Beyond Dollars and Acre Feet: Assessing the Social Sustainability of Emerging Environmental Governance Structures and Restoration Efforts on "Off-Project" Irrigated Lands in the Upper Klamath Basin

Principal Investigator: Hannah Gosnell

Department of Geosciences
104 Wilkinson Hall
Oregon State University
Corvallis, OR 97331-5506
Phone: 541-737-1222
Email: gosnellh@geo.oregonstate.edu

Co-PIs: Lindsey Lyons, Watershed Education, Klamath County Extension; Mark Meyers, Faculty Research Assistant, Geosciences; Lena Etuk, Social Demographer, Extension Family and Community Development; Gail Achterman, Director, Institute for Natural Resources; Desiree Tullos, Assistant Professor, Biological and Ecological Engineering; Kurt Peters, Associate Professor, Native American and Ethnic Studies; Denise Lach, Associate Professor, Sociology

Student Research Assistants: ***Grads***: Shaun Golding, Aimee Brown, Lauren Redmore, Suzanne McFarland-Price, Paris Edwards; ***Undergrads:*** Shilena Battan, Anne Halliburton, Nikole Wilkins

Submitted to IWW
June 24, 2008

PROBLEM AND RESEARCH OBJECTIVES

Many water resource conflicts have their roots in problems related to environmental governance – the set of regulatory processes, mechanisms, and organizations through which political actors influence environmental actions and outcomes (Lemos and Agrawal 2006). The Klamath Basin is one such example. Historically there has been strong resistance to restoration projects initiated by the federal government, but the recent emergence of more decentralized "hybrid" environmental governance structures (including, for example, community-based natural resource management efforts, government funded water "banks," and co-management with the Klamath Tribes) and associated restoration projects on the "off-Project" irrigated landscapes of the Upper Klamath Basin[1] offer new hope that private landowners can be more effectively engaged

[1] Private lands upstream of the Bureau of Reclamation's Klamath Irrigation Project, including lands in the Wood, Williamson, and Sprague River Watersheds, are typically referred to as "off-Project" lands. Because of their different physical geography and historical land use patterns, and their non-federal status, they have significantly different socioecological dynamics, past and present. One significant difference between the two landscapes is the way in which the Endangered Species Act is implemented, with Project lands experiencing many more legal constraints on their use of water. Because off-Project landowners are not compelled by law to abstain from irrigation, efforts to engage them in conservation and restoration revolve around creating the right incentives for voluntary participation.

in ecosystem restoration, and that the social sustainability of local environmental governance structures can be enhanced. How water is used on off-Project lands has a critical impact not only on the viability of endangered shortnose and Lost River sucker populations, the quality of Upper Klamath Lake water, and the quantity of water flowing to other parts of the Basin (which has implications for the viability of threatened salmon in the Lower Basin), but also for the livelihoods of individual landowners dependent on water supply for irrigation. The physical and spiritual well-being of the communities that inhabit the tributaries, including the Klamath Tribes, is also at stake.

In recent years a significant amount of scholarship has been dedicated to understanding both the drivers and the socioecological outcomes of community based natural resource management because of the promise their "place-based" solutions hold for creating socioeconomic benefits while maintaining ecosystem services. Relevant literature includes work by political scientists, sociologists, and geographers. Key questions, among others, include the following: (1) What local, regional, national, and international political economic and discursive conditions explain the emergence and evolution of particular programs and projects? In particular, what is the relevance of regionality, i.e., local physical geography, human history, antecedent community conditions (the "social soil" according to Weber), tenure history, and the technical nature of the most pressing local ecological problems? (2) How is the notion of "community" interpreted and translated and enacted in the actual practices of the various CBNRM groups in the realms of land and water resource mgmt? To what extent has there been attention to social positioning and creating opportunities for, and conditions conducive to, the advancement of socially marginalized groups and incorporation of their experiential knowledge of the environment? (3) What are the social, economic, ecological, and political outcomes of collaborative approaches to environmental governance, viewed through the lens of overall rural sustainability? (4) What are the reasons behind the successes and failures of the various CBNRM attempts at sustaining ecosystems and communities?

This project, primarily exploratory in nature, sought to broadly address these four general sets of questions by analyzing the emergence, evolution, and outcomes associated with five different groups engaging in community-based natural resource management in the Wood, Williamson and Sprague;[2] and (2) evaluating the extent to which these groups have contributed to the "social sustainability" of restoration efforts in each subbasin.

METHODS AND PROCEDURES

Methods included document analysis (secondary data), parcel data analysis, demographic data analysis, GIS mapping, and semi-structured interviews that were coded for emergent themes using qualitative methods. We synthesized existing data regarding the location and type of known conservation projects taking place on private off-Project lands (Figure 1). We collected parcel data from the Klamath County assessor and analyzed current ownership patterns in the Wood, Williamson and Sprague watersheds to assess the degree

[2] The five groups included the Klamath Watershed Council (KWC), the Klamath Basin Ecosystem Foundation (KBEF), the Klamath Watershed Partnership (KWP – the result of a merger of the previous two in 2007), Klamath Basin Rangeland Trust, and the Yainix Partnership.

of parcel fragmentation and the ratio of local to absentee owners to better understand the different geographic contexts of the three subbasins (Figures 2 and 2a). We analyzed the history of the Klamath Tribes' land ownership to understand the historical context for current social, political and legal relations that could be contributing to the various instanciations of CBNRM (Figures 3 and 4). We analyzed demographic data for Klamath County, focusing on three main population dynamics: composition, distribution, and migration, using both historical and recent U.S. Census data as well as Bureau of Economic Analysis data (Appendix A).

ACTIVITIES AND RESULTS

(1) Identify and Describe Origins and Drivers of CBNRM Groups

The project started with several hypotheses regarding the causal factors behind the emergence of the five CBNRM groups in the three different subbasins. We hypothesized that there would be evidence to suggest that the emergence and evolution of the five different groups in the three different subbasins would be related to causal factors at international, national, regional, and local scales, as well as the specific geographic context of each subbasin, especially its physical geography, its human history (including past and current ownership patterns and demographics), and the type of ecological problem of most concern. We hypothesized that some of the more important causal factors occurring at the subbasin scale might include (1) demographic change and the role of newcomers in catalyzing new approaches to environmental governance; (2) fear among landowners dependent on water for irrigation that the impending adjudication of water rights in the Upper Klamath Basin, which hinges on the Klamath Tribes' success in legalizing their claims to significant amounts of water in the Basin, might impact their water usage; and (3) the emergence of local charismatic leaders with the ability to engage landowners in restoration, and improve relations between landowners and the various federal agencies as well as the Tribes. Here we very briefly summarize the results of our inquiry into the validity of these three hypotheses using bullet points, graphs, and charts.

Geographic Context or Regionality

Our document analysis, review of secondary data, and interviews revealed evidence that local geography played an important role in explaining current conditions surrounding CBNRM efforts. With the best soils and natural amenities, the Wood has been home to a more elite and privileged class of people since EuroAmericans first began settling the area. The majority of the subbasin was excluded from the Klamath Reservation and set aside for settlers, while the Sprague and Williamson subbasins were completely within the Reservation. The history of land ownership change in these latter two subbasins, including allotment and termination, have significant implications for current patterns of ownership, as well as current social and political tensions. As Figures 2 and 2a illustrate, the Sprague is significantly more parcelized than the Wood, where 21% (compared to only 13% in the Sprague and 12% in the Williamson) of the owners own 500 acres or more. This tenure pattern was referred to as a potential factor in describing the more "fractious" nature of the Sprague community (compared to the Wood). In terms of

ecology, the Sprague has seen more environmental degradation along the river channels related to agricultural activity, and thus, aquatic and riparian ecosystem restoration to improve habitat for endangered species is the most pressing issue. In contrast, restoration efforts in the Wood focus more on reallocating water for instream flows to Agency Lake and Upper Klamath Lake. The differences result in the adoption of different government conservation incentive programs, and interactions with different federal agencies, resulting in different social relations and institutional arrangements.

Demographic Change in the Basin

Our demographic analysis, which drew on U.S. Census Data and IRS data (see Appendix A), revealed that over the past five years there has been sustained in-migration to Klamath County from more wealthy and more urban residents. While the off-Project lands have long been the most ethnically diverse part of Klamath County, with 15% of local residents self-identifying as Native American in 1990 and 2000, that number represents a reduction since 1980, when 19% of residents reported that they were Native American. Census data for the past three decades also reveals pronounced changes in local employment. Industry and occupation figures depict a county switching from natural resource-based to service-based economic dependency. This story is consistent with industrial sector changes felt throughout the region and much of the nation during the same period, and is consistent with scholarly literature concerning "post productivist" or "multifunctional" transitions in postindustrial rural areas around the world (Holmes 2002, 2006; Mather et al. 2006, McCarthy 2005).

Drawing on previous research in ranching communities in Wyoming and Montana undergoing significant demographic change and changing relations among neighbors, we hypothesized that, while in some cases increasing ownership heterogeneity related to the inmigration of wealthy outsiders with no agricultural background might cause conflict, it could, in others, lead to unusual and productive agri-environmental alliances that would improve social and ecological sustainability. In the Madison Valley, for example, the Madison Valley Ranchlands Group, one of the most innovative CBNRM groups in the West, is comprised of a mix of wealthy newcomers with financial and intellectual capital (e.g. CEOs with business experience and money to invest in restoration projects) and longtime ranchers with social capital and local ecological knowledge. While we found evidence that this was very much the case in the Wood River Valley, as evidenced by the founders and participants involved in the Klamath Basin Rangeland Trust, it did not appear to be an important factor in the Sprague, where newcomers are not playing a significant role in CBNRM efforts. This may be because the Sprague does not boast the same kind of natural amenities as does the Wood, and also because it is associated with the town of Chiloquin, an impoverished Indian town. For whatever reason, the Sprague has not (yet) attracted significant numbers of amenity ranch owners. We did find evidence, however, that this ownership trend is starting in the Sprague. We found a different set of factors driving the emergence of CBNRM groups in the Sprague, including concerns about the pending adjudication, and a different type of leadership, comprised not of newcomers but of locals who are well-established in the community (members of multigenerational ranch families).

Fear Regarding Impending Adjudication of Upper Klamath Basin

We hypothesized that the impending adjudication of the Upper Klamath Basin's waters could be a motivating factor driving participation in CBNRM efforts, since the specter of reduced amounts of water available for irrigation could potentially motivate landowners to be more open to water conservation measures being promoted by the CBNRM groups. We hypothesized that this would be more of a factor in the Sprague than in the Wood, due to the fact that most of the water rights in the Wood were adjudicated in the 1930s, and the owners there thus enjoy more security regarding their water rights. This difference has to do with the historical boundaries of the Klamath Reservation, which did not include the Wood, and the timing of earlier adjudication processes (before termination of the Reservation). As it turned out, our interviews revealed that fear was not as big a factor in landowners' decisions to participate in conservation and restoration projects as we had anticipated. Several informants suggested that participating landowners were engaged through effective leadership that emphasized the positive outcomes related to the various projects, versus the dangers of not participating. Still, there was evidence to suggest that macroscale shifts in power and influence among irrigators and the Tribes were contributing to local dynamics surrounding CBNRM. Figure 5 attempts to illustrate these changing relations and their relation to emerging approaches to environmental governance.

(2) Evaluate the Efficacy, Viability, and Social Sustainability of CBNRM Groups

We looked at the approaches adopted by the five groups, and outcomes related to their efforts, through the lens of "social sustainability," a somewhat ambiguous concept that is difficult to define but incredibly important to consider if restoration on private agricultural lands in rural communities is the goal. We analyzed transcripts of our interviews looking for evidence of the social sustainability criteria listed in Table 1 (derived from a review of scholarly literature on the topic) and found varying levels of evidence for each of these criteria among the five groups. Since space here is limited, a detailed analysis and interpretation of the results of this aspect of the project will be incorporated into a subsequent report and manuscript.

Table 1: Social Sustainability Criteria

Broad participation in decisionmaking, including underrepresented groups
Broad view of "community" embraced by many
Enhanced trust between landowners and government, and among landowners
Empowerment of local stakeholders
Adaptive co-management – sharing of management power and responsibility
Creation of context that encourages learning and stewardship
Poverty and inequity addressed
Creation of grassroots information networks
Shift in power from agricultural interests exclusively to sharing power with others
Nonconfrontational leadership style
Incorporation of TEK and co-management into existing mgmt structures

NEXT STEPS

This project was essentially exploratory in nature, in that it enabled the researchers to better understand the geographic context of the study area, the nature of emergent approaches to environmental governance, and a suite of issues, problems, and questions that would benefit from further investigation. Data collected for this project is currently being compiled into a more extensive report that synthesizes diverse and disparate sources of secondary data regarding land ownership, demographic change, and restoration activities on the off-Project lands, as well as original data resulting from our qualitative inquiry into the social sustainability of the various approaches to environmental governance that each of the five groups represents. The report will be presented to the groups we studied, interested community members, and federal agencies working on recovery efforts in the off-Project lands. Results from this project will be used to develop at least two manuscripts for peer-reviewed journals, and a grant proposal to the National Science Foundation.

LITERATURE CITED

Berkes, F. 1999. *Sacred ecology: traditional ecological knowledge and resource management.* Philadelphia: Taylor and Francis.

Berkes, F., J. Colding, and C. Folke. 2003. *Navigating social-ecological systems: building resilience for complexity and change.* New York: Cambridge University Press.

Holmes, J. 2002. Diversity and change in Australia's rangelands: a post-productivist transition with a difference? *Transactions of the Institute of British Geographers* 27(3):362-384.

Holmes, J. 2006. Impulses towards a multifunctional transition in rural Australia: gaps in the research agenda. *Journal of Rural Studies* 22:142-160.

Lemos, M.C. and A. Agrawal. 2006. Environmental governance. *Annual Review of Environmental Resources* 31:297-325.

Mather, A.S., G. Hill, and M. Nijnik. 2006. Post-productivism and rural land use: cul de sac or challenge for theorization? *Journal of Rural Studies* 22:441-455.

McCarthy, J. 2005. Rural geography: multifunctional rural geographies – reactionary or radical? *Progress in Human Geography* 29(6):773-782.