renewal Ceremony) every year, when some ceremonies are held less frequently. His brother explained that they have to do it every year "Because we're human. We're not perfect." The community member elaborated "We're not perfect people, we're just people. We make mistakes. We've got to get together and pray every once and while and hope to make things better. And then backslide like crazy again for another year" (community member interview #10127, 1/29/09).

Prior to the arrival of Euro-Americans, the Indians of northwestern California lived in a dynamic, but well-ordered world (community member interview #21210, 2/5/09). Through their active management of the watersheds they called home, these American Indians helped to shape and maintain the landscapes and riverscapes that supported them. The resulting cultural landscapes enabled certain practices (e.g., hunting and gathering acorns and basketry materials), while they also required certain practices (e.g., burning and use) to be maintained. Participation in ceremonies and other spiritual activities expressed key values, especially a commitment to maintaining and restoring balance, and participants regularly reproduced their identity as fix the world people (Buckley 2002). Many of the conditions that have been identified as necessary for a healthy community in the twenty-first century (Hancock and Minkler 1997) – i.e., a clean environment, sustainable ecosystems, meeting basic needs for food, clothing, and shelter, enabling people to maintain a connection with their past and heritage, having access to culturally appropriate health care – existed before 1850 suggesting that both social and environmental conditions were in place for promoting healthy communities. In addition American Indians' identity, lifeways, and knowledge, which were closely bound up with their environment, were valued and supported.

A world disrupted: genocide and dispossession, 1849-1910

Following the discovery of gold in California in 1849, Euro-Americans streamed into northwestern California, hoping to profit from the minerals and timber there and setting in motion profound social and environmental changes. Gold strikes along the Klamath and Trinity Rivers brought thousands of miners into the country as early as 1850 (Norton 1979, Most 2006). On the heels of the miners came other settlers who supplied the mines with agricultural and timber products. Towns sprang up in coastal areas (Gould 1978, Most 2006), while the fertile soils around Humboldt Bay and the Mad and Eel Rivers were quickly claimed for farming (Sawyer 2006). These non-Indian settlers, who conceived of parts of ecosystems as extractable commodities that could be appropriated for economic gain, brought new ideas about the appropriate uses of the environment (see also, Merchant 1989; Cronon 1983; White 1983). As their ideas took hold, the use and management of this

region's natural resources, and ultimately the landscape itself, changed. For UIHS community members what stands out about this time is the violence directed at American Indian people, the radical disruption of ways of life and the cultural landscape, and the rapidity with which these changes occurred.

Political and social environment

In this period, more than just physical resources and the meanings attached to them were at stake. How people thought about ethnicity and community also had real and often deadly consequences. Many non-Indians who wanted the land and resources contained within Indian territories perceived American Indians as a threat to progress, prosperity, and security. Some white Californians used their judgment that California Indians were inferior and almost less than human to justify waging a war of extermination against them (Rawls 1984).

The federal government's initial efforts to protect Indians' rights and welfare failed, leaving them in legal limbo (Slagle 1989) and leaving Indian affairs in the hands of state and local interests. In 1851, the federal government had attempted to keep the peace between Indians and non-Indians by sending a delegation to sign treaties with California Indian Tribes that would have ceded much of their land in exchange for a series of reservations. But California citizens vehemently protested the fairness of reserving 7,488,000 acres for American Indians, and the United States Senate subsequently voted not to ratify the treaties (for more on concepts of fairness and American Indian resources see Huntsinger and Diekmann 2010).

Subsequently, non-Indians with the financial and legal support of the fledging California state government undertook a war of extermination, which peaked between 1850 and 1865 (Raphael and House 2007; Hurtado 1989). Local governments often offered bounties for Indian scalps, and militia members could submit their expenses to the state treasury for reimbursement (Rawls 1984). From 1851 to 1852, the state legislature paid more than one million dollars in claims, and was later reimbursed by the federal government for these expenditures (185-86). In Humboldt and Del Norte counties, the state and federal government paid $60,000 for campaigns against the Indians in 1855 alone (Lowry 2007, 10).

At the same time, California state law institutionalized inhuman treatment of American Indians. In 1850, the state legislature passed both the Act for the Government and Protection of Indians, which allowed indentured servitude for Indians and imposed fines for special Indians crimes, such as setting fire to the prairies, and the California Civil Practice Act, which prevented Indians from testifying in any court case to which a white person was party (Most 2006; Norton 1979; on making Indian burning illegal see Hurtado 1989, 130-31).

The process of dispossessing Indians from their lands often took place violently (Buckley 2006; Rawls 1984; Norton 1979). The *Humboldt Times*, for instance, reported on volunteer militias clearing out Indians in order open up prime agricultural and grazing lands for white families (Rawls 1984, 179). Between 1850 and 1865 many massacres targeted the Karuk,

Tolowa, Wiyot, and Yurok as well as other American Indian groups in northwest California (Raphael and House 2007). Both the Tolowa and Wiyot were victims of particularly brutal massacres that took place during their World Renewal Ceremonies. In the fall of 1853, a group from Crescent City massacred hundreds of Tolowa when they gathered for the ceremony at Yontoket, the center of their world (Bommelyn cited in Norton 1979). Seven years later, on the night of February 25, 1860, a small group from Eureka slaughtered 150 Wiyot, mainly women and children, on Indian Island where they had gathered for their World Renewal Ceremony. In both cases, survivors were rounded up and removed to distant reservations, with devastating consequences for the transmission of language and culture (Leona Wilkinson interviewed in Johnson and Marks 2007). These events exemplify several elements of historical trauma: loss of life, loss of land, loss of a way of life, violent separation from the environment of home, lack of access to sacred sites and an inability to protect them, and the destruction of communities and dispersion of people (Middleton 2010).

As a result of violence and disease, American Indian populations in northwest California and throughout the state plummeted. Statewide the Indian population fell from an estimated 300,000 in 1850 to just 20,000 in 1900 (UIHS 2002). In northwest California, the indigenous population decreased by 81% between 1850 and 1910. By 1910, the Yurok had lost 73% of their population, the Karuk had lost 47%, the Tolowa had lost 85%, and the Wiyot had lost 90% (Buckley 2006). California Indians today are the descendants of those who survived this period and no community or family is untouched by its traumas, "attempted extermination, burnt houses, disease, murder, rape, kidnapping, and involuntary servitude" (Buckley 2006, 9).

Environmental Changes

The economic and demographic changes that followed the Gold Rush had environmental impacts with wide-ranging consequences for local American Indians' way of life, wellbeing, and their access to land and resources. Within a few decades, non-Indians had claimed much of the aboriginal territory of the Native people of northwestern California. Through a series of executive orders, the Yurok and Hoopa were granted a reservation that totaled 56,000 acres in 1892, but that was almost immediately eroded by allotment, a federal policy aimed at detribalizing American Indian communities (Huntsinger and Diekmann 2010; Huntsinger and McCaffrey 1995). The Karuk lack a reservation all together, although many Karuk have remained living in their aboriginal territory (Bright 1978). Similarly for Indians living along the coast—the Wiyot, Tolowa, and some Yurok—there was no federally reserved land until the early twentieth century when a few small acreages were purchased and placed in trust for "homeless" Indians, creating the Rancherias that exist today (Gould 1978; Castillo 1978).

Mining produced particularly dramatic environmental changes. As early as 1850, damage from mining—muddied waters and diverted streams—had killed thousands of salmon (Most 2006; Norton 1979). Noting both this destruction and its consequences for Indians, California author Joaquin Miller (1996, 90) reported in 1873,

> The Klamat [sic], which had poured from the mountain lakes to the sea as clear as glass, was now made muddy and turbid from the miners washing for gold on its banks and its tributaries. The trout turned on their sides and died; the salmon from the sea came in but rarely on account of this; and what few did come were pretty safe from the spears of the Indians, because of the coloured water; so that supply, which was more than all others their bread and meat, was entirely cut off.

Mining affected the riverscape as well as aquatic species; when hydraulic mining was most active, some village sites along the Klamath River were literally washed away (community member interview #10127, 1/29/09; community member interview #20113, 1/30/09).

Where farming, settlements, and logging replaced the indigenous subsistence economy, there were other ecological changes. By 1851, cattle took the place of elk to the east of the redwood belt and in the prairies above Humboldt Bay (Sawyer 2006, 130-132). Around urban centers, American settlers cut spruce and fur trees and brush moved into areas where coastal forests once stood. In these areas, the land that had once supported rich crops of berries as well as a variety of other edible plants was changing quickly into pastures for grazing dairy cows (Loud 1918; UIHS 1996). The Indian potato (*Brodiaea coronaria*), for example, had been such an important food that the Wiyot gave its name to a creek that was tributary to the Mad River. But as a sign of both the social and ecological changes taking place, by 1875, that creek had been renamed Lindsay creek and its watershed was better known for its timber than its traditional foods (Melendy 1959; Redwood Community Action Agency 2005). These and other changes interfered with Indians subsistence; not only were there fewer fish, fewer elk, and fewer acorns, but Indians were cut off from large areas that they had previously accessed as part of their subsistence cycle, and some of their management practices, such as building fish dams and burning, were coming under external pressure (Raphael and House 2007).

Community impacts

Confronted with a new cultural landscape, many American Indians living during the late nineteenth century had to adapt to new circumstances in order to survive. For some this meant leaving their villages to find work in towns; others supplemented traditional activities with work on ranches, canneries or by providing domestic help; although still others managed to continue supporting themselves without participating in the wage economy (community member interview #10127, 1/29/09; community member interview #20113, 1/30/09; Mattz 1984). Medical anthropologist Marianna Ferreira (2002) has documented that among the Yurok new work and family arrangements and the stress from having to provide for family in new circumstances strained social support networks. Although it was a time of great stress, hardship, and upheaval, many raised in the second half of the nineteenth century still learned the language and specialized cultural knowledge, such as how to make regalia and baskets, and engaged in traditional subsistence practices (Ferreira 1996). The following interview excerpts illustrate the range of responses to the upheaval American Indians experienced during this period:

> My grandmother was fluent in Yurok. She was fluent in Hupa. She was fluent in Karuk. And she could speak pretty doggone good English. So she knew four languages, but I only once ever heard her speak Yurok. And she didn't attempt to pass that on. She was born in 1888. She had her children taken away from her and sent to the boarding school down in Sherman, Riverside. And she made a conscious choice and she for whatever reason chose not to pass that on. She was a regalia maker and the daughter of a medicine woman, but there was a lot died with her. I wish she hadn't made that choice, but it was hers and I'm not mad at her for doing that. I'm sure she had her reasons. My grandfather was Karuk, her husband, and he must have known a lot, but he never spoke of it. He was born in the 1880s too and that was a period of time that I think was really tough on our people. It was when… we … didn't have the right to vote, probably weren't even considered people (community member interview #20116, 3/17/09).
>
> "He was raised a lot by his grandparents, who at least one of them was born prior to 1850, prior to the Gold Rush. He was raised in that period: he'd seen a lot of the destruction, and yet he lived a very traditional life of fishing and trying to survive" (community member interview #10127, 1/29/09).
>
> "[My great gram, Mary Ike] was one of the ones born before 1850. She really never left the area during her life…. She'd seen a lot of those things and yet when people came up there to study language or study plants or to get stories, she was always willing to share" (community member interview #10127, 1/29/09).

Although there was a wide range of experiences, which depended in part on community location and family circumstances, in the immediate aftermath of American colonization, no family was untouched by the trauma of racially directed violence and the loss of land and resources. In a single generation, American Indians' way of life changed dramatically, in part because their ability to use and control key resources was constrained by a loss of ownership and the ecological changes associated with new modes of economic production. Still many were able to incorporate their subsistence and cultural practices into the new cultural landscape and pass on cultural knowledge.

Life at the margins: state and federal resource management regimes, 1910-1960s

In the first half of the twentieth century, social policies continued to target American Indian cultures, while environmental policies reproduced the separation of American Indians from the environment and perpetuated the landscape changes that had begun in the previous half century. The Indian Service persecuted Indian customs and religious practices: in 1902, for instance, it advised reservation agents to make males cut their hair and to stop dances and feasts (ARCIA 1903 cited in Castillo 1978, 120-121.) More subtly, natural resource policies have limited access and changed ecosystems in ways that are inhospitable to American Indians and others (Huntsinger and McCaffrey 1995; Romm 2002). Natural resource policy and Indian policy have often reinforced each other (see for example Romm 2002). Federal

Indian policies, such as the General Allotment Act and the boarding school system, aimed at suppressing Indian culture and subsistence and breaking up Indian communities to further the goal of assimilating American Indians into mainstream society. The General Allotment Act in particular showed policymakers' recognition of the connections between land use and ways of life, and their hope that changing the distribution and character of land and resources could also support social goals. Taken together the policies aimed at controlling Indian people and the policies aimed at controlling the natural world had the effect of pushing Indian people, their cultural practices, and the resources they depend on to the margins. In what Jeff Romm (2002, 117) has termed "The Coincidental Order of Environmental Injustice," "societal restraints on access to natural resources and racial restraints on access to opportunity together force people of color toward the ills and edges of environmental opportunity."

By the turn of the twentieth century both the state and federal governments took on a larger role in the management of natural resources in northwestern California as concern over the long-term sustainability of aquatic and forest products became part of state and national policy. The conservation movement of the Progressive Era was motivated by fears of a dwindling supply of timber, water, and fish as a result of unrestrained economic development. The Forest Service hoped to save the nation's forests from the ravages of industrial logging, while in California the state worried about the destructive effects of commercial fishing on fisheries. The conservation movement's goal was to reduce both human and natural waste, which was thought of as the underutilization, rather than the overuse, of resources. Conservationists were motivated by the belief that science and technology could improve upon nature and ensure abundance into the future (Hays 1959; Langston 1996; McEvoy 1986).

During this period, the relationship between people and the local environment shifted yet again as governments asserted that a small group of technical experts should regulate human interactions with the natural world (Hays 1959). Fledgling agencies, such as the Forest Service, the Bureau of Reclamation, and California's State Board of Fish Commissioners, charged with managing national resources had specific ideas about the purpose of resources, their appropriate uses, and who could best make decisions about them. These ideas were often at odds with Indian management practices and discounted community values associated with the natural world as well as uses of forests and water that did not contribute to a particular vision of progress (see for example, Brown and Ingram 1987; Fortmann and Fairfax 1989). In this period both rivers and forests were "managed to produce fewer goods", but "in larger, more predictable quantities" (Wolf 2004, pg). The resulting ecological changes contributed to the "loss of diversity and resilience that local American Indian cultures valued, cultivated, and depended on" (ibid., pg). UIHS community members spoke of hardships, frustrations, and people who were alienated from both the local environment and culture.

Forests and fire: changing management and landscapes

Professional forestry became a factor on reservation and public lands at the beginning of the twentieth century. Professional foresters applied their cultural norms to the forests of

Humboldt and Del Norte Counties, including the belief that the highest and best use of a forest was growing trees for commercial timber harvest (Fortmann and Fairfax 1989; Huntsinger and McCaffrey 1995). Early foresters did not recognize the importance of fire in the forests of the western United States; consequently one of their first and most influential campaigns was suppressing fires to protect timber. Other agencies, including the Department of the Interior, which manages National Parks and Indian Reservations, soon followed suit, adopting their own fire suppression policies. In California, fire suppression was instituted on state and federal lands between 1905 and 1924 (Huntsinger and McCaffrey 1995). One UIHS community member, well aware of the irony of the situation, described how fire suppression came to Karuk territory:

> My grandfather, who was George Tripp, worked for the Forest Service or at least the federal government, I don't know if they called it Forest Service at the time…. My grandmother on my Ike side, she was full-blooded Karuk, and then my grandfather on my dad's side, was one-quarter Karuk and three-quarters non-Indian. Anyway, there's a story about them meeting someplace. She was up on the hillside burning because we burned. He came through and he caught her. And he said, "Now, Mrs. Donahue, you know we don't burn anymore." He was telling her. And so they quit. So my grandpa on one side… was telling my grandma on the other side "don't burn anymore." And so the burning stopped, probably in the early 1900s, maybe 1910s, '20s, somewhere in there (community member interview #10127, 1/29/09).

Throughout the west, the decision to eliminate burning ignited a controversy between forestry professionals and local practitioners over how best to protect the forest, whether through light burning or by preventing fires (Pyne 1982). Although Indians (along with ranchers and some timberland owners) used fire as a management tool, professional foresters believed it was harmful to the forest, damaging mature timber and interfering with reproduction (Langston 1996; Show and Hammatt 1920). The arguments that early Forest Service scientists in California made in favor of fire suppression illuminate their ideals for forests and forest use. They believed that the purpose of a forest was growing a crop of trees and their main concern was managing the forest in a manner that would maximize timber production and economic returns (Show and Kotok 1925). Thus, fire suppression became part of their plan "to make sure that the future timber crop, like any other crop, is as heavy (or complete) as can be secured" (Show and Hammatt 1920). For similar reasons they preferred even-aged stands over "the patchy stands in virgin forests" (ibid., 6). This exclusive focus on maximizing the production of commercial timber species meant that other forest uses, other forest species, and other values associated with forests were dismissed. Professional foresters also dismissed the experiential knowledge of local people as too self-interested and hypothetical in contrast to their own "impartial" collection and analysis of data (Show and Hammatt 1920). However, the Forest Service's decision to reject all forms of burning had as much to do with power as with science. If light burning was an Indian or folk practice, then accepting it undermined the Forest Service's authority and legitimacy, which rested on their ability to provide technical expertise (Langston 1996, Pyne 1982).

In Northwest California American Indians protested both the changes to the landscape caused by fire suppression and the narratives behind them. When Lila O'Neale (1932) interviewed Yurok and Karuk basketweavers, women from both tribes reported that they preferred hazel sticks as the foundation material for their baskets, but that hazel was becoming more difficult to collect because of the lack of burning. They lamented that "fires cannot be set as they used to be by the old-time weavers," and regretted "that accidental burnings occur so seldom in places where they do basket makers any good" (O'Neale 1932, 15). Similarly, basketweavers struggled to locate good quality bear grass because annual fires were no longer being set. Among the Tolowa, the difficulty of obtaining materials contributed to a decline in basketweaving in the 1930s and 1940s. Tolowa culture bearer, Loren Bommelyn, explained that Amelia Brown, who lived to be 110 and was the last living basketmaker of her generation, eventually gave up basketweaving because it became too difficult to get materials. She had said that they used to burn a nearby ridge for hazel sticks, but

> Then it became illegal to burn and we're out here on the coast not inland, so then you couldn't get bear grass… Then it came down to you to go get ferns and it was the whole illegal thing and there was no trespassing. So, Amelia Brown finally gave in and started knitting and crocheting because it was so hard to get materials. Everywhere you went it was illegal and hard to get. So, I think just the disappearance of hazel sticks is probably one of the big declines. They used to go to Big Flat to get the hazel sticks…. Well, ranchers moved in there and the Forest Service moved in there, and of course fire is taboo to the Forest Service, so all the hazel was no longer burned. So I think just the loss of materials. There was just very little available (interview with Loren and Lena Bommelyn in Johnson and Marks 1997, 219).

At a hearing held in Hoopa, CA, Anderson Mesket, an Indian man residing in Hoopa, challenged the notion that Indian management had had little or no impact on the landscape. Instead he argued that the fires that had been set regularly by the Indians had benefited the forests and that as a result of this management system "we had the finest timber in the entire world and this timber was handed over to the white man by the red man" (Survey of Conditions of Indians in the U.S. (1932) *at* 15552-15553), with the implication that these stands had subsequently been mismanaged. More generally, Lucy Thompson called attention to the species that the Yurok valued as well as the dedication with which they cared for them. She wrote,

> The Indians also took the greatest of care of the hazelnut flats as the nuts are used in many ways…. The oak timber they were very careful to preserve, as they gathered the acorns from it late in the fall, October and November. (Thompson 1916, 31-32).

Removing fire as a management tool and instituting a policy of fire suppression initiated ecological changes throughout the watersheds of northwest California that were felt as early as the 1920s, as indicated by the basketweavers in O'Neale's study (Huntsinger and McCaffrey 1995). Without fire, as American Indians had long understood, the extent of

Douglas Fir trees increased (see for example, Thompson 1916, 33). In 1918, Loud noted that there was more wooded land in Humboldt than there had been 50 years earlier, an observation confirmed by his Wiyot informants who told him that some prairies were shrinking (Loud 1918, 230). More recent vegetation studies show that Douglas fir cover has increased at the expense of oak woodlands since the nineteenth century, most likely because of the cessation of Indian-set fires and the suppression of wildland fires (Keter 1995). A study of the impacts of fire suppression on five Karuk cultural sites in the Six Rivers and Klamath National Forests found that Douglas fir are invading these areas with negative consequences for the plants used by the Karuk. Because of the increasing density of Douglas fir, culturally important but shade-intolerant species such as black oak and Oregon white oak have declined. In addition, meadows were smaller and had fewer plants that the Karuk use but an abundance of exotic annual grasses (de Rijke 2001). Along the coast, vegetation has also shifted as a result of changing management regimes; a historical ecology study near the Yurok village at Trinidad found that the suppression of Indian burning had altered the forest understory and that coastal scrub had expanded at the expense of coastal prairie (Bicknell, Hansen, and Mackey 1998).

Salmon fisheries in decline: damaged habitat and regulated uses

While the federal government increased its role in natural resource management, the state undertook a larger role in regulating hunting and fishing. In the 1910s and 1920s, the state became more involved in the salmon fishery on the Klamath River because the size of the salmon harvest was growing and because of the growing political sway of recreational fishermen. Harvest pressure on salmon had significantly increased following the creation of a deep-sea salmon fishery and the higher prices for fish during World War I. Additionally, in the mid-1920s the Redwood Highway reached the Klamath River, giving more recreational fishermen access to the river, where they competed with Indians and off-shore boats for salmon (McEvoy 1986). At the same time that harvest pressure was increasing, the amount and quality of spawning habitat on the Klamath declined as a result of upstream irrigation and hydroelectric dams. Over the protest of the California Fish and Game Commission, the California-Oregon Power Company built the first hydroelectric dam on the Klamath in 1917, which interrupted water flow in the river. "As the dam periodically stopped the flow entirely and then released torrents of water through its turbines," writes historian Arthur McEvoy (1986, 135), "the Klamath's level fluctuated wildly and exposed adult fish and their spawn alike to air."

In addition to declining salmon populations and detrimental changes to salmon habitat, this period also saw the introduction of regulations on Indian fishing. Even though recreational fishermen successfully lobbied to stop the construction of two proposed dams on the lower Klamath in the 1920s, their interests often did not align with those of American Indian fishermen. In 1933, as result of recreational fishermen's demands, the state of California closed the last cannery on the Klamath and banned commercial fish harvest in the basin (McEvoy 1986). Indians resisted these restrictions, but they nevertheless drove people into hiding their subsistence activities and they made it more difficult for Indians to feed or support themselves through fishing. As one UIHS community member (Yurok) described, "In 1933 commercial fishing as well as subsistence gillnet fishing was outlawed on the

Klamath River…. The people down there essentially never quit doing what they always did…. they were just turned into criminals by this unjust law (interview #20116, 3/17/09)."

The conflict between recreational fishermen and Indian fishermen stemmed in part from differing ideas about rights and values. In a story that highlights the tensions between these competing perspectives, Geneva Mattz told about a time, around 1915, when two white men tried to tell her grandfather that he could no longer fish at his family's traditional fishing spot. He refused, declaring that he had been taught the appropriate way to fish, that it was his way of life, and that it was a skill and right that was essential for survival and providing for his family. Shooing them out he said, "Don't you bring another white man in my house who's gonna tell me how to live" (Mattz 1984, 55-56). Reflecting on her childhood, Mollie Rudd, a Yurok woman born in the 1920s, recalled the different values American Indians and recreational fishermen placed on fishing and how those were reflected in their behavior:

> The other thing we liked to do was play tourist. Just a few days ago, I saw tourists playing around with salmon. They use non-barbed wire so the fish is not really hooked, but the can play around with it and still pretend they're really fishing. I guess it's a feeling. By the time they let the fish go, the animal is so tired that it usually dies. You can see the fish floating on their bellies. I think this is the worst law they ever made. Can you imagine, they can't fish out of season, but pretending is allowed. Giving tourists the pleasure! So in those days, 50 or 60 years ago, we watched them do that. And we, too, I mean, all the kids that lived on the side of the river, we wanted to do the same. We just looooved to play tourist on the Klamath. Grandpa had this dugout. We'd paddle to the cove, hook a fish and yard it right in, then we'd let it go. But then grandpa would get mad at us and say we couldn't play with food. He said we were spoiling food, that food is sacred and if the whites go around sport fishing, we don't do that. He said in Indian, "if you get a fish you have to pull it into the boat immediately. No playing around." (Mollie Rudd quoted in Ferreira 2006, 365).

As these stories suggest, shutting down the Indian fishery interfered with a practice that was closely tied to community values of care-taking, respect, reciprocity, and self-determination. It also took away a key means of economic support and devalued and criminalized Indian ways of life.

Dams, habitat destruction, and changing watershed management regimes have all had serious consequences for the Klamath River spawning runs. For some, the diminishing salmon runs, along with other environmental changes they had experienced provoked a sense of hopelessness. As the anthropologist Stephen Buckley writes, "A way that had been 'good' (that is to say 'successful') since the myth-time had been wiped out in less than a century—or so it seemed. 'What's the point of dreaming of elk,' Harry Roberts remembered a Yurok man asking, in Requa in the 1930s, 'when there's no elk left to hunt?'" (Buckley 2006, 219). The Karuk fisherman Fish Ike was the great grandfather of one interviewee. He had lived through immense changes, but continued fishing all his life. By the 1930s, he was

bed ridden. One day he called one of his grandsons to his side and told him in Karuk, "Our world is going to hell." Reflecting on his great grandfather's dismay, this UIHS community member recounted all Fish Ike had seen in his lifetime:

> So he's seen the hydraulic mining and the effect of that on the fish. He's seen the dams go in which killed the spring runs. When we were growing up the spring runs were the small run, but when he was alive and fishing the spring run was the main run. … He's seen that. Even in the 1930s, talking about the changes which were occurring, and at that time, I think a sense of hopelessness. Because it's like how do you fight back to that? (community member interview #10127, 1/29/09).

The dams which radically reordered Fish Ike's world had become a fact of life by the time his great grandson was growing up. The dams shaped subsequent generations' experience of the riverscape. As this interviewee explained, the dams "were what we knew because we were raised with it. We just knew that at a certain time of day the river would come up really fast. It wasn't until later when we learned about dams and the generation of electricity that we knew what was going on" (community member interview #10127, 1/29/09).

Community Impacts

Local American Indian communities faced many hardships in this landscape, where ecological changes and regulations restricted access to critical resources. Describing the privation that some experienced, one Karuk woman recalled how,

> When my grandmother was a young girl she said that she was so hungry she would dream about food. And I find that hard to get my mind around because it is a land of plenty. But this was a time when the… laws came up that people couldn't gather anymore, they couldn't hunt, they couldn't fish. You were supposed to go to the store and buy stuff (community member interview #21117, 2/4/09).

Later when she was growing up, her grandfather continued to hunt despite increased restrictions, so "we were always kind of under the radar, still getting the food we needed to feed our people, ourselves and family" (community member interview #21117, 2/4/09).

Several UIHS community members recalled that even in times of scarcity, their relatives used what was available to care for the members of their communities. Noting that this was a tradition among local Indian people, one woman (Tolowa) described her grandparents' involvement with the Del Norte Indian Welfare Association,

> "See the federal government was supposed to provide certain things to the Indians when they took over California, and supposedly treaties were signed and none of that happened…. But they [the members of the Del Norte Indian Welfare Association] got together and made sure the kids had school clothes, and they made sure the kids had lunches at school. They made sure the kids were taken care of. They also helped adults too, but they focused mostly on

> the kids that were coming up at that time…. They worked towards their Indian community and supporting it and keeping these people going where it was really difficult…. They always helped their Indian community members. And not just Indian community members, there were people who were not Indian that they helped" (community member interview #11126, 2/4/09).

Growing up during the Depression Merky Oliver (Yurok) recalled, "The old people up here that I stayed with most of the time were pretty poor, sometimes wondering what they were going to eat tomorrow. So we had to go out there and down an animal or put out a net and kill a fish, or kill an eel or kill a bird or something to eat." After evading State Fish and Game wardens, Oliver's relatives provided food to the community. He recalled, "Whenever they brought something home, they would skin them up and that stuff would just disappear all around the neighborhood, taking care of our neighbors. And I think that stuck with me more better than anything, just cause I still believe in that you know, giving and sharing" (Oliver quoted in Most 2006, 96).

Mid-century: Resource intensification

By the 1950s, new developments in forest and river management changed Humboldt and Del Norte County watersheds further. While logging in Humboldt County dates back to the Gold Rush (Melendy 1959), WWII represents a watershed in the region's logging history because it precipitated an increase in both the extent and intensiveness of logging operations. In this area, the composition and structure of the post-war forests reflects the interaction of silviculture management with "evolving markets, tax laws, harvesting technology, and forest practice regulations" (O'Dell 1996, 15). After WWII, new markets heightened the demand for timber, while new technologies enhanced the logging industry's ability to supply it. The post-war housing boom and the development of Douglas fir plywood created an unprecedented demand for Douglas fir (Hirt 1994), and new tractor and truck technology opened previously inaccessible areas to harvest. In Humboldt County, the arrival of processing facilities, such as pulp mills, that could handle smaller or lower quality logs as well as hardwoods spurred the transition from selection logging to clear-cutting (O'Dell 1996). In addition, beginning in 1947 the State of California began taxing standing timber on its potential value, unless at least seventy percent of the standing timber was harvested. For the next thirty years, this tax structure provided private landowners a powerful incentive to log their property. In 1956, for instance, landowners paid $2.80 per acre for forested land, compared to $0.22 per acre for cutover land. Thus from 1947 through the early 1970s, maintaining forested acreage became a substantial tax burden (House 1999; O'Dell 1996; practitioner interview #1020, 10/12/08). The intensive management (Hirt 1994) of this period included the application of herbicides to eliminate oaks and other nonconifer species (community member interview #10209, 1/27/09; community member interview #21211, 3/20/09; Huntsinger and McCaffrey 1995).

While declines in fish populations and the health of the river system were noticeable earlier in the century, they continued through this period. As one Yurok man (community member interview #20116, 3/17/09) explained, the changes began before his lifetime, "but the final blow" came in the early 1960s with "the building of the Iron Gate Dam on the Klamath

River and the Lewiston and Trinity Dams on the Trinity River." The Iron Gate Dam blocked off the upper 350 miles of spawning grounds for spring salmon, while the Lewiston Dam reduced the flow on the Trinity River, a major tributary of the Klamath, by eighty percent below the dam (McEvoy 1986). The impact that new dams had on salmon was compounded by the environmental effects of accelerated logging. Without vegetation on the hillsides there was nothing to stop sediments from washing into the rivers, where they muddied the spawning gravels where salmon lay their eggs and wiped out whole runs (community member interview #10101, 1/27/09).

Logging impacts on watersheds

The logging boom set in motion many of the landscape level changes—particularly sediment movement from hillsides into waterways— which contemporary salmon and watershed restoration efforts seek to address. Tractor logging operations, which proliferated after World War II, had the most significant impact on sediment, primarily through the construction of extensive logging road networks that dramatically altered drainage patterns and accelerated landslides and erosion. Logging roads and landings, where logs were stored until they could be loaded onto trucks, were prone to mass failure. A single mile of road might cut across dozens of capillary drainages, channeling their flow into the inboard ditch. There the accumulated waters would either be channeled through a culvert onto an unarmored bank. Or, when culverts were too small to accommodate winter flows and became clogged with debris, as was often the case, water would eventually explode through the road, causing blowouts that released large quantities of sediment into the drainage below (Griffin 1990; Hight 1998; House 1999; Spreiter, Franke and Steensen 1996). Additionally, the thousands of skid trails, created when felled logs were either dragged downslope by tractors or upslope by cables, severely disturbed the ground surface. Finally, the compacted surfaces of roads, skid trails, and landings were impermeable bare soils that reduced infiltration and increased rapid surface runoff during storms. As a result of these logging-related impacts, ten to twenty inches of topsoil washed away in some places (Weaver and Sonnevil nd).

As a result of road construction and other forms of ground disturbance associated with logging, earthflows and landslides became more frequent, mobilizing large quantities of sediment in logged watersheds, and resulting in the deposition of sediment and organic debris into stream channels. Summarizing the impacts of past land use, Redwood National Park scientists wrote, "The effect was a near total disruption of the microtopgraphic features of a site and obliteration of all but the major channels of the original drainage network. Compacted areas (roads, trails, and landings) generated rapid surface runoff during winter storms and diverted streams found new paths over the disturbed landscape" (Weaver et al. 1987). Across the county, these changes in land use left their mark on the landscape and it is largely their ecological legacy that contemporary restorationists attempt to redress.

Driven by new incentives and armed with improved tools, the logging industry cut huge swaths of forest between the 1940s and 1970s, leaving large portions of the landscape bare and crisscrossed with logging roads and skid trails (practitioner interview #1020, 10/12/08). These changes took place across Humboldt County. For instance, 75 percent of redwood

and Douglas fir in the Mattole watershed, located in southern Humboldt County, were cut in less than thirty years (House 1990). Similarly in northern Humboldt, 90 percent of coniferous forests in the Redwood Creek Basin were logged after 1945 (Weaver et al. 1987). A study of the Redwood Creek Basin found that 80-85% of the ground surface was bare and 40% had been severely disturbed by roads, landings, and skid trails (Weaver and Sonnevil nd).

The impacts of these changes in logging practices rippled throughout northern California watersheds. Sediment delivered to streams in increasing quantities filled pools—important habitat for juvenile and spawning salmon—with silt and smothered the gravels salmon need for spawning (House 1990). With shallower channels, floodwaters moved laterally, undercutting stream banks or jumping the banks entirely, posing a threat to riparian vegetation, including the old-growth redwood stands protected inside Redwood National Park (House 1999; Spreiter, Franke and Steensen 1996; Griffin 1990). The logging-induced acceleration of erosional processes resulted in a loss of both aquatic and riparian habitat: trees were lost because of bank erosion and low flow aquatic habitats, like pools and spawning grounds, were lost as rivers and streams filled with fine sediment (Spreiter, Franke and Steensen 1996; S. Doc. No. 95-98 (1978)).

Logging's effects were amplified by the huge winter storms and accompanying floods that are a normal occurrence on the north coast (Ozaki 2004). Major winter storms occurred on the North Coast in 1955 and 1964. The flooding in the winter of 1955 wiped out five towns in Humboldt and Del Norte County, washed out hundreds of roads and bridges, and caused millions of dollars in damage, but did not slow the logging boom (House 1999; *Humboldt Times* 1955; Hellesoe n.d.). In Redwood Creek, these events triggered the "majority of land-use-related and fluvial and mass erosion" since modern logging began in 1940s (Spreiter, Franke, and Steensen 1996; Weaver et al. 1987). An article that appeared after the 1955 flood summed up the problem, while lamenting that officials could not agree on a strategy to protect valuable natural resources:

> Once Bull Creek was a beautiful, sparkling rivulet where salmon leaped. More importantly, it wandered through a large grove of redwoods generally regarded as the finest anywhere…. Then, beginning in 1947, irresponsible loggers moved into the rain forests of Bull Creek's headwaters, above the grove. They not only stripped the steep slopes of Douglas Fir, they gouged and gutted with roads and skid trails. Fire completed the ruthless havoc begun by man. Thus was the stage set for tragedy when torrential rains came on Christmas Week, 1955. The denuded hills could not absorb the torrent as they once had. Bull Creek became a muddy, raging river loaded with sediment and debris (*The Sunday Examiner* 1961).

While large rain events and flooding are common occurrences on the North Coast, both local people and scientists believe that the impacts of these two storms were especially great because they came on the heels of widespread clear-cutting and associated road building (practitioner interview #1020, 10/12/08; Mattz 1984). The huge winter flood in 1964 washed away hundreds of houses along the Klamath River, destroyed bridges, and wiped out the town of Klamath (Most 2006). Yurok elder, Geneva Mattz (1984, 24), recalled that

in the 1964 flood, "Everybody lost everything." Her family lost livestock and fruit trees and the land they owned upriver was literally swept away (ibid., 23-27). For at least one UIHS community member (Yurok), losing her homes in the flood and being forced to relocate was devastating (community member interview #11118, 1/30/09).

It is important to note that the significance of employment in the logging industry should not be underestimated, both as a source of income and as culturally meaningful work (Lowry 2007; community member interview #10127, 1/29/09; community member interview #22108, 3/18/09). Nevertheless, logging's direct and indirect environmental impacts had a profound emotional effect on some Indian people as well. One community member (Tolowa), who grew up watching the mountain and valleys around his home stripped of timber, reported it was catastrophic for him when the last of the virgin redwoods were cut down (community member interview #22103, 1/28/09).

The Lost Generation

The middle of the twentieth century was a low point for the American Indian peoples of northwest California. Assimilationist policies—cultural, political, and environmental—and associated trauma had taken a toll on individuals, families, and communities (Wilkinson 2005). The federal policy of termination and relocation (H.R. 108 (1954)) was designed to end the trust relationship between the federal government and American Indian Tribes. Under 72 *Stat.* 619 (1958), 38 California Indian Tribes and Rancherias were terminated between 1961 and 1970 (Slagle 1989), including the Bear River Band of Rohnerville Rancheria and the Elk Valley Rancheria. For these Indian communities, already meager government services evaporated. On the decline for a century, life expectancy among the Yurok reached its lowest point in 1950s, having fallen from 80 years in the 1850s to just 36 years in 1954 (Ferreira 1996).

Because being American Indian was widely looked down upon, members of the generation that came of age around World War II were often discouraged or prevented from learning and participating in Indian culture. Many interviewees reported that during the mid-twentieth century being Indian was dangerous and at times a source of shame. The hostile social environment particularly affected this generation, who had "a big disconnect with them and their culture because it wasn't a good thing to be Indian and they couldn't come out" (community member interview #11112, 1/28/09). Many in this generation spent their childhoods away from their families at boarding schools, which had far reaching social and cultural impacts. Whether people recalled a positive or negative experience at boarding school, attendance at boarding school had the effect of taking children away from their families and communities, which interrupted the intergenerational transmission of community, familial, and cultural knowledge. This disconnect from cultural knowledge and lack of experience with stable relationships was often passed on to their children, i.e., reproduced in the next generation.[2]

[2] To streamline the text, where more than three interviews are cited, they appear in a footnote. Community member interview #11112, 1/28/2009; community member interview #22103, 2/2/2009; community

Some of those who stayed home faced other challenges. One woman recalled how her grandfather, who was not Indian, did not want his children raised as American Indians, "But when he passed away, my grandmother went back to doing her traditional ways that she grew up with. So, fortunately my brothers and myself were raised doing both of those. Whereas my mom and aunts and uncles, they don't have any of that" (community member interview #11112, 1/28/09). The disconnect with tribal cultures reported for this generation is widely attributed to forced assimilation. As one Karuk woman explained, external forces interfered with community and cultural life in ways "that didn't let our people be healthy Indian people" (community member interview #21124, 2/6/09).

Some people struggled more than others as changing environmental and social circumstances limited what economic and cultural activities they could do. One Karuk man described the problem this way,

> One of the things we seen a lot when I was growing up was the drunks. And one of their favorite spots to drink was under the bridge and one of their favorite activities was to sing brush dance songs. So, they'd get drunk and sing brush dance songs. And people kind of made fun of them—they weren't exactly pillars of the communities. Oftentimes they were actually dance makers, dance owners, regalia holders, *people who didn't work, but lived. Then when it changed, they didn't have a life, they didn't have any place to live, so they were lost. They didn't work in the woods, so they were lost. They were the first people lost because there was no place for them to fit in*…. It took us until we brought back the dance, and even ten or fifteen years later to realize those were the ones who were the drunks, but they were the ones holding the songs, holding that knowledge, holding onto those things, but they had no place to express it. So we started seeing some things get lost, the frustrations (emphasis added, community member interview #10127, 1/29/09).

Not "fitting in" was the result of ongoing environmental, economic, and social changes. Preceding generations had been able to support themselves without participating in the wage economy. As this community member explained, "Before that, my grandfather, in one sense, never worked a day in his whole life. He didn't cut hay or bale hay…. He lived, he caught fish, he gathered acorns" (ibid.). But by the 1950s, logging had become a dominant economic pursuit and landscape use. In the mid-twentieth century, "everyone was working in the woods and the mills. You could get a job" (ibid). Those who worked in the logging industry "fit in," but those who found no place for themselves—and their skills and knowledge devalued—in the new cultural landscape of that period struggled. This process is ongoing. The landscape and landscape uses continue to change. Some community members are able to make the change to new industries, but just as many or more find themselves

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member interview #11126, 2/4/2009; community member interview #10101, 1/27/2009; community member interview #21108, 3/18/2009; community member interview #21124, 2/6/2009; community member interview #20113, 1/30/2009; interview #21117, 2/3/2009; community member interview #21119, 2/6/2009)

without a place to fit in (community member interview #10127, 1/29/09, community member interview #11102, 1/28/09, community member interview #21108, 3/18/09).

Conclusions

Prior to the arrival of American settlers, the American Indians of northwest California actively managed their environment for the dynamic diversity that was the foundation of their subsistence system (Lightfoot and Parrish 2009; Anderson 2005). By intentionally setting fires, they encouraged temporal and spatial changes in the abundance of important plant and animal species across the landscape. These and other management actions were guided by a worldview that emphasized reciprocal relationships between people and nature and valued balance and respect (Merchant 1989). It contributed to an environment that supported the health and culture of American Indian communities (Ferreira 1996; Ferreira 2006; UIHS 2002). Many of these ecological changes were cyclical, but they were occasionally punctuated by dramatic events, such as the earthquake and Tsunami recorded in Tolowa oral history. American Indian management had a significant impact on the landscapes of northwest California (Krech 1999; Lightfoot and Parish 2009; Taylor 2001) and its removal across the state has contributed to the decline in certain ecosystems, such as oak woodlands and montane meadows (Anderson 2005). Beginning in 1848, American settlers began to replace American Indian management regimes with their own, setting in motion what Carolyn Merchant (1989) has described as an ecological revolution. Guided by a very different framework for interpreting the natural world, these newcomers' actions soon produced dramatic changes in the landscape and for American Indian peoples.

Since the Gold Rush, American Indian communities have experienced unprecedented and rapid changes in the landscapes of their ancestral territories and their ways of life. As Julian Lang (1991, xxii) wrote in the Introduction to Lucy Thompson's *To the American Indian* (1991[1916]), "By 1916 the Indian cultural landscape was covered with the white man's frame houses, clothes, economy, and regulation…. Where once-proud villages and spiritually ordained geography stood, now lay utter decay and ruin." For much of the intervening time, economic and political forces that did not acknowledge or value American Indians uses of or relationship to the land and water (Brown and Ingram 1986; Fortmann and Fairfax 1989) shaped the local environment. Over time the resulting cultural landscapes became less conducive to American Indian subsistence and cultural practices. These landscape changes have often reinforced social policies aimed at suppressing Indian culture and assimilating Indian individuals into mainstream American society.

By the middle of the twentieth century, many of the ecological impacts—e.g., loss of spawning habitat; accelerated erosion on forest lands; increased density of forest stands; loss of culturally significant native species; and declining populations of salmon and other aquatic species—that contemporary restorationists, both Indian and non-Indian, hope to redress had already taken place. For American Indians, these ecological changes were accompanied by and contributed to dramatic changes in the conditions of community life. In just 100 years, many ceremonial dances had stopped, few people spoke native languages, many people lived in poverty, and health had grown worse as evidenced by a steep decline in life expectancy. Within the cultural landscapes of this period, the opportunities to engage

in cultural practices, to express cultural relationships with the environment, to subsist on traditional foods, and to engage in native artistry were increasingly constrained.

Both within and outside the American Indian communities of northwest California, these conditions have begun to change. In northwest California, the late 1960s and early 1970s saw a wave of American Indian political and cultural activism. Despite the hardships they had endured, local American Indians retained many community strengths and assets, which they mobilized in this period. The 1970s also ushered in the federal Indian policy era of Self Determination, which gave Tribes the opportunity to provide services and manage their own resources. The next chapter explores the role of cultural landscapes in a period of American Indian community revitalization and more supportive federal Indian and environmental policies. Nevertheless, Chapter 4 finds evidence of the persistence of landscapes that restrict American Indian practices and pursuits, even in the face of changing social, cultural, and political forces, both locally and nationally.

CHAPTER 4. POLITICAL AND CULTURAL REVITALIZATION, 1960 – PRESENT

Introduction

Over the past 160 years, the changing political-economic and cultural context of resource management decision-making, as well as the resulting changes to the landscape, have had far-reaching consequences for American Indians. The previous chapter explored changes to the local cultural landscape and their impacts on UIHS community members through the 1950s, the decade of the federal government's termination and relocation policy and a nadir for American Indian people in northwest California and around the country (Wilkinson 2005). This chapter picks up in the 1960s when the political and social climate, both locally and nationally, began to shift, ushering in an era that was more supportive of the rights of minority populations. (Although federal Indian policy now embraces self-determination, it is important to note that American Indians still face many challenges in their relationship with the federal government.) Based on interviews with UIHS community members, this chapter examines how community members' uses of the local environment have changed from 1960 to the present. Some of these community members first became involved in activism on behalf of American Indians in the 1960s; others described themselves as beneficiaries of this activism; and all could recall changes to their relationship with the natural world that had taken place over this period. Persistent environmental problems and losses accompanied by a renewed investment in local cultures have combined to produce a sense of urgency around restoring local landscapes and community members' access to them. In many ways, this period sets the stage for what UIHS community members want out of restoration projects now.

Reduced access to culturally significant materials and sites was a common theme that emerged from the interviews with UIHS community members. Consequently, this chapter elaborates on how access has been lost and the impacts of constrained access on UIHS community members. My discussion of access is informed by Jesse Ribot and Nancy Peluso's (2003, 153) theory of access, which they characterize as the *ability* to benefit from things. In contrast to concepts of access that look exclusively at property—the *right* to benefit from things (ibid., 157)—their formulation includes a wider range of social relationships that constrain or enable people's ability to derive benefits from a resource. They suggest that it is important to look at the political-economic and cultural context in which property relations play out. In addition to rights-based access, Ribot and Peluso also identify a number of other factors that influence who benefits from resources and why. They find that technology, capital, markets, labor, knowledge, authority, and social identity all shape access.

Access arrangements are not static. People and institutions have different relationships to resources at different times, so forms of access change over time (Ribot and Peluso 2003, 154). In northwest California, the context in which access is determined is continually changing. At present, UIHS community members' access to the landscapes of their home territories are significantly constrained by property ownership, regulations, management

regimes, and the cultural context in which property owners and managers make their decisions. Even as local American Indians have become more visible, culturally and politically, in northwest California since the 1960s, access to the natural world remains a significant challenge.

Because their relationship to the natural world is inextricably bound to their culture and spirituality, limited access has in turn affected UIHS community members' ability to hunt and gather and to eat traditional foods. In general, contemporary landscapes and access arrangements inhibit UIHS community members' ability to engage in cultural practices and express key cultural values of respecting, stewarding, and using the natural world. Thus restoring the landscape promises not only to return valued habitat types and species, but also to facilitate the application of the knowledge, values, management techniques, and uses so fundamental to local American Indian cultural and spiritual relationships with the natural world.

Focusing on the period from 1960 to the present, this chapter examines how cultural landscapes have constrained access. It begins by introducing the political and cultural revitalization that has taken place among the American Indians of northwest California since the 1960s. Then, it examines UIHS community members' environmental concerns against the backdrop of these political and cultural changes. Of particular interest here is the way in which UIHS community members' cultural activities, including the consumption of traditional foods, are constrained. The remainder of the chapter explores how community members' access to the local landscape has been reduced. In conclusion, it considers the consequences of these changes and the place of restoration in addressing both environmental and cultural concerns.

Political activism

The 1960s ushered in a new era of American Indian activism in northwest California. UIHS community members remembered this as a unique time when Indian people were working together for Indian people (community member interview #22103, 2/2/09). Inspired by the political climate of the Civil Rights Movement, American Indian activists worked to improve conditions for their people after the hardships they had suffered during the first half of the twentieth century. American Indians across the county had newfound independence and resources thanks to the Johnson Administration's War on Poverty (community member interview #10101, 1/27/09; community member interview #10127, 1/29/09; Wilkinson 2005, 127-28, 191-94). Explaining the national changes that helped to facilitate this movement in Indian Country, Philip Deloria writes,

> The 1960s was above all else an Office of Economic Opportunity decade…. [T]he Great Society programs were the first major instance in which Indian tribal governments had money and were not beholden for it to the Bureau of Indian Affairs. This created an enormous change in the balance of power on reservations, and in Washington (Deloria quoted in Wilkinson 2005, 128).

In northwest California, American Indian activism included efforts to provide basic services and legal struggles to defend and restore rights. The California Rural Indian Health Board, established in 1969, and the United Indian Health Services, established in 1970, provided much needed healthcare. Legal rights were also reaffirmed: In the Tillie Hardwick case, initiated in 1979 and decided by the Supreme Court in 1983, 17 of California's terminated tribes, including the Blue Lake and Smith River Rancheries, successfully fought to have their Tribal status restored (Slagle 1989). At Humboldt State University, American Indian students organized to resist the California Indian Land Claims Settlement, which paid each eligible California Indian $658 in compensation for the taking of the state of California (community member interview #10127, 1/29/09; community member interview #20116, 3/17/09). In the Supreme Court and on the ground, facing armed state and federal agents, Yurok tribal members defended their fishing rights. Today, UIHS community members are proud of what has been accomplished, but remain concerned that environmental and other obstacles impede ongoing cultural practices and cultural education.

Restoring ceremonies

Part of the effort to revitalize American Indian communities involved bringing back some of the ceremonial dances which had been in decline since the early twentieth century. Among the Yurok, for example, the Jump Dance at Rewkoy had continued until 1904, the Wecpus deerskin dance until 1912, and the Jump Dance at Pecwan until 1939 (Buckley 2006, 291). A UIHS community member who helped restore the dances recalled that they focused on Brush Dances first because those dances had only slowed down for a decade, unlike other dances, which had not been held in 60 to 80 years, and because all involved had attended Brush Dances in their lifetimes. Still there was a sense of urgency, because it was clear that with aging dance makers, these dances would end soon if nothing was done to preserve them. Once the Brush Dance had been reestablished, these community organizers turned their attention to other dances that had been dormant for a greater length of time. In the early 1980s, they worked to bring back the Jump Dance. Then in the 1990s, the Karuk, Hoopa, Yurok, and Tolowa all began holding Flower Dances, the girls' puberty ceremony, again.[1]

Since their restoration, these dances have once again become an important and positive part of community life. Initially, it was all organizers could do to find enough people for one round of the Brush Dance. By the late 1980s and early 1990s, the number of participants had exploded, with some dances attracting as many as 800 people. At present, the number has settled to around 400 attendees (community member interview #22103, 2/2/09; community member interview #11102, 1/28/09; community member interview #10209, 1/27/09). Similarly, since a small group of people brought back the Karuk Flower Dance in the mid-1990s, it has been held most years and has impacted many families who have held it for their daughters. Participating in the Flower Dance is the first connection that some of these families have had with their Tribe's ceremonies. Ceremonies have the added benefit of

[1] Community member interview #10127, 1/29/09; community member interview #11102, 1/28/09; community member interview #10209, 1/27/09; community member interview #22103, 2/2/09.

being a place where the community and families can come together and support each other.[2] As one participant described it, "One of the reasons we're really proud of the Brush Dances is because we have this Brush Dance community, the community of people who are regulars. We all know each other, love each other. We also know we've got a lot of issues, we're not perfect… [but] you have to care about people" (community member interview #10127, 1/29/09). Those in the dance community hope that more dances will be brought back, participation in ceremonies will continue to grow, and the benefits of ceremonies for Indian communities will spread to more people and places (community member interview #20113, 1/30/09; community member interview #20116, 3/17/09).

After decades when many dances were not held or held infrequently, there are now two generations who have always had at least one dance as a constant in their lives (community member interview #22128, 1/29/09; community member interview #21121, 1/30/09). As one Karuk-Yurok woman noted, while her parents can remember when the Brush Dances were not that consistent, she has always had the Brush Dance. And while the Jump Dance and Flower Dance were brought back during her lifetime, her daughters have never known a time when they were not regular occurrences. She said, "It's cool to see each generation think that that's just normal, and it's not. There have been groups of people who work to make those things seem like they're just normal, like they just happen, but they don't" (community member interview #11102, 1/28/09). In many ways, the political and cultural work done by American Indians in the 1960s and 1970s has paid off, creating a new normal for their children and grandchildren, for whom ceremonies and other cultural activities are part of the fabric of community life.

Bringing back ceremonies is one part of a larger process of cultural renewal. Because of the activism of the 1960s and 1970s, the social world looks very different than it did in the mid-twentieth century. As one Karuk-Yurok man explained, his parents and grandparents

> went through the tough times of our culture dying off, alcoholism, and people being pushed off to the side, and they fought through that in the late '60s and '70s and kept our culture alive for us. They paved our way for us. We didn't know it any other way, other than what the stories were. Our kids are going to do the same thing (community member interview #10101, 1/27/09).

Now there has been a period of 30 to 40 years in which local American Indian cultures have become progressively stronger (community member interview #11102, 1/28/09; community member interview #10225, 2/4/09). As one young (Karuk-Yurok) woman explained

> "Over the last few generations we've been getting back to that and I feel like each generation is continuing to grow a little bit stronger in our traditional value sets. Of course, that looks very different now in a lot of ways with contemporary culture and society having the influence it does. But with each successive generation our children are getting more and more grounded in our

[2] Community member interview #11102, 1/28/09; community member interview #21124, 2/6/09; community member interview #21121, 1/30/09; community member interview #20113, 1/30/09.

> traditional values sets and our traditional culture" (community member interview #21124, 2/6/09).

A shift in perception of what it means to be American Indian has accompanied this surge in political and cultural activism. In contrast to the experiences of some of those who came of age in the mid-twentieth century, in recent decades Indian youth are more interested in being acquainted with their culture and there is a sense of pride associated with Indian culture and identity (community member interview #21211, 3/20/09; community member interview #10101, 1/27/09; community member interview #22128, 1/29/09).

Cultural significance of the environment

Because of the intimate connection between northwest California Indian cultures and the local environment, ceremonies and other cultural activities require interaction with the natural world. Renewed interest in ceremonies, basketweaving, and other cultural practices has spurred some people's interest in "appreciating and being reconnected to their environment" (community member interview #21121, 1/30/09). Ceremonies, for instance, are often about the relationship between human communities and their environment and they require a variety of direct interactions with the natural world.[3] These community members' comments help to illustrate this connection:

> In our ceremonies we pray to make sure that we have enough things, that we have enough acorns and fish, that the world is balanced. But we also know that we have responsibilities and some of our ceremonies are set up around certain kind of activities for taking care of the land. Nature, culture, responsibility are all intertwined (community member interview #11102, 1/28/09).

> The way that you honor those responsibilities is to conduct ceremony. And the way you conduct ceremony is to create baskets, to create regalia, a lot of which is abalone shells, clam shells, which signify that deep connection that we have as Native people to the areas where we come from (community member interview #20113, 1/30/09).

As indicated above, community members create regalia from a range of natural materials, such as pine nuts, maple bark, and woodpecker scalps. Additionally, some ceremonies require certain participants to spend time in special locations praying and gathering medicinal plants (community member interview #11102, 1/28/09). Providing food, such as fish, is also an important ceremonial responsibility (community member interview #21124, 2/6/09; community member interview #11102, 1/28/09; community member interview #10127, 1/29/09). For people who want to become more engaged in American Indian culture or for those who are already immersed in cultural activities, it is essential to interact with the natural world. Activities, such as gathering, fishing, hunting, basketweaving,

[3] Community member interview #10101, 1/27/09; community member interview #21108, 3/18/09; community member interview #11118, 1/30/09; community member interview #21121, 1/30/09; community member interview #10127, 1/29/09.

making regalia, and carving, provide a way for American Indians to maintain or renew a connection with their environment.[4]

American Indian members of the UIHS community emphasized that their relationship to the environment is at the core of their identity (community member interview #11102, 1/28/09; community member interview #21105, 3/19/09; community member interview #21117, 2/3/09). UIHS community members build and experience their relationship with place through a variety of activities. Cultural activities that intersect with the environment take many shapes, but they are highly valued by and widespread among the community members interviewed for this project. These activities include hunting, fishing, and gathering for food, medicine, basketry and carving materials, and regalia making. Inland, gathered foods include acorns, berries, and tan oak mushrooms, while along the coast gathered foods include mussels, sea urchins, clams, and seaweed. Fishing for salmon, ocean perch, sturgeon, eels, and steelhead and hunting for deer and other game were important activities and sources of meat. Wormwood, teas, and other plants with medicinal applications are gathered for personal use. Basket weavers gather many plants, including willow sticks and roots, hazel sticks, and spruce roots, while a carver might collect mock orange to make flower dance sticks and yew for bows. In regalia making, blackened pine nuts and shells are used in necklaces and dresses; bear grass can be braided for dresses; and maple bark skirts are worn in the Flower Dance. Many of these activities and crafts are divided by gender, with men doing much of the hunting and fishing and women doing more of the gathering. In addition, many people enjoyed spending time outdoors, whether going for walks, working outside, gardening, bird watching, or swimming.[5] These types of activities reflect a personal relationship with the natural world of northwest California, as well as the way in which the cultural and spiritual is intertwined in everyday life for many American Indians.[6]

Although these types of activities were widespread among the people interviewed, UIHS community members expressed concern that more work needs to be done to preserve them. UIHS Traditional Resource Specialist Paula Allen described the current situation by explaining that during the 1960s and 1970s, local American Indian activists were

> so busy saving the culture and making sure we had social programs that something had to fall off the table. They came from a time when people would gather for them. There were enough people doing it that it didn't feel like it was going to be lost. And now we're getting to a point where it's like

[4] Community member interview #11102, 1/28/09; community member interview #21119, 2/6/09; community member interview #21121, 1/30/09; community member interview #21211, 3/20/09.
[5] Community member interview #11102, 1/28/09; community member interview #20113, 1/30/09; community member interview #10114, 2/5/09; community member interview #11118, 1/30/09; community member interview #11320, 3/17/09; community member interview #22128, 1/29/09; community member interview #11123, 1/28/09; community member interview #10209, 1/27/09.
[6] Community member interview #11118, 1/30/09; community member interview #11102, 1/28/09; community member interview #10209, 1/27/09; community member interview #20113, 1/30/09; community member interview #10114, 2/5/09; community member interview #11320, 3/17/09; community member interview #22128, 1/29/09; community member interview #11123, 1/28/09; community member interview #21119, 2/6/09.

> 'oh my goodness, now those things are getting lost' (author interview, 1/28/09).

As people begin to feel more secure in some of the cultural and spiritual activities that have been the focus of so much community work for the past several decades, attention is now turning to those activities where people interact with the natural environment directly.

Changing environmentally-based activities

UIHS community members are realizing that they can no longer take for granted some of the subsistence activities that "just happened" a few decades earlier. All but the youngest interviewees recalled that subsistence activities were a part of everyday life when they were younger if not for them, then for members of their immediate family. But now, with a few exceptions[7], UIHS community members felt that they engaged in cultural activities less frequently and ate fewer traditional foods than they had when they were growing up.[8] These representative interview excerpts give a sense of the changes that community members have experienced:

> Growing up we had eels all the time. We had deer meat. We didn't have beef or cow meat…. My brothers would bring home rabbits and stuff that was from the wild and deer meat all the time. We always had salmon. I don't as much now unless it's at a cultural event that I attend (community member interview #11104, 2/3/09).

> I ate more when I was young. My father would take my grandmother gathering and we would go along. It was part of what we did. I remember when my father went eeling, my grandmother would make sand bread on the beach (community member interview #11118, 1/30/09).

> It seemed like we were always eating fish or deer when I was a kid. I eat a lot of chicken and occasionally beef, turkey, but I harvest as much fish as I can. We kipper it, smoke it and put it in jars. The last few years we've had to ration that. We've had years when we didn't have to pay attention to how much we ate. I would eat more if I could get it…. I think between my wife and I, we would eat fish or deer meat over anything if we had that available to us in bigger supply (community member interview #20116, 3/17/09).

> I probably ate as much deer meat as beef when I was a kid. Back home we grew our own food. We grew a lot of our own vegetables. We had peaches,

[7] A few people had always had a gathering lifestyle, which they attributed to their family and where they lived. At least one person felt that he did more than he had as a child.

[8] Community member interview #11102, 1/28/09; community member interview #21108, 3/18/09; community member interview #10101, 1/27/09; community member interview #11104, 2/3/09; community member interview #21106, 2/3/09; community member interview #11112, 1/28/09; community member interview #11118, 1/30/09; community member interview #11126, 2/4/09; community member interview #20116, 3/17/09.

> pears, and apples. That's the difference, now I have to buy all that (community member interview #10101, 1/27/09).
>
> Dad and my grandfather were hunters and fishermen. We never really had commercial. We never went to the store and bought meat, we never went to the store to buy fresh vegetables. We bought things like staples: sugar, coffee, things we couldn't grow. And oatmeal. We always had oatmeal for breakfast (community member interview #11126, 2/4/09).

Despite a decrease in the quantity of traditional foods they ate and the frequency with which they engaged in cultural activities, many community members' commitment to these pursuits has increased since they have become adults or started their own families. For example, one young couple (Karuk, Yurok-Apache) had resumed language and basketweaving classes and expanded the kinds of plants they gathered because these were skills they wanted to be able to pass on to their children. Reflecting on how their attitudes toward these activities have changed over time, UIHS community members expressed an enhanced appreciation for the personal and cultural significance of gathering and other subsistence or cultural activities, which they might have taken for granted growing up.[9] As one community member (Paiute) noted, when she was younger,

> "every year we'd go out and get pine nuts, get tea, and get wood…. I didn't think about having to do it, it was just the season to do it, so you just have to go whether you like it or not…. [but] now if I don't do those things, like getting wood or getting pine nuts or getting tea,… I feel off, I like I'm missing something, I feel incomplete. Then once I do that I feel whole again" (community member interview #21105, 3/19/09).

These activities are less common or require more effort now because changing social and environmental circumstances have made them more difficult to do. This difficulty arises from at least two intersecting factors—changing lifestyles and environmental obstacles—which have the cumulative effect of restricting community members' access to culturally significant places, resources, and experiences.

Between two worlds: the impact of changing lifestyles

In the recent past, UIHS community members and their families collected and caught, prepared, and consumed traditional foods more often than they do now partly out of necessity. Without money to buy food, people had to procure or grow it themselves. As one Yurok woman explained,

[9] Community member interview #11102, 1/28/09, community member interview #21105, 3/19/09; community member interview #22128, 1/29/09; community member interview #10101, 1/27/09; community member interview #21108, 3/18/09; community member interview #21106, 2/3/09; community member interview #21211, 3/20/09; community member interview #20113, 1/30/09, community member interview #21117, 2/3/09; community member interview #20129, 2/4/09; community member interview #20116, 3/17/09.

> "I lived in a very different world growing up than I do now. Growing up that was just a way of life. That's the way we got our food…. Now that I'm able to buy the food I need, I lost some of that…. [By] changing how I lead my life versus when I was younger, I've kind of lost some of those cultural, everyday things we've always done" (community member interview #11104, 2/3/09).

Today, more people have the money to buy food. But in exchange new work schedules do not allow them much time to gather traditional foods and other cultural materials. As one community member (Yurok-Karuk) explained, "I really feel if I could eat more of the traditional foods I would, but when you're working every day, you're working to earn money and the money's to buy food" (community member interview #10101, 1/27/09). Another noted a larger shift, "there was a lot of gardens around this area at one time and it's kind of like Safeway and McDonalds have taken over (community member interview #10115, 3/18/09; community member interview #20116, 3/17/09).

Engaging in the cultural activities that UIHS community members mentioned is not a casual pursuit, but an undertaking that requires a serious commitment of time and energy. To procure and process materials takes time and requires a specialized skill and knowledge base in order to carry out these tasks. Typically the materials or foods that people harvest are available for only a limited period of time. Overlaying the availability of resources with work, family, and other commitments makes it even more difficult to be in the right place at the right time. As one community member (Karuk) said,

> I do a lot of gathering acorns by myself because there's a very small window from when they fall to when it rains so much you've got to get them off the ground before they start to rot. So I do a lot of that on my own. And because the days are real short during acorn time and it's harder to plan for it, you can't do it after work, you basically have to take off work and go do it when you can (community member interview #21108, 3/18/09).

These time constraints also apply to farming. Recalling the farm her family had when she was a girl, one Tolowa woman noted that "we just don't have a garden anymore unless it's a very small one because no one has time to garden like we used to (community member interview #11126, 2/4/09).

Some UIHS community members describe the challenges of balancing cultural responsibilities and traditional activities with work schedules and other family commitments as being between "two worlds." Trying to do both is difficult as these comments illustrate:

> Walking both worlds is not an easy thing. Having to work to make money to eat and pay rent on top of trying to enhance or rebuild a lot of your traditions is a lot to ask of a person (community member interview #10209, 1/27/09).

> It's hard with our everyday lives to balance out. We're striving to keep these things in our lives for our children (community member interview #22128, 1/29/09).

> I guess we've got TV to watch and we've got our kids in Little League and all of those things to where our time is pretty well spent on other aspects of our life. So we need to make the time to do that (community member interview #20116 3/17/09).

Only in very rare instances, for example, can someone who holds a typical nine-to-five job also subsist on traditional foods all year. Those who do "don't necessarily work. They've made a choice to be committed to that way of living…. You don't see many people who work for a bank who also subsist on fish" (community member interview #11102, 1/28/09). Few employers allow people the flexibility to take time off to go to a dance or to cancel a meeting to go gather. Similarly it is rare to have an employer that also values their employee's cultural knowledge. UIHS community members mentioned UIHS and other tribal organizations as the exception to this rule (community member interview #11102, 1/28/09; community member interview #10101, 1/27/09).

It is not only the amount of time that people have for these activities that has changed, but also the social setting in which they take place. For many, gathering was a bigger part of their lives growing up because they had relatives who did it regularly. Having these people in the community created more opportunities to participate in and learn these practices. Grandparents were especially influential. In the following interview excerpts, UIHS community members describe the important roles that their relatives played:

> One (Wiyot) woman said that when she was growing up traditional foods were a bigger part of her life because her brothers and dad did it. Now there's no one left in her family to do it. When she was younger, she went with her family when they went hunting. They had a camp where they stayed. While the men were hunting, the women gathered seaweed and acorns (community member interview #11123, 1/28/09).

> Growing up I gathered huckleberries; we gathered Indian tea; we gathered basket materials with my great gram. Even though we didn't weave, she was a weaver as was my grandmother, so gathering materials with them (community member interview #11102, 1/28/09).

> I was raised by my grandmother, and she was a full-blooded Indian. She made baskets. We did the traditional thing. She made baby baskets. She did bead work. We gathered acorns and pine nuts… and all the berries and stuff (community member interview #11112, 1/28/09).

> I was raised by grandparents and I was taught to go out and gather (community member interview #21117, 2/3/09).

> At my grandmother or mother's request we would go out and get certain plants. We always gathered berries, we always gathered wormwood (community member interview #11126, 2/4/09).

Although hunting and gathering were often done in big groups as recently as 25 or 30 years ago, it is now more difficult to get people together, either because there are fewer people to do the activities or because people's schedules do not allow it.[10]

As a consequence, interviewees worry that there are fewer people in the community carrying out these activities. They are even more concerned that, compared to previous generations, relatively few young people today have the opportunity to experience these activities and learn those skills, knowledge, and values. As one Yurok-Karuk woman pointed out, "our parents worked so hard at making us successful in the non-native world… they didn't realize how important it was to teach us those other things as well" (community member interview #11102, 1/28/09). Because older generations had the opportunity to learn those things as part of their daily lives, they assumed that their children would know them too. Their children, however, have come to realize that the community must make a concerted effort to teach those skills because they do not occur in day-to-day life as frequently anymore.[11]

Environmental obstacles

UIHS community members identified environmental obstacles as another challenge to participating in cultural activities. Interviews revealed that tribal members' access to—i.e., their ability to benefit from (Ribot and Peluso 2003)—natural resources in their indigenous territories was constrained in several ways: through 1) limitations imposed by private property or regulations and permitting requirements on public lands, 2) ecological changes that are the result of non-Indian management regimes, and 3) differing views of use and the human-environment relationship which affect both legal access and management.

Legal access: property rights

Because very little land is tribally owned in northwest California, public and private land ownership shape the broad contours of access. An increasing number of private property parcels along with more strictly enforced boundaries has restricted access to gathering and hunting places. As one Yurok-Karuk woman commented "now it seems like everywhere you go, there's a big line and every twenty feet a do not trespass sign" (community member interview, 1/28/09). Being able to gather or hunt on private lands depends, then, on direct negotiations for permission with private landowners.[12] On commercial properties access has

[10] Community member interview #11118, 1/30/09, community member interview #11123, 1/28/09; community member interview #21106, 2/3/09; community member interview #21117, 2/3/09; community member interview #11112, 1/28/09; community member interview #11102, 1/28/09; community member interview #11126, 2/4/09; community member interview #21108, 3/18/09.
[11] Community member interview #11112, 1/28/09; community member interview #11102, 1/28/09; community member interview #10101, 1/27/09; community member interview #22103, 2/2/09; community member interview #11104, 2/3/09; community member interview #11118, 1/30/09.
[12] Community member interview #21106, 2/3/09; community member interview #11112, 1/28/09; community member interview #11118, 1/30/09, community member interview #21119, 2/6/09; community member interview #20129, 2/4/09; community member interview #21124, 2/6/09; community member interview #11126, 2/4/09.

also become more restricted. While it was not necessarily allowed, people who worked in the woods used to have more access to logging roads, which enabled Indians to go out and gather along them, but today locked gates are more often the norm (community member interview #21211, 3/20/09; community member interview #11102, 1/28/09; community member interview #21108, 3/18/09).

Because of the loss of access to private lands, American Indians have increased their reliance on public lands, where access is controlled primarily through regulations and permits (Heffner 1984).[13] An added complication is that rules for gathering and permitting requirements vary among agencies (community member interview #21211, 3/20/09). These rules restrict who can gather what and when and are often an affront to people who believe they have a right to use and manage the land and resources of their indigenous territory even if they no longer own them. The relationships between the public agencies that control access and the American Indians who seek to maintain access to public lands and resources require ongoing work. They are also often dependent on the strength of personal relationships and are subject to change when agency employees retire or move to different positions or when a state or national level policy counteracts work that has been done on the local or regional level. As an example, American Indian advocates had worked for several years to develop a gathering policy that would apply to all agencies, instead of having different policies for each agency, but at the time of the interviews that arrangement was in jeopardy: "So everyone's writing letters again. It's this constant advocacy work that you have to do to be a traditional person" (community member interview #11102, 1/28/09).

Management & Ecological Changes

Ecological changes, which UIHS community members attribute to how watersheds have been managed, have also affected American Indians' ability to access the places and materials that are essential for living out their culture. Differences in management have meant less abundant culturally important plant and animal species, poorer quality materials, and at times resources that are not safe because of toxins that have been introduced into the environment. Over their lifetimes, UIHS community members reported witnessing declines in both aquatic and terrestrial species. Interviewees recounted the declining abundance of salmon, steelhead, crabs, smelt, eels, and sturgeon. The devastating fish kill on the Klamath in 2002 was mentioned repeatedly as a symptom of the environmental changes that have taken place in the Klamath Basin. To many the Klamath River system as a whole appears threatened by low water levels, warm water temperatures, and toxic algae.[14]

[13] Community member interview #11102, 1/28/09; community member interview #21211, 3/20/09, community member interview #21117, 2/3/09; community member interview #11118, 1/30/09, community member interview #21119, 2/6/09; community member interview #21124, 2/6/09; community member interview #11126, 2/4/09; community member interview #20116, 3/17/09; community member interview #11112, 1/28/09.

[14] Community member interview #11102, 1/28/09; community member interview #10101, 1/27/09; community member interview #22103, 1/28/09; community member interview #21106, 3/17/09; community member interview #10107, 1/30/09, community member interview #20113, 1/30/09, community member interview #21117, 2/3/09; community member interview #20116, 3/17/09; community member interview #21322, 3/20/09; community member interview #20129, 2/4/09; community member interview #11104, 2/3/09; community member interview #11118, 1/30/09, community member interview #21124, 2/6/09.

Community members have also witnessed changes in the terrestrial resources available to them, pinpointing the absence of fire as a management tool as the main reason for the decline in the quantity and quality of plants available. They noted fewer acorns, deer, tan oak mushrooms, hazelnuts, and rabbits.[15] At the landscape scale they have noticed an increase in invasive plants, from European beach grass at the coast to Himalayan blackberries inland, as well as a decrease in the size of prairies and an increase in forest density.[16] Many native bulbs have been lost because meadows have been planted for commercial forestry or they have been encroached upon by conifers (community member interview #10209, 1/27/09).

Active management, particularly burning, is seen as necessary for maintaining the quality as well as quantity of valued resources. Being unable to use fire as a management tool is a significant management challenge for American Indians in northwest California. Many materials cannot be used unless they have been burned, so the lack of burning creates a significant barrier to access. Some species used in baskets, such as bear grass, hazel, and some kinds of willow, need to be burned in order to produce the type of shoots that are desirable and necessary for basketweaving (community member interview #21322, 3/20/09; community member interview #21211, 3/20/09). Even when there are lands available for gathering, "a lot of the plants need to be tended or else they're not going to be producing the kind of shoots and materials that people need, the high quality stuff" (quote from community member interview #21211, 3/20/09; community member interview #21108, 3/18/09; community member interview #21124, 2/6/09; community member interview #21119, 2/6/09). As a California Indian Basketweaving Association (CIBA) employee explained there is not a shortage of bear grass plants, instead "proper management is what there's a shortage of" (community member interview #21211, 3/20/09). Additionally, the prohibition against using fire as a management tool has made it impossible to access some gathering sites because of the physical barrier created by brush as the density of forests has increased in the absence of fire (community member interview #21105, 3/19/09; community member interview #21108, 3/18/09, community member interview #21124, 2/6/09).

Some forest management techniques, particularly the use of herbicides and pesticides, are incompatible with Indians' cultural uses of forest resources (community member interview #21211, 3/20/09; community member interview #11112, 1/28/09). One Karuk woman recalled how her aunt and great aunt would get terrible skin reactions after gathering, so "they couldn't gather in certain places because they were heavily sprayed and it was toxic, so it was no longer available, certain areas, to even gather. We hear stories like that all up and down the river" (community member interview #21124, 2/6/09). While many public

[15] Community member interview #11102, 1/28/09; community member interview #10107, 1/30/09; community member interview #10101, 1/27/09; community member interview #11126, 2/4/09; community member interview #21124, 2/6/09; community member interview #11118, 1/30/09, community member interview #20116, 3/17/09; community member interview #21108, 3/18/09, community member interview #21211, 3/20/09.

[16] Community member interview #10114, 2/5/09; community member interview #21211, 3/20/09; community member interview #10225, 2/4/09; community member interview #20116, 3/17/09; community member interview #10127, 1/29/09.

agencies in northwest California have stopped using or drastically cut back their use of herbicides (community member interview #21211, 3/20/09), private timber companies, such as Green Diamond Timber, which owns a large portion of the Yurok Reservation, continue to spray. Others lament that managing forests as timber plantations eliminates the resilience and species diversity that American Indians value (community member interview #21117, 2/3/09). Management of local rivers has also affected the quality of some resources. High flows, which are limited on rivers where water is being diverted or hydroelectricity is being produced, are needed to get the desired quality of willow sticks and to avoid bug problems (community member interview #21108, 3/18/09; community member interview #20116, 3/17/09).

Mismanagement or the prevention of management can amplify the effects of limited access, further restricting community member's ability to engage in cultural practices. One Yurok man described how both regulations and ecological changes had impeded his ability to hunt over the course of his lifetime. First, restrictions on hunting forced him to cut back on subsistence hunting: "by the time I got to be 18 … I was able to go out and kind of reestablish that part of our lifestyle. But then law enforcement stepped up their efforts about that same time too and that kind of forced me to change my thinking on how to do that. I still like to go hunting but now I confine it to during hunting season with a hunting license." Tighter regulations have been followed by ecosystem changes that further limit his opportunity to harvest deer: "But now there's no new places being cut and everything is just really dense because of fire suppression and the deer populations have shrunk down. And that was a major food that our family subsisted on when I was a young man. And that's another traditional value that was kind of taken away from us and that's the ability to go hunt" (community member interview #20116, 3/17/09).

As the quantity and quality of resources are diminished, access becomes increasingly difficult for the typical UIHS community member (community member interview #11102, 1/28/09; community member interview #11123, 1/28/09). Several community members noted the difficulty of "being in the right place at the right time:"

> It's a commitment to take a day off from work to go gather. You're not always going to get it that day. Just because you say 'oh, I plan on gathering acorns because I have a day off Wednesday' doesn't mean that you're going to find any. So it's more of a commitment. The less we have, [the] less access for the average person (community member interview #11102, 1/28/09).
>
> I have to be there when the fish is there to get what I need and those don't always overlap. Same thing with eels. You've got to be there when they're there (community member interview #20116, 3/17/09).
>
> If it's a bad year because of weather or lack of rain, or like I said, the gathering sites haven't been cleansed and burned, then it makes for a really reduced quality of materials. Again, you have that window of time as it is and it's very limited already, so sometimes there's definitely a lack of material whether for baskets or resources or different things. It definitely affects the

> ability to live out certain aspects of our culture (community member interview #21124, 2/6/09).

The normally cyclical availability of resources, combined with management-related changes in their quantity and quality as well as people's busy schedules, makes it harder and harder for community members to get the materials they need.

Different Viewpoints

How landowners and managers view the environment and people's relationship to it also affects access and management. For instance, landowners' perspectives on use can affect access. In the experience of at least one Tolowa woman, landowners who have acquired property for its scenic value are less disposed to permit American Indian cultural uses than those who use their land for productive uses. Describing the change she has witnessed over her lifetime, she said,

> Because in Del Norte, when I grew up, there were a lot of ranches there, dairy farms and most of the time, the dairy farmers, they didn't really mind if you went across their land or went to gather something along the river. But now there are so many people in Del Norte who love Del Norte County because of the home they can build overlooking the ocean, or the home they can build on the hillside that looks over the whole land. They don't like anyone disturbing their view or their property (community member interview #11126, 2/4/09).

On public lands, Tribal members and management agencies also disagree about their rights to use and manage ancestral lands. Many UIHS community members described the challenges that regulations caused and their frustrations at being stopped by rangers and being asked for permits when they were gathering.[17] As one Yurok-Karuk woman explained they still see the land as theirs, not in terms of ownership, but "to take care of and be able to access, while to the managers it is public land" (community member interview #11102, 1/28/09). Thus, attitudes toward use have the potential to influence whether and how American Indians can gain access to culturally important resources, which they hope to use actively, on both public and private land.

In addition, how certain species and ecological processes are valued influences management decisions. Over the last century, American Indians and federal and state land managers have held different ideas about the value of different plants, animals, and ecological processes. Often what timber managers have perceived and treated as a pest is considered a resource by local Indian people. For instance, many timber companies treat tan oak as a weed because it is not a commercial species, but for American Indians in California it is a dietary staple (Lightfoot and Parrish 2009). Conversely, the Karuk consider Douglas fir

[17] Community member interview #11102, 1/28/09; community member interview #21211, 3/20/09; community member interview #21105, 3/19/09; community member interview #11118, 1/30/09, community member interview #21117, 2/3/09; community member interview #21119, 2/6/09; community member interview #11126, 2/4/09; community member interview #20116, 3/17/09.

weeds (community member interview #21117, 2/3/09). In other situations, non-Indians may not appreciate that resources have non-commercial significance to local Indians. One Tolowa woman used floral greens as an example, noting that non-Indians may not realize "how it's used in our world… to them it's just a plant that the florist wants," while for local Indians it is a food or medicine. Even under new management paradigms, like ecosystem management, community members noted that public land managers can have a hard time managing for species that they do not have a use for.

In addition to disagreements over the type of management and access allowed, interviewees also commented on the importance of underlying differences in management philosophy. Some criticized public and professional forestry's emphasis on growing Douglas fir as fast as possible; not only do Douglas fir plantations fail to produce the range of resources that many tribal members want they are also less resilient than a more diverse forest landscape. One Karuk woman explained how the Forest Service's management objectives differed from those of the Karuk: while the Forest Service wants to manage for timber, the Karuk want acorns, basket materials, forage for deer, and to maintain areas that have spiritual or cultural significance. Another Karuk man stressed the importance of thinking about the philosophy behind the management decision: "Not just what do the dams do to the salmon, but why? Why are those things being done?" (community member interview #10127, 1/29/09). For local American Indian cultures, management is informed by the cultural values of taking care of and respecting people and place. In contrast, for much of its history, Forest Service management, for instance, has been based on culturally specific ideas about profit, efficiency, and what serves the national interest. Consequently, as UIHS community members are keenly aware, the decisions that get made about the forest are not just ecological in nature, but also economic and social.[18]

Consequences of landscape change

Generally, UIHS community members describe a landscape that, on the whole, constrains their efforts to engage in cultural activities. In some instances, community members have lost the opportunity to have certain experiences all together. One (Yurok-Maidu-Pitt River) man recalled how, in the early 1970s, his father loved to go swimming while the fish were migrating upstream. With dwindling salmon runs this is an experience that is no longer available to him and others in his generation. In Karuk country, elders have lamented that there are certain fish that children do not know the taste of because they never get them anymore and "There's a lot of sadness attached to that, a big sense of loss" (community member interview #20113, 1/30/09). Opportunities to engage in other cultural practices persist, but are limited by a combination of restricted access, ecological changes, and busy schedules. UIHS community members reported a strong attachment to the natural world, but they also reported that access configurations and management regimes presented obstacles to engaging in the activities that are a manifestation of this relationship between people and place. As another sign of changing lifestyles, even gardening and preserving food, which some community members see as an extension of Native practice (community

[18] Community member interview #21117, 2/3/09 (quote), community member interview #21105, 3/19/09; community member interview #10209, 1/27/09; community member interview #11126, 2/4/09; community member interview #21322, 3/20/09; see also, Romm 2002.

member interview #20116, 3/17/09) and were once widespread among the communities that UIHS serves, have dwindled.

UIHS community members' biggest concern about the cultural landscapes of today and their effect on American Indians' practices and experiences is that many Indian children do not have sufficient opportunity to learn cultural information.[19] As fewer adults know how to prepare traditional foods and as subsistence activities become less commonplace, fewer children are being exposed to those foods or activities. Because of the difficulty of accessing gathering places, fewer children are being exposed to gathering and the environmental and cultural knowledge that goes with it (community member interview #21211, 3/20/09). UIHS community members' concern about the generational impacts of contemporary cultural landscapes demonstrates that these landscapes are not just a reflection of the past, but structure experiences and opportunities into the future as well. Because of the importance of the natural world to American Indian cultures, efforts to preserve culture often attempt to renew relationships with the environment. Yet contemporary cultural landscapes constrain the opportunities to practice culture. Therefore, cultural renewal may also necessitate promoting management regimes and access arrangements that are supportive of culturally appropriate uses and treatments of the landscape.

UIHS community members were also concerned that the effects of cultural landscape change have had a greater impact on men than women. Among American Indian communities in northwest California, there is frequently a gender division in activities and responsibilities. Some UIHS community members felt that activities that were traditionally men's purview have been more affected by landscape changes. As one Karuk woman explained,

> Traditionally in our culture it was the men who managed the forest and the resources. Not that the women didn't, but it was … a big part of who they were. I think it's been really, really difficult for us as people for them not to be able to do that anymore. We have all these men, every generation at this point, not having been able to fulfill their purpose as a Karuk person, or a tribal person from northwest California. So I think they're kind of wandering around. I think if they were able to do that, then they would feel a lot better about themselves (community member interview #21108, 3/18/09).

Another Karuk man elaborated on how limited access to natural resources, new natural resource management regimes, and economic shifts made it harder for some men to find a place. Speaking of young American Indian men in trouble, he said,

> Right now the major issue we have now is meth, in a sense that's just the outward expression of it. But really the major problem is there's nothing for our men to do. When I was growing up everyone was working in the woods

[19] Community member interview #11102, 1/28/09, community member interview #11112, 1/28/09; community member interview #11118, 1/30/09; community member interview #10129, 1/27/09; community member interview #20113, 1/30/09; community member interview #11320, 3/17/09; community member interview #21119, 2/6/09.

> and the mills. You could get a job. Before that, my grandfather, in one sense never worked a day in his whole life. He didn't cut hay or bale hay or whatever. He lived, he caught fish, he gathered acorns. He lived, he didn't work in today's sense. So it's like the men really don't have any role….We just had a total shift from loggers, mill workers, from people working in the woods to today. And we just weren't able to make that shift. It really is affecting us right now…. Our system had places for those people before. When you close off all the natural resources, you're closing off a lot of jobs. You're closing off a lot of activities, whether its acorns, or birding, or picking. The men used to help with a lot of that too (community member interview #10127, 1/29/09).

Because the natural world serves economic, cultural, and spiritual purposes for UIHS community members, it is critical for local American Indians to have a landscape that supports a mix of culturally significant species which they can use, access, and manage. As one CIBA employee noted, teachers are having trouble supplying enough basketry materials to keep pace with the growing demand for basketweaving classes. Without materials, classes could not be taught and the learning, sharing, and connecting associated with them would be put on hold. A Karuk man offered another example, stating the straightforward connection between resources and practices: "You have to have elk horn to make an elk horn purse" or simply put "You have to gather to do things" (community member interview #10127, 1/29/09). A living culture needs to be able to *do* things and often doing those things requires access to resources and places.

With the aim of supporting their communities and their cultures, many American Indian professionals focus on developing processes that make it easier for people to do the things they need and want to do. As one American Indian woman explained,

> I want a system that is simple and streamlined, so gathering is not something you have to sit down and think about government-to-government relations. We have to think about how we're going to interface with this agency now, so we won't have to have this conversation about how hard it is to gather…. It shouldn't be so problematic to gather or to hold a basket class (community member interview #21119, 2/6/09).

For community members who have found that "that's the main thing: access to places to do those things" employing a variety of strategies to create and maintain access is important.[20]

Historical Trauma and healing

Acknowledging and addressing the effects of historical trauma on their communities is an important issue for members of the Karuk, Tolowa, Wiyot, and Yurok Tribes. As one Karuk woman said,

[20] Community member interview #11102, 1/28/09; community member interview #21211, 3/20/09; community member interview #10127, 1/29/09.

> In talking about the Indian community, we have to also look at our past and not forget about that. We're going to have to keep talking about that with our children and our grandchildren about what happened to our ancestors because that's still the sickness within our community. That's still alive today. And we have to keep addressing it in order to heal (community member interview #21121, 1/30/09).

Beginning with the attempted genocide of California Indians, the Indian community has experienced trauma repeatedly. Traumatic experiences have taken many different forms. They are not confined to the policies that aimed at stamping out cultural practices, but also include changes to the local environment and Indian's ability to interact with and benefit from it. Collectively, the result of these recurring traumas has been poor health as well as social ills, such as substance abuse and incarceration (Ferriera 1996).[21]

Today much of the work done by American Indians and American Indian organizations, including UIHS, is aimed at healing. From the perspective of interviewees, connections to both culture and environment are important for healing.[22] For local American Indians, political, advocacy, educational, and scientific work all have the potential to be healing. Restoration, as a form of natural resource management, is just one way to address the interrelated environmental and cultural changes that have negatively impacted American Indian communities. Engaging in restoration is not for everyone—it makes some people feel good, but for others politics, for instance, is more gratifying—but it has a place in the suite of activities that can contribute to healing by acknowledging and addressing historical trauma. Indeed, many American Indians Tribes in Northwest California, including the Yurok, Karuk, Hupa, and Wiyot, undertake their own restoration projects (which will be described in more depth in Chapter 6).

As one strategy for healing, restoration offers the chance to incorporate cultural values into management, to practice management that favors culturally important species and habitats, to create access to healthy places, to celebrate and implement cultural knowledge, to steward the land and fulfill cultural responsibilities to maintain and restore balance, and to acknowledge both Indian history and living Indian cultures. Despite the many differences among American Indian groups, they share a strong connection between identity and homeland as well as a common experience of historical trauma. Thus, it is not surprising that among American Indian groups engaged in restoration, the sentiment "When we heal the land, we also heal people" is common (see for example, Long et al. 2003; Wolf 2004).

Conclusions

Since the 1960s, American Indians in northwest California have reinvigorated their political organizations and revitalized many of their ceremonial dances. Today, UIHS community

[21] Community member interview # 21108, 3/18/09; community member interview #22103, 2/2/09; community member interview #21210, 2/5/09; community member interview #20116, 3/17/09.
[22] Community member interview #10114, 2/5/09; community member interview #10209, 1/27/09; community member interview #21124, 2/6/09; community member interview #10107, 1/30/09; community member interview #21108, 3/18/09.

members participate in and highly value many different cultural activities. Despite community members' commitment to these practices and the importance they assign to them, almost all of the people interviewed for this project reported that hunting, gathering, and gardening are a smaller part of community life than they were in the recent past. Community members identified two primary reasons that these activities have become more difficult: changes to their lifestyles, particularly the types of jobs they hold, as well as changes to the local landscape. Busy schedules combine with a landscape that is largely owned and managed by others to restrict access to the environment. Access is affected by ownership, management that affects the quantity and quality of important resources, and the cultural frames through which different people determine which species are valuable and appropriate uses of the natural world. Reduced access has implications for the UIHS community in terms of the materials (e.g., foods, medicines, fibers) that are available for their use, the practices or behaviors they can engage in, the experiences they can have, and ultimately how they feel. While this is a community-wide concern, people were particularly concerned about the implications of these changes for two segments of the community: men and children. Community members' leading concerns are that intergenerational transmission of cultural knowledge continue to take place and that community members have the access to the places, materials, and knowledge that they will need to continue to carry out cultural traditions.

UIHS community members are rightly proud of the many things that have been accomplished by American Indian activists. They have established organizations, like UIHS, that provide high quality medical care to their communities. They have developed highly regarded resource management departments and become an important political voice in the management of the Klamath River Basin. At a more personal level, American Indian identity is something that can be celebrated rather than hidden, as it often was in the mid-twentieth century. Despite all these improvements, interviewees expressed many concerns about the wellbeing of their communities as well as individuals' health. One woman (Yurok-Karuk) commented that the disparities within local American Indian communities were getting greater. As she said, "It seems like they [social ills] are getting better, but I worry that some of our kids are doing a lot better and some are doing a lot worse. We used to be all in the middle. And now it seems like some are excelling, and there seems to be this other group with drugs and alcohol getting worse" (community member interview #10101, 1/28/09). Others spoke of young adults who got into trouble because there were few opportunities for them to constructively engage with an environment where many natural resources were inaccessible economically and culturally. They also spoke of hoping for a time when fewer places on the reservations in the area, and the region generally, were unwell or unsafe (community member interview #10127, 1/29/09; community member interview #20113, 1/30/09; community member interview #11320, 3/17/09). Although great strides have been made, community members see an ongoing need to build on their many cultural, spiritual, and community strengths and they continue to feel a sense of urgency about addressing the economic, social, and health challenges facing local Indian communities.

This history and these historically rooted problems frame what people want from restoration. Restoration that is guided by American Indian knowledge and values can help

to provide access to culturally important species and can provide a framework in which active management and use are appropriate, and necessary, ways of relating to the environment (Long et al. 2006; Rogers-Martinez 1992). As UIHS community members juggle the challenge of being in two worlds, restoration also has the potential to integrate traditional practices and contemporary lifestyles, by translating cultural values into natural resource management and for a few providing an environmental career (Casagrande and Vasquez 2010). Ultimately, by getting the community involved in creating a "healthy environment" that facilitates access to important materials, enables cultural practices, provides experiences where cultural knowledge can be applied and learned, and helps people to feel good, many American Indians expect that restoration can also indirectly contribute to improving human health (LaDuke 1994; Long et al. 2003; Wolf 2004).

CHAPTER 5. KU' WAH-DAH-WILTH RESTORATION AREA: RESTORATION FOR AND BY THE COMMUNITY

Chapters 3 and 4 document how changes in the North Coast environment have impacted local American Indians' cultural practices and argue that linked ecological and cultural restoration is one way to address past environmental injustices. Using the Ku' wah-dah-wilth Restoration Area—a 20-acre restored wetland and prairie site that is managed by the United Indian Health Services (UIHS) in Arcata, California—as an example, this chapter looks at the creation and use of an ecological restoration project with explicit cultural goals.[1] I draw on UIHS community members' knowledge and restoration-related experiences to explore the model of human-nature interactions underlying the restoration area, their uses of the restored site, and the results the restoration has had for the community.

To conceptualize restoration projects, particularly as something other than a purely technical fix to an environmental problem, environmental philosopher Eric Higgs (2003, 104) recommends considering "intent, process, and product." Although ecological restoration, like all forms of natural resource management, is an "intentional manipulation of ecosystems in accordance with our values" (13) to achieve certain socially determined goals, Higgs fears that a focus on restoration *products* alone strips restored sites of their "connection with social and natural processes" (12). By considering intent and process, it is possible to situate the practice of restoration within its social and environmental context, thereby highlighting the ways in which restoration interacts with its social and cultural setting. Looking at intention can draw attention to the ways in which ideas of restoration and restoration goals are historically and culturally situated as well as the active human role in restoration. A focus on process draws attention to participation, power, and the ways in which compromises are made between ecological goals, stakeholder desires, and the regulatory and socioeconomic setting (Higgs 1997, 339). In sum, including intent and process along with final product, means that the *why* and *how* of restoration are considered along with the *what*, questions that, when taken together, are likely to address both social and ecological issues.

Following Higgs's logic, in this chapter, I provide a brief history of UIHS and present why it created the Ku' wah-dah-wilth Restoration Area and how, considering both the political and eco-cultural processes that occurred. Then, using interviews with UIHS community members—the organization's staff, clients, and their families (Kadlecik 2002, 35), as well as organizations and individuals who have partnered with UIHS—I consider the restoration project's purpose and outcomes from the perspective of those it was intended to serve (see Chapter 1 and Appendix A for a more detailed description of methods). Most but not all UIHS community members are American Indians; many are from local tribal communities, but other Tribes in California and the nation are represented as well. Interviewees were selected to be representative of the UIHS community as a whole. They included both

[1] The community in question here, what I call the UIHS community, is a cultural community. Thus, I use community and culture somewhat interchangeably in this chapter. Communities form for a variety of reasons and not all of them will have a shared culture as their foundation.

current UIHS staff (14) and community members not employed by UIHS (17); men (12) and women (19); and people of Karuk, Tolowa, Wiyot, and Yurok ancestry. People interviewed ranged in age from their early twenties to their early nineties. Interviewees recognized that this community is heterogeneous and that they belong to many, sometimes overlapping, communities. Although the Tribes of northwest California each have their own culture and history, UIHS and the Traditional Resources Program focus on their commonalities—the values and experiences they share. The Potawot Health Village provides a setting in which people with familial and cultural ties can interact and brings together people with a shared interest in improving the health of American Indians and supporting their cultural and environmental work.

I find that the restoration area has had a wide range of results (e.g., stress relief, providing a place to exercise, and strengthening relationships between the Indian and non-Indian communities). However, the impact that these results have varies, often depending on whether they are derived from the process of restoring, passive use of the site, or active engagement with the site and its resources. Although community members felt that active uses of the restoration area had the greatest impact on wellbeing, they reported that passive uses of the Ku' wah-dah-wilth Restoration Area were most common. And indeed, many self-defined members of the UIHS community did not directly use the restoration area at all. Overall, however, UIHS community members are eager for the benefits of the restoration area to be extended to more people and for more active uses to be available, enthusiasm that demonstrates their belief in the power of interacting with the natural world to contribute to community and cultural wellbeing.

Background

United Indian Health Services, the American-Indian-run nonprofit organization that is responsible for the Potawot Health Village and Ku' wah-dah-wilth Restoration Area, was established in 1970 to address a serious problem: the lack of adequate health care for American Indians in Humboldt and Del Norte Counties (Schwandt 2001). The termination and relocation policy (HCR-108), enacted in 1953 to hasten Indian assimilation into American society by ending the federal-Indian relationship and selling off Indian land, ended health and educational services for terminated tribes and significantly limited them for those that were still recognized (Schwandt 2001; Wilkinson 2005). In 1954, legislation in the U.S. Congress and the California State Legislature abolished Indian Health Services in California with the result that the two Indian Health Services hospitals in California both closed and public health nurses stopped making visits to California Indians (Butler 1995, 5). Faced with inadequate health services and the removal of federal assistance, American Indians from northwest California banded together in a community-based effort to assure a healthier future for local Indian communities, creating UIHS with the goals of providing health care and improving health. At the time UIHS was established, community activism for health fit into a larger trend of American Indians working for Indian rights at the regional and national level (Amos Tripp, author interview, January 29, 2009; Butler 1995; Smith and Warrior 1996; Wilkinson 2005).

From small beginnings, UIHS has grown rapidly. In 1970, UIHS used its first grant money to hire a few aides who went out into Indian communities to survey people's needs and connect them to health care providers. Soon after UIHS moved into service provision and within a few years had constructed a clinic, with the help of volunteer labor and donated materials, on Trinidad Rancheria land, which served as its base for more than a quarter century (Butler 1995). Today the organization has over 200 staff members and serves more than 15,000 American Indians and their families in Humboldt and Del Norte Counties (Kadlecik 2002). UIHS is affiliated with ten federally recognized Tribes[2] and primarily serves people of Tolowa, Wiyot, and Yurok ancestry.

In addition to providing medical services to the American Indian population, UIHS is committed to promoting wellness. Just as the ideas that underlie natural resource management – e.g., what constitutes land damage and repair, in the case of restoration—are culturally situated (see for example, Hall 2005; Spence 1999), so too are ideas about health. For the American Indian Tribes of northwestern California, health includes "all things which contribute to the physical, mental, and spiritual well being of the individual, the family, and the community" (Bates et al. 2002, 1). Integrating community as well as cultural values and traditions into its activities has been an important part of what UIHS offers since its establishment ("About UIHS," accessed 2/4/11, http://www.uihs.org/content/about-uihs). Recalling the early years at the Trinidad clinic, Chief Executive Officer (CEO) Jerry Simone said,

> We were putting on functions at the clinic on a weekend, like salmon barbeques, where the community came together. We realized quickly that was as much a part of what we do. And then our waiting room was becoming a communal gathering area where people were crossing. Having kids coming to the clinic after school and wandering the hallways and feeling comfortable that the clinic was part of their community…. You start realizing that there was more to all this than the doctors and dentists (author interview, February 4, 2009).

When board members began to plan for a larger clinic, having outgrown the space in Trinidad, they saw an opportunity to create a place that would not only provide health care, but also promote wellness broadly conceived (UIHS 2002). In a 2001 interview, Simone explained UIHS's philosophy, which integrates the restoration of culture, environment, and health: "Good health goes beyond that of the individual. It must include the health of the entire community including its culture, language, art and traditions as well as the environment in which it exists" (Mullen 2001). Traditional Resources Specialist Eric Johnson, described the scope of the project this way:

> they knew that they wanted a space for community, more than just white walls and a sterile clinic environment, that they wanted a place they could call their own, and a

[2] The ten Tribes represented on the UIHS Board of Directors (UIHS website 2011) are the Bear River Band of Rohnerville Rancheria (Wiyot/Mattole), the Big Lagoon Rancheria (Yurok), the Blue Lake Rancheria (Wiyot), Elk Valley Rancheria (Tolowa), Resighini Rancheria (Yurok), Smith River Rancheria (Tolowa), Table Bluff Reservation - Wiyot Tribe (Wiyot), Tolowa Nation, the Trinidad Rancheria (Coastal Yurok), and Yurok Tribe.

> place for educational opportunities, a space for community to come together and learn, and share, and honor the land (author interview, January, 27, 2009).

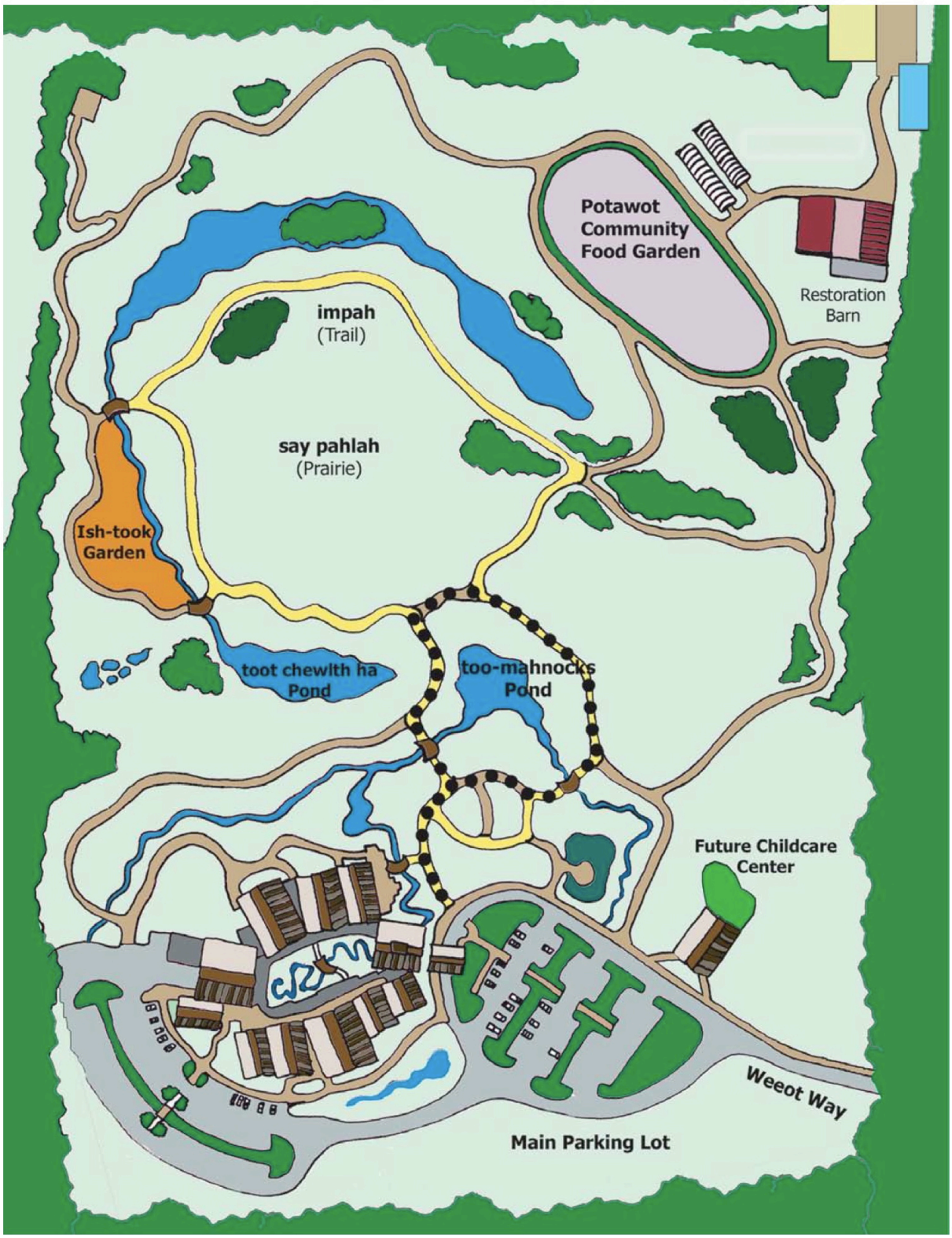
Community and environment are such an important part of UIHS's larger vision of health because for many UIHS community members the health problems that disproportionately afflict American Indians are the result of the disruption of American Indian lives and environments caused by colonization. One hundred and sixty years ago, local American Indians lived in an environment that they actively managed to meet their physical, cultural, and spiritual needs (Ferriera 1996). But, as one community member (Yurok-Karuk) explained, "then with the infiltration of colonization a lot of that was dismantled, and a lot of things were lost or a lot of things thrown out of balance" (community member interview #21124, 2/6/09). Among the results of these historical changes have been both social ills and poor health, including, said Laura Kadlecik former project manager for the restoration area, "the onset of diabetes, heart disease, teenage pregnancy, substance abuse, [and] incarceration" (author interview, 2/5/09). Restoring health at the individual and community level then is connected to making large-scale changes that influence cultures and environments, including, but not limited to restoration.

Potawot Health Village and the Ku' wah-dah-wilth Restoration Area

UIHS's concept for a new clinic was eventually realized as the Potawot Health Village, which comprises 40 acres near downtown Arcata (Figure 3.1). Half the property is devoted to the 42,000 square foot clinic, built to resemble the redwood plank houses of local Indian communities, and associated infrastructure. Reflecting UIHS's environmental and cultural values, the clinic is partly powered by solar energy, incorporates recycled wood, and prominently displays its collection of Native artwork and basketry. The remainder of the Potawot Health Village is devoted to the Ku' wah-dah-wilth Restoration Area, a 20-acre restored meadow and wetland ecosystem, which is under a conservation easement held by the City of Arcata. The conservation easement's primary goal is ecological restoration that also integrates culturally significant resources and cultural activities as well as the sustainable production of food and fiber (UIHS 1999).[3] The restored area has a basket and textile demonstration garden, snags that create bird habitat, trails for passers-by to explore, and a community garden that supplies fresh produce for the weekly farmer's market. Acknowledging the American Indian past, present, and future here, UIHS named the site Potawot, the name given to the nearby Mad River by the Wiyot Indians, whose ancestral land this is. Ku' wah-dah-wilth means "comes back to life" in the Wiyot language and it describes the effect of restoration on native plant communities and the impact that these environmental changes are intended to have on local Indian communities.

[3] Sustainable managing and harvesting of foods and fiber is part of local American Indians traditional uses of the environment. This tradition of food production is represented on the conservation easement in an organic garden and in the planting of culturally important species in the restored ecosystems where they are actively managed and used. Community members felt that both historic and contemporary gathering activities as well as the more recent history of gardening, farming, and food preservation expressed this relationship to the natural world.

Figure 5.1 Map of the Ku' wah-dah-wilth Restoration Area. This map is available on the UIHS website at http://www.uihs.org/sites/default/files/u5/walkingmap_shortb.pdf. The health clinic is at the bottom of the image and the Restoration Area is at the top.



As outlined in the Conservation Easement Management Plan (UIHS 1999, 12-13) the goals of the Ku' wah-dah-wilth Restoration Area are the:

1. Enhancement of the natural landscape to a form that most resembles the site prior to the settling of peoples of European descent
2. Development of recreational opportunities that are compatible with the conservation/restoration of the Easement.
3. Creation of educational opportunities to convey the importance and significance of the land held within the Conservation Easement.
4. Creation of a culturally rich atmosphere for healing and cultural experiences.
5. Development of food resources within the native landscape.

To educate people about the restoration area, UIHS has installed interpretive signs (Figure 3.2) along the walking trails and published a self-guided walking tour booklet, which address uses of native plants, the impact of pesticides on basket weavers, wetland function, and environmental management practices. In addition, the Traditional Resources Program, which is run by Paula Allen and Eric Johnson and is responsible for the restoration area, gives tours to elementary, high school and Humboldt State University students and hosts regular cultural and educational activities that utilize the restoration area. These include the La Chomp Chay Kids Club, the annual Health and Wellness Committee (HAWC) walk, a walk-a-thon and health fair, and annual Harvest Party (Kadelcik and Wilson 2008; UIHS website, accessed February 4, 2011). Occasional special projects include the Traditional Foods Project in which young people gathered, propagated, and researched the traditional uses of native plants.

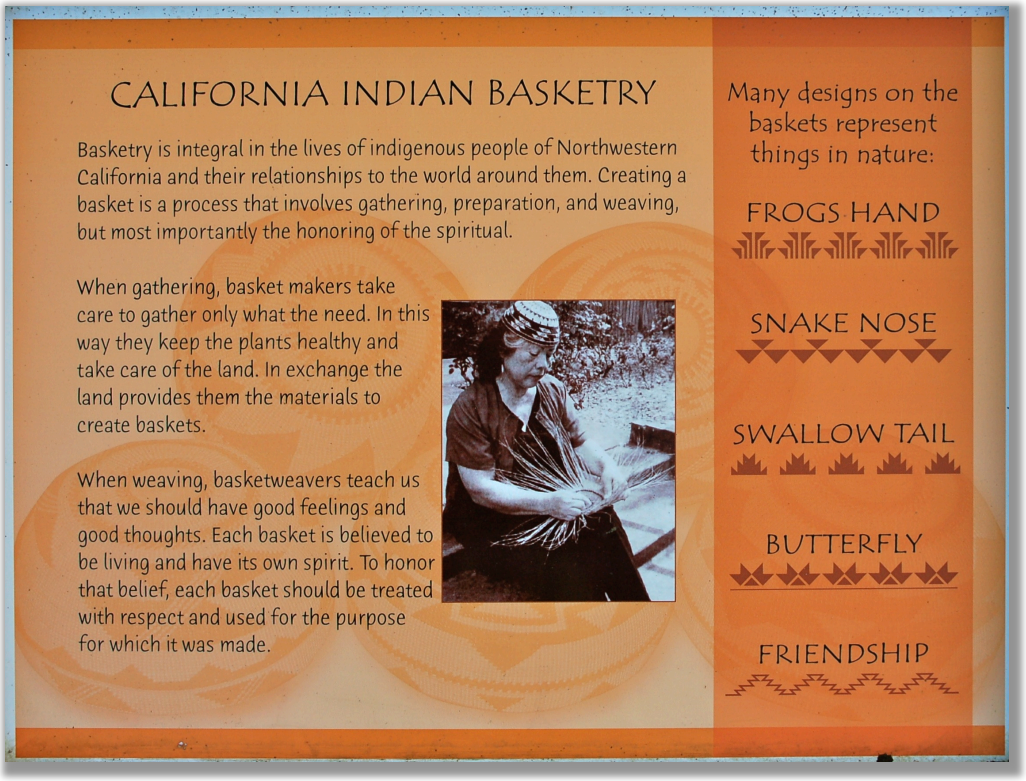
The Process of Restoring

The search for a new clinic site began in 1994. UIHS staff initially visited former industrial sites or smaller parcels in the midst of suburban developments, but these properties were incompatible with their vision of a space with natural beauty that could accommodate outdoor activities (Kadlecik 2002). Then in 1995, a 40-acre dairy farm adjacent to the Mad River Hospital and close to the intersection of Highways 101 and 299, the primary transportation corridors in this region, became available (Jerry Simone, author interview, 2/4/09). With ample open space, swale wetlands, and a desirable location, this property became a clear favorite (Kadlecik 2002).

Site land-use history

Although the property had been farmed and ranched since the 1870s, it was once part of a coastal prairie with "willow, salmonberry, alder and spruce thickets and brush" (Kadlecik 2002, quoting NOAA 1870). This area, the Arcata Bottom, is located south of the Mad River and north of Humboldt Bay. Historically, when the river overflowed its banks, it meandered southward into the prairie (Kadlecik 2002). Background research revealed that the swales on the dairy farm were most likely the remnants of former meanders of the Mad River (UIHS 1999). At the time of Euro-American settlement, a large bend in the river

Figure 5.2 Interpretative Signs in the Ku' wah-dah-wilth Restoration Area. Photographs by the author.



brought it within a half mile of the current Potawot Health Village site. As recently as 1850, that bend was home to four Wiyot villages (Loud 1918). According to Wiyot informants in the early twentieth century, this area was a "noted feeding ground for elk" and "a good place for taking eels and salmon." The four villages bore the name of the important resources found there: "fern roots" (Tachenkalchwheten), "sturgeon" (Klokno-Sesko-Ten), "they grow like wild oats" (Klokai-Kemekiok), and "smooth river to catch salmon in" (Tidil'-Tin) (Loud 1918, 262). With this environmental and cultural knowledge, UIHS board members began to talk about restoring the cow pasture to the ecosystem that had been home to Wiyot people, who actively used and managed it.

Political process: From "Out of sight, out of mind" to "In your space, in your face"

For UIHS, the first step toward restoration was purchasing the land, a move that required the City of Arcata's approval of the project land uses. A liberal college town, Arcata has strong zoning rules to protect agricultural land and limit urban sprawl. As an active dairy farm, the land that UIHS wanted to buy was zoned agriculture exclusive. For the project to proceed the property would need to be rezoned for planned development (UIHS 2002), a change that would require the City to make an amendment to the general plan and zoning map and issue a planned development permit for the parcel. UIHS proposed that half the site be zoned for planned development and that the natural value of the remaining 20 acres be protected in perpetuity through a conservation easement held by the City (Jerry Simone, author interview, 2/4/09).

To the surprise of UIHS community members, who felt the value of their project spoke for itself, their proposal kicked off a public debate over land uses within the City of Arcata. Competing visions for the 40-acre parcel forced the City government to take up the issue of land use priorities. For more than a year, it wrestled with the question of which should take precedence, supporting American Indian efforts to provide holistic health care or preserving agricultural lands and discouraging development of farmlands in the future (Schwandt 2001). Leading the opposition to the proposed Potawot Health Village was a group dedicated to saving Arcata's agricultural lands. They had initially organized to prevent a housing development in the agricultural land of the Arcata Bottom and when that project was withdrawn they turned their attention to UIHS's clinic proposal (Laura Kadlecik, author interview, 2/5/09).

The night that CEO Simone arrived at Arcata's City Hall to first present UIHS's proposal, he was startled to find the building's front lawn covered with signs reading, 'Save the Ag Land, Stop UIHS.' Even so, he expected that once their opposition heard what the project was about – not just rezoning, but doing a restoration project – they would back down. At the end of the night, Simone could tell the opposition group was taken aback by the proposed project. As he said, "If we'd been Walmart their mission would have really been justified. I would have been standing alongside of them. But what did they get? Indians trying to buy their land back to do a restoration project on it in order to build a health clinic" (Jerry Simone, author interview, 2/4/09). Nevertheless the agricultural activists were not deterred. The meeting ended with a young man jamming his finger into Simone's chest

saying, "We're going to stop you." For UIHS, however, the effort to persuade others of the value of their project was just beginning.

As both UIHS and their opponents became aware, a proposal to alter existing land uses can provide an opportunity to challenge the "cultural norms, values, and fears" (Schein 2003, 217) embedded in a landscape. For "The human landscape," as Peirce Lewis has written, "is our unwitting autobiography, reflecting our tastes, our values, our aspirations, and even our fears, in tangible, visible form" (quoted in Schein 2003, 202). Fights over landscape form can become especially contentious because landscapes do not just embody past human activities and cultural ideals, they also project a vision of how the future should be. Because landscapes are both acted upon and actively structure social and cultural processes, they play an important role in the "ongoing production and reproduction of place and identity" (203). Thus the shape of the landscape has material and symbolic importance, explaining in part how people can become so invested in debates about how to structure the landscape. For participants, then, these struggles are often about not just the land itself, but about cultural identity as well as cultural meanings that "dictate, permit, or prohibit alternative uses, treatments, or concepts of landscape" (Hardesty 2000, 177). Decisions to alter the landscape can, but do not necessarily, open the door for environmental as well as social change. By calling attention to the way a landscape that typically appears natural has been constructed, people can choose to challenge or perpetuate the norms, values, and fears it represents.

The decision before the planning commission represented a significant change to the local cultural landscape. At the time that the Potawot Health Village was proposed, there were no other visible signs of the Indian community in the North Coast's urbanized areas. Paula Allen (Karuk-Yurok), Traditional Resource Specialist, explained,

> Humboldt and Del Norte… has seven percent American Indian [population], which is huge…. Most places across the nation, it's less than one percent. Even with that, other than casinos, there was no Indian presence in any of the major cities or even anywhere. There might be a tribal library hidden somewhere, but there was nothing that said 'this is the Indian space.' This was really the first project. It definitely had an impact (author interview, 1/28/09).

The lack of visible Indian spaces in these areas was not a historical accident. Beginning in the mid-nineteenth century Indian people had been systematically removed from coastal areas and, throughout the region, Indians' claims to land and resources as well as their management paradigms were dismissed (see for example, Huntsinger and McCaffery 1995).

Among the notable absences was a lack of place names carried over from Indian names or places named for local American Indian Tribes (Stern 2005). UIHS CEO, Jerry Simone, recalled his surprise upon arriving in Humboldt County and seeing no Indian place names. In *Flutes of Fire* (1994), Leanne Hinton describes California places with Indian-language-derived names. Although her essay is not exhaustive, she mentions none in Humboldt and Del Norte Counties. In contrast, natural places in those counties, particularly within

Redwood National and State Parks, are frequently named after American eugenicists, many of whom believed in a connection between preserving nature and preserving racial purity (Stern 2005). Through their environmental work, eugenicists "inscribed their names and priorities" (ibid, 148) on California's landscape and legitimized certain versions of the state's history.

Without a visible presence, it was easy for local American Indians to be "out of sight, out of mind." One consequence of this erasure was local non-Indians' lack of knowledge about the American Indian communities in the region (Kadlecik 2002, 33). Fears and stereotypes came out during the rezoning debate. One UIHS community member recalled, "people thought they were going to build a casino here because they're Indians, you know, they must be going to build a casino" (community member interview #21322, 3/20/09). Similarly, former Project Manager, Laura Kadlecik, described the outreach she and others did to try to explain the project and dispel negative stereotypes of Indians: "there were still skeptics out there who were all, 'the Indians are going to come here and park all their dead cars and they're going to be drumming into the night. What's going to happen out there?' So we were dispelling myths. We thought that was a benefit" (author interview, 2/5/09).

Opponents of the project argued rezoning farmland for development would undermine strong zoning rules to preserve agricultural lands in Arcata, setting a poor precedent for future development (Goforth 1996). While some UIHS supporters centered their arguments on the multiple benefits that would arise from having the health clinic integrated with a restoration area, e.g., stormwater reduction, increased wetland acreage, and educational opportunities (Waller 1997), others challenged the framework that agricultural activists used for interpreting the local landscape.

Interpreting cultural landscapes requires attention not only to what is celebrated but also what is ignored. In a pointed letter to the editor, CEO Simone noted how local American Indian history had been written out of the other side's framing of the issue. He situated their objections in a longstanding pattern of devaluing American Indian claims to land and resources. Therefore, in response to opponents' claims that the agricultural land in question "was too *valuable* and *important*" (Simone 1997, emphasis in the original) for UIHS to use, Simone reminded readers that land had been too valuable after the discovery of gold for Indians, and later home to too much valuable timber to be set aside for Indians.[4] He also asserted that the agricultural landscape at issue was created, in part, through the dispossession of American Indians and the removal of their uses and management of local resources. Finally, he challenged the import of the City's impending decision, writing some people are worried about "some sort of precedent being established if UIHS is allowed to *purchase* this land. Too late. A precedent was set beginning in the 1800's and unfortunately some people would like to see, knowingly or unknowingly, these policies continue" (Simone, 1997). Ultimately, UIHS supporters sought to inform others about the way in which historical race relationships had been inscribed on the landscape and had come to appear normal over time. The alternative vision put forth by UIHS acknowledged the

[4] For an analysis of contemporary arguments used to justify excluding Indians from land see Huntsinger and Diekmann, 2010.

injustices of the past and imagined a future that honored the north coast's living American Indian cultures and their relationship with the natural world.

This and other letters to the editor were just a small part of UIHS response to the opposition their project faced; they orchestrated a political and public relations campaign to educate Arcata citizens and the City government about the vision for the Potawot Health Village and to convince them of its merit (UIHS 2002). An integral part of this strategy was to have UIHS supporters turn out in large numbers at every subsequent Planning Commission meeting and City Council meetings when the project was considered (Ward 1997). At the next Planning Commission meeting, for the first time that anyone could remember, Indian people packed Arcata City Hall (Jerry Simone, author interview, 2/4/09). As Traditional Resource Specialist Paula Allen (Karuk-Yurok) said, "When the day came we filled Arcata City Hall with Indians. I don't know if that had ever happened before. We had to tell them that sometimes there is an exception to the zoning rules. This is an indigenous community coming back to reclaim the land. It wasn't like there hadn't be a price paid for that ag land" (Paula Allen, quoted in Schwandt 2001). Another participant observed that with so many UIHS community members and their supporters present, City officials had "to face the reality that Indian people are part of their community" (Jerry Simone, author interview, 2/4/09).

After thirteen months of mobilizing their supporters, both Indian and non-Indian, of filling City Hall for each Planning Commission meeting, and of educating the larger community about their organization and vision, UIHS finally convinced City officials to support their project. Both the Arcata City Council and the Planning Commission unanimously approved the Potawot Health Village and associated rezoning. UIHS's successful campaign is a tribute to the capacity of the UIHS community and it built on the decades of work by members of local Indian communities to revitalize their cultural practices. [5] According to cultural landscape scholar Richard Schein (2003, 217), the character of places are linked to the social processes that give them form. By asserting their place in the community and its political processes, UIHS also paved the way to change the form of the landscape itself. To use Schein's language, UIHS successfully challenged the status quo, "both in the *form* of the [site] and in the *processes* that gave it form" (217).

Changes on the ground: eco-cultural restoration

[5] One community member (Yurok-Pit River-Maidu) explained the importance of the earlier work done by local American Indians to revitalize their culture as the foundation on which more recent activism rests:

> I know in other communities that racism and that fear is deeply entrenched, whereas here they've been fortunate that you've had a couple of generations now of Indian culture bearers, linguists, academics, traditional singers and dancers who have continually shared about their perspective, and shared their perspective in many different venues. So that fear and racism that was exhibited by a few was overwhelmed by the acceptance and encouragement of many more non-native people for this building to be here (community member interview 20113, 1/30/09).

By the end of the planning process, thanks in part to UIHS's commitment to education, "a large percentage of the local community came to know, trust, and appreciate UIHS and their proposed project" (Kadlecik 2002, 33), a significant achievement as prior to this campaign many local non-Indians did not know about the Tribes in the region. During this process, many UIHS board and staff members gave presentations on local American Indians and the Potawot Health Village project. CEO Jerry Simone and Potawot Project Manager Laura Kadlecik alone gave more than 60 (Kadlecik 2002).

After political approval had been secured for the restoration project, the second phase of the process, planning and implementing changes on the ground, could begin. With the zoning changes in place, UIHS purchased the site in November 1997 and the environmental consultants who had been hired to help with the restoration began work on a conservation easement management plan. While Laura Kadlecik, the lead consultant for the restoration project, oversaw the technical aspects of designing the restoration, UIHS community members were actively involved in planning (Kadlecik 2002). As Kadlecik (author interview, 2/5/09) explained, "I couldn't produce a management plan for a piece of property that was not mine, that belonged to a group of Indian tribes without input from those tribes."

To gather cultural input into the design of the site, UIHS created the Conservation Easement Management Advisory Committee (CEMAC), which brought together a group of women elders with cultural expertise (Laura Kadlecik, author interview, 2/5/09). They included basketweavers, herbalists, dressmakers, and gardeners (Community Food Security Coalition 2002). For about a year, CEMAC met to create a management plan for the restoration area that highlighted the priorities of the Indian elders that made up the committee. To determine which culturally significant plants should be used to restore the site, members of CEMAC discussed what types of plants they used and what plants they would like to see included in the restoration area. As they worked to decide what species should be planted, CEMAC members took field trips to the different reservations, the coast, and the Klamath River. With the help of a botanist they drew up a list of species for the restoration area. As Kadelick recalled "in the open spaces we looked at the landscape, what would work, the types of soils and tried to work in the species that these various elders were wishing for." Over time, they "winnowed the wish list into what would grow here, what made sense, trying to provide basketry materials, and other kinds of textile materials, edibles, herbals, and things you can eat" (Laura Kadlecik, author interview, 2/5/09). Some of the species they selected because of their cultural significance would not have grown in this ecosystem type historically, but are native to the region (Kadlecik 2002). The easement document developed through this planning process was approved by the City of Arcata in 1998.

According to both Kadlecik and Eric Johnson, the Traditional Resource Specialist who manages the restoration area now, it is the species used in the Ku' wah-dah-wilth Restoration Area (Table 5.1), not the decisions about the site's hydrology or topography, that differentiate it from what one might expect to find if a non-Indian group restored the same site. As Johnson explained:

> If someone were to come to me and they wanted to restore this pasture and it had no tie to the American Indian community, they just wanted to bring back the historical plant communities, then that's what I would do. I'd plant a lot of spruce, willow, berry thickets, native grasses, and kind of let it heal in its historical context. But here, we've done more than that. We've planted a lot of culturally significant plants that aren't necessarily from specifically this area (author interview, 1/27/09).

Kadlecik elaborated on the differences between the species CEMAC selected and the species that might otherwise have been chosen for a restoration project at the site:

> We probably wouldn't put a lot of hazel out there from a biological standpoint because it really isn't something that would grow here, but we pushed the envelope a lot to support species that were important. So in that way it was different. From a pure restorationist's perspective, I would have put in a lot more salal. Probably we wouldn't have put maple out there because it's kind of an open plain…. We would have put more sitka spruce, thimbleberry, salmonberry, that kind of species unit is what was originally here…. The vine tea, we tried to get a lot of, and Labrador tea, and yerba santa. Yerba santa would have done well anyway, but the other two, probably not. The same with elderberry, a good medicinal, we wouldn't have planted here, but it's doing well (author interview, 2/5/09).

Despite the differences between the Ku' wah-dah-wilth Restoration Area and how this area might have been restored for a non-Indian landowner, both restored areas would incorporate the culture of the manager or owner and both could rightly be considered ecological restoration.

Table 5.1 Partial list of culturally significant species planted at the Ku' wah-dah-wilth Restoration Area and their uses. Adapted from Kadlecik (2002), 25.

Cultural use and species name	Common name
Basket Materials	
Salix spp.	Willow
Alnus spp.	Alder
Woodwardia fimbriata	Giant chain fern
Corylus cornuta	Hazel
Xerophyllum tenax	Bear grass
Medicinal uses	
Equisetum hyemale	Horsetail
Petasites frigidus Var. *palmatus*	Colt's foot
Artemesia douglasii	wormwood
Food	
Typha latifolia	Cattail
Rubus spectabilis	Salmonberry
Rubus parviflorus	Thimbleberry
Gaultheria shallon	Salal
Vaccinium ovatum	huckleberry
Ceremonial uses	
Acer macrophyllum	Big leaf maple
Physocarpus capitatus	Ninebark
Umbellularia californica	California bay

That some of the species at the Ku' wah-dah-wilth Restoration Area were selected for cultural rather than ecological reasons does not make it less of a restoration. As ecological theory has embraced nonequilibrim dynamics, scientists are acknowledging that returning to a particular historical condition is not possible and that reference sites have limited applications (see for example, Palmer 2009). In place of returning to a fixed historical state, some ecologists have suggested a focus on restoring function as well as a range of acceptable outcomes (Palmer 2009) and trajectories of recovery (Suding, Gross, and Houseman 2004). If those in the environmental field are serious about including people as part of an ecosystem, then restoring processes through which humans engage with their home environment seems a legitimate objective for restoration. Finally, it is acceptable, and prudent, for restorationists to consider the larger landscape in which a particular restoration is situated because the landscape context affects factors such as dispersal, recruitment, and the types of disturbances experienced (Palmer 2009). Why shouldn't restorationists consider changes to the cultural landscape as well? Since American settlement, some culturally important species and places have become impaired and local American Indians' access to some culturally significant species and places has been curtailed (see Chapter 4). Taking these changes into account, it is not unreasonable to include culturally significant species from the region when one of the goals is to integrate education and cultural activities into the site restoration.

With a culturally informed management plan in place, work on the restoration site began in June 1998. "Because the vision of having walking trails and areas for collecting native plants and spiritual relaxation and an organic garden … was so exciting," (Kadlecik, author interview, 2/5/09) restoring the land in the conservation easement began before construction of the clinic. With a grant from the USDA's Natural Resource Conservation Service, UIHS began restoring wetlands in the spring of 1999 (Kadlecik 2002). The deepest portions of the property were excavated, undoing 150 years of agricultural leveling, and the excavated soil was used to enhance the site's topography. In addition, stormwater that runs off the parking lot and roofs of the clinic is integrated into the restoration area. Vegetated swales channel runoff into a treatment wetland, which releases water to the wetlands in the restored area. This integrated system provides water to the restored wetlands and reduces the potential for flooding (Kadlecik 2002, 23).

After completing the hydrological and topographical changes to the site, the restoration team turned their attention to species composition. When the property was used as pasture, the dominant plants were non-native grasses and forbs, including perennial ryegrass, velvet grass, and bent grass, as well as the invasive forbs white clover, bindweed, English plantain, and buttercup. To displace exotics and reestablish California coastal prairie species, UIHS crews experimented with soil preparation techniques – in this case disking and burning – and different native seed mixes (Johnson 2002). As part of the restoration, the wetlands were planted with sedge, mannagrass, spikerush, small-fruited bulrush, and willow and upland mounds were planted with big-leaf maple, red and white alder, sitka spruce, salmonberry, western red cedar, and evergreen huckleberry (Kadlecik 2002, 16-17). UIHS has adopted an adaptive management approach to restoring the site and uses seven transects to monitor species richness and diversity through annual surveys.

Community members and volunteers performed much of the work of restoring the site. Contractors were hired to excavate dirt for the wetland restoration, but otherwise the restoration was done by volunteers, Americorp members, and paid Indian work crews (Kadlecik 2002, 34). Kadlecik estimates that volunteers planted at least a quarter of the species in the restoration area. Since the initial planting, volunteers have continued to help weed and maintain the restoration area. In addition to the contributions of individuals, partnerships with agencies and environmental organizations were key to the implementation of the restoration project. Many of the plants used in the Restoration Area were gathered on the Six Rivers National Forest under a Memorandum of Agreement (Laura Kadlecik, author interview, 2/5/09).

The Potawot Health Village opened in 2001, when work on the restoration area and the clinic was completed.

Community members' perceptions of the Ku' wah-dah-wilth Restoration Area

In 2009, nearly a decade after the restoration was completed, UIHS community members discussed the significance of ecological restoration, their uses of the Ku' wah-dah-wilth Restoration Area, the impacts they had experienced or observed, and their recommendations for improving the restoration area.

Understanding of restoration

Everyone interviewed was familiar with restoration in general and the Ku' wah-dah-wilth Restoration Area in particular. This familiarity with the Ku' wah-dah-wilth Restoration Area is in part a bias of the sampling strategy; the interviews revealed that others in the UIHS and larger community are not familiar with the restoration area. Several themes emerged in response to the question what does restoration mean to you? The two most frequently mentioned concepts were 1) that the essence of restoration is restoring function and 2) that part of what is being restored is people's relationship to the environment (Table 5.2). The belief that people are an important element of restoration was mentioned as frequently as the ecological aspects of restoration. It appears that community members understand restoration to be as much about ecological as cultural processes. In general, UIHS community members felt that restoration, particularly at the Potawot Health Village, entails more than returning particular species or functions to a place, it also includes stewardship and restoring traditional activities, cultural knowledge, or management philosophies and tools. Respondents envisioned an ongoing role for people as the stewards and managers of a restored area and valued that community members could use the Ku' wah-dah-wilth Restoration Area for cultural purposes.

Community-Environment Connections

While few people not directly involved in the creation or maintenance of the restoration area could describe the goals for the Ku' wah-dah-wilth Restoration Area, interviewees had a shared sense of the core issues the restoration area is intended to address and a shared

Table 5.2. Responses to "What does restoration mean to you?" * indicates relative frequency with which this theme occurred, with *** being most frequent and * being least frequent.

Themes	Content
Restoration involves restoring human-environment relationships *	**Concepts mentioned by respondents:** Need people who will care for a restored site; managing a site for use; things that grow can be used in healthy and traditional ways; creating a clean environment that people can use and feel good in; bringing back traditions, traditional thought processes, or forms of management; thinking about a continuum of management—how a site has been managed in the past and how it will be managed in the future. **Representative responses:** "Just what we have: brings back to life. And that's why I do the salves. It's because we get the plants from the land and we're using traditional plants in modern way." (Interview #11112, 1/28/09). "When we first purchased this property…, I went over to the BLM office and went back and read the original surveys… to see what kind of plants grew here because the villages were located close to this area. So I wanted to see what was growing here and what people would utilize. So when I saw them putting in some of the plants that I read about I thought it was really neat because it kind of brought back a little of our knowledge that we might have lost had we not done it." (Interview #11126, 2/4/09).
Restoration is about restoring function *	**Concepts mentioned by respondents:** water flow; clean water; providing wildlife habitat; clean air. **Representative responses:** "It means restoring ecosystem functions. A lot of times I know people think restoration means restoring it to a past condition, but I don't think that's really the best way to think of things anymore. There's some non-native plants that are never going to be gotten rid of and the effort to try to eradicate them is absurd to me. Trying to figure out a way that restores ecosystem functions with what we have now is how I think of restoration." (Interview #21211, 3/20/09) "[R]estoring the land… is getting it back to its more natural state of being, getting back to the root, what the existence of it is…, just getting back to what makes something thrive, survive, live, be healthy and functional (Interview #21124, 2/6/09).
**Restoration is putting things back they way they were **	**Concepts mentioned by respondents:** returning to what was there before, but doesn't specify whether that means structure, function, or both. **Representative response:** "To me that's the main thing when I think of restoration, bringing the land back to life, trying to make the land as close to as it once was." (Interview #10114, 2/5/09).

Restoration means different things in different contexts **	**Concepts mentioned by respondents:** Can range from cleaning up contaminated urban sites to restoring prairies; ideas of what good ecological restoration is have changed over time; can be applied to the physical environment, but also includes culture and health. **Representative responses:** "I know that every year they come up to Weitchpec and they give you a six-pack of tomatoes or some other vegetables. That's kind of a restoration too. It was a lifestyle that my parents and grandparents enjoyed of living off the land in terms of planting a garden and harvesting and preserving…. It can mean a whole bunch of different things. What it means here I'm not certain. I just know that looking at the maps of this place they've got a lot of nice stuff that could fit into basketweaving or teas or just being able to walk around out there and exercise is restoring somebody's health…." (Interview #20116, 3/17/09). "The broad term itself, I'll apply it to the physical, the environment itself. Restoration is we need to try and bring back certain methodologies that were very successful based on tens of thousands of years of evidence in the sharing and maintaining of resources: the water system, the land, the air. But restoration in terms of the cultural and social context, I see it as—and others may disagree—we're not ever going to be able to go all the way back to how it was in pre-contact times. Every generation has valid ideas to add to the set of rules that the cultures can live by. So to me restoration means respectfully allowing each generation to continue to add to that collective knowledge that benefits people and the place that we live in." (Interview #20113, 1/30/09).
Restoration is about restoring complexity *	**Concepts mentioned by respondents:** increasing species diversity; increasing structural heterogeneity; incorporating disturbances; bringing back native species and removing invasives. **Representative responses:** "Restoration, for me and if I'm looking at the area up in Orleans, is getting back our tanoak groves, is taking back from these plantations… restoring those to a more species diverse area…. A Doug Fir plantation is devoid of life. It really is because it's overstocked, there's nothing getting to the ground, there's no opening for forbs, the animals can't get through. It's just this thing that's there, so restoration to me would be going into those areas and manipulating the vegetation so it hosts more species, both animal and plant species." (Interview #21117, 2/4/09) "[W]hen you had just blackberries here, you had very few predators, you had a food source you could collect for a short time during one period of the year, where if you let all the natural plant life grow, there's stuff you can collect all year long, so it's healthy for you, it's healthy for the animals and you can see that because we have a nice group of predators living in the area now because they have prey here which has more of a source of food to eat. So it's going from simple, which is often the non-natural aspect, and going to the more natural, more complicated, interwoven." (Interview #11320, 3/17/09).

vision of community health that involved the environment and of a healthy environment that involved the community.

Interviewees were adamant that providing for good health is not simply a matter of setting broken bones, controlling blood pressure, or prescribing antibiotics. When asked to describe community health, healthy individuals and access to good health care services, while important, were just one part of a much bigger picture. For UIHS community members a healthy community is one where people have good relationships with one another and are willing to work together to help each other. Other important elements of a healthy community include being involved with one's culture and embracing cultural values, such as respect and balance.

The importance of environmental context for community health was another recurring theme. Members of a healthy community not only live in a healthy environment, but also interact with that environment. Creating or maintaining a healthy community requires an environment that is safe, provides jobs, clean food, air, and water, and allows people to practice their traditions. For UIHS community members, a healthy environment meant both "the woods and the watersheds" (Eric Johnson, author interview, 1/27/09) as well as the environment at home—whether it is safe, comfortable, and a good place to live and play.

Important for the restoration project, interviewees asserted that improvements to community health could be achieved through access to the environment. At an institutional level, interviewees suggested that allowing Tribes to manage their own resources; establishing working relationships with agencies so that Indian communities could be more involved in management decisions; and having the ability to access and use plants would be healing. On a personal level, many people indicated that they found spending time in nature to be therapeutic. One community member (Paiute) described how gathering was both a source of exercise and a spiritual connection to the natural world (interview #21105, 3/19/09).

Environment is such an important component of community wellbeing for UIHS community members because of the importance of place to the American Indians of northwest California and because of the widely expressed belief that people are not separate from nature. Many of the American Indians interviewed stated that their relationship with place is at the core of their cultural identity. As one woman (Yurok-Karuk) explained, their connection to place is "the source of who we are as a people" (community member interview #21124, 2/6/09). Additionally, acknowledging that people are not outside or above the natural world brings with it a particular way of relating to the environment. In this worldview, the natural world is meant to be used, although this privilege comes with a responsibility not to overexploit or waste resources.[6] As participants in the natural world, UIHS community members believe their role is to be managers and care takers. Turning

[6] As UIHS attorney and Karuk Tribal member, Amos Tripp, explained in reference to birds used to make regalia, "they're gifts to us so that we can use them for those purposes as long as we use them respectfully." He also noted that this stance has often put American Indians at odds with the mainstream environmental movement: "that's the problem we sometimes have with the environmental side… [W]e don't think we're misusing or degrading or any of that. We think it's a good thing" (author interview, 1/29/09).

conventional American environmental thought on its head – namely the idea that the only way to protect the environment is to exclude people from it (see for example, Cronon 1996, the discussion of George Perkins Marsh in Hall 2005) – UIHS community members believe that it is not possible to have a healthy environment without people participating in it (community member interview #21108, 3/18/09; community member interview # 21117, 2/3/09).

In the literature on ecological restoration, it is common to see the idea the people can both help and hurt the natural world (see, for example, Hall 2005). UIHS community members share the concept that people influence the natural world, often in profound ways, and that their impact can be either beneficial or destructive. Yet the vision of human-nature relationships common among UIHS community members adds another layer to this picture. Not only can people affect their environment positively or negatively, but the condition of the environment and people's relationship to it influences community wellbeing.

Users and uses of restoration area

Those with the most access to the Restoration Area were also the ones who used it most often. Potawot Health Village employees appear to be the most frequent users of the trails. Some employees try to walk everyday, while one woman (Wiyot) goes out once during each of her three breaks. People living in the surrounding neighborhood also regularly use the restoration area. One employee (Karuk) reported that there are a couple dozen neighbors who regularly walk the trails, some of whom he sees almost every day. Other Arcata residents enjoy the trails as well. Clients and staff living in nearby towns – Trinidad, McKinleyville, and Eureka – observed that they did not use the Restoration Area as much as they would if they lived closer, but they still enjoyed coming by themselves or with their families to walk the trails.

Less frequent visitors include clients who use the Restoration Area when they come for appointments and school and tour groups who come to Ku' wah-dah-wilth occasionally for educational purposes. The UIHS Board Members I interviewed reported being too busy to use the trails often, although they were very happy to have the Restoration Area. UIHS clients that live further from Arcata reported that they rarely or never use the restoration area because distance makes it inaccessible to them.

There was consensus among interviewees that walking the trails and enjoying the garden were the two most common uses of the restoration area. Interviewees agreed that use of both the trails and the onsite farmer's market—the primary outlet for the garden's produce—had increased since the Potawot Health Village opened. As people have become more familiar with the garden and the farmer's market their use has increased, and in the restoration area hardening the trail surface did much to encourage walking. In addition, many people had attended events held at the Ku' wah-dah-wilth Restoration Area.

Restoration Outcomes

The changes UIHS has made to the restoration site have had impacts, both concrete and symbolic, on the UIHS community as well as the community at large (Table 5.3). Although the main uses of the Restoration Area are currently walking, using the garden, and having gatherings, these activities function in a variety of ways. Reflecting on how the Restoration Area had affected their community, UIHS community members described it as a place that contributed to health and a place for the community to learn, interact, and be inspired.

According to interviewees the Restoration Area's primary result has been creating a space that promotes health by encouraging exercise and eating well and by helping people to manage stress and feel good about themselves. Referring specifically to the garden, which was thought to be the most successful part of the Restoration Area, interviewees felt that the biweekly produce stand had encouraged people to eat more and a wider variety of vegetables.[7] Although Traditional Resources Program staff and other UIHS employees would like to see the Restoration Area better integrated with clinic services, a few interviewees reported that the Restoration Area was a helpful addition to the clinic because it provides a different way to interact with and engage clients (community member interview #10115, 3/18/09; community member interview #11320, 3/19/09; community member interview #11104, 2/3/09).

Community members frequently commented that the Restoration Area was both beautiful and safe, making it an inviting place to spend time outdoors. For some, Ku' wah-dah-wilth provides access to culturally important resources and experiences in a safe environment, which is lacking in other locations because of environmental degradation such as poor water quality and pesticide spraying (community member interview #11112, 1/28/09). For others it is a space that feels safe because of the attention that has been paid to culture and community (community member interview #21117, 2/3/09; community member interview #20113, 1/30/09). One community member (Karuk) described it as follows:

> The people make me feel safe. I'm in my community. I'm with my people. There's so much wood and plants and water…. It's got this beautiful feeling here that I don't feel anywhere else…. And it's really important to the Indian people here to have this…. This is the only place on the coast that the Indian people can come and really have that and the freedom to be who they are and really revel in the fact that we are Indian, we are so special (community member interview #21117, 2/3/09).

The emotional or psychological aspects of the Ku' wah-dah-wilth Restoration Area were especially significant for interviewees. Many people commented on the peaceful aspects of the site. One UIHS employee (Wiyot), for example, likes the quietness of the Restoration Area and uses her walks there as a time to hear nature. Spending time in the Ku' wah-dah-wilth Restoration Area is comforting, calming, and makes her feel good (community member interview #11123, 1/28/09). Feeling good often came up in conversation about the

[7] Community member interview #11112, 1/28/09; community member interview #10114, 2/5/09; Paula Allen, author interview, 1/28/09; Laura Kadlecik, author interview, 2/5/09; community member interview #11126, 2/4/09; community member interview # 21105, 3/19/09; community member interview #10115, 3/19/09; Eric Johnson, author interview, 1/27/09.

Table 5.3 Examples of the Ku' wah-dah-wilth Restoration Area's Outcomes for the UIHS and Broader Arcata communities.

Outcome	UIHS community	Arcata community
Exercise	"Mostly exercise. People walking the trails to stay fit." (Interview #10114, 2/5/09) "I think it's mostly been used as a walking trail." (Interview #11104, 2/3/09)	"They like walking out there too. There are lots of people in there in the evening. Joggers, walkers. They say they really like it, what a beautiful place it is. They are glad it's there since before they had to walk the streets." (Interview #11123, 1/28/09)
Eat more vegetables	"A few years back we tried kholrabi and nobody knew what a kholrabi was so… we gave samples out of kholrabi…. People just loved it. Next season we didn't have as much and we were just swamped with requests, "Where's this kohlrabi, we need this kohlrabi." (Interview #10115, 3/18/09)	
Education	"If they see them here and then they're out in the mountains, they're out gathering, they'll recognize that plant was used to weave baskets or that other plant was used to make string. It's good for education, for the community to see." (Interview #10114, 2/5/09)	"You can see people out there reading the signs… so they learn about restoration and why it's important, they learn about the local Native American culture and why it's important and how they used what was around them, so it has all these different ways to teach people." (Interview #11320, 3/17/09) "But I do know that we raised the level of awareness in the community about these kind of issues and we made people more politically aware of the importance of land being returned, or in our case purchased by, and re-indigenized." (Interview with Paula Allen, 1/28/09)
Feel calm and/or good	"People can go out there and feel good. It just makes you feel good to walk through it. It feels good to walk out there. I walk out there all the time." (Interview #11123, 1/28/09) "It's definitely had an impact. When you take a break, it's definitely a break. You're able to clear your head." (Interview #10107, 1/30/09)	
Inspiration	"I think some of the projects we've done with youth at risk, that involve working out there, and really being involved in	"We get a lot of people who tour this place and then they call us back and are like, "Hey, this is amazing

	longer projects has inspired them to move in the direction of working in that field. I know I've had people work for the Forest Service after working with me or for the environmental programs of the Tribes and stuff." (Interview with Eric Johnson, 1/27/09)	stuff. We want our community to do this. Can we bring people from our community to see what you're doing?" (Interview with Eric Johnson, 1/27/09)
Pride/ Positive symbol	"I'm very proud to work here. It's always cool to tell people what I do as my work. Fulfilling." (Interview #10114, 2/5/09) We're really fortunate to have something like this; I'm proud to have a place like this. It's really special. Having this place which is really nice, it makes you take pride in yourself and in your people. It benefits all of the tribes. (Interview #20129, 2/4/09) If you're not going to school, it's important to have work like this. It gives you confidence - to come out here and see what your work has done, that you've helped this place. To have a job is good. To have a job where you can work for this cause is really good. (Interview #20129, 2/4/09)	"I brought [people from the Civil Rights division of CalTrans] here to see the place, just because of the community effort…. They really loved it…. It's so nicely done, you feel like you have to bring people here because it's an example of what could be done when people get together and decide to do something right." (Interview # 21322, 3/20/09) "I think it has changed their perspective of us. We don't hear complaints. What I've always heard is compliments. 'I'm so glad you guys are here.' 'I'm so thankful you have trails here.'" (Interview #11112, 1/28/09)
Interact/ Relationship building	"Sometimes I see parents walking their kids. To me that's really nice, to see a dad walking their son on the trails. I see people going for walks, talking to each other, communicating. Sometimes I'll see people sitting on the bench, just sitting and talking to each other." (Interview #10114, 2/5/09)	"The biggest thing that I got out of it, over the whole time, was the relationship we developed with people committed to ecological restoration…. Just as we realized that there were people that had similar values, they realized 'Hey, Indian people have similar values to us as well.' So I think we built community." (Interview with Paula Allen, 1/28/09)
Complement clinic's services	"Sometimes when we're talking with a client you don't always want to sit in the office. People open up differently when you get outside. If you just take a little stroll through the garden and it seems not so clinical you get a better result from people." (Interview #11320, 3/17/09)	

restoration area and garden. Some of the most positive feelings were the result of having had the opportunity to work on the Restoration Area or in the garden. One community member (Karuk) who had done temporary work on the Restoration Area reported that active involvement with the Ku' wah-dah-wilth Restoration Area was rewarding in a number of ways: pride at being able to do work that contributes to one's cultural community; learning about plants and management while also sharing one's own environmental knowledge; receiving compliments from others about one's work; and seeing one's work pay off as the restoration area matures.

Education is an important aspect of the Restoration Area, both in terms of what people feel it has accomplished and what they want from it, and it takes many different forms. Interviewees described learning by investigating aspects of the restored site that interested them (community member interview #11112, 1/28/09; community member interview #11126, 2/4/09); asking staff members about the restoration (Eric Johnson, author interview, 1/27/09); reading the interpretative signs along the trails; working on the restoration area or related projects (community member interview #20129); or participating in classes and workshops. They felt that these educational opportunities had raised people's awareness about the environment (community member interview #11112, 1/28/09), changed people's perception of the natural areas around them (Eric Johnson, author interview, 1/27/09), and helped people to learn about and identify culturally important plants (community member interview #10114, 2/5/09). Parents stressed that the Potawot Health Village and Ku' wah-dah-wilth Restoration Area are fun, informative places for their children to come, where they can absorb cultural knowledge in a relaxed setting.

The Restoration Area is also used as a place to connect, to communicate, and to interact. As one volunteer (Paiute) explained, "It's hard not to be happy out there and to have a pleasant conversation. Sometimes you go out there, not necessarily to work, but to find a friend to talk to, so it becomes like a counseling or spiritual kind of time, where you're able to delve into those things with other people" (community member interview #21105, 3/19/09). Several people said their best memories of the restoration site were times spent there working or gathering with other people (community member interview #21105, 3/19/09; community member interview# 11320, 3/17/09). Cultural events bring many people to the site and they are among community members' favorite experiences at Ku' wah-dah-wilth (community member interview #10115, 3/18/09; community member interview #21124, 2/6/09). This outcome is significant because community members identified interaction and strong relationships as a key element of a healthy community.

Working on the restoration area or in the garden is also a source of inspiration. For some, seeing the garden is a reminder of the work they want to do on their own gardens or of the gardens they had growing up (community member interview #10115, 3/18/09). Some of the at-risk youth who have participated in longer restoration or planting projects have gone on to work in other federal or tribal environmental programs (Eric Johnson, author interview, 1/27/09). Even if former workers have not become environmental professionals, they value the work opportunities provided by the Ku' wah-dah-wilth Restoration Area and report using what they learned, e.g., about transplanting and soils, on their own properties. For both of these trajectories, UIHS community members see the Restoration Area as a

"stepping stone or foundation for education" (community member interview #20129, 2/4/09). At least one community member (Yurok-Maidu-Pit River) likes the possibility of having a meaningful environmental career that working on the restoration area represents. He explained:

> I see young guys that work at Potawot; they're going to college and they have a job where they're helping restore the plants and maintain the acreage. That's really cool and I think, maybe one day my son might be able to have that experience of bonding with and maintaining this land (community member interview #20113, 1/30/09).

Outcomes for the broader community

The impact of the Ku' wah-dah-wilth Restoration Area has not been confined to the Potawot Health Village site and UIHS community members alone. UIHS has also created a unique place within the larger cultural landscape of the North Coast and their success at reconfiguring the landscape has affected both local Indians and non-Indians.

The Ku' wah-dah-wilth Restoration Area has some outcomes for the larger Arcata community that are similar to those experienced by the UIHS community: providing a place for exercise, education, and inspiration.[8] UIHS community members observed that many people from Arcata—those living in the surrounding neighborhood, patients and staff at the adjacent hospital, and others—regularly use the trails. While on site, people read the signs and learn about restoration, local American Indian cultures, and the connections between basketweaving plants, herbicides, and health (community member interview #21211, 3/20/09; community member interview #10114, 2/5/09; community member interview #11320, 3/17/09). Having the restoration area has helped to change non-Indians perspective on UIHS. Although some in the Arcata community were opposed to it, one employee (Pit River) noted that since the Restoration Area was completed, "We don't hear complaints. What I've always heard is compliments: 'I'm so glad you guys are here.' 'I'm so thankful you have trails here'" (community member interview # 11112, 1/28/09).

Ku' wah-dah-wilth also serves as an inspiration and model for non-Indians. The Potawot Health Village has had visitors from around the world who hope to do something similar in their own communities.[9] Locally, Humboldt State University students tour the restoration every semester. Eric Johnson (author interview, 1/27/09), the Traditional Resources Specialist who leads these tours, finds, "It's amazing the response that I get and the amount of volunteers I get out of it. People are totally enthralled by this place. They're all getting into the engineering program, so it truly inspires them in that direction."

[8] Community member interview #10107, 1/30/09; community member interview #20113, 1/30/09; community member interview #10114, 2/5/09; community member interview #11320, 3/17/09; community member interview #21121, 1/30/09; community member interview #11123, 1/28/09.

[9] Author interview with Paula Allen, 1/28/09; author interview with Eric Johnson, 1/27/09; author interview with Jerry Simone, 2/4/09; community member interview #11112, 1/28/09)

The process of creating the Potawot Health Village and the Ku' wah-dah-wilth Restoration Area and the distinctive finished product have caused non-Indians to take notice of the American Indian community, which in turn has created opportunities for building relationships, finding common ground, and raising awareness of Indian issues (author interview with Paula Allen, 1/28/09; author interview with Eric Johnson, 1/27/09; community member interview # 22128, 1/29/09). As UIHS reached out for and received help in designing and implementing the Ku' wah-dah-wilth Restoration Area they built relationships between the Indian and non-Indian communities (community member interview #21105, 3/19/09; community member interview #11112, 1/28/09). To develop the Ku' wah-dah-wilth Restoration Area, UIHS worked with a range of organizations, from the Forest Service, to local timber companies, to the California Native Plant Society (community member interview #21211, 3/20/09; community member interview #11112, 1/28/09). Many of these relationships are ongoing. The Audobon Society, for instance, works with UIHS to host bird walks on the Ku' wah-dah-wilth Restoration Area. In addition, Indian and non-Indian volunteers who have worked together on the site have created new relationships, expanded their social networks, and discovered shared values (community member interview #21105, 3/19/09; Paula Allen, author interview, 1/28/09).

Symbolic impact

Potawot and the associated restoration area have also made an impact as the first and most prominent Indian space in the urban areas of Humboldt and Del Norte Counties (Paula Allen, author interview, 1/28/09). Potawot has become a powerful, positive symbol of Indian culture for both the Indian and non-Indian communities. UIHS CEO, Jerry Simone (author interview, 2/4/09), interpreted its meaning to local Indian communities this way,

> Potawot became this symbol starting in Arcata City Hall being packed with Indians, of doing a restoration project to put back things the way they were…. It's seeing things put back the way it was for your ancestors who weren't even recognized…. It not only provides a place for health care, it becomes a place to display that Indian culture is back, healthy, and alive.

Potawot Health Village and the Ku' wah-dah-wilth Restoration Area are not just a prominent reminder of the living American Indian cultures on the North Coast, they also represent for UIHS community members "a place of our own." Many people felt an intense sense of pride in what UIHS had been able to accomplish on the site. One staff member said she was so happy and satisfied with everything that had taken place so far that she could not pick a favorite aspect of the Potawot Health Village or the Ku' wah-dah-wilth Restoration Area; she was proud of all of it (community member interview #11123, 1/28/09). The symbolism of American Indian people reclaiming and reshaping the land resonated with a number of people; as one employee (Yurok) explained, "We did live here, this was our land, then ranchers had it, it became cow pasture, now we have it back. Who would have thought, Indian people walking on the same land as their ancestors did?" (community member interview #11104, 2/3/09).

The struggle to create the Ku' wah-dah-wilth Restoration Area as well as the finished restoration site have also raised awareness about American Indians in the larger community and about the importance of land and the environment to American Indians' wellbeing (Paula Allen, author interview, 1/28/09). In the experience of one community member (Yurok-Pit River-Maidu), the Ku' wah-dah-wilth Restoration Area, helps to challenge popular misconceptions about Indians: "In popular culture, literature, it's always assumed that native people were just here, that they just lived in these places, but they didn't maintain them or structure them, but they did, we did. And we continue to do that. That's what this place represents" (community member interview # 20113, 1/30/09). The leadership of UIHS and the Traditional Resources Program feel strongly that this newfound awareness of Indian issues and the importance of place has contributed to a local political environment that is somewhat more sensitive to the needs of local American Indian communities (Paula Allen, author interview, 1/28/09; Jerry Simone, author interview, 2/4/09). In addition, a variety of organizations bring visitors and guests to the Health Village because they are impressed by what the UIHS community has been able to accomplish. As Simone (author interview, 2/4/09) explains, "These are non-Indian organizations wanting to show off Indian culture."

Recommendations: community members' desired outcomes

Although the majority of interviewees were very satisfied with the Ku' wah-dah-wilth Restoration Area, everyone had recommendations to improve the restoration area. These suggestions centered on making the offerings and benefits of the Restoration Area available to a wider group of people. First, interviewees requested more classes and camp sessions. These were in high demand because they would create more opportunities for education and for community members to actively engage with the restoration site and its resources. Youth programming and creating a space for elders were seen as especially important. In addition, several people requested that the Traditional Resources Program do more with the demonstration basket garden and the restoration area generally. Second, community members wanted the Restoration Area to be made accessible to more people, either by bringing elements of the restoration area, such as gardens and produce stands, to satellite clinics, or by developing strategies, like providing gas coupons or shuttles, to bring people who live further away and might not otherwise have the time or resources to make the trip to the Potawot Health Village.

Several respondents felt that the restoration area would be much more effective and appreciated if the Traditional Resources Program did more to communicate with the UIHS community about the site, its history, and their offerings. They felt that talking about the reason for the restoration area and the story of its creation—the *why* and *how* of this particular restoration project—would get more people interested in using the site and in using it in more ways than just walking the trails.

Finally, a number of interviewees wished that there were more paid positions at the restoration site. Having more employees would enable the Traditional Resources Program to offer more classes and more actively manage the plants with cultural uses (e.g., teas and basketry materials). Those requesting more jobs acknowledged the importance of

meaningful paid work as well as the value of having a deeper and more sustained involvement with the restoration site.[10]

These recommendations indicate that community members subscribe to the theory underlying the Ku' wah-dah-wilth Restoration Area—that the health of the community and the culture is linked to the health of the environment. They believe that this model works and are asking that it be implemented in such a way that it reaches as many people as possible. In addition to increasing access to the restoration area, community members wanted to move beyond the most common uses of the site at present—walking and consuming garden produce—to more active uses that they believed would have a more profound impact. Community members' recommendations are in keeping with what people most want from the Ku' wah-dah-wilth Restoration Area: educational opportunities that enable people to engage with their culture and the environment.[11]

Conclusions

Like other American Indian (see for example, Wolf 2004; Long et al. 2003; Rogers-Martinez 1992) and non-Indian restoration efforts (Paolisso and Drury 2010), the Ku' wah-dah-wilth Restoration Area was conceptualized as a project that would affect and incorporate people as well as the local environment. Similar to other restoration projects (see for example, House 2000), but particularly other American Indian restoration projects, the Ku' wah-dah Restoration Area grew out of the belief that the wellbeing of the environment and the community are interconnected, and that healing one requires healing the other. This vision produced a project with goals that explicitly set out to cultivate human-nature relationships. The restoration was then implemented with significant cultural input and community involvement as well as an unexpected public discussion of land use history and priorities. Drawing on UIHS community members' experiences and observations, I find that these efforts have borne fruit: analysis of the interviews revealed at least six community-related outcomes associated with the Ku' wah-dah-wilth Restoration Area.

The restoration impacts identified by community members were generated without reference to the expected outcomes of the Ku' wah-dah-wilth Restoration Area (Kadlecik 2002, 37) or the benefits that have been hypothesized in the literature on the human dimensions of ecological restoration. Nevertheless, the outcomes that emerged from the interviews include almost all of the benefits of restoration proposed in the literature (Table

[10] When asked to identify obstacles to the Traditional Resources Program expanding their restoration-related work, interviewees pointed to lack of funding, staff, and space. They felt that with more money the Traditional Resources Program could do more, offer more programs, and hire more staff. Grant constraints were also cited as limiting the number of people who could participate in programs—particularly the diabetes program which uses the restoration area for some of its activities—and making employment with the Traditional Resources Program irregular. A lack of appropriate spaces for cultural and educational activities makes conducting the programs they do and want to do a challenge.

[11] Community member interview # 22103, 2/2/09; community member interview #11104, 2/3/09; community member interview #21121, 3/20/09; community member interview #21117, 2/3/09; community member interview #11126, 2/4/09; Eric Johnson, author interview, 1/27/09; Amos Tripp, author interview, 1/29/09.

5.4) and many of those identified by former project manager Kadlecik (2002), such as increased outdoor physical activity, consumption of organic produce, knowledge about the natural environment and land management, and interaction between Indians and non-Indians. Although UIHS has yet to quantify the impacts the Ku' wah-dah-wilth Restoration Area has had, community members' impressions reveal that the project is having many of the desired effects. It is important to remember, however, that these effects are not occurring to the extent that community members or Traditional Resources Staff wish. The Ku' wah-dah-wilth Restoration Area is just one case, but in this instance community members' perceptions of the project provide empirical support for many of the restoration benefits theorized in the literature.

UIHS community members felt the restoration area also had a number of benefits for the non-Indian community, which included creating a safe, comfortable space for exercise, educating them about American Indian cultures, and raising awareness of contemporary issues facing American Indian communities. The process of restoring helped to build relationships between the UIHS community and the local non-Indian community. Given the relatively long timeframe for the ecological results of restoration to be realized, relationship building has been identified as one of the most important short-term outcomes of environmental work and one that is critical to the success of desired environmental changes over time (Flitcroft et al. 2009).

Community members agreed that not all of the restoration area's outcomes had the same impact. The restoration area was most widely recognized as place to walk, while some of the outcomes that community members felt were most important, especially providing opportunities for cultural education, have not yet been fully realized. Interviewees revealed that restoration outcomes differed depending on whether they resulted from the process of restoring, active use of the finished product, or passive use of the finished product. In the conservation easement management plan (UIHS 1999, 16) passive recreational activities are defined as "jogging, walking, birdwatching and picnicking, as well as meditation, and spiritual reflection." Although fewer examples were available, Traditional Resources Staff and other community members felt the restoration had had the greatest impact through active uses of the site, such as classes, specialized programs, and work opportunities, as well as the process of restoring. The garden, for instance, was the most popular element of the restoration area, in part because there are a number of ways for people to use and engage with the garden and its produce. Workshops, paid work, and volunteer work are all more active uses of the restoration area, and among the uses of the restoration areas that community members most want to see developed further and expanded. At the time of the interviews, community members felt that the impact of the restoration area was limited by the relatively small number of opportunities for active engagement with the Ku' wah-da-wilth Restoration Area and its resources. Because of the importance they assigned to education and being involved with culture, UIHS community members were eager for there to be more opportunities to actively engage with the restoration area either in the form of classes or work.

For the Ku' wah-dah-wilth Restoration Area—and, other restoration projects—to have the desired results, attention must be paid not only to the types and strength of various

Table 5.4 Comparison of Restoration Benefits Proposed in the Literature with the Restoration Impacts Identified by UIHS Community Members

Restoration Literature	Ku' wah-dah-wilth Restoration Area
Recovering Ecosystem Services	
• Flood control • Water quality • Improve recreational access and education opportunities	• Stormwater management • Bird and wildlife habitat • Walking • Interpretative signs and educational workshops
Investing in Human and Natural Capital	
• Provide full or part-time employment • Develop restoration planning & implementation skills; build capacity to engage in environmental work • Source of funding	• Two employees manage the restoration area. • Through work opportunities and special programs, like the Traditional Foods Project, community members learn about restoration, plant propagation, etc. • Secured grants to do restoration
Improving Human-Nature Relationships	
• "[R]egenerate old ways or create new ones that bring us closer to natural processes and to one another" (Higgs 2003, 2). • Raise environmental awareness • Psychologically restorative • Encourage stewardship; increase environmental advocacy • Strengthen sense of place	• Return indigenous management to area previously settled and used by the Wiyot • Raised awareness of the environment • Raised awareness of local American Indians • Feels good to walk on the trails • Alleviates stress to use the restoration area • Build and strengthen relationships between the Indian and non-Indian communities
Contributing to Environmental Justice	
• Improve linked social and ecological conditions • Acknowledge community history • Equitable distribution of environmental amenities • Engage communities in environmental planning and decision-making	• Recognize contemporary and historical American Indian land management • Community members and supporters run successful campaign to persuade City officials to approve their project
Eco-Cultural Restoration	
• Sustain cultural practices and local environmental knowledge • Integrate community values into management • Contribute to individual health and wellbeing. • Build political capital, management capacity	• Community members cultural expertise used to design restoration area • Workshops offered that utilize site resources • Community members use site resources in traditional ways • Partner with other agencies and organizations

outcomes, but also who experiences them. Limited access to the restoration area and its associated programming was an issue interviewees brought up repeatedly. Community members stressed the importance of providing more physical access by expanding classes and camps, developing the basketweaving resources and other plants intended to be used for cultural purposes, and either enabling more people to come to the Ku' wah-dah-wilth Restoration Area or bringing restoration and gardening to the satellite clinics. Community members also emphasized the need to raise awareness of the restoration area and its goals by improving Traditional Resource Program communications, particularly explaining *why* the restoration area is there. The number of people reached as well as who has and who does not have access is an important consideration for restoration projects both in terms of maximizing impact and in terms of environmental justice (see for example, Moran 2007).

How people structure and manage physical space—both the natural world and the built environment—has been implicated in social, and especially racial, relationships. Often one group uses their control of the environment "to assert authority over another group" (Chiang 2010). Historical examples abound: redlining African American neighborhoods (Schein 2003), allotting Indian reservations (Lewis 1994), and the placement of internment camps for Japanese Americans during World War Two (Chiang 2010). Groups that have been marginalized also have the opportunity to propose alternate uses of the environment and with them new human-nature and new social relationships. In an area where the environment has drastically changed since the arrival of Euro-Americans with far-reaching consequences for local American Indians, UIHS has been able to reclaim a place for American Indians through the construction of the Ku' wah-dah-wilth Restoration Area and the Potawot Health Village. In interviews UIHS community members attest to the positive outcomes this culturally sensitive reconstruction of space has had for them and the Arcata community more generally. Even though UIHS has more work to do in terms of providing the most helpful programming to more people, UIHS community members' desire to see the benefits of the restoration area developed and made more widely available show the promise of the Ku' wah-dah-wilth Restoration Area and reflect a belief that the form and uses of the environment matter for individual and community wellbeing.

CHAPTER 6. BEYOND THE KU' WAH-DAH-WILTH RESTORATION AREA: HUMBOLDT COUNTY RESTORATION

Introduction

UIHS, along with local American Indian Tribes, is part of the Humboldt County restoration community. Coordination among the different institutions and people in this community is a defining element of the restoration industry in Humboldt County (see Chapter 1). Indeed, after initially viewing the Naye-Ribeiro property, where the Potawot Health Village now stands, UIHS board members knew they wanted to restore the area, but were unsure how to go about it. By tapping into the local restoration network (Baker 2005), they were able to find a team of environmental scientists to act as consultants. Now that the Ku' wah-dah-wilth Restoration Area is well established the Traditional Resources Program staff get requests for information about how to restore prairies. Meanwhile, the environmental consultants have gone on to work with the Wiyot Tribe on the ecological and cultural restoration of Indian Island (Kadlecik and Wilson 2008) among other projects. In 2007, the restoration community bestowed one of its highest honors on an American Indian restoration project, when the Alliance for Sustainable Jobs and the Environment awarded the Restoration Project of the Year to the Yurok Watershed Restoration Department, the first time a Native group had won this award.

Since early salmon, ecosystem, and watershed restoration projects began in Humboldt County more than thirty years ago, many of the people involved in the restoration industry have been motivated not only by their desire to bring back certain species and ecological processes, but also by the beneficial effects they believe that restoration will have on people (Baker 2004; Baker 2005). Although the Humboldt restoration community has become more professional over this period, members of the restoration community remain enthusiastic about the connections between restoration and communities in Humboldt County. This chapter seeks to answer the following two questions: 1) what benefits do restoration community members hope that restoration will have for local communities? And 2) what outcomes for local communities have restoration community members observed in their work?

In the preceding chapters, I looked at the origins and outcomes of the Ku'wah-dah-wilth Restoration Area. In this chapter, I expand my analysis, scaling up from a particular community to the entire Humboldt County restoration community. To provide some background, I look first at several of the early restoration efforts in Humboldt County. In the remainder of the chapter, I use archival and published restoration accounts as well as interviews with eight restoration community members to outline restoration goals, processes, and outcomes. Points of particular interest will be: how those in the restoration community conceive of the connection between ecological restoration projects and the communities they serve; community involvement in restoration work; restoration projects' community-related outcomes; and the relationship between restoration activities and the larger cultural landscape, particularly the challenges it poses, a topic that emerged out of the interviews with restoration community members.

I find that restoration community members anticipate social benefits that fall in three main categories: economy, human-nature connections, and culture. While the relationship between ecological restoration and human communities is part of the larger motivation for undertaking restoration work in Humboldt County, how well these goals are achieved remains unclear. Some of the outcomes with the greatest impact—learning and relationship building—were not anticipated at the outset. When thinking of the larger context in which restoration takes place, members of the restoration community are concerned about the ways in which social processes and the surrounding landscape constrain the work that they are able to do.

Early Restoration Efforts With Community Goals

Confronted by declining salmon runs, eroding hillsides, and dwindling native plant diversity, many groups in Humboldt County responded to the loss of natural elements they valued or found useful (Robbins 2004) by initiating restoration projects. In the late 1960s and 1970s, the threats to native species and ecosystems, particularly salmon and redwoods, stirred several different groups to initiate restoration projects, ranging from federal programs with an emphasis on job creation to community-based restoration efforts striving to create new relationships between people and place. Beginning with these early efforts, restoration projects in Humboldt County have frequently been inspired by the twin goals of rehabilitating ecosystems and supporting communities. The long-standing members of the restoration community—government agencies, industry organizations, community-based groups, and American Indian Tribes—illustrate the diverse origins of restoration in Humboldt County and the wide-ranging commitment to improving both community and environmental quality within the Humboldt restoration system.

Government-sponsored restoration: Redwood National Park's watershed rehabilitation program

The Redwood National Park watershed rehabilitation program has been an anchor of Humboldt County's restoration system. Congress established Redwood National Park in 1968 to preserve old-growth redwood, but it soon became apparent that purchasing stands from logging companies was not sufficient to protect them from the effects of timber harvesting. Between 1968 and 1978, when the Park was expanded, logging in the Redwood Creek watershed upstream from the park continued to threaten the preserved stands. An Interior Department report from 1973 concluded that timber harvesting on private properties in the Redwood Creek watershed posed "the greatest threat to the Park," as elevated sediment loads in the creek undercut banks, toppled trees, and caused landslides (quoted in Schrepfer 1983, 190). The Sierra Club and other environmental organizations argued that the only way to fulfill the park's purpose was to expand its boundaries to encompass the entire lower watershed, a position that was adamantly opposed by the timber industry. The ensuing political debate turned on the effect of forest management—particularly clearcutting on steep, erosive slopes—on the environment and the effect of the park on the local economy (Schrepfer 1983; Weaver and Sonnevil nd).

Ten years after the Park was created an expansion bill combined land acquisition, watershed rehabilitation, and protection for impacted timber workers. Forty eight thousand acres were added to the Park, three-quarters of which had been logged within the previous ten years. These new park lands included 300 miles of roads, 3000 miles of skid trails, and "thousands of acres of eroding hillsides" (Spreiter, Franke, and Steensen 1996, 141). The enabling legislation (PL 95-250 (1978)) provided for a multi-million dollar restoration program to rehabilitate these cutover lands which were sources of sediment that threatened downstream redwood groves. In addition to reducing erosion and protecting old-growth redwoods, it was hoped that the rehabilitation program would also provide employment to ameliorate the displacement of workers caused by localized reductions in timber harvest (DeForest 1999; Schrepfer 1983; Spreiter, Franke, and Steensen 1996). Therefore, the bill also instructed the government to pay salary and benefits to timber workers who were laid off as a result of the park expansion, to pay for retraining, and to preferentially hire displaced workers for watershed rehabilitation work (PL 95-250 (1978)). Thus, the expansion of Redwood National Park and the simultaneous creation of its watershed rehabilitation program was an early expression of the belief that restoration could "rescue both human communities and degraded and imperiled ecosystems" (DeForest 1999, 1).

Industry groups and restoration: Commercial salmon fishermen

Since the late 1970s commercial salmon fishermen have been actively involved in restoring the salmon stocks upon which their livelihoods depend. At that time, dwindling runs caused some commercial fishermen to advocate for habitat restoration, which they argued was essential to fish reproduction and ultimately a sustainable fishery (practitioner interview #1030, 3/18/11). Restoration work also became an alternate source of employment for some (Baker 2004). Indeed, commercial fisherman turned restoration advocate, Nat Bingham, operated some of the earliest fish rearing and habitat restoration programs on the North Coast in the 1970s (Commercial Salmon Trollers Advisory Committee 2011). Bingham and others like him were influential in convincing local marketing associations to fund salmon enhancement and habitat restoration projects by voluntarily taxing themselves (House 1990). In 1978, the Pacific Coast Federation of Fishermen's Associations (PCFFA) sponsored legislation to create the Commercial Salmon Trollers Enhancement and Restoration Program (usually referred to as the Salmon Stamp Program). Under this program, which began in 1979, commercial fishermen purchase a stamp in addition to their commercial fishing license. The revenue generated from stamp sales went to the Department of Fish and Game, which decided how to spend it in consultation with the fishermen's associations (practitioner interview #1000, 11/10/08). The scope of the program soon expanded from rearing salmon in hatcheries, to habitat and other restoration work as well as educational programs. By 1990, the Salmon Stamp Program was generating over $1 million per year for salmon enhancement and restoration work in California. In 1993, to further its environmental work, PCFFA founded a non-profit branch devoted to salmon protection and restoration with the mission "to protect and restore fish populations and the human economies that depend on them" (Institute for Fisheries Research, "About IFR," accessed 11/11/11, http://www.ifrfish.org/aboutus,). Because of their economic stake in restoration outcomes, fishermen have also been particularly successful at reaching out to other industry groups, most notably timber (practitioner interview #1000, 11/10/08).

Community-based restoration: Mattole Restoration Council

In Humboldt County, there are many community-based restoration efforts. Perhaps one of the best known is the Mattole Restoration Council (MRC) whose history and mission has been publicized in the book *Totem Salmon*, written by founding member Freeman House. The group that would become the Mattole Restoration Council began their community-based effort to save native salmon in the late 1970s (House 1999). The impetus for restoration came from a new generation of homesteaders who were inspired to move to rural California by bioregionalism (see for example, Berg and Dassmann 1977) and the back-to-the land movement. By migrating out of the city, back-to-the-landers had an opportunity to inscribe the idealism of the 1960s on the landscape of their new homes (practitioner interview #1020, 10/12/08). Organizers of this community-based restoration effort sought to reestablish an intimate relationship with place and to build community with their human and nonhuman neighbors. In contrast to the more technical approach to restoration taking place at Redwood National Park, restoration in the Mattole watershed grew out of organizers' faith in local people's knowledge of and commitment to their home environment. Reflecting on a 1978 meeting between Mattole residents and commercial fishermen from nearby ports, House recalled "the thirty or forty people who attended left with a host of new possibilities for direct action, and practical, local approaches to a challenge they were beginning to understand as a personal and community imperative" (House 1999, 120).

After several years seeking approval from the state Department of Fish and Game for their experimental stream-side incubation plan, the nucleus of friends behind the restoration effort incorporated as the Mattole Watershed Salmon Support Group and launched the Mattole hatchbox project in 1980. They began with a stream-side incubator that had been used in British Columbia and Alaska and worked from the premise that the best people to take on the challenge of restoration were local residents because only they had the requisite place-specific knowledge and dedication to take on such demanding, place-based work (House 1990). As the scope of their restoration work expanded, they formed the MRC in 1983 to coordinate the various groups engaged in restoration within the Mattole watershed and to establish a process for making long-range plans about the watershed as a whole. The MRC is comprised of both individuals and groups and its membership has been fluid, including over time the Mattole Watershed Salmon Support Group, tributary stewardship groups, land trusts, community service groups, and the local high school. In their first five years, the Mattole Salmon Group incubated and released 24,000 yearling coho salmon. As they became more confident in their work promoting salmon reproduction, they expanded the scope of their activities to include river and upslope restoration projects (House 1999). Although the MRC is closely associated with bioregionalism, other community-based restoration groups, such as the Friends of the Dunes, stress the importance of relationship with place and with others, without such an explicitly bioregional focus (Baker 2005; for more on restoration and bioregionalism see Christian-Smith 2006).

American Indian Restoration Projects

Local American Indian Tribes are also important members of the local restoration community and have actively pursued restoration in their ancestral territories. Along the Klamath River and its tributaries, for instance, the Hoopa, Yurok, and Karuk[1] have started watershed restoration programs. The Hoopa Watershed Restoration program, which is housed within the Tribe's Forestry Division, began shortly after the 1988 Hoopa-Yurok Settlement agreement, when the Tribe assumed full management authority for its resources (Baker 2004). Since the early 1990s, the Yurok have been involved in watershed restoration with projects on Green Diamond Timber and Redwood National and State Park lands. In 1996, the Karuk Tribe began decommissioning Forest Service roads after entering into a Memorandum of Understanding with the Six Rivers and Klamath National Forests (Karuk Tribe 2003). Both the Hoopa's and the Yurok's restoration programs took off after the Northwest Forest Plan enabled the Bureau of Indian Affairs to increase funding to the Tribes for watershed assessment and restoration work (Baker 2004; Yurok Tribe Watershed Restoration Department 2001). By building political momentum to change water management in the Klamath Basin and undertaking large-scale watershed restoration, the Tribes along the Klamath River and its tributaries have been instrumental in efforts to restore salmon on the Klamath.

Around Humboldt Bay, the Wiyot Tribe is also undertaking restoration work. Their biggest project is the ongoing Indian Island Cultural and Ecological Restoration Project in Eureka. For over 1000 years, the Wiyot and their neighbors had gathered at Tuluwat Village on Indian Island to perform their World Renewal Ceremony until 1860, when this tradition abruptly ended because a massacre during the dance decimated the Wiyot population (Kowinski 2004). Speaking of the massacre, former tribal chairwoman Cheryl Seidner said, "We lost our regalia, our elders, our weavers, and our dreamers, all the things that make a community. We have not danced since that day. I can't wait for that first dance" (quoted in California Council for the Humanities 2004-2005). By completing this restoration project, the Tribe hopes to hold the World Renewal Ceremony again, to protect archaeological and cultural resources, to provide a venue for other cultural and educational activities, and to improve the surrounding salt marsh habitat (Kadlecik and Wilson 2007; Vogel 2004). The first phase of this work was acquiring land on the island. In 2000, the Wiyot purchased the 1.5 acre site of the Tuluwat village and in 2004, the Eureka City Council unanimously decided to return 40 acres of Indian Island to the Wiyot, making it the first city in California to return land to Native people. Subsequent steps in the restoration process include controlling erosion, cleaning up debris and remediating contaminated soils left behind by a dry dock facility, providing public access, and undertaking ecological restoration and cultural development (Kadlecik and Wilson 2007; Kowinski 2004; Vogel 2004). Although the restoration is not complete, it is seen by members of both the Indian and non-Indian communities as an important step toward healing the Wiyot Tribe as well as the relationship between the two groups (author interview with Jerry Simone, UIHS CEO, 2/4/09).

Narratives connecting restoration and community

[1] A small portion of the Karuk's ancestral territory falls with the borders of Humboldt County, so they are included in this description.

Restoration efforts can be distinguished at least one of two ways: by the practices involved or by the ideas behind the restoration action, i.e., the issues it is concerned with and the alternatives it imagines. Within the Humboldt County restoration system, there is a great deal of overlap in restoration practice, in everything from funding sources to treatments used. There are also some central similarities in how the ecological aspects of restoration projects are described: a focus on salmon and other native species and a reliance on ecology, fisheries biology, hydrology, and geomorphology to diagnose and resolve problems (practitioner interview #1101, 3/9/11; Christian-Smith 2006). These areas of convergence are evident in the fairly unified description of the problem facing North Coast watersheds and fisheries as well as the agreement about the procedures needed to solve it. Many involved in the Humboldt County restoration system see the problem they are addressing as the effects of past land use and one of their primary goals is to minimize the negative impacts caused by these land uses. Of particular concern is the fact that land-use disturbances can affect resources far from the site of the disturbance. Because of these watershed connections, recovery requires changes in land use and management as well as restoration work conducted at the watershed scale (DeForest 1999; House 1999; Ozaki 2004; Popenoe and Spreiter nd; Spreiter, Franke, and Steensen 1996; Yurok Tribe Watershed Restoration Department 2001).

While a shared concern with the condition of the local environment unites the restoration community, many of those engaged in restoration in Humboldt County believe it has more than just ecological potential (practitioner interview #1020, 10/12/08; practitioner interview #1100, 11/10/08). While William Jordan III's (2000, 27) description of ecological restoration as "a valuable context in which to create community or to negotiate the relationship between the human community and the larger biotic community" makes a general statement about how ecological restoration might affect human communities, it says little about the particular ways in which people involved in restoration conceive of these connections. For the members of the Humboldt Restoration community whose goals extend beyond the purely environmental, the intended impact of restoration is twofold: to influence the landscape and the people living and working on it. Common narratives frame restoration as supporting local economies and cultures and fostering human-nature connections, categories that are not mutually exclusive, but often overlap or build on each other.

A narrative is a collection of stories, ideas, statements, and analogies (Christian-Smith 2006) and a discourse is a collection of narratives that together create a field of possibilities. Restoration advocates have heralded restoration discourse as a positive alternative (Jordan 2000; Tomblin 2009a) to the declensionist discourse that has long dominated mainstream American environmentalism (for example, Cronon 1995; White 2001). Scholarly and practical concern with environmental discourses has to do with how different groups perceive their relationship to the natural world and how they act based on these perceptions. In other words, discourse has received special attention because of the way in which it bridges perceptions and practice, by shaping how issues are defined and constraining the realm of possible actions and reactions.

In this section, I explore the three common restoration narratives employed by members of the Humboldt County restoration community. They cast restoration as benefiting the 1) local economy, 2) human-nature relationships, and 3) local cultures. Once I have laid out these desired outcomes, I will compare them to the changes that community members have actually observed to see how well goals align with results. In addition, I will briefly outline the opportunities for local community members to participate in restoration, since involvement in the restoration process is one of the primary mechanisms through which restoration is expected to impact people.

Narrative: Restoration supports the economy

In Humboldt County all levels of government as well as a number of non-profit organizations and private contractors are invested in the idea that the restoration industry can simultaneously contribute to environmental protection and a strong economy. They propose that the ecosystems shaped by restoration contribute to local economic wellbeing and that the work of restoration itself makes valuable contributions to the economy. In this instance, the problem that people seek to address is a lack of quality jobs, the absence of a sustainable resource base, and environmental degradation; the proposed solution to all three is the creation of a restoration industry (Baker 2004; Christian-Smith 2006; Yurok Tribe Watershed Restoration Department 2001). For some the root of this problem is an unsustainable economic system, which does not invest in either ecosystems or human communities (practitioner interview #1020, 10/12/08; Baker and Kusel 2003). Furthermore, the proposal that jobs and natural resource protection can have a positive relationship to one another stands in stark contrast to the popular jobs versus environment dichotomy epitomized by the Spotted Owl controversy of the early 1990s, which was widely perceived as pitting the needs of endangered species and loggers against each other. The perception that jobs and environmental protection are opposed is predicated on the belief that human work in nature is inherently destructive (White 1995; for an example of the contrary argument, that working landscapes are beneficial, see Sayre 2005).

Community members who speak about the economic benefits of restoration belong to government-sponsored, industry, community-based, and American Indian restoration efforts and they are interested in maintaining natural-resource based livelihoods, replacing employment in one natural-resource based economic sector with another, creating jobs, building natural resource management capacity, and sustaining the local resource base as the foundation of the economy. An early expression of the link between jobs and restoration appeared in the Redwood National Park's watershed rehabilitation program. When Redwood National Park was expanded in 1978, displaced timber workers were compensated for their economic losses and timber workers were supposed to be preferentially hired for restoration work. While politicians hoped to cushion loggers from the unemployment related to park expansion, many environmentalists hoped that labor-intensive restoration work would surmount the apparent tension between jobs and environmental protection (DeForest 1999; Schrepfer 1983; Weaver and Sonnevil nd).

Rather than replace their old livelihoods with work in a new industry, salmon trawlers have supported and become involved in restoration work because of their concern about the

relationship between fisheries and a sustainable economy. Through restoration efforts, they hope to protect and maintain their livelihoods (practitioner interview #1030, 3/18/11). The Yurok and the Karuk emphasize job training and capacity building in their watershed restoration programs. The Yurok Tribe, for example, states that its restoration goals are two-fold: 1) to restore the Klamath fisheries by improving stream and riparian habitat and 2) to provide job training and employment opportunities for Tribal members. Similarly the Karuk Tribe has, since 1999, run a watershed restoration specialists training program for tribal members. Combining classroom instruction in watershed assessment with training in the field to teach the techniques used by heavy equipment operators and other ground personnel, the training programs of both the Yurok and Karuk Tribes are intended to provide tribal members with the knowledge and skills to do watershed restoration. Through the restoration projects they do, these restoration departments provide work and the opportunity for tribal members to gain experience in the field. For the Karuk Tribe (2003, 5), the watershed restoration program is an outgrowth of a wider Tribal goal to expand "the role of the Karuk Tribe in managing their traditional resources." Building management capacity is an important step towards restoring the Mid-Klamath and Salmon River sub-basins and achieving community development (Baker 2005; Karuk Tribe 2003; Yurok Tribe Watershed Restoration Department 2001).

The connection between jobs and restoration that originated with Redwood National Park's watershed rehabilitation program was institutionalized under the Northwest Emergency Assistance Programs, which operated in the mid-1990s after President Clinton declared a state of disaster for the Pacific Northwest salmon industry, and the Northwest Forest Plan, which was designed to help rural communities faced with declining timber harvests. All three federal programs have included funds to support watershed restoration and provide jobs. At the regional level, Humboldt along with Del Norte, Mendocino, Trinity, and Siskiyou Counties have formed the Five Counties Salmonid Conservation Program, whose stated purpose is "To strive to protect the economic and social resources of Northwestern California by providing for the conservation and restoration of salmonid populations to healthy and sustainable levels" (Five Counties Salmonid Conservation Program, accessed 11/7/11, http://www.5counties.org/), a mission which illustrates the relationship that restoration has to maintaining and enhancing the natural resources upon which the local economy depends.

Narrative: Restoration encourages human-nature connections

For over thirty years, fostering community connections to the natural world and building community by engaging in restoration have been an important motivation for restoration work in Humboldt County. Some community-based restoration groups, including the Mattole Restoration Council, see the problem as a broken relationship between people and place, which has had negative consequences for both the environment and resident human communities. In this model of restoration, it is a goal for people as well as places to be acted upon and transformed through the process of restoration. Improved ecological conditions are seen as essential for and manifestations of a healthy human community (Baker 2005; House 1999; Zuckerman 1990). Illustrating this relationship, the Natural Resources Services (NRS) Division of the Redwood Community Action Agency's ("About Us," accessed

11/7/11, http://www.naturalresourcesservices.org/aboutus.html) mission states, "Because natural and human communities of the North Coast are inextricably linked, and the sustainability of both is inter-dependent, NRS strives to protect and restore community and watershed health." Community-based groups also see civic engagement, community identity, and sense of place as an important outcome of restoration work—of people working together for the sake of the local environment (practitioner interview #1101, 3/9/11). There are many community-oriented restoration organizations and programs in Humboldt County, including the Mattole Restoration Council, the Friends of the Dunes, the education programs sponsored by the California Department of Fish and Game, and the Orleans Somes Bar Fire Safe Council (Baker 2005).

Narrative: Restoration supports culture

Other restoration groups are motivated by the belief that restoration can support culture. Because of the links they see between natural and cultural resources, these restoration projects operate from the assumption that environmental restoration work can help maintain and sustain cultural practices and ways of life (Kadlecik and Wilson 2007; practitioner interview #1030, 3/18/11). These projects include the Indian Island Cultural and Ecological Restoration Project being done by the Wiyot Tribe as well as the Ku' wah-dah-wilth Restoration Area created by United Indian Health Services. In addition to their economic component, the watershed restoration projects performed by the Karuk, Hupa, and Yurok Tribes are also connected to culture. For example, nearly every aspect of Yurok life is bound to fisheries, which are important for sustaining both culture and economy. Having safe, clean rivers and healthy fisheries is important for maintaining cultural practices and is an important element of tribal identity (Yurok Tribe Watershed Restoration Department 2001). As the Karuk Tribe's Department of National Resources (2003, 29) explains, "In a economically depressed area, the jobs we provide [are the] mechanism by which native people can live and raise their children in a land we have called home since the beginning of time."

Tribes are not alone in seeing restoration as contributing to a sustainable economy and maintaining a way of life. For example, the Commercial Salmon Trollers Advisory Committee (2011) describes salmon trolling as something "more than just an industry," as its own subculture. The restoration work of their commercial organizations is also an investment in maintaining this way of life for future generations. Because of their dependence on salmon fisheries, commercial salmon fishermen and fisherwomen also feel an ethical obligation to act responsibly toward the fish. At least one fisherman described their work to maintain intact salmon runs and salmon habitat for future generations as an important part of their legacy (practitioner interview #1030, 3/18/11).

Community Involvement in Restoration

In the literature, participation in restoration activities has been identified as an important pathway for achieving community benefits (Higgs 2003; Light 2000b; Moran 2007), a result that is confirmed by UIHS community members' preference for active engagement with the Ku' wah-dah-wilth Restoration Area. Community involvement in restoration projects takes

several forms, but typically occurs as labor-intensive planting or plant removal work done by volunteers. Consequently, the more numerous technical projects, such as those that recontour roads or improve fish passage by removing culverts, are less conducive to community participation. Nonetheless, volunteer opportunities are abundant in Humboldt County. The community calendar in the weekly *North Coast Journal* lists at least one restoration activity nearly every week of the year. The City of Arcata, for instance, holds about 10 community workdays per year, where interested members of the public can participate in an ongoing restoration project. The Friends of the Dunes, a non-profit organization that facilitates community-supported coastal conservation, involve volunteers in their work, both as labor for restoration projects and as docents to educate the public about the dune landscape that is being protected and restored. Because restoration projects in Humboldt County have shifted over time from emphasizing biological (i.e., labor-intensive planting work) to a physical (i.e., modifying abiotic conditions with heavy equipment) interventions (Sonnevil and Weaver n.d.), the opportunities for non-professionals to participate in the act of restoring are somewhat limited.

Educational outreach is another component of community involvement. A popular educational program sponsored by the Department of Fish and Game, "Salmon in the Classroom," brings live salmon fry into schools for students to raise, with a curriculum designed to encourage awareness of the local environment and encourage stewardship. Some restoration project managers like to bring in high school or elementary school students to do planting or post-project monitoring, so they will have a stake in the project, develop a sense of stewardship, and learn about their home environment (practitioner interview #1100, 11/10/08). Communities are sometimes also involved in planning restoration projects (practitioner interview #2112, 10/14/08). Finally, to a small extent, community involvement factors into project selection. Members of the restoration community felt that funders preferred proposals with widespread support or multiple cooperators as opposed to those submitted by individuals. All other elements of a proposal being equal, at least one funder is likely to select projects that have community support or offer benefits to the community. And one restoration community member hypothesized that projects done by locals as opposed to outside firms are more successful because local workers know the local environment better and they are more invested in the project and its outcomes (practitioner interview #2112, 10/14/08).

Community members' assessment of restoration's impacts

Given the imagined relationship between restoration and community as well as the opportunities for community involvement in restoration, what do restoration community members identify as the community-related outcomes of their work? While explanations of the community-related goals of restoration fell into three main categories—economy, human-nature connections, and culture—the social impacts of restoration included these categories as well as two unanticipated outcomes: learning and relationship building.

Impacts on the economy

There is widespread agreement that one of the primary social benefits of Humboldt County's restoration system has been its contributions to the local economy by creating jobs and attracting restoration funding (practitioner interview #1020, 10/12/08; practitioner interview #1111, 11/14/08; practitioner interview #2112, 10/14/08; practitioner interview #1100, 11/10/08), a trend that began more than 30 years ago when the Redwood National Park expansion bill authorized $33 million for watershed restoration on newly acquired park lands. In a recent study of the Humboldt County restoration industry, Mark Baker (2004) found that in 2002 restoration created 300 jobs: 240 in the private sector with consulting firms, contracting companies, and nonprofits; 45 in the public sector; and 15 with tribes. Many heavy equipment operators are seeing a transition from good paying summer work in logging to restoration. And in some parts of Humboldt County, restoration projects provide jobs and training opportunities in areas that otherwise offer little of either (practitioner interview # 1020, 10/12/08). Between 1995 and 2002, within-county restoration work brought in more than $65 million in funding, typically in the form of grants, from 13 state and federal funding agencies (Baker 2004). Furthermore, the money brought in for restoration work ripples throughout the Humboldt economy (practitioner interview #2122, 10/14/08). To illustrate this point to high school students, one restoration community member mentions during presentations how her restoration income has paid for her house, her car, and her dog (practitioner interview #1111, 11/14/08). While restoration revenue is still dwarfed by the value of Humboldt County's timber harvest, it is comparable to the contributions of other agricultural and resource sectors of the local economy (Baker 2004).

In addition to providing income, developing skills and building capacity is an important goal of the restoration process. Restoration work that incorporates training helps to develop new skills, which in turn build institutional or community capacity for future restoration or natural resource management work. For instance, the goal of the AmeriCorps Watershed Stewards Project is to train the next generation of resource professionals. Their model of providing training and networking opportunities has been very successful at launching service members' careers in the restoration industry (practitioner interview #1101, 3/9/11; practitioner interview #1111, 11/14/08; practitioner interview #1020, 10/12/08). Unlike the other federal agencies doing restoration in Humboldt County, The Bureau of Land Management (BLM) does restoration work through cooperative agreements with community partners that involve those partners in decision-making and planning. According to Baker (2005), these partnerships have helped to develop the capacity of local nonprofits. Similarly, when the Mattole Restoration Council planned a survey of salmon habitat and old-growth forest they opted to train local residents rather than hire outsiders to do the work, "reasoning that as a watershed population we would have gained an array of skills that had a value beyond the data we would collect" (House 1990, 42).

For Tribes training has also been a key goal and element of their restoration programs. While much early tribal restoration work was done through contracts with outside professionals, the additional funding provided under the Northwest Forest Plan allowed Tribes to train their own members in restoration work and increase the capacity of their departments in watershed restoration analysis, planning, and implementation. For instance, through the training program associated with the Ah Pah Creek watershed restoration project, nine Yurok tribal members were employed and learned the technical skills they

would need to do future restoration work with the Restoration Division. In the year following the completion of the program, three graduates did further assessment work for the tribe while two graduates did contract restoration work for the United Indian Health Services at the Potawot Health Village site (Yurok Tribe Watershed Restoration Department 2001).

In other cases, specific goals for providing economic benefits through restoration work have not been fully realized. After analyzing the employment programs implemented in the aftermath of the Redwood National Park expansion, DeForest (1999, 10) concluded that, "the expansion legislation made possible scientific advances in doing restoration work, but the benefits to affected workers and communities were limited." While the aspect of Redwood National Park's restoration program designed to benefit timber workers may not have functioned as its framers intended, there is no denying the large stamp Redwood National Park's restoration work has had on the local restoration community: they have been the source of restoration methods that are now widely used on state and private lands, they have provided valuable technical consulting to other restoration groups, and many people who have gone on to have decades-long careers in restoration got their start with early restoration work at the park (practitioner interview #1020, 10/12/08; practitioner interview #1100, 11/10/08).

Impacts on individuals and communities

Since the earliest days of restoration in Humboldt County when back-to-the-landers in the Mattole watershed and commercial trawlers first began using fishbox hatcheries to restore native salmon runs, people have engaged in restoration work for reasons in addition to the income and employment it provides. According to some restoration community members, restoration work creates a venue for individuals to have a positive and mutually beneficial relationship with the natural world. Several community members noted that they had gotten involved in restoration because of their love of salmon and other wildlife (practitioner interview #1000, 11/10/08; practitioner interview, #1111, 11/14/08), while others felt involvement in restoration work was a necessity for saving aquatic and forest health (practitioner interview #1020, 10/12/08). Even as the restoration system becomes more professionalized (practitioner interview #1030, 3/18/11; practitioner interview #1020, 10/12/08; practitioner interview #1000, 11/10/08), people continue to seek work in restoration because they want a healthy relationship with the local landscape and want to do work that creates positive environmental outcomes (practitioner interview #1111, 3/9/11). A career in restoration provides an outlet for people with those interests and goals.

Writing about restoration efforts in the Mattole River watershed, Freeman House (1990) attests to the transformative nature of restoration for some people. He describes several local innovators who, after getting their start in restoration, have gone on to become play pivotal roles in developing and advocating for sustainable local economies. In addition, House (1999) reports a new understanding of place among Mattole River watershed residents who have become more attentive to their surroundings as they work to protect them. As a result of extensive restoration and educational work, Mattole residents have started to envision themselves as inhabiting watersheds and ecosystems rather than individual parcels of private

property and they have come to see people in the watershed as "functional parts of the place" (198).

The writings of participants in community-based restoration projects also support restoration's ability to satisfy some goals that are neither ecological nor economic.

> "Restoration gives me a feeling of constructive connection with my home place that no amount of lobbying can produce." Seth Zuckerman, Mattole Restoration Council (1990)

> "By participating in restoration I find a way to actually be a positive part of the ecology of the dunes and not feel separated from the natural processes that shape the area. Joining together with other community members who care about this place completes my sense of connection and belonging." Carol VanderMeer, Friends of the Dunes (2001)

Restoration community members also observed that restoration has had an impact on those who have been involved in restoration work, but do not make their career out of it. Some community members reported that one of the most rewarding parts of their work is when they have witnessed landowners or heavy equipment operators' pride in the changes they've been able to affect through restoration, especially if these individuals were resistant to restoration at first (practitioner interview #2112, 10/14/08). In both urban and rural areas, restoration projects were identified as a source of community pride. Daylighted creeks and restored industrial sites have high visibility in the surrounding area and they typically include trails for recreation and public access (practitioner interview #1100, 11/10/08; practitioner interview #2112, 10/14/08). Interpretative materials and access are seen as important for education, helping people to appreciate and value the natural environment.

Impacts on culture

For those in the salmon industry, the results of their restoration work have been mixed. One community member felt that their efforts had prevented salmon from going extinct in California. However, over the same time frame, their fleet had shrunk by 85%. Despite the many challenges fishermen and fisherwomen have faced in recent years, he believed they had kept the resource alive and with it hope for a future generation of fishing men and women (practitioner interview #1030, 3/18/11). As mentioned earlier, participating in restoration was one way to realize this community's values of protecting and responsibly using the resource upon which their way of life depends.

For Tribes and other American Indian groups, restoration is part of an ongoing process to reconnect local cultures and the environment and to acknowledge and address historical changes that have affected the local landscape and people's ability to practice their cultures and express cultural values. At UIHS, restoring the Ku' wah-dah-wilth Restoration Area has had emotional impacts, affected relationships between Indian and non-Indian community, raised awareness of American Indian history and culture, and to a limited extent provided opportunities for community members to use and learn about culturally-significant natural

materials. Restoration at Indian Island is ongoing, but early stages of the process have been encouraging. Initial results include raising awareness of Wiyot history and current issues facing the Tribe as well as increased engagement between Wiyot and non-Indian community, evidenced in the outpouring of support for the decision to return land to the Tribe and the large attendance at yearly vigils held to commemorate the anniversary of the Indian Island massacre. Finally, when the tribal member who had nominated the Yurok Watershed Restoration Department for the ASJE award mentioned at the start of this chapter, spoke about the significance of restoration to her, she said, "This is who we are. This is what we do." Her testimony indicates that for some restoration is a way to integrate cultural identity and values into contemporary resource management practices.

Building Relationships

Mark Baker's (2004) description of a restoration system built around a network of relationships among various actors in the restoration community suggests the importance of relationships in making the restoration system function in Humboldt County. Not only are these relationships a precondition for many restoration projects, they are also an outcome of the process of restoring. Crises often precipitate restoration work (see for example, House 1999), and the relationships that have grown out of these crises were cited as one of the most important outcomes of restoration. In some cases the benefit of these relationships was judged to outweigh the ecological impacts of a particular restoration activity (practitioner interview, #1020, 10/12/08; practitioner interview #1000, 11/10/08).

Most famously, the water wars of 2001 and the fish kill of 2002 on the Klamath River eventually led to a sustained conversation between opposing sides. After years of meetings and negotiations, many of the Tribes and irrigators within the Klamath Basin have had a chance to get to know each other and have, over time, developed a productive and supportive relationship, culminating most recently in the dam removal settlement that lays the foundation for the restoration of the entire Klamath River Basin (Fletcher and Kandra 2010). In another instance, the potential listing of salmon under the Endangered Species Act in the mid-1990s got commercial fishers and members of the logging industry talking to each other after years of each blaming the other for declining salmon populations. Once this new relationship was in place, members of the timber industry ended up supporting the fishermen who helped Senator Mike Thompson draft Senate Bill 271, which created a dedicated funding stream for salmon habitat restoration projects from tidelands oil and gas leases (practitioner interview #1000, 11/10/08). On a smaller scale, the fear and anger generated by a potential net zero sediment rule in the Mattole got back-to-the-landers and ranchers talking to each other after years of thinly veiled hostility. Out of this confrontation was born the Mattole Watershed Alliance, which created a constructive forum for ranchers and other residents to communicate and find common ground based on shared concern for health of the watershed (practitioner interview #1020; House 1999).

Learning

Those involved in the Humboldt County restoration system note that restoration practice has consistently evolved over the last thirty years (practitioner interview #1020, 10/12/08;

practitioner interview #1000, 11/10/08). In the late 1970s, both resource professionals and community volunteers involved in salmon and watershed restoration found little guidance on how to approach the work. Neither Redwood National Park personnel nor local contractors had much experience controlling erosion on steep, unstable hillslopes like those found in the Redwood Creek basin, so "In a cooperative effort, the National Park Service drew heavily upon the experience and imagination of local contractors to design, test, and document various rehabilitation techniques" (Weaver and Sonnevil nd, 3). In 1977, the Park's first year of experimental watershed restoration treatments, park staff solicited proposals from local contractors and awarded contracts based on the treatments the contractors had prescribed. Likewise the community-based restoration group in the Mattole watershed had a clear idea of what they wanted to do—restore the native salmon runs—but little idea how to do it, so they began by talking to ranchers, loggers, commercial fishermen, and biologists and by seeking out what few technical manuals were available (House 1999). From these beginnings restoration practice evolved rapidly, in the span of a few years, as people learned from their experiences in Humboldt's forests and streams. Since then restoration in Humboldt County has been a process of experimentation, learning, and adaptive management (practitioner interview #1100, 11/10/08). Indeed, looking back at some of their early restoration attempts, participants in both these efforts concluded that a few had more educational than ecological value (practitioner interview #1020, 10/12/08, Sonnevil and Weaver n.d.).

As an example of the learning that has taken place and the subsequent evolution of restoration practice, one of the major changes in watershed restoration has been the switch from labor-intensive techniques to heavy-equipment based-treatments. When Redwood National Park staff began experimental watershed rehabilitation work in 1977, small-scale, labor-intensive techniques (e.g., check-dams and wooden terraces) were considered state-of-the-art and believed to be critical for controlling erosion on logged lands. After several years of experimenting with both labor-intensive techniques and heavy equipment work, park personnel determined that using manual labor to control surface erosion was ineffective and expensive. Park studies illuminating the relative sediment contributions of different ground disturbances led to a shift in restoration treatment from intensive manual labor activities to heavy equipment work. This research showed that roads and stream channel erosion were much greater existing and potential sources of sediment than surface erosion from exposed soils. Physical work turned to treating and preventing road-related erosion, using the same machines that had created the roads in the first place. At the same time, revegetation efforts shifted away from labor intensive replanting of many species toward site preparation designed to encourage natural succession. Redwood National Park's early evaluation of restoration treatments revealed that employing large numbers of unskilled workers was not the most effective way to meet either their restoration or economic goals; it was difficult to recruit people and more skilled jobs at the park did not materialize.

In addition to learning that advances restoration practice, some in the restoration community stressed that taking part in restoration can also shift people's mindset, whether or not a particular intervention has an ecological effect. As one community member said, "Sometimes there's an effect, sometimes not, sometimes you can't tell, but through all of that we are developing a mindset, and understanding that we must work with the

landscape" (practitioner interview #1020, 10/12/08). Creating new relationships with the landscape and incorporating respect and humility into interactions with the natural world is an important outcome for those who believe the root cause of local ecological degradation is land management primarily focused on economic extraction (practitioner interview #1020, 10/12/08; House 1999).

One of restoration proponents' ultimate goals is to motivate and educate people to avoid destructive actions in the first place, so as to prevent the damage that restoration later tries to undo. Restoration community members' accounts suggest that the process of restoring contributes to changes in environmental awareness as hypothesized and facilitates learning. For instance, in *Totem Salmon* (1999), House describes how the intimate contact he has had with places and salmon while doing restoration work have been profound learning experiences both about natural systems and human relationships with them. What people learn through the restoration process, they take with them elsewhere to other non-restoration jobs and contexts. For example, heavy equipment operators doing restoration work are learning how to create adequate fish passage. With this knowledge, they are able to provide fish passage when they do private road construction jobs (practitioner interviews #2112, 10/14/08). Another community member felt that more than 30 years of restoration work had helped to educate the public about the intrinsic ecological value of ecosystems, as opposed to the economic value of some of their component parts (practitioner interview #1030, 3/18/11).

Monitoring and Evaluation

Aside from the efforts of Mark Baker (2004) to quantify the economic impacts of ecological restoration, the effects of restoration on communities in Humboldt County remain largely unevaluated. However, funders are beginning to ask for more monitoring of social impacts, so several organizations are in the early stages of developing new metrics and data collection systems (practitioner interviews, #2112, 10/14/08; practitioner interview #1101, 3/9/11). Monitoring and evaluating the social outcomes of restoration work have many of the same difficulties as monitoring and evaluating their ecological outcomes, an undertaking that restoration community members readily admit is challenging. These difficulties arise from a lack of baseline data and the fact that many restoration treatments have indirect impacts that unfold slowly and that many factors not directly connected to the restoration project itself may impact how effective treatments will be (practitioner interview #1020, 10/12/08; practitioner interview #1100, 11/10/08; practitioner interview #1111, 11/14/08).

Multiple interacting factors and the difficulty of developing useful metrics also make evaluating the social outcomes of restoration projects difficult. In assessing the impacts of the expansion of Redwood National Park on the local timber economy, DeForest (1999) found it was hard to attribute change to a specific factor, since many other forces were influencing the California timber industry at the same time. A lack of adequate metrics for capturing the impacts of restoration, including its impact on communities, was another issue that restoration community members identified. For example, it is common to count volunteer hours or the number of volunteers, but these numbers fall short of capturing what,

if any, impact volunteering had on participants (practitioner interview #1101, 3/9/11). Despite the difficulties, restoration practitioners in Humboldt County appreciate monitoring and evaluation for the contributions they have made to restoration practice, the improvements they can yield in proposal and project quality, and their ability to illustrate accomplishments thereby garnering support from managers, funders, and the general public (practitioner interview #1101, 3/9/11; practitioner interview #1111, 11/14/08; Popenoe and Spreiter nd).

While learning and the associated evolution of practice are valued outcomes of the more than 30 years of restoration work in Humboldt County, there is also a demand for a more coordinated system for sharing information between groups at a regional scale (practitioner interview #2010, 10/12/08). At least two restoration community members see this lack of coordination among restoration organizations as a limitation of work that is inherently place-based (practitioner interview #2010, 10/12/08; practitioner interview #1101, 3/9/11). Other obstacles to learning occur because of lack of communication between different scientific disciplines as well as a divide between practitioners and academics (see for example, Palmer 2009). As one member of the restoration community explained, "Practitioners don't go to Society for Ecological Restoration meetings. Academics do. Practitioners go to Salmonid Restoration Federation meetings. Because of this separation, there's no meeting of the minds" (practitioner interview #2010, 10/12/08).

Restoration's social and landscape context

Restoration is a form of natural resource management that is shaped as much by social context as by physical and biological conditions (O'Dell 1996). The ways in which restoration is constrained by regulatory, fiscal, and landscape factors was a theme that emerged when restoration community members described their work.

Constraints: Permitting and funding

Restoration community members identified permitting as both the biggest obstacle restoration projects face and the most time consuming aspect of the restoration process (practitioner interview, #1100, 11/10/08; practitioner interview, #1000, 11/10/08). Obtaining permits, which are typically required from many different agencies, consumes limited funds and can delay projects by several years. Large sums of money are being invested in Humboldt County restoration, but the number and complexity of funding sources can also be challenging. Each grant program has a different application process, guidelines, conditions, and reporting requirements as well as a different willingness to support institutional overhead. The interaction of permitting and funding cycles further hampers restoration activities, particularly because it is not uncommon for grants—whose life spans do not take into account the lengthy process that precedes a project's start—to elapse before permits have been approved. Money that is intended for implementing restoration treatments instead gets spent on the work of getting permits (Baker 2004, 2005). Although complaints about the permitting process were widespread, getting permits can be especially onerous for groups with fewer resources, less experience with the permitting process, and less internal capacity for permitting (practitioner interview, #1100, 11/10/08).

These observations and experiences confirm what political ecologist Sharon Moran (2007) identifies in her research on urban restoration projects: social processes that have marginalized groups in the past can continue to marginalize them as they seek to undertake environmental work for the benefit of their surroundings and communities.

Restoration practitioners stressed that restoration projects often follow funding (practitioner interview, #1100, 11/10/08). As has been reported elsewhere in the United States (Flitcroft et al. 2010; Palmer 2009), it is not uncommon to do restoration work piecemeal as funding becomes available. In addition, the types of projects and project locations that funders want to support can also influence what projects get proposed and where work takes place. Finally, while Humboldt County is fortunate to have the infrastructure to do extensive restoration work, being able to maintain this infrastructure and continue restoration work depends on a reliable funding stream. The current funding structure is risky because of the limitations of grant funding and the uncertainties associated with relying almost entirely on government support. The problems with this system have been particularly evident in the last several years as state and federal agencies struggle with budget shortfalls (practitioner interview #1101, 3/9/11).

Furthermore, opportunities to engage in restoration, in particular gaining access to sites, impact how prioritization plays out (practitioner interview #1100, 11/10/08). While the literature stresses the importance of doing large-scale assessments and then prioritizing restoration projects (see for example, Palmer 2009), designating a site a priority has little practical significance if one lacks access to it. Fortunately, opportunities to undertake restoration are not fixed. As one restoration community member noted (practitioner interview #1100, 11/10/08), part of the work of restoration is creating opportunities, by building relationships with landowners, working on getting easements, and engaging in other activities that create access to important places or nurture the trust and relationships needed to carry out restoration work.

Constraint: Landscape context

Landownership shapes how restoration is done as well the possibilities for restoration in particular locations. Baker (2005), for example, has identified two models of restoration in Humboldt County based on whether the land where restoration takes place is publicly or privately owned. On private lands, nonprofit organizations act as intermediaries between private landowners and government agencies, addressing issues of trust and access and coordinating permits and funding. The most common arrangement on public lands is for a government agency to oversee all aspects of restoration except implementation, which is done by private contractors. Redwood National and State Parks, Six Rivers National Forest, and on US Fish and Wildlife Service units all use this approach. The Bureau of Land Management conducts its restoration work differently, partnering with community organizations who share in the planning process (Baker 2004).

The issue of landownership also affects strategies for achieving restoration goals. Freeman House (1999) describes how members of the Mattole Restoration Council felt that forest and stream habitat on public lands could potentially be protected through political channels, but

to intervene on behalf of these types of sites on the property of private timber landowners, purchase seemed like the only option.

Land ownership plays an especially significant role in the restoration work undertaken by American Indian Tribes. Because of the history of Indian dispossession in the region, American Indian Tribes interested in restoration have had either to purchase land or negotiate agreements to gain access to lands within their ancestral territories. For instance, only a few thousand acres of the 56,000-acre Yurok reservation remain in trust; the remainder are held by Green Diamond Resources (formerly Simpson Timber Company), other private landowners, and public land management agencies (Huntsinger and Diekmann 2010). In the early 1990s the California Coastal Conservancy facilitated a collaborative partnership between the Yurok Tribe and Simpson Timber Company to do watershed restoration on the Lower Klamath River. The Yurok Tribe has also performed watershed restoration work within Redwood National and State Parks under a Memorandum of Understanding for government-to-government relations and an Annual Funding Agreement (National Park Service 2006; Yurok Tribe Watershed Restoration Department 2001). Similarly, over ninety-five percent of Karuk ancestral territory is contained within the Six Rivers and Klamath National Forests. In 1996, the Tribe entered into a Memorandum of Understanding with these two National Forests that establishes a framework for them to work together on mutually beneficial watershed restoration projects in Karuk Ancestral Territory (Karuk Tribe 2003). The Yurok and the Karuk rely on cooperative agreements with private companies or government agencies to secure access to land in need of restoration. In more urban areas, Tribes and American Indian organizations have had to buy back land they wish to restore at considerable expense.

The number and type of landowners in a watershed also structure the restoration activities that take place there. The watershed rehabilitation program in Redwood National Park has been shaped by landownership and land use since its beginning. Because the National Park Service did not own the entire watershed and could not influence the land use practices of upstream landowners, the redwood stands that were initially acquired were soon affected by logging taking place outside the park's boundaries. Even after expansion, landowners who engaged in industrial timber harvest continued to own and control the upper portion of the watershed. Although the Park has a Private Lands Program to work with private landowners in the upper basin on minimizing erosion and sedimentation from their lands, one of the limitations to Redwood National Park's restoration program is that it does include the entire basin, so ongoing development on private lands can offset what the park has accomplished on its own land. Park documents stress that what Park staff are able to achieve and their ability to follow priorities are seriously constrained by access and land ownership (DeForest 1999; Ozaki 2004; Popenoe and Spreiter nd). In a Park report, it was noted that "Of the currently active or potential erosion sources identified in a watershed, it is likely that only a fraction of these will be both accessible and controllable" (Weaver and Sonnevil nd, 7). In fact, as of 1997, new roads added by upstream landowners more than offset the old roads removed within Redwood National Park Redwood as part of its watershed rehabilitation program, resulting in a net increase in road mileage in the Redwood Creek watershed (Ziemer 1997).

Although Redwood National and State Park does not own the entire basin, it is the sole owner of a large tract of land, a situation that restoration community members identified as desirable, but relatively rare (practitioner interview #1000, 11/10/08; practitioner interview #1020, 10/12/08; Griffin 1990). According to restoration community members, the fewer landowners in a watershed the greater the potential for restoration work. For instance, Redwood National and State Park's recent acquisition of the Mill Creek watershed creates an unprecedented opportunity to employ the best practices for creating healthy aquatic and redwood ecosystems (practitioner interview #1020, 10/12/08). Outside of the parks, practitioners report a similar phenomenon. Restoration community members generally prefer to work in watersheds with just a few large landowners because it is possible to get more done (practitioner interview #1000, 11/10/08). In contrast, they find it much harder to work in more developed watersheds because of the challenge of coordinating a large number of property owners (practitioner interview #1000, 11/10/08; practitioner interviews #2112, 10/14/08). In urban settings, orchestrating access to lands belonging to multiple landowners is a major undertaking. Having multiple landowners also raises liability issues should restoration-related changes impact those on surrounding properties (practitioner interview #1020, 10/12/08). For instance, using fixed wood structures in stream habitat restoration projects was identified as being very safety and liability conscious, but completely counter to the dynamic way wood functions in aquatic systems (practitioner interview #1020, 10/12/08). Existing infrastructure must also be taken into consideration and can impede attempts to emulate natural processes. Conversely the possibility of upgrading aging infrastructure can be an incentive for municipalities to participate in restoration (Doyle et al. 2008).

The landscape context of particular restoration sites also impacts restoration outcomes. When the City of Arcata restored Butcher Slough, non-native Spartina grass unexpectedly invaded the project area after the project, which undid channelization, was complete. Going forward, the City is trying to figure out how to conduct similar types of restoration projects without also creating an opportunity for colonization by invasive species. At the Lanphere Dunes, restoration leaders acknowledge that "invasive plants are a never-ending battle" (Anderson n.d.). Even though they have succeeded in removing almost all the exotic European beach grass, bush lupine, and ice plant from the restored area, these plants will continue to invade from outside the protected area, necessitating ongoing maintenance of the dunes. In estuaries, restoration projects employ heavy equipment to dig out tide gates, which were used to create or protect agricultural fields, and then to excavate the former channels. It is not possible to let the tide do the work of restoring former channels because it would put too much sediment into Humboldt Bay, creating a water quality issue and interfering with the local mariculture industry (practitioner interview #1100, 11/10/08).

The landscape—the site where people and their environment mingle—is important because it provides the physical and social context in which restoration work takes place. Properties and sites are not independent, but connected by ecological, hydrological, geological and social processes. The relationship between people in the landscape and between human and nonhuman elements of the landscape is shaped by past events, but also has the power to constrain what occurs in the future. It was more than 150 years ago that Americans began claiming Indian territory in Humboldt County, but the legacy of this dispossession

continues to shape how tribes practice ecological restoration and the strategies they employ to manage natural and cultural resources in their ancestral territories. Working in a landscape that is populated with preexisting properties, structures, property owners, and ecological communities can complicate efforts to emulate natural processes. Restoration work takes place within and must take into consideration the complex mosaic of human and environmental factors that a landscape weaves together.

Conclusions

Humboldt County is home to an active and multifaceted ecological restoration system (Baker 2004), made up of diverse entities (e.g., governments, Tribes, industry groups, and community-based organizations) that share an interest in the connections between restoration projects and adjacent communities. Describing their motivations and goals, restoration community members outline a vision of restoration that contributes to the region's economy, strengthens relationships within human communities and between communities and the places they call home, and supports cultures and ways of life. These ideas are in keeping with the hypothesized social benefits of restoration that have been outlined in the literature on the human dimensions of ecological restoration (see Chapter 2). Similarly studies of watershed restoration on the Chesapeake Bay and in western Oregon have found that stakeholders expect that restoration will accomplish economic, cultural, and environmental goals simultaneously and that this understanding of restoration affects people's support for restoration plans and practices (Paolisso and Dery 2010; Rosenberg and Margerum 2008). The cultural meanings and values that people attach to the targets of restoration projects (be they oysters, watersheds, or something in between) shapes how they perceive and define restoration (Flitcroft et at. 2010; Paolisso and Dery 2010).

How well these intentions and desires translate into outcomes in Humboldt County remains much less clear. While restoration community members were confident about the economic impacts of the restoration system (Baker 2004; Baker 2005), other benefits for the community were harder to pinpoint and less well documented. Of the non-economic outcomes they described, restoration community members were most certain about the new relationships that emerged between groups or communities, which had been at odds with one another previously, and about the learning that took place both by individuals working on particular restoration projects and collectively from conducting many restoration projects over time. These two types of outcomes may be important for the long-term success of restoration efforts in Humboldt County and elsewhere. Because restoring habitat, for instance, can take decades or longer, some of these social developments, which may be realized on much shorter time scales, are important for sustaining commitment and coordinated restoration planning, action, and maintenance over long periods of time and across large areas (Flitcroft et al. 2009). Strong social infrastructure and social learning are thought to increase the resilience of social-ecological systems (Fernandez-Gimenez, Ballard, and Sturtevant 2008; Flitcroft et al. 2009).

Members of the Humboldt County restoration community agreed that monitoring and evaluation were an important, but neglected part of the restoration process (for more on insufficient monitoring of ecological restoration, see Aronson et al. 2010; Bernhardt et al.

2007; Kondolf 1995). Yet, monitoring and evaluation of both the ecological and social outcomes of restoration activities remain a challenge because of the "interaction of multiple processes operating at multiple spatial and temporal scales" (Reeves and Duncan 2009, 2). In Humboldt County, attempts to conduct more comprehensive monitoring of restoration projects are likely to become more commonplace, in part because funders are beginning to ask for more evidence of social impacts. Beyond meeting grant requirements, it is important to consider the community benefits and burdens (Buckley and Crone 2008; Davenport et al. 2010) of restoration projects because these factors appear to be integral to residents' evaluation of restoration outcomes. When asked to evaluate restoration projects in Florida and Illinois, residents placed as much or more emphasis on community benefits—such as recreation access, environmental education programming, improved scenery, and tourism-based revenue—than ecological outcomes (Davenport et al. 2010).

Despite their desire to positively impact people as well as places, restoration community members often seemed most concerned with the human dimensions of ecological restoration when discussing how negotiating regulations, funding streams, and the larger cultural landscape constrained restoration practice. Similar issues (e.g, political pressure and jurisdictional divisions) have been raised in other restoration contexts (Palmer 2009, 6). For instance, landowners in Western Oregon reported that the greatest barriers to undertaking watershed restoration projects on their land were money, time, and unfamiliarity with government programs (Rosenberg and Margerum 2008). However frustrating these experiences and concerns may be, they demonstrate that neither the process of restoration nor restored sites can be separated from their social and ecological context (Moran 2007).

Restoration must take place within the boundaries of what is ecologically and socially viable. Both what people expect from restoration and the obstacles to restoration they identify factor into social acceptability (Gobster and Hull 2000; Reeves and Duncan 2009). Frequently, these factors (i.e., funding, regulations, land ownership) are framed as setting limits on the amount and effectiveness of restoration that is performed. Although regulations can be modified and funding streamlined, these and other forces will continue to impact what is possible and what types of opportunities exist for management. Rather than think of them purely as obstacles to be surmounted, it could be more productive to imagine what kind of social-ecological linkages are desired and would support restoration goals, a planning process that might include possible social benefits as well as social restraints and engage the larger context within which restoration takes places.

CHAPTER 7. CONCLUSIONS

Restoration has important ecological work to do, particularly maintaining biological diversity and repairing impaired ecological functions. But, as those who study restoration (Chapter 2), those who use restored areas (Chapter 5), and those who do restoration (Chapter 6) report, many people anticipate and hope that restoration will also produce changes in and provide benefits to human communities as well. Although these expectations are widespread (Davenport et al. 2010; Paolisso and Dery 2010; Tomblin 2009a; SER 2004; Jordan 2003), relatively little is known about how well restoration projects achieve their goals generally (Bernhardt et al. 2007, Bernhardt et al. 2005), and even less about the social and cultural consequences of restoration work (Aronson et al. 2010).

To address this gap, I have used interviews, in combination with a review of historical and contemporary documents, to develop an understanding of restoration goals and outcomes that is grounded in the experiences of UIHS community members, who are the intended beneficiaries of the Ku' wah-dah-wilth Restoration Area, and of members of the broader Humboldt County restoration community. The UIHS community is made up of American Indians living in northwest California, their family members, and the organization's Indian and non-Indian staff members and collaborators. The Tolowa, Wiyot, and Yurok Tribes are represented on the UIHS Board. UIHS community members also belong to other California Tribes, including the Karuk, as well as Tribes from other parts of the United States. The Humboldt County restoration community is made up of diverse entities, including public and private landowners, regulators and funders, American Indian Tribes, and nonprofit organizations, who work together to further local restoration efforts.

To assess restoration's community-related outcomes, it is important to understand what people want from restoration and why. Restoration goals are culturally and historically constructed. Thus, they are the product of broad cultural frameworks that shape how people make sense of, value, and interact with the natural world (Robbins 2004; Merchant 1989). Yet they are also the product of the specific characteristics of landscapes and the ecosystems, habitats, and populations that they contain at a given period in time, which have been shaped through the interaction of political, economic, social, and ecological forces. Consequently, restoration goals will change over time (e.g., Hobbs, Higgs, and Harris 2009) and differ from place to place. What different human communities want from restoration is influenced by their culturally mediated relationship with the land as well as their position within the social-ecological system (Nadasdy 2007). For the same reasons that communities may not agree about the desired outcomes of restoration, management interventions to maintain or restore certain ecological states will not affect all communities equally. Restoration's community outcomes, whether beneficial or disadvantageous, also depend on a group's culture, history, and relative social position as well as the particular environmental state in question. Because of the complex social, political, and environmental context in which restoration takes place, positively impacting human communities through restoration will require considerable thought and effort to incorporate community goals throughout the restoration process: planning, design, implementation, and maintenance.

The Ku' wah-dah-wilth Restoration Area and the United Indian Health Services Community

UIHS community members share a vision of restoration that is rooted in 1) cultural understandings of the relationship between people and the environment and 2) historical changes to the local landscape and American Indian communities that have affected their ability to enact this relationship and to apply key cultural values. According to this worldview, people are an integral part of the natural world and have personal relationships with plants and animals as well as landscape features. This worldview is evident in the way that basketweavers treat plants as people and finished baskets as living objects (Johnson and Marks 2007). Ultimately, UIHS community members believe that it is not possible to have a healthy environment without people participating in it, i.e., using and managing resources and fulfilling their spiritual responsibilities as "Fix the World" peoples. Equally important is their belief that it is not possible to have healthy people and a healthy community without a healthy environment. This culturally specific model of human-environment interactions leads to the hypothesis driving UIHS's and other local American Indian restoration projects (Kadlecik and Wilson 2008, 316-317). That is, because natural and cultural resources are inextricably linked, restoring the environment can support cultural revitalization and community wellbeing. As Laura Kadleick, who oversaw the design and implementation of the Ku' wah-dah-wilth Restoration Area explains, in this project and others like it, American Indians combine restoration techniques with traditional ecological knowledge "to restore balance and health to their population by providing culturally appropriate places that offer a sense of community" (317). These ideas are evident in UIHS community members' definitions of restoration, which they see as being equally about restoring ecological functions and restoring a role for American Indians in the landscape through management, traditional activities, and applications of cultural knowledge.

This cultural framework helps to explain what UIHS community members want from restoration. But they also feel there is a need for restoration because the American colonization of northwest California and its aftermath have made it difficult for local American Indians to express their relationship to the natural world through land and fisheries management, subsistence practices, and other cultural and spiritual activities. Since the mid-nineteenth century, the landscape has been altered and local American Indian communities and cultures have been disrupted, causing trauma to the American Indian population (Middleton 2010; Kadlecik and Wilson 2008; UIHS YR; Ferriera 1996). At times intentionally (Lewis 1994) and at times not, changes in the environment have reinforced attempts at directed social and cultural change (Huntsinger and McCaffrey 1995; Romm 2002). For the second half of the nineteenth century and much of the twentieth century, indigenous landscapes and culturally important species were marginalized at the same time that American Indian peoples found themselves outside of the dominant American society.

Even though American Indians tribes in northwest California have successfully gained political recognition, established a larger presence in the region, and engaged in cultural revitalization efforts (Kadlecik and Wilson 2008) since the 1960s, UIHS community members still describe local landscapes that have not kept pace with these changes. In

addition, despite successful local American Indian activism, the UIHS community continues to struggle with poor health, drug and alcohol addiction, and a lack of quality jobs, among other problems. Community members are also concerned that today's youth are not being exposed to cultural values and practices, complicating the intergenerational transmission of cultural knowledge in their community. The environment is implicated in these ongoing problems because current cultural landscapes of northwest California restrict American Indians' access to certain materials and experiences, perpetuating the intergenerational trauma that UIHS community members continue to grapple with. In this context, restoration offers a way to insert American Indian knowledge, values, and practices into natural resource management; to increase community members' access to certain materials and activities; to affect how people feel about themselves; and to confront some of the larger social and political processes that have contributed to historic landscape changes.

UIHS created the Ku' wah-dah-wilth Restoration Area to help improve community members' physical health by creating an environment that supports community wellbeing and local cultures. In many ways, the Ku' wah-dah-wilth Restoration Area is unique because UIHS consciously included culture and community in the vision, design, and implementation of this restoration project. The organization's focus on social and cultural outcomes has paid off: community members report that they have experienced and/or observed positive results both from the process of restoring and from uses of the finished restoration site. The outcomes they identified suggest several different pathways through which the restored area impacts people:

- By providing opportunities for education about local cultures, the environment, and indigenous management through use of on-site educational materials, individual exploration, discussion with knowledgeable community and staff members, participation in workshops, and direct engagement with the site through paid or volunteer work.

- By encouraging healthy behaviors, such as regular exercise and a diet that includes a wide variety of fresh vegetables.

- As a source of inspiration that stimulates people's memories (e.g., of past landscapes or a grandparent's garden) and imaginations (e.g., of the possibilities for a culturally satisfying career in an environment profession or a home garden) and also develops people's skills for acting on these visions of past and future landscapes.

- By providing welcoming spaces for community interaction and connection.

- By creating a culturally meaningful place that encourages a range of positive emotional responses, such as stress release, feeling good about oneself, and pride.

- Through the symbolic power of creating the only highly visible Indian place in the densely populated parts of the North Coast, which serves as a positive symbol of living Indian cultures for both American Indian and non-Indian communities.

Although UIHS community members identified many pathways through which the Ku' wah-dah-wilth Restoration Area positively impacted their community, they also pointed out a number of ways in which the restoration area did not live up to its full potential. In this regard, community members had two main concerns. First, that the restoration area reached only a limited number of people. And second, that those who did take advantage of the restoration area primarily used the site in passive ways (e.g., walking, personal reflection) instead of engaging actively with it, even though community members believed strongly that active uses had the greatest impact. To overcome these obstacles to fully realizing the community's social and cultural goals for the Ku' wah-dah-wilth restoration area, community members recommended 1) increasing the number of people that access the restoration area, either by bringing more people to the site or by bringing restoration to UIHS's satellite clinics where it could benefit people who live too far away to visit the Potawot Health Village; 2) increasing the number and types of offerings at the restoration area that enable more active uses of the site, such as workshops, classes, and children's camps; and 3) improving communications about the restoration area, particularly describing *why* and *how* it was created, to raise awareness about the Ku' wah-dah-wilth Restoration Area and its significance.

Humboldt County restoration

By and large, members of the Humboldt restoration community share UIHS community members' interest in the connections between restoration and community. Their community goals are both economic and cultural: to provide quality jobs and a sustainable resource base, to change how people perceive their relationship with the environment, and to maintain or restore ways of life. The environmental conditions they are responding to are in large part a consequence of the cultural landscapes that were produced by forest and river management regimes, regulations, tax structures, and economic conditions that prevailed from the 1940s to the 1970s. Their cultural goals are connected to the community value of natural resources and are sometimes a reaction against an economic system that alienates people from ecological processes and consumes natural resources unsustainably.

But with the exception of restoration's economic impact, which has been documented by Mark Baker (2004, 2005), the other impacts restoration has had on local communities are harder to pinpoint. This uncertainty suggests a disconnect between restoration goals and outcomes, which Juliet Christian-Smith and Adina Merenlender (2010) have also observed in the Russian River watershed just south of Humboldt County. They attribute this mismatch to a failure of implementation, in which restoration practices do not reflect restoration intentions (ibid., 100). Their conclusion, arrived at through an institutional analysis, that restoration goals are not necessarily reflected in restoration outcomes is supported by this more ethnographic research.

Humboldt restoration community members' experiences also indicate that restoration can have unintended consequences. In this case, the unanticipated social outcomes of restoration work have been deemed positive: 1) relationship building between groups that had been at odds in the past, and 2) improved knowledge about local ecosystems and management techniques. In other instances, unanticipated restoration effects can negatively

impact communities, and ultimately the progress of a restoration project itself. As Buckley and Crone (2008) describe, many farmers perceived restored sites in the Sacramento River Conservation Area as a source of pests and weeds and their concerns affected policy and funding decisions, which limited the scope of the restoration.

Research implications for restoration projects

Considering the restoration experiences of the UIHS community and the broader Humboldt County restoration community as well as the differences in the social and cultural outcomes these two communities have been able to achieve leads to four recommendations for conducting restoration that strives for both community and ecological outcomes.

- Achieving community-related goals through restoration, while possible, does not occur automatically (Light 2000). Realizing social and cultural goals requires active planning, engagement with the broader political and social forces that have contributed to current conditions, selection of appropriate methods, and ongoing involvement with the restored site to create opportunities for education and/or use. Working at the watershed level, a number of researchers have commented on the need to engage with larger economic and political processes that have influenced current undesirable ecological conditions (Christian-Smith and Merenlender 2010; King and Whisenant 2009; Moran 2010). This remains an important consideration at the project level, where it can also be expanded upon by taking action during design, implementation, and maintenance to create opportunities for community input and engagement. Christian-Smith and Merenlender (2010) have criticized the site-specific focus of restoration projects in northern California for failing to address the social processes that produce a degraded watershed. Small-scale projects can grapple with these processes if they take steps to meaningfully integrate the community.

  The Ku' wah-dah-wilth Restoration Area has many of these elements: a restoration plan that explicitly incorporated community and cultural goals; a design process that involved community members with cultural expertise to guide the selection of plants for the site; a political process that drew attention to contemporary American Indian communities as well as the social and cultural legacy of past landscape changes; and a dedicated staff to oversee the ongoing maintenance of the restoration area and develop programming and other activities that utilize the restored site. Even so, the impacts of the restoration site have been limited and community members request more staff and funding to increase access to and awareness of the Ku' wah-dah-wilth Restoration Area. The political organizing done to get the project land uses approved, the Conservation Easement Management Advisory Committee (CEMAC), and the Traditional Resources Program Represents a serious commitment of resources that some organizations may be unwilling or hesitant to make.

- Incorporating monitoring and evaluation of social outcomes into the process of restoration can increase the likelihood that these goals will be achieved. Including community-related goals at the outset signals that they are an important element of the project and facilitates the collection of data that can be used to determine project impacts and eventually to help expand practitioners' knowledge of what works and what does

not. Used this way, evaluation is not a one-time event intended to be a final judgment on project success, but instead a tool for learning and adjusting course as necessary (Minkler 2005; Springett 2003). It is akin to adaptive management, in that it is designed to facilitate learning and adaptation (Fetterman 1996; Millett 1996; Springett 2003), but it is not hypothesis driven and lacks an experimental design.

- It has been suggested that much of restoration's human potential lies in the possibility for participation (Higgs 2003; Light 2000b; Moran 2007), with the environment and with other people. UIHS community members' experiences with the Ku' wah-dah-wilth Restoration Area confirm that participatory activities—whether through the process of restoring or engaging with the restored site and its materials—are more transformative than passive uses of restoration areas. Managers interested in achieving social and cultural outcomes with restoration should consider what leeway they have to create opportunities for participation. This approach, however, may be at odds with models of restoration that prefer to erase all signs of human intervention after a project is completed (Hall 2003).

- Finally, where community benefits are desired, managers must consider who is benefiting from restoration and who is not. Knowing who benefits is important because the number of beneficiaries is an important consideration in determining the overall impact of an intervention. Just as important is knowing who does not benefit because the distribution of environmental investment and opportunities has implications for environmental equity. Environmental justice scholars have shown that it is not only environmental harms that are unevenly distributed, but also environmental amenities (Moran 2010). Although the environment justice implications of restoration have received the most attention in urban settings (Moran 2007, Smith-Cavros 2006), they are also a concern in rural areas. Finally, distributional equity is a concern not just among different communities, but also within communities.

The Impact of Ecological Restoration on Human Communities

Much of the literature on the human dimensions of ecological restoration concentrates on the impact that people have on the environment, thereby envisioning landscapes as artifacts of human action. Yet, as a cultural landscapes framework suggests, this is only one half of the story. Landscapes also affect people by structuring the opportunities and choices available to them. UIHS community members' accounts of local American Indian history and their experiences with the Ku' wah-dah-wilth Restoration Area illustrate the ways in which landscape form and character can both impair and contribute to community wellbeing. For much of the last century and a half, changes to the landscapes of northwest California have restricted American Indians' access to materials and places as a result of property arrangements, the ecological impacts of shifting management regimes, and attitudes about use and the value of different places and species that affect the decisions made by property owners and resource managers. These cultural landscapes have negatively impacted UIHS community members and their forebearers by restricting the materials they have access to for economic development, subsistence, arts and crafts, traditional medicine,

and spiritual uses, with implications for the continuation of cultural practices as well as people's experiences, behaviors, and emotions.

At a much smaller scale, the Ku' wah-dah-wilth Restoration Area demonstrates both how places can positively affect people and the potential for people to successfully challenge normative landscapes. The Ku' wah-dah-wilth Restoration Area has made an impact on UIHS community members by providing educational opportunities, some materials for cultural uses, and a welcoming space for engaging in healthy behaviors, such as exercise and consuming organic vegetables and fruits. It is also a place where people want to come and spend time, so it facilitates community interaction, a key component of community wellbeing. And as a place that honors the cultural values of UIHS community members and includes culturally important species, it also affects how the people who use it feel. Finally, the Ku' wah-dah-wilth Restoration Area, as a distinctively American Indian place, holds symbolic importance in relationship to the surrounding landscape, which has been manipulated for the benefit of the non-Indian community and until the construction of the Potawot Health Village largely obscured the region's American Indian history and its American Indian population. It is important to note that at present these positive impacts are limited to a small portion of the total UIHS community. Nevertheless, UIHS's preliminary restoration successes indicate that restoration can challenge dominant cultural landscapes with positive outcomes for both individuals and communities. Furthermore, while much of the literature on the connections, both positive and negative, between landscape and human well-being has focused on cities (e.g., Hancock and Minkler 2005; Corburn 2009), the experiences of UIHS community members suggest that other managed landscapes are also important drivers of community wellbeing.

Although culture is often mentioned as a factor in ecological restoration (Higgs 2003), few researchers have explored restoration's cultural context and implications (cf. Hall 2005). Those that do consider culture are often describing American Indian restoration projects (McCool 2010; Wolf 2004; Long et al. 2003; Rogers-Martinez 1992). Culture may be easier for the non-Indian observer to locate in American Indians' restoration projects, but it exists in all restoration projects. Even the decision to hide the traces of human activity inherent in restoration is rooted in cultural beliefs about people being separate from the environment (Hall 2005). In addition to the explicit cultural concerns of the Ku' wah-dah-wilth Restoration Area and other American Indian restoration projects in northwest California, the goals expressed by members of the Humboldt restoration community help to reveal how restoration is culturally situated. Of the non-Indian groups included in this study, only fishermen and fisherwomen talked directly about the connection between restoration and their way of life and about engaging in restoration as an expression of community values. However, the more general desire to restore human connections to the natural world is a long-standing impulse in American environmental thought (Nash 1982). An explicit cultural orientation does not diminish the value of a restoration project; in fact it cannot, since all restoration projects are both ecological and cultural undertakings.

It is important to recognize that restoration goals are culturally constructed and that restoration does cultural as well as ecological work. Many of the inequitable outcomes of

past natural resource management programs can be traced back to managers and policymakers overlooking the different cultural meanings that shape appropriate "uses, treatment, or concepts of landscape" (Hardesty 2000, 177; also, Huntsinger and McCaffrey 1995; Fortmann and Fairfax 1989). That is not to say that these inequities and conflicts are only the result of cultural differences. As Scott Prudham (2005) argues—in reference to the spotted owl crisis in the Pacific Northwest—to fully understand conflicts over nature, we must look at the origins of the environmental change at issue, particularly the historical, institutional, and material forces that have transformed biophysical nature. Nevertheless, the imposition of a particular view of nature and the appropriate human relationship to it has been implicated in conservation outcomes that negatively impact minority or low-income groups (Jacoby 2001; Spence 1999; Warren 1997) and remains a concern for those who want restoration to be equitable (Higgs 2003; Long et al. 2003).

Aside from wanting to avoid privileging one view of nature over others, it is also important to consider the cultural aspects of restoration because this and other studies (Davenport et al. 2010; Paolisso and Dery 2010) show that people have multiple, interlocking expectations about what restoration *can* and *should* achieve. As argued previously, these non-ecological goals are rooted in people's culture and socio-economic position. Nature is highly symbolic, and is valued for its ecological services, its economic benefits, and its connections to cultural heritage, among other things (see for example, Brown and Ingram 1986). Paolisso and Dery (2010) find that stakeholders on the Chesapeake Bay hold a cultural model of oyster restoration that dictates that, "oyster restoration is successful when it produces ecological, economic, and cultural benefits, *not just one or the other*" (177, emphasis added). Similarly, researching wetland restoration along the Cache River in Illinois, Davenport et al. (2010) find that community members are more likely to evaluate restoration projects based on their social rather than ecological outcomes. While people in their study area supported restoration generally, when it came to specific projects around their homes, support rested on how those projects intersected with the community. To ensure long-term commitment and public support for restoration, these authors argue that it is important to include community members' criteria for successful restoration outcomes in restoration planning. Stakeholders expect multiple benefits and are more likely to respond favorably to restoration if their expectations—and concerns (Buckley and Crone 2008)—are addressed throughout the restoration process. As Paolisso and Dery (2010, 177) write, the more closely that restoration fits stakeholders' cultural model "the more likely are stakeholders to respond with supportive behaviors, be those behaviors in the arenas of political support, compliance with new harvest regulations, willingness to experiment with new economic strategies, etc."

This research indicates that ecological restoration produces some benefits for human communities. As a result of restoring the Ku' wah-dah-wilth Restoration Area, UIHS community members report changes in their behaviors, in the way they feel, in their relationship to the non-Indian community, and in their enjoyment of culturally significant species at the site. Humboldt County restoration community members have observed the creation of new jobs, a strengthened sense of place, improved understanding of local watersheds, and the emergence of working relationships between formerly opposing groups. I want to make the case, however, not just that restoration *can* positively impact

communities, but that restoration's community outcomes *should* be a consideration for more restoration programs.

Restoration must address both the larger ecological and social processes that produce undesirable ecosystem states if it is to be successful (Christain-Smith and Merenlender 2010, King and Whisenant 2009). From both an ecological and social standpoint landscape context is important; restored sites are not islands, instead they are inextricably linked to the places and the communities where they occur (Buckley and Crone 2008). Restoration takes place within a social and social-spatial context, as Humboldt restoration community members' discussion of social and landscape obstacles demonstrates. If we accept that "landscapes are the artifacts of particular ideas about and uses of nature," then when we want to transform or reproduce those landscapes we need to pay attention to the "political, social, economic, and ecological conditions that create them" (Feldman 2010, 44). James Feldman illustrates this point as he describes how the Apostle Islands were reforested without direct human action, an occurrence that was nevertheless the result of human choices, particularly decisions by the state to promote a tourist economy, and to designate and protect wilderness. As Feldman's case study aptly demonstrates, restoration success hinges as much on social conditions as on physical and ecological conditions. By focusing on restored sites in their landscape context, restorationists must ask themselves not only what restoration technologies and techniques are best suited to the job, but what social, political, and economic conditions are needed to make the desired landscape transformation possible and effective.

If restoration is to live up to its transformational goals, it must address the root causes of undesirable ecological change, which are often social in origin. Yet as Hall (2005, 127) writes, "when setting out to remake nature, humans reproduce a great deal of culture." And as other researchers have observed, restoration often fails to tackle the economic or political conditions that have produced the problem. Restoration, like all forms of natural resource management, is a normative endeavor with ecological, political, and social implications (Nadasdy 2007). Consequently, intentionally manipulating environmental conditions will have an affect on people. It may be to maintain the status quo (Christian-Smith and Merenlender 2010), but it may also change the way that communities relate to the environment and to one another. A focus on possible community benefits, not just society's environmental impacts, can help to close this loop, bringing both people's effects on the landscape and landscape's effects on people into the process of restoration.

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APPENDIX A: INTERVIEW QUESTIONS

I conducted semi-structured interviews with 31 UIHS community members and 8 Humboldt County restoration community members. The questions and topics used to guide each set of interview are listed below. Because these interviews were semi-structured, the actual questions varied from interview to interview.

Interview topics and sample questions for UIHS community members

<u>The importance of the natural world and changes to the environment</u>

- How important is it for you to live in a place where the natural world is part of you life?
- What kinds of things do you particularly like to do in the outdoors?
- In your lifetime have you noticed any changes in fish, game, or plants?
- Over your lifetime have you experienced any changes in your ability to access food species or places to hunt, gather, and fish?
- Have you heard from family members or other community members about other changes in the local environment?
- Do you eat locally grown, gathered, or caught food? If yes, please give an example. Do you eat more or less of this type of food than you did as a child? Why do you think that is?
- Thinking back to your childhood, do you find that you participate in more or less harvesting or gathering activities?
- How important is it to you to carry on these activities? To pass them on to the next generation?
- What do you think are some of the biggest differences between the environment of your parents' generation and the environment that your kids are/will grow up in?
- What local environmental issues are most important to you? Have you been involved in efforts to solve them? If yes, what have you done?
- Have you been involved in the renewal of American Indian cultural practices that has been going on in this area?
- Do you think there are any connections between cultural renewal and changes in how local American Indian people manage or use the environment?

<u>Vision for a healthy community</u>

- What does a healthy community look like to you?

- Can you give an example of people working together to improve health and quality of life? What are the most important lessons you have learned from these community efforts?

- What do you believe are the 2 or 3 most important issues that need to be addressed to improve the health and quality of life in your community?

Ku' wah-dah-wilth Restoration Area

- Have you heard the term "restoration" used in talking about the environment? What does restoration mean to you? Do you think it is important?

- Have you ever heard of the Ku' wah-dah-wilth Restoration Area as a specific part of the Potawot Health Village?

- Have you ever been to the Ku' wah-dah-wilth Restoration Area? Have you been involved with project? If yes, how?

- What are the goals of the Ku' wah-dah-wilth Restoration Area as you understand them?

- What are some of things that people are most proud of about the Potawot Health Village? About the Ku' wah-dah-wilth Restoration Area?

- Do you use the Ku' wah-dah-wilth Restoration Area? Why or why not?

- What in your experience is the most common use?

- Have you seen any changes in its uses over time?

- What types of activities or uses would you like to see as part of the Ku' wah-dah-wilth Restoration Area?

- Do you think the Ku' wah-dah-wilth Restoration Area has had an impact on people who use or work at UIHS? Please explain.

- Do you think the Ku' wah-dah-wilth Restoration has had an impact on the general (non-native) community?

- Have you seen any changes in the community or in people's behavior or attitudes that you think is connected to the restoration area?

- Are there any additional (or unexpected) benefits that have come about because of this project?

- Do you think it's been successful so far? What has enabled it to be successful? What has prevented it from being completely successful?

- How would you like to see it grow, change, or develop in the future?

Interview topics and sample questions for Humboldt County restoration community members

Background
- What role does your organization play in restoration?

- How much of your work involves restoration?

- What types of restoration projects does your organization do or support? Where do these restoration projects typically take place?

- How/why did your organization get involved in restoration?

Restoration goals
- What is your motivation for doing restoration?

- What problems are typical restoration projects trying to address?

- In your opinion, what are the goals of restoration?

Restoration outcomes
- What has this restoration work accomplished so far? What types of impacts have you observed?

- Are there any additional benefits to the projects you've done or supported (e.g., increased adjacent property values, employing community members)?

- What challenges have you encountered doing restoration work?

- What do you think makes for good restoration? Can you provide an example from a project you've been involved with?

Restoration and the community
- Do community members typically play a part in the restoration projects you work on? If yes, what role do they play? If no, why not?

- Do you think many people are aware of the restoration work going on in this region?

Monitoring and evaluation
- Are the restoration projects that you're involved with monitored or evaluated?

- What type of monitoring information is collected?
- How are your projects evaluated?
- Who are the results reported to?