Water Allocation in the Klamath Reclamation Project, 2001: An Assessment of Natural Resource, Economic, Social, and Institutional Issues with a Focus on the Upper Klamath Basin
Oregon State University • University of California

Effects of the 2001 Water Allocation Decisions on Project-area Communities

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By the winter of 2001, decisions were required on how water would be allocated in the Upper Klamath Basin for protecting endangered and threatened species: shortnose and Lost River suckers, coho salmon, and bald eagles. The previous year's drought resulted in below-normal snowpack in the mountains that feed the lakes, streams, and rivers in the Basin, the source of habitat for endangered species and water for acres of irrigated fields.

The science that contributed to the decision to curtail water to farmers continues to be debated, as is evident throughout this report, and it is made more complex by unresolved conflicts about water rights (see Chapter 18, "Policy," and Chapter 3, "Legal Aspects"). However, for the farmers who rely on the Klamath Reclamation Project, as well as their communities, the decision had direct and drastic consequences in 2001.

During the 2001 season, farmers and community members expressed great concern about the fate of their planted fields, as well as fears for the coming year. Stories about the situation were seen frequently in *The New York Times*, *The Wall Street Journal*, and *The Oregonian.* The reports were not only of farmers challenging the decision through civil disobedience, but also of the increased need for community services, the ideological divisions emerging throughout the community, a sense of loss of a way of life, and a sense of betrayal by elected officials.

We recognize that previous decisions about water and endangered species management contributed to the position in which communities and individuals found themselves during the 2001 growing season. It is vital to remember that the comments and perspectives reported below fit within a history of water use, land management practices, fishing, and other activities in the Project area that resulted in the listing of multiple species as endangered or threatened.

We also recognize that to paint a complete picture of the effects of this decision, further detail is needed about how water management in the Project affects other communities, individuals, and industrial sectors. Among those affected are the downstream fishing industry and the Native American tribes that historically relied on fish for subsistence and cultural values.

This report, however, focuses on the consequences of the 2001 decision to those living in the area covered by the Project—several communities in Klamath County, Oregon, and Modoc and Siskiyou counties, California. Thus, it is only the beginning of efforts to understand the effects of water allocation decisions on all of the communities and individuals in the Klamath Basin.

We begin with a brief discussion of our research methodology, providing details about the sources of interview data and community statistics. Next, we describe the demographic

characteristics of the counties in which the Project lies. This demographic portrait is followed by information about the availability and use of social services and social support organizations in the area.

Finally, we present the findings from our interviews with 69 members of the Project-area community. Using the words of local farmers, social service providers, business owners, tribal representatives, federal and state employees, and conservationists, we paint a portrait of a community under stress. While the details of these stories may not be entirely accurate, they construct a reality that shapes the behavior of Project-area residents.

What we did

Consequences of the drought and curtailment of water deliveries to farmers in the Klamath Reclamation Project during the 2001 growing season can be seen at least partially in the economic data in Chapters 12–14 of this report, as well as in publicly available data that describe changes in community structure and services. We looked at data from the U.S. Census Bureau, county and state agencies, and nonprofit organizations, including churches and other community social service providers.

In order to get some sense of whether the past year was unique in any way, we wanted to collect data for 3 years: 1992 (a drought year), 1997 (a year with normal precipitation), and 2001. Unfortunately, data collection and reporting methods for the information we wanted were inconsistent, making a quick assessment impossible. Instead, when data were available, we looked at trends for the entire decade between 1991 and 2000. More typically, we were limited to a few indicators for 1997, 2000, and parts of 2001. In the summaries below, we also report any available 1992 data.

Economic and social service data can help us understand some aspects of consequences for communities when we collect data over the years, average it, and compare it with other years to see whether the situation has changed. This information is essential for understanding consequences to the community over the long term; however, it does not give voice to the people who are living through events as individuals, families, and community members. Numbers and graphs cannot fully capture the complexity of a community's concerns and responses. For that, we turned to a qualitative research approach and asked individuals to describe their own experiences and perceptions.

Qualitative research can be seen as a companion to quantitative research, as well as an independent research method that follows certain processes for thinking about, collecting, examining, and interpreting data. Qualitative research is a way to provide firsthand accounts of the life experiences of individuals from their unique perspective regarding moments, events, and situations. It elicits and makes sense of the meaning of these phenomena in the lives of individuals.

Proponents of quantitative investigation might question the validity of this analysis because it does not include hypothesis testing. Rather, it is a method that attempts to bring out both the subjective and objective meaning of an event—in this case, the 2001 water situation in the Project area—in the lives of those affected (Denzin and Lincoln 1994; Gilgun et al. 1992).

The participants

For this study, we conducted 11 focus groups and 13 one-on-one semistructured interviews (a total of 69 people) to explore effects on individuals, families, and communities. The questions we asked are found in Appendix A.

Focus groups were chosen as a data collection method for several reasons. First, focus groups allowed us to talk in-depth with many people over a relatively short period of time. We also believed that talking and listening with neighbors and colleagues about common experiences would provide participants with an opportunity to describe their own experiences and learn from others.

Although Stewart and Shamdasani (1998) note the advantages of using focus groups to collect data, it is important to remember that the groups are not random samples of the entire population. Therefore, the results cannot be generalized to all people living in the Project area.

Instead, the samples are "purposive" in that we intentionally selected respondents who have been involved in various ways in the current events and activities. Purposive samples are used when we want to explore a complex situation in great detail with exactly the people who are involved, those who have the most experience or knowledge about the situation. Purposive samples do not necessarily represent the general public, but they can provide insight about the situation from multiple perspectives.

For these reasons, the information reported from the focus groups should be considered a snapshot of the experiences and understanding of several community members from September to November 2001. Experiences and emotions change over time, and our results may have been different if we had conducted the research prior to September 11, 2001, for example, or after a decision was made about irrigation water for 2002.

We convened two groups of farmers (trying to separate those who rely most heavily on Project water from those who don't), using a random selection of names from lists of farmers provided by the Klamath County office of the Oregon State University Extension Service and the University of California Intermountain Research and Extension Center in Tulelake. We wanted to make sure that we heard from respondents in both Oregon and California in order to capture any differences due to state-related variables (e.g., regulations, tax laws, or assistance programs).

One group of farmworkers was convened with the assistance of a local translator. He invited participation through announcement of the focus group at a local resource center for farmworkers. This focus group was conducted in Spanish with the assistance of the translator in both the interview and translation of the transcript.

Two focus groups were convened to talk with individuals who worked in existing organizations that provided a variety of social services, including food assistance, health care, mental health, education, and emergency shelter. We began with a purposive sample of social service providers in Tulelake, California. We used a "snowball" sampling technique; we asked a key informant who had been active in the area for a long time to provide the names of others who might be willing to participate. We then asked each of those people, whether or not they agreed to participate, to suggest the names of others.

A matching focus group of service providers from Klamath Falls was then convened. (For example, a food bank director was in both groups.) We conducted a group in Oregon and another in California to capture any differences based on state variables and also to talk with social service providers in both a larger community such as Klamath Falls and in smaller rural communities.

Purposive samples of federal and state agency staff who are on the "front lines"—meeting regularly with community members—were selected with assistance from a staff member at one of the agencies. A single focus group was convened with both state and federal agency participants.

We also used a "snowball" sampling technique to identify individuals who were self-identified as conservationists. While all of these participants claimed membership in local, state, and/or national environmental groups, their level of personal activism ranged from quite passive to very active.

Two business focus groups were convened with a purposive sample—one with business owners from Klamath Falls and the second matched with similar types of businesses in smaller towns (e.g., a grocery store and a restaurant).

A member of the Klamath Tribes helped to organize a conversation with tribal members. This conversation was held at the tribal offices.

In addition, we conducted 13 in-depth, semistructured interviews with individuals who were unable or unwilling to participate in a focus group. These interviews were conducted using the same questions used in the focus groups. Table 1 describes the categories of participants in the focus groups and interviews.

How the focus groups worked

For focus groups to be successful, participants need to be comfortable sharing information in a semipublic setting. While it is the facilitator's responsibility to ensure that people are able to participate, specific strategies are used to create effective focus groups. Every effort is made to keep participation confidential, especially for reporting purposes, by using first names only in the discussion and on the transcript, and by deleting any information that can easily identify an individual. However, participants may know each other through other community contacts, and confidentiality is difficult to maintain. Thus, other techniques are used to create an environment where people feel safe to respond to questions and to interact with each other. One method is to create relatively homogeneous groups. This ensures that existing animosity or enmity is not exacerbated, that conversations move beyond arguments, and that participants hear from others in similar situations.

Each focus group had 4 to 14 participants, and most were conducted with 2 facilitators. One facilitator directed the conversation, asking questions and probing in more depth as issues were raised. The second facilitator took notes and watched to ensure that all participants were heard. The group with farmworkers was conducted in Spanish with a translator.

All focus groups and all but one interview were tape recorded (with participants' permission) and professionally transcribed for analysis. Extensive notes were taken for the interview that was not recorded. We examined the transcripts to identify and characterize the major issues raised by participants as they described their experiences related to the curtailment of water delivery to Project farmers.

Once the issues were characterized, we wrote the report using participants' own words when appropriate. Brackets are used to indicate where we modified participants' words to enhance readability or protect confidentiality.

Community overview

Klamath County, Oregon, is located in the eastern foothills of the Cascade Mountains, bordering northern California. It covers 6,135 square miles, making it the fourth largest county in Oregon. Klamath Falls, the county seat and largest town, rests on the southern shore of Upper Klamath Lake, one of the largest bodies of freshwater in the Pacific Northwest. Oregon towns in Klamath County and in the Project area include Merrill, Malin, and Klamath Falls.

Table 1. Categories of participants in focus groups and interviews.

Focus groups (11)	Interviews (13)
Klamath Tribes	Manager of grocery store
Bonanza farmers	State/federal agency staff (2)
Klamath Falls business owners	Conservationist
Tulelake business owners	Farmers (5)
Tulelake service providers	Urban business owner (not taped)
Klamath Falls service providers	Urban business owner
Tulelake farmworkers	Rural service provider
State/federal agency staff	Klamath Falls service provider
Conservationists	
Merrill farmers (two groups)	

Parts of two California counties are served by the Project. Siskiyou County is directly south of the Oregon border, and Modoc County is located in the northeast corner of California. The only Siskiyou County town within the Project is Tulelake, just south of the Oregon border. Newell, a small, unincorporated town, is the only community within the Project in Modoc County. While all three of the counties can be described as "rural," Klamath Falls (population 19,462) provides major services for most of the communities. Information for each county is shown in Table 2.

Although these three counties and several towns were directly affected by the water situation, the consequences of the decision rippled throughout the region to other farmers and nonfarming community members outside the Project area.

In this section, we review information about social trends in the Project counties, including population, age, employment, and income. We use demographic data available from the U.S. Census Bureau at the national, state, and county levels.

Population

As displayed in Figure 1, the population of Klamath, Siskiyou, and Modoc counties was relatively stable over the decade from 1990 to 2000, with a general rise toward the end of the decade in Klamath County and a slight decline in the California counties.

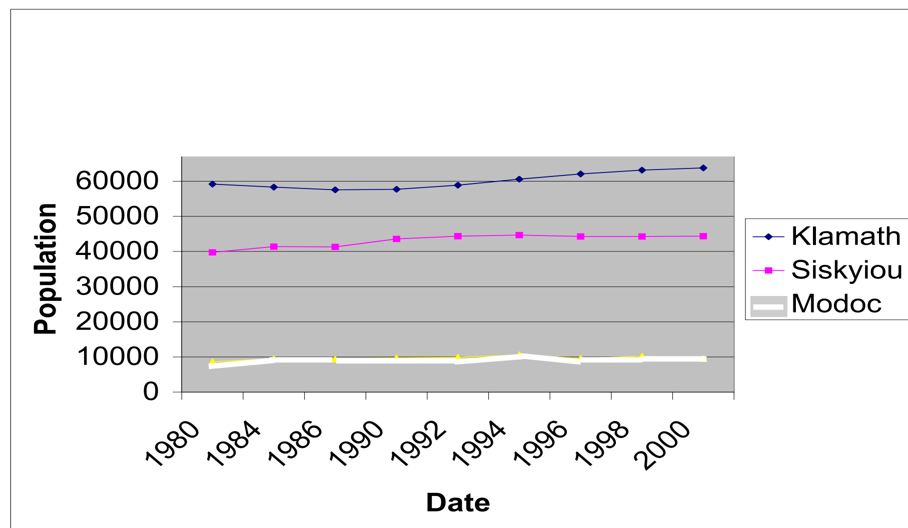

Figure 1. Upper Klamath Basin population, 1980–2000.

Table 2. Description of counties in the Klamath Reclamation Project area, 2000.

County	Area (sq miles)	County population	City/town population	Major industrial sectors
Klamath (OR)	6,135	63,755	Klamath Falls: 19,462 Merrill: 897 Malin: 638	Service Forestry Manufacturing[a]
Modoc (CA)	3,944	9,449	Newell (unincorporated)	Government (44%) Agriculture (14%) Retail (14%)
Siskiyou (CA)	6,281	44,301	Tulelake: 1,029	Government (26.5%) Services (22.5%) Retail (20.6%)

[a]The largest employers in Klamath County include Merle West Medical Center, Jeld-Wen, Sykes Enterprise (high-tech support), Collins Products (particleboard, plywood, siding), and Columbia Plywood.

Source: U.S. Census 2000

Ethnic distribution

All three counties have significant populations of Native Americans and Hispanics. As shown in Table 3, American Indians constitute about 4 percent of the population of each county, compared to a 1 percent share of the national population. According to a tribal memo prepared by the Directors of the Planning, Natural Resources, and Culture and Heritage departments (Klamath Tribes 2001), there currently are about 3,300 Klamath Tribe members, and the population is growing slowly. The Tribes believe that historically the population ranged between 2,700 and 3,000.

While there are about twice as many Hispanics as Native Americans in the three counties, this population concentration is quite low for California, where almost one-third of the population identifies themselves as Hispanic. The Hispanic population in Klamath County is about average for the state of Oregon. The 2000 Census shows that the small communities affected by the decision to curtail water have a high percentage of Hispanic residents: 45 percent in Tulelake, 54 percent in Malin, and 33 percent in Merrill.

Due to the seasonal, temporary nature of their jobs, determining the number of migrant workers is difficult. As shown in Table 3, migrant workers in the Project area are more likely to reside in California than in Oregon. It's important to note that many, if not most, farmworkers in the Upper Klamath Basin are permanent residents of the area and that not all farmworkers are Hispanic.

An aging population

As shown in Table 4, one-quarter to almost one-half of the people in the three Project counties are more than 45 years old. The general age of a population reflects the distribution of experience, knowledge, skill, and (usually) wealth accumulation across generations. This age distribution in the Project counties suggests, among other things, that farmers and ranchers who lose their ability to make a living on their land may be (or feel they are) too old to find other occupational opportunities. Another fear is that families with children are leaving the area because parents are unable to find jobs. With the loss of students comes loss of funding for public education.

We found that this demographic characteristic is of concern to community members. Apprehension was expressed regarding the ability of aging farmers and other affected community

Table 3. American Indian and Hispanic populations in Klamath Reclamation Project counties, 2000.

	American Indian		Hispanic		
	County (%)	State (%)	County (%)	State (%)	Migrant workers (estimated)[a]
Klamath County (OR)	4.2	1.3	7.8	8.0	~200
Modoc County (CA)	4.2	1.0	11.5	32.0	662
Siskiyou County (CA)	4.0	1.0	7.6	32.0	2,658

[a]Source: *Migrant and Seasonal Farm Workers Enumeration Profiles Study,* September 2000. Health Resources and Services Administration (http://bphc.hrsa.gov/migrant/enumeration/enumerationstudy.htm). Includes seasonal and migrant workers; excludes those working with livestock, poultry, and fisheries.

Table 4. Population 45 years and older in Klamath Reclamation Project counties.

	1992		1997		2000	
	Population 45+	% of total	Population 45+	% of total	Population 45+	% of total
Klamath (OR)	21,199	34	24,530	36	16,041	25
Modoc (CA)	3,933	36	3,961	38	2,771	29
Siskiyou (CA)	17,157	38	8,192	38	20,643	47

Source: U.S. Census 2000; Bureau of Economic Analysis (http://www.bea.doc.gov)

members to retrain for new jobs or to find alternative employment if farms or ranches were lost. One 50-year-old farmer told us:

> "It's very, very frustrating when you read career-oriented materials. Bachelor's degree, master's degree. For God's sake, I've got to go to school 3 more years to get there. And, who's going to hire somebody who's in their mid-50s? I guess realistically the only chance you've got in most cases would be somewhere in the public sector. There's very few private enterprises that are going to hire someone that old because how long are they going to get to use you?"

Older farmers were also discouraging their children from going into farming. One farmer told us:

> "I have a son that was kind of wanting to go into farming a few years ago. And he's 22 now, and I love farming, and it's a fantastic life, and I wouldn't want to change unless I absolutely had to. But he was wanting to go into farming and I sort of discouraged it. Because the situation, the way things were going around here."

Another concern related to the aging population is its reliance on farms and land to provide retirement funds, either through a leasing arrangement or outright sale. Without water for irrigation, the values of farms have declined, and few people are willing to take on a farm or ranch without water. One of our participants told us

Table 5. Per-capita income for Klamath Reclamation Project counties.

	Per-capita income ($)		
	1992	1997	2000
Klamath (OR)	15,968	19,485	20,886
Modoc (CA)	15,913	19,054	21,427
Siskiyou (CA)	16,658	19,898	21,092

Source: U.S. Census 2000; Bureau of Economic Analysis (http://www.bea.doc.gov)

about an elderly family in the neighborhood. The husband has farmed all his life, on a small farm of less than 200 acres.

> "They are at a position where their acreage is too small to warrant drilling a well. They don't have any extra finances; they're living off their savings. All they have is their home and their property. And that's what their retirement is. That's what they've worked their whole lives for, for the land."

Income and employment

As shown in Table 5, per-capita income continues to grow in the three Project counties, although in 2000 all three lagged behind the average per-capita incomes of the country as a whole ($21,684). The California counties lag behind the average per-capita income of that state ($22,770), but Klamath County per-capita income is slightly higher than the average for Oregon ($20,718) (U.S. Census Bureau 2001).

Table 6. Unemployment rates for Klamath Reclamation Project counties.

	1992 (%)	1997 (%)	2000 (%)	Jan.–Oct. 2001 (average, %)
Klamath County (OR)	10.2	9.8	8.1	8.7
Oregon total	7.5	5.6	4.9	5.7
Modoc County (CA)	11.1	11.5	8.3	6.4
Siskiyou County (CA)	15.0	12.0	9.5	8.3
California total	9.1	6.3	4.9	5.0
United States	7.5	4.9	4.0	4.6

Source: U.S. Department of Labor, Bureau of Labor Statistics (http://www.bls.gov)

As shown in Table 6, average unemployment rates typically are quite high in the Project counties compared to unemployment rates at either the national or state level. This may reflect disinvestment over the past decades in resource industries such as fishing and timber, both of which were major employers in the region.

The Klamath Tribes report that about 60 percent of tribal members live below the poverty line, and tribal "unemployment is six times the level for the rest of the Oregon population" (Klamath Tribes 2001).

The seasonal unemployment pattern for all three counties is similar. Unemployment rates are highest during the months of December, January, February, and March. Then, rates start to decline through summer (June, July, and August), after which they start to rise again. This cyclical pattern, common in areas dominated by a farming economy, has held over the past decade, even during years such as 1992 when average unemployment rates were very high. Interestingly, unemployment rates in the three Project counties began the year high as usual in 2001, but continued to decline over the year, with no upturn at the end of the growing season (U.S. Bureau of Labor Statistics).

Social service use and provider impressions

We wanted to determine whether there were changes in the types or amounts of social services requested by and/or provided to community members in 2001 as a result of the irrigation curtailment. We started out to collect information that could be used to document changes over the past decade (1992–2001), which saw drought years as well as years with normal amounts of precipitation. Unfortunately, we found that few data have been collected consistently by social service providers. For those groups and organizations that did collect data, it was common to find that collection methods had changed sometime during the decade. Thus, it was difficult to compare data from 1992, for example, to more recent information. More information about social service delivery may be available for analysis if more resources are available to recalibrate the data.

We decided to combine the available data with interviews with service providers to present a snapshot of the impressions and concerns about social service needs in the Project counties. This information should be used cautiously because the figures cited below are mostly provider impressions of the current situation.

Difficulties in finding reliable data are exemplified by the data provided by the Klamath County Mental Health Department. The current system for data collection began in 1997, although data for that year cover only the period from February through December and include only information about adult outpatient services. No subprovider information is included. (Subproviders are professionals to whom patients are referred or who contract to provide specific services at the Mental Health Department.) The 2000 and 2001 data, on the other hand, include all services provided by the Klamath County Mental Health Department, including those of subproviders. Therefore, it is impossible to compare current data with the 1997 data in order to detect changes.

The information, however, can be valuable in helping to get a sense of how residents of the Project counties understand what is happening. No rigorous methods were used that would allow us to indicate whether the drought and subsequent water curtailment were responsible for increased problems and/or social service usage. The past year has been stressful for the entire nation, with the contentious and prolonged Presidential election, the economic downturn, and the September 11, 2001 terrorist attacks. All of these events are likely to have contributed to the social consequences observed by our respondents, and it is impossible to untangle the effects of various events.

Due to the difficulties in collecting information in the three counties, we present, for interest only, an example of changes in the amount of mental health services provided in Klamath County. Information about some of the services provided by the Mental Health Department during 2000 and 2001 is shown in Table 7. Because the data for 2001 were for January 1 to October 1 only, we extrapolated the data to the end of the year, assuming that service levels would stay the same. We recognize that this assumption may be flawed.

While these data must be considered cautiously, it seems that there was an increase in 2001 in services for crisis screening and precommitment investigations. Other services, including family and individual therapy, declined. In similar circumstances with timber

Table 7. Changes in a sample of services provided by the Klamath County Mental Health Department.

	2000 service count	2001 service count[a]	Change in service (%)
Assessment: Determination of need, concluding with diagnosis	1,177	1,069	–9
Referral screening: Assessment for referral to non-mental-health services	193	212	+10
Crisis screening: Assessment of immediate need and provision of intervention treatment	694	1,067	+54
Precommitment investigation: Services for determining commitment to Mental Health Division	441	610	+38
Family therapy: Planned treatment for a consumer that includes family participation	831	761	–8
Individual therapy: Planned treatment for a consumer	3,507	2,419	–31

[a]Using the information available through October 1, 2001, we extrapolated the data through the end of 2001 by assuming an equal level of service each month.

Source: Klamath County Mental Health Department

families, researchers have found that families were reluctant to use mental-health services even when jobs were lost and communities faltering (Sturdevant 2001).

In addition to providing data, staff at Klamath County Mental Health talked with us about what they were seeing in their day-to-day practice. They told us that one of the big differences in 2001 was the amount of support Mental Health provided to primary-care physicians in the community. They have consulted with physicians so that affected families could be served by the doctors with whom they are familiar and comfortable. One staff member told us:

> "[The] most affected by the water crisis were those not eligible for the Oregon Health Plan due to land and equipment holdings. They were experiencing increased stress and anxiety, needing an [antianxiety] drug or sleep medication, not a referral or treatment by the Mental Health Department."

Mental Health Department staff recommended that we talk directly with the primary-care physicians working with families and individuals in the area. Thus, we asked a family practitioner to describe what he saw happening with his patients. He reported a 70 percent increase in the number of patients he saw during the summer of 2001. The predominant complaint, he reported, was depression. He estimated that prior to the summer of 2001, about 1 in 15 of his patients experienced depression; in 2001 it was 1 in 3.

In addition to depression, he reported a long list of ailments that he attributed to stress in the community, including heart attacks, kidney infections in adult men (uncommon and stress related), approximately three times more hypertension than a year earlier, five cases of bleeding ulcers that led to surgery, and elevated triglyceride and cholesterol levels in people working on the water issue. He also told us that he knew of 14 or 15 divorces since June 2001, two suicides in late winter and early spring 2001, and three heart attacks that he felt resulted from events related to the water curtailment.

We also talked with another health provider in a small-town clinic, who reported that overall client numbers were down at her clinic. She told us that she knew of at least 50 families, mostly Hispanic, who had left the area. She had not experienced the same increase in stress-related services as reported above.

The Klamath Crisis Center/Harbor House provides shelter for women and children who are victims of domestic violence. Because 2001 was their first year in operation, they were unable to compare service delivery with previous years. The Center Director reported a general increase in depression and anxiety-related after-hours crisis calls over the summer and into fall. The shelter (Harbor House) was full during June, July, and August, with 32 women and children in residence. September and October occupancies, however, were down.

The Executive Director of the Klamath Youth Development Center was able to give us information about service provided during

Table 8. Services provided by Klamath Youth Development Center in selected months of 2000 and 2001.

	Total appointments		Emergency calls		New referrals	
	2000	2001	2000	2001	2000	2001
March	1,441	1,782	12	29	65	79
April	1,460	2,350	17	23	67	104
May	1,513	2,348	13	29	79	127

Source: Klamath Youth Development Center

Table 9. Total offenses in Klamath County (not specially arrested or cleared).

	1992	1997	YTD[a]
Crime against person	763	969	424
Crime against property	2,251	3,353	1,210
Behavioral crime	1,476	2,260	918

[a]Year-to-date is for 6 months (January–June 2001).

Source: Report #DRI NO-ORO180000, Oregon Uniform Code Reporting (includes Klamath County Sheriff, Oregon State Police-Klamath Falls, and Klamath Falls Police)

Table 10. Total reported crimes and incidences for Merrill and Malin, Oregon.

	1992	1997	YTD[a]
Merrill	49	140	73
Malin	NA	21	15

[a]Year-to-date is for 6 months (January–June 2001).

Source: City Recorder for Malin; Merrill Police Clerk

March, April, and May in both 2000 and 2001. As displayed in Table 8, all categories of service increased in 2001, compared with 2000. Emergency response calls, for example, more than doubled in both March and May 2001. The Director said he believed that "these increases are a result of the water crisis, although I have no real proof to support the claim."

The Director of the Klamath–Lake Counties Food Bank told us that between July 1 and September 30, 2001, 3,200 households received food assistance 1 to 3 times. However, an additional group (1,025 families) received food 1 to 4 times per month. The Director speculated that the increase was due directly to the loss of agricultural jobs or a cutback in work hours resulting from the irrigation curtailment. She anticipated continued increases as winter heating bills began taking a larger portion of family incomes.

The Migrant Education Service for Modoc and Siskiyou counties reports that there were 290 participants in Migrant Head Start in 2000 and 178 through November 2001. All families in her Head Start program had been in the area for less than 3 years.

As shown in Tables 9 and 10, crime rates in Klamath County and the towns of Merrill and Malin were not significantly higher than in the past decade. If we assume that we can double the rates for 2001, since we have data only for the first 6 months, crime rates would be lower than those for 1997 in Klamath County and only slightly higher for Malin and Merrill. This conclusion is supported by staff at Tulelake City Police and Klamath County Sheriff offices, who commented that they thought crime rates were down.

As described above, some of these data are anecdotal, and others are difficult to compare across time due to missing and inconsistent information. Also, some of the consequences that people attribute to the water situation occurred before April 6, 2001. In the future, with more data and/or time to reflect, people may reattribute consequences and effects that they currently attribute to the decision to curtail water deliveries. For the time being, however, almost all of the service providers who talked with us or provided information reported an increased need for their services. "Real" or perceived, the needs were felt as real at the time, and that reality is what providers use to understand the current situation and make decisions for themselves and their organizations.

These social service providers were anxious not only for their clients, but also for their organizations and groups. They were concerned about continuing to provide services to everyone who needed them. They worried about staff "burnout" from increased workloads and/or anxiety associated with community responses to the water situation. One exception to this trend was the concern we heard from some educational services that reduced numbers, and subsequent reduced funding, would affect their ability to provide services.

Table 11. Benefits and programs of the Klamath County Farm Bureau.

Member benefits	Programs
Insurance programs	Young Farmers and Ranchers
Credit card	Leadership Farm Bureau
Telephone discount	Rural health and safety
Prescriptions/eye care	Ag crime—R.I.P.
Travel and entertainment	Ag in the Classroom
Vehicle discounts	FELS Labor Service
Labor/employer services	Scholarship Foundation
Ag trading on-line	Photo contest
Accuweather	Food check-out day
Industrial supplies	Water quality program
Citizens Network for Foreign Affairs	

Source: Klamath County Farm Bureau

Social capital

For many reasons, life is easier in communities where multiple social organizations create networks and trust as people work and play together. Examples are civic and religious organizations, bowling leagues, reading groups, Little League, and soccer teams. These and other types of involvement with others in the community can create a dense web of relationships that cross political, economic, and ideological boundaries. It is believed that these informal relationships are critical in helping to develop strong and vital communities.

By analogy to physical and human capital, some people call this notion of networking "social capital" (Putnam 1995). All three forms of capital are believed to enhance individual and community productivity and effectiveness in solving problems.

A brief assessment of the traditional forms of social capital revealed a large number of churches, most with energetic congregations, in all communities affected by the water situation. There are 7 churches, for example, in the Tulelake and Newell area, 3 in Malin, 4 in Merrill, and 58 congregations in Klamath Falls.

Traditional networking opportunities for farmers also appeared to be working in the area. For example, the Grange in Tulelake and the three Granges in Klamath County provide benefits such as insurance programs, credit cards, and support for legislative action. The Klamath County Farm Bureau, an advocacy group for farmers that is connected to the larger Oregon and American Farm Bureaus, also provides multiple services and programs as shown in Table 11. For example, the Farm Bureau provides professional services, which are especially helpful to self-employed farmers who have little or no access to these services through other mechanisms. Other types of services provided by the Grange include education activities for farmers and future farmers, community service programs, and even opportunities for members to express themselves artistically through a photo contest.

Other professional associations for farmers and ranchers in the three counties include the Klamath Water Users Association, the Klamath Cattlemen's Association, the Klamath County Cattlewomen, the Klamath Potato Growers Association, the Tulelake Growers Association, and the Tulelake Horseradish Growers Association. University Extension offices in all three counties provide research and education specific to the community's needs.

A community with a robust stock of social capital should be able to respond effectively to challenges that arise. We found that farmers, ranchers, and other community members were able to organize several responses to the drought

and subsequent water curtailment. Community members created a Web site that became a clearinghouse for information, on-line discussions, and notices of meetings and other gatherings (http://klamathbasincrisis.org). More than 300,000 people have visited the site since April 26, 2001, when it went live. The Klamath County Chamber of Commerce established the Klamath Ag Relief Fund in April 2001, raised about $34,000, and is distributing funds through various programs such as Operation School Belle, which purchases winter clothing.

In August 2001, the Klamath Relief Fund was formed and registered as a Nevada for-profit corporation doing business in Oregon. Fund organizers say they have plans to convert to nonprofit status. They have collected donations through auctions, relief convoys, and a $15-per-plate benefit dinner, raising about $300,000. About $1,000 was spent fixing a pump, and the rest is in accounts for distribution to farmers.

The Klamath Water Foundation was formed in August 2001 with the objective of uniting the agricultural, retail, and other community entities. The Foundation is made up of various specialized departments, such as communications, education, political awareness, and the environment, each chaired by a Klamath County resident. The departments offer opportunities for community members to participate in various activities. The Foundation is seeking formal certification as both a nonprofit organization and as a political action committee. This organization has raised about $50,000 for pursuing legal cases involving water issues, supporting a bill for amending the Endangered Species Act (ESA), and assisting County Commission efforts to privatize the water delivery system. The stated mission of the Klamath Water Foundation is to "enhance productive coexistence among Klamath Basin water users, to sustain traditional livelihoods, and to protect the local communities, economy, and environment."

Another group, the Farmers Against Regulatory Madness (FARM) collected donations primarily at the head gates and through direct solicitation of area businesses. Finally, the Tulelake Growers Association raised $42,300 for relief and assistance to farmers.

It is obvious from the donations collected by these various groups (more than $400,000 at the time of publication of this report) that individuals in the Upper Klamath Basin and elsewhere want to support farmers. The rapid response of group organization and fund-raising suggests that the farmers had an existing tight network of relationships that enabled them to respond quickly as the situation changed throughout the spring and summer of 2001.

For some other groups, particularly the Klamath Tribes, it is apparent that social capital is not as present and accessible. In comments following release of the initial draft of this report, tribal representatives mentioned many consequences of the steady decline over the past century in the natural resources upon which the Tribes have traditionally relied. They described effects on economic well-being, family and social relationships, physical well-being, and spirituality. Moreover, they mentioned that the nature of their social networks has changed, resulting in tenuous support in their community and churches. The comments below show how the loss of traditional gatherings, where people could work, talk, and play together, affected the cohesiveness of families and the community. For example, the gatherings for fish harvest brought people together and helped

> "to pass on life ways and traditions to the next generation. It was a time for feeling the connection with untold generations who had gone before us, and to know that future generations would feel the same connection to our people and to the earth…. This is an important problem at the family level. Families no longer interact with each other the way they used to…. It is also a problem in our churches. In our community, the churches have always been places where our people talked about the Tribes, where we are going as a people, and what we are trying to do and to accomplish. It is

> difficult now to have those discussions because many people are very skeptical, even cynical, about the likelihood of rebuilding our fisheries.... This has caused the church to evolve into a different role in the community, providing a spirituality more detached from our traditional values and the resources on which we depend. People are unfamiliar with this role, and as a result the ability of our churches to serve the people is diminished."

Social capital that can help communities respond effectively to challenges and opportunities relies on the construction and maintenance of informal networks, relationships, and gathering places. It is through these forums that neighbors learn to count on each other, experience and retell the stories of their lives, and create relationships to which they can return in times of trouble.

Project-area farmers seem to be reaping the results of years of helping and knowing each other in multiple networks; they came together quickly and energetically. The Klamath tribal experience suggests that when gathering places and/or reasons to gather disappear, the networks and relationships that create social capital also begin to disappear or need extra effort to sustain.

Personal, family, and community consequences

As described above, we talked with nearly 70 people living and working in the Project counties to find out how the decision to halt water deliveries to many Project irrigators was affecting them, their families, and their communities. As always occurs when talking in-depth with people, we found complex experiences. People were only beginning to learn what the long-term consequences might be for themselves and their community. We found that an individual's descriptions of experiences and perceptions were contradictory from moment to moment and inconsistent in the retelling, but always painfully raw.

In addition, as Project-area residents began to adapt to new circumstances, the tragedy of September 11, 2001 took the area off the front page of the country's newspapers and turned the attention of many of the people we talked with to other concerns. It is within this context that we discuss our findings from the interviews and focus groups.

After reviewing the transcripts of our conversations, several themes emerged that helped us organize participants' experiences and perceptions. In order to tell the story of the participants' experiences, we use their own words when appropriate (always concealing their identities). In other cases, we develop a summary with information from multiple people. The extent and strength of the responses is described only qualitatively. Unless noted otherwise, we use the word "community" to refer to the entire area supported by the Project because this is how our participants used the term.

We want to reiterate that participants' responses were complex, and this summary cannot do justice to people's experiences. We hope, however, to capture the wide range of experiences and perceptions they described by juxtaposing the contradictions and conflicts in their stories. We hope this will let the reader sense the difficulties our participants had in talking about, explaining, and understanding what was happening. Our report represents the perceptions of participants and does not assess the accuracy of those perceptions.

Community support and community polarization

In addition to the traditional social consequences caused by a sudden change in economic and/or environmental conditions (for example, changes in employment, population, and income), many participants talked about the farmers' response to the decision to curtail delivery of water. Their highly visible strategies for publicizing the irrigators' situation rippled

throughout the community, creating strong emotions that were entwined with concerns for the farmers themselves.

A sense of support

When first asked how the water situation affected the community, many participants told us that it had brought the community together. A service provider described the unity she saw in the community during a public rally:

> "You saw, if you were at that rally, 6,000 of us were at the fairgrounds. Where and when have 6,000 of us ever gathered for anything? Short of giving away money, you aren't going to get that many people anywhere."

Highly visible and publicized actions such as the bucket brigade and turning on the water at the head gates suggested to this woman and others that there was a strong sense of community, unity, and support for the farmers.

This theme was illustrated in other ways as well. For instance, a farmer told us that

> "the one positive thing, if there is something, is that it has pulled the whole community together. There's been a lot of support from Klamath businesses…. I think it has always been there, but [I] just wasn't aware of it. When they started shutting off the water, people came together; I mean, the letters to the editor were 99 percent pro ag. A lot of them were not from farmers in the Project area. If it's someone local, you recognize the name, there were people we didn't even know that were supporting us."

Another farmer noted that he was surprised by the support "we got from Eugene, the liberal capital of the world, up there with Berkeley." He cited the positive press in the Eugene *Register-Guard,* along with articles in the *New York Times* and the *Sacramento Bee,* as evidence that "it's finally waking some people up to what's going on in this country."

Another respondent described the 4-H livestock sale in 2001 as an example of public support. People thought that the annual sale would be very low because of the water situation; instead, it had a record year, with a high number of sales and high price per pound for the heifers raised by members. A Klamath Falls business owner told us that this was "because people want to show support for that community and make sure it continues."

This support also was shown by directly helping one another. A small-town business owner told us that in 2001, "where I live there's been more help when you're working cows; there's more help there [if needed] like driving a truck in the spud field or jump[ing] on a hay rake or something." He believed this indicated the strong support between families, friends, and other businesses that came together to help each other.

Another Klamath Falls business owner described how the water issue was considered "just a farmer problem" in the spring. Then, with public-relations activities such as newspaper articles, the bucket brigade, and other community-wide programs, it "very much became a community problem. And it kind of pulled everybody back together."

While a federal/state agency worker who had lived in the area for 6 years did not describe the events as pulling community members together, she did believe that the "incredibly small community—people that lived here all their lives in a very intertwined network—saved us from escalation."

A sense of division

Only slightly below the surface of descriptions of a community coming together were divisions that continued to erupt throughout the interviews. These ranged from tension in long-term relationships to highly polarized and confrontational incidents between farmers and conservationists, farmers and state and federal agencies, farmers and tribal members, and/or farmers and farmworkers.

One of the major issues described by our respondents was their concern that framing the issue as "farmers vs. fish," "farmers vs. Indians," or "farmers vs. feds" had oversimplified the situation and created a sense that others were

"out to get the farmers." Conservationists, Native American tribes, and federal and state agencies have all been blamed for the current situation. This created a tense environment for many residents who might support the farmers as members of the community, but hold other perspectives as well. Members from these groups told us that people who became especially vocal in their support of the farmers and ranchers had silenced their own voices and concerns.

For others, the racism that they believe lies mostly below the surface of social life in the Basin emerged as some framed the issue as "Indians vs. farmers."

While each of these issues is discussed in more detail below, a service provider's joking comment about his family is a description of the tensions in the community.

> "My family is all over the board and isn't very tolerant of each other. My [kids] go out on the bucket brigade. My wife is [an ethnic minority] and a liberal Democrat. She says,'Why are the farmers doing all this griping, what about the laborers? They are the ones that were slave labor in the first place. The farmers got property money. What about those immigrants?' And I'm a maniac. I think that we [should] organize and take over the state and feds [agencies]."

Farmers: There was friction among farmers themselves over who received water in 2001, who received drought assistance, and who was willing to sell land. For some residents, the perception of a farming community under siege was evidence of a conspiracy to rid the West of all farmers.

While farmers could describe and appreciate support from the larger community, they found that the relationships among their professional colleagues—both farmers and nonfarmers—were becoming weaker, leaving them isolated from other people, news, and events. It was common for farmer participants to note a loss of sense of community. For example, one farmer from the Merrill area described the situation as follows.

> "People just don't go out and socialize in any venue. They have just disappeared. And when you talk to them they look down a lot. They don't have a lot to say. And these were formerly talkative people, people you might see in the coffee shop every morning … and they're not conserving 75 or 80 cents of a cup of coffee. It's just, it's a little bit of shame, anger, I don't know."

Two other farmers echoed these concerns.

> "People are just not as friendly. You know this is a small town, everyone knows each other. Everyone talks to everyone else; now people just don't talk, they don't go out and socialize, don't go to festivals like the Potato Festival. It's been an annual event for 60+ years. I didn't even go this year."

> "Every other weekend someone would be having a party or barbecue. You'd go over and have a few beers and cook a steak. I don't know that I went to one barbecue all this summer. Nobody wants to socialize, there's nothing to celebrate."

While most farmers told us that this retreat from socialization was to be expected as people dealt with their problems individually, we heard that differences with the potential for polarization were emerging in the farming community itself. One farmer was concerned that "people will get upset because I've got a job … will they start looking at people who are maybe a little more insulated maybe as much by dumb luck as anything?" He described this feeling as "a big cloud hanging over the community."

Another farmer told us that the "willing seller issue" had divided some people. He and others described the tension felt by individuals who would like to sell their farms and leave, yet felt they were somehow betraying the community. He said that he didn't "even want to talk about that with anybody unless I know what

their way of thinking [is]. Because there's been a lot of bad situations in the Basin because of that." Another farmer provided more detail about these concerns.

> "So if you do sell your ranch out to the 'willing buyer,' you wouldn't have the community to keep business open. If we lose two or three of these businesses, where do we go for parts? You can't blame the farmers for wanting to sell out, you know, if the money is there and [there is] some way of getting out of this thing. But what does the rest of the community do? It's just a domino effect. Even if they get out, they're not going to spend their money here. They're going to go somewhere else and spend it."

One more farmer said that she "didn't know the whole story behind every single person that wants the buy-out. But I resent the government wanting to spend money for a buy-out."

Participants also talked about the tension emerging as they continued participating in civil disobedience and planning meetings, while at the same time maintaining their farms and ranches and living their lives. One participant told us that "all of a sudden you have to go bale hay, and I took a lot of criticism for leaving, they wanted me to stay at the head gates and help them." Another described his life as follows.

> "You're on all these committees you make a commitment to. Then they turn on the water and you have to get out to the farm to take care of things, equipment and stuff for 3 weeks, trying to generate a few dollars. For a while, all I did was meetings, that was my job. Got all these commitments and plus this other job, there are only so many hours in a day. …How do I balance this out and then, oh yeah, I forgot I had a family, where do they come in?"

Another farmer also reported that he was starting to see that the pressures on farmers involved in planning and organizing were becoming less appreciated by some

> "who have less tolerance with some of the organizations because they're not getting anything done. We want to see them doing everything they can. And the people in the organizations are just starting to get really burnt; they're just burnt out. They meet two, three, four times a day, every day…. And there are a few that are moving away and just not going to the meetings and just complaining like most other farmers do most of the time."

Conservationists: Community members who described themselves as conservationists had concerns as well. All but one of the participants in this group had resided in the area for at least 20 years. The concerns shared by this group about media bias can be summed up in the words of one participant: "There is an assumption that everyone in Klamath Falls feels this way and that it is fine to put down a big bucket in front of the courthouse and that it represents all of our feelings." A common response of these participants is a sense of embarrassment about these actions, illustrated by the following quote.

> "I guess I knew that this was a small community and a very conservative community. At the same time there are a lot of people here who are more broad minded. So when I see the signs on the highway [criticizing the decision] and I know a lot of people coming into Klamath Falls are seeing that, I am embarrassed.[1] I know there are a lot of people here who don't feel that way."

This embarrassment also extended to feelings about the local media, who were described

[1]During our trips to the area, we observed roadside signs expressing concerns such as "New Addition to the ESA: Tulelake Farmers," "Stop Playing God—You Don't Qualify," "An Opinion is Killing our Communities," "No Water, No Barley, No Beer," and "Federally Created Disaster Area." We also saw many signs that were more restrained, including "73 Years of Water Until Now," "Where Water Flows, Your Food Grows," and many creative versions of "Support Our Farmers."

as presenting biased and one-sided information about what was happening. One participant told us:

> "I resent the image the media created, and you had to go outside of the Basin to get balanced representation of the real problem and what the impacts were. Personally, this was the first time in my 30+ years of living in the Basin that I considered moving away … the local media feeding the idiocy, the poor law enforcement. It makes us look ridiculous and I really resent that."

Several members of this group also talked about their fear that violence could erupt during public rallies or during heated conversations with farmers. One told us that she felt

> "a real sense of being afraid in my own community. I [need to] go by the head gates every day as I ride to work. [I'm afraid that they might think that] 'someone on a bike must be against what I have to say.' Watching the Sheriff not enforcing laws … city police not enforcing laws. So I feel unprotected and that has not happened since I lived here."

Another told us that she would never go near the head gates, worried that someone "might be firing a gun around there."

Another member of this group went to the head gates for the first bucket brigade and was surprised at the talk of violence. He heard people name specific conservationists, who they claimed would be hanged if they came down the street. He had the sense that his farming community friends, whom he described as "wonderful, you can't find bigger heart[s]," would participate in a lynching if prominent and active environmentalists ever showed up at a rally.

A conservationist we talked with during a one-on-one interview described how the polarization with the farming community led to, in his words, a "completely ridiculous" outcome.

> "[An employee at a state agency] was [head of the sailing club] this year. It got so far out this year, that they were accusing him of holding back water in Upper Klamath Lake, so he'd have enough water to sail his boat. You know, it is completely ridiculous, but you know it makes good press: self-serving agenda as [head of the sailing] club. And, not only that, the farmers say, 'Oh well, you guys aren't supporting us, all you care about is sailing your boats.'"

None of the conservationists we talked with was happy about the situation in which farmers found themselves. Almost all described themselves as having many friends who had farms and ranches, and they knew of the trouble farmers were having. Furthermore, some were at least as disappointed in the agencies responsible for managing natural resources as the farmers were. One told us that he was

> "ashamed of our agencies. Like I mentioned earlier, I was involved in some of the same agencies which helped created this problem. We were talking about how not to let this happen, and here we are 20 years later and haven't done that. So I have little empathy for these agencies being in the hot seat right now."

Yet, to a person, the conservationists who participated in focus groups and interviews believed that any solution would have to involve the consideration of multiple perspectives, including those of the farmers. They were discouraged, however, that years of friendship and working together on community projects were being destroyed by the short-term actions taken to resolve what they believed was a problem that had been a long time coming.

As one told us, "Even before the water crisis, there's been a long and steady decline in the ag economy for reasons way beyond the water issues. You know, the consolidation of multinational corporations, the grain cartels, NAFTA [North American Free Trade Agreement]. The ag economy isn't what it used to be." He was concerned that after years of working with community members to find solutions for allocation of water, the farmers' desperate response in 2001 would create irreparable splits

with others interested in resolving the region's problems.

Indians: Framing the issue as "farmers vs. Indians" revealed a strain of racism that usually ran "quietly beneath the surface," as one farmer said. Members of all focus groups noted incidents where tribal members were shunned or treated badly, and all disassociated themselves from this behavior. A service provider described an incident related to an annual fundraiser held every year for a local treatment facility. The powwow was designed to

> "honor people in recovery, who have gotten jobs, gotten families back, who aren't doing crimes anymore. And it's 90 percent non-Indian. We go around to corporations and places in town and they donate money—$200 to $500—because a powwow is expensive. This year 90 percent of them said 'no' because 'you're associated with the Klamath Tribe.' Most of our clients aren't tribal members, so what's that about?"

Social service providers, many of whom work with the nonwhite population of the area, described multiple incidents in which their clients were treated rudely or even violently.

Klamath Tribes members described how an intentional decision was made that individuals would stay as far from confrontational situations as possible. Tribal members were advised in the tribal newspaper and through word of mouth to "walk away" from arguments or other tense situations. This may have been what this Klamath Falls business owner was seeing when she described the following.

> "We have a lot of Native Americans that come in to use [this service]. And before they were very vocal when they were standing in line, somewhat loud when they were talking with their friends and around everybody else.... But after this happened they would come and they would walk with their head down, they walked slowly, they stood in line quietly, they didn't talk with other people in line, they looked straight ahead, they were very courteous."

Instructions to remain nonconfrontational were hard on tribal members, according to one of our participants, "because we had guns pulled on us, were run off the road, there was one beating where a guy ended up in the hospital pretty bad." This participant also described an incident that occurred in an elementary school when each student was asked to take a position on the water issue.

> "[When] they finally get to an Indian child in this classroom, because of our prompting and parents telling him 'just stay out of it,' the student said, 'I want to stay out of it, I don't want to have a response.' The teacher told him it was a class project and he had to have a response. And, he said, 'Well, I really don't want to say anything.' The kid was sent down to the principal's office, and they actually expelled the kid from school."

The tribal government intervened, sending a letter to the school asking that the child be immediately reinstated and that this type of teaching be discouraged. The student went right back to school, but tribal members were left feeling betrayed by the portrayal of the problem in the public school.

Tribal members believed they had supported the farmers from the beginning; they had gone to Washington, DC "several times and seen Congressmen, Senators, and other legislative people. We've asked for funding and are trying to come up with a solution. Because we didn't want to see anybody lose their livelihood because we know, we've been there." They also maintained low visibility throughout much of the spring and summer, trying to remain out of confrontational situations, as illustrated by the following quote.

> "Imagine, if you will, what would have happened if there would have been a confrontation? We've had offers from other organizations throughout the

country, just as agriculture has, to come in the area. This could have become a full-blown civil war in the area, and that's not good for anyone."

The tribal members we talked with were convinced that the relationships built with irrigators through the Alternative Dispute Resolution (ADR) process could be salvaged and solutions could be found. One described how, through the ADR, great strides were being made for the adjudication of water rights, even traveling to Washington, DC to describe to others how well they were doing. He continued:

> "Then all of a sudden the drought of 2001 comes along and that's put everything to a screeching halt. But right now we're trying to pick it back up again. We've had meetings with the irrigators where one of them actually said that 'everything that was built up to this point was gone. We're going to have to start at the beginning again.' I told them, 'Well, I don't know about that. You know, we think we can just kind of pick up where we left off.' It took a little encouraging, but finally they said, 'We can go ahead and things that we've already built we'll just keep adding to that.' We're still trying to work with them as much as we can."

Just as conservationists are willing to keep working with irrigators to find solutions that work for everyone, according to our participants, so are the Tribes. It is important to note that all of the people we talked with are local—they live and work with farmers and their families, and they seemed to see the farmers' problems as their problems as well. As one person put it, "We're never going to have a sustainable community if one component of the community is … in the dumper."

State/federal agencies: Finally, we talked with representatives of state and federal natural resource agencies who work in the Project area, most of them for many years. Many in the farming community held the agencies responsible for their problems because of the decision to halt water delivery for the 2001 growing season. Agency folks we talked with were frustrated by the anger from the farming community because they believed staff had been supportive in many ways over the years. In addition, they were frustrated because

> "to a large degree we have lost what little authority we had. Now it is virtually impossible to do anything without regional offices and/or Washington offices involved. I think that it is frustrating that those of us at the local level have a clearer idea of what the problems are and what the possible solutions are, but have no authority to do anything. It is really out of our hands."

Despite their own frustrations with the agencies involved, local employees of the agencies still described themselves as treated as "outsiders," with hostility, and they were uncomfortable in many public situations. One participant said:

> "You know, you are really reluctant to go out into the community and freely associate with people. You try to avoid situations where the water crisis might come out. I feel reluctant to tell people who I am employed by, what my job is."

Another person described herself as "shrinking" because she was unable to express her own views.

Agency staff members also believed that most of the community remained unheard, and that the voices that *were* heard represented the "more extreme views and certainly [don't] represent the range of views that the community has." Instead, there was intimidation to express only the single view that the farming community "must be made whole."

Many agency staff reported feeling "threatened" as they performed their duties, wore their uniforms, or interacted with the public. They believed that people mostly recognized that individuals in the local offices weren't making the decisions, but "collectively, like at the head gates, you run into problems. Because of mob mentality."

These agency staff perceived that their relationships with the public had changed as a result of the drought and subsequent water decisions. People were asked for identification and frisked as they entered federal buildings, immediately setting up an adversarial relationship. One person described how trust with the agricultural community had been harmed, remembering "the times I used to be able to go out on a guy's ranch," and following up with, "there is more reservation there now." Another claimed that the strategy of keeping farmers at the head gates was

> "just to keep up the image without physically taking over … we have to provide guards, and I imagine we've spent well over a million dollars on protecting the head gates. You stop and think about it—there might be something better to do with that money."

Uncertainty about the future and long-term planning

While all of our participants described a complex and dynamic situation, with many contradictory personal and community experiences, they all shared one way of describing the circumstances—intolerably uncertain and increasingly frustrating. The farmers talked about how not knowing whether there would be Project irrigation water in 2002 only exacerbated the uncertainty inherent in agriculture from sources such as weather, prices, and disease. For those not directly involved in farming, the uncertainty had rippled through social service agencies, schools, state and federal agencies, and local businesses.

Yet, we also heard from farmers and others that this "crisis" was unexpected only in its appearance in 2001. Many already had been planning and working to shift reliance from irrigated fields and the agricultural economy to alternative crops and new business sectors.

Living in limbo

Farmers routinely told us that their greatest needs were water and some kind of assurance that they would receive water consistently. Without that, they couldn't plan, as this farmer indicated: "Usually you have a plan, you know what you're going to do with your operation. You're going to do this and do this and at the end of the year you hope it works out and you've made a little money."

A younger farmer said:

> "[I am] young enough, I have [a business degree]. I've had some offers at banks and different places. They say if I ever want to change careers, come see me. If they would come out and say you're never going to have water again, you're done, then I could move."

He went on to say:

> "Where am I going to be 10 years from now? I don't even know where I'm going to be next year. You can't make any long-term plans right now. When I got out of college I had a plan with goals, knew what I was going to do. This is where I wanted to make my career."

We were told by farmers that without a definite decision about the availability of water they wouldn't be able to make it economically. A Merrill farmer told us that couldn't mean

> "waiting until April 6th for a decision, saying, 'oh yeah, you get some water.' I mean, planning and planting takes a lot of time. You don't decide to do this tomorrow. It's a 6-, 8-, 10-month lead time for an individual crop."

Some business owners, especially those in farm-related businesses, saw a decline in their business in 2001. They, too, were unsure how to plan for the future, how much inventory they should stock, how long they could hang on to employees. One Klamath Falls business owner mentioned, "I think people are pretty nervous about how to spend, how to plan for their business futures, and then I think personally people are really nervous too because there's a lot of people out of work." An outdoor-sport-related business owner affected by the water decision

wondered whether to make other arrangements for other parts of the state.

Finally, a business owner wondered, "How easy will it be to attract new industry here if you don't know if you can keep an educated workforce?"

The business owners in the small towns of the Project area were more unsettled about the future than were the Klamath Falls owners. As the small towns have relied heavily on the agricultural industry for years, any downturn in that sector will affect them quickly. They were concerned that the true effect of the season without water would only be seen the following winter. One business owner pointed out:

> "There's a lot of people right now that aren't doing too badly because they still have the income coming from last year's potato crop. So they have income and they don't have the outgo of cash that they would have had to plant this year's crop. But when they run out of that money, then this community is really going to feel it. They've all cut back trying to conserve this money and stretch it as far as they can, which has hurt the business community. But when that money's gone, then we're looking at real big problems."

A farmer explained further why many effects would be delayed until the following winter:

> "In this business you grow crops in one calendar year, and 75 percent of that is sold in the next calendar year. So your income comes a year later. All our income from last year, 75 percent comes in this year. We didn't operate our farm [this season] so we don't have the fertilizer bills, the rent payments, the this and that, all the ongoing expenses to offset the income, so we're looking at bankruptcy and possibly a $200,000 tax liability. And no way to generate any money to pay any of it. And there was no way to do any tax preparation or planning because you didn't know it was coming."

The social service providers in the Project area also were seeing how the uncertainty had affected those parts of the community that had little voice in the conflict to date—the farmworkers, the unemployed, and other traditional clients of social service agencies such as Head Start, County Health, Mental Health, etc. One service provider from a small community reported:

> "Suicide calls have increased, they want to end life. They feel like they have no choice—'I can't do this anymore.' We bring it around to what they can't do anymore and it is the fear of living in the unknown. Not knowing what to expect. What's going to happen? What's going to happen to my family? What's going to happen to my kids? I can't take care of myself anymore and no one understands."

Other service providers described a "feeling of powerlessness" and uncertainty, a "constant up-in-the-air feeling" for both staff and clients. This was echoed by a Klamath Falls service provider, who said:

> "One of the things that I think we are all affected by personally is what the future has in store for us as far as what we all do if this place is going to become a dustbowl. Do you buy a home? Do you buy a car? Do you do anything if you're not sure what the future has in store? … you just don't know what is going to happen year to year."

Another said that some of her clients were hoarding food out of fear. "They are not using it, they are hoarding it. They want to make sure that they can get through next year."

In follow-up comments from the Klamath Tribes, a similar sense of futile waiting was reported. It was reported that the income and cultural losses due to the closure of the sucker fishery in 1986 were "compounded by our inability to see an end to the problem. Water management that reduces the species' ability to

recover causes people to have little confidence that these resources will again become available in their lifetimes."

Not only did tribal members experience these losses on an instrumental level, they personally took responsibility for the decline in natural resources upon which they have traditionally relied, and they felt that they had failed as "the responsible stewards they are required to be." This was a source of additional anxiety and social stress for the Tribes.

Alternative arrangements

Farmers also told us that they had plans for alternative crops, other jobs, and other ways of organizing their farms. Almost all farmers we talked with had alternative sources of income; either another family member worked off the farm, they held another job themselves, or they were experimenting with "value-added crops." One said, "We're not sitting around twiddling our thumbs either, we're probably trying to be as busy and as inventive as we ever have been to find other venues." A Merrill farmer was somewhat typical in his arrangements.

> "I've got a wife who teaches and so I do have some security. None of my children are involved in agriculture…. I'm looking at transportation, trucking, more and more outside seed sources. And I'm trying to grow higher value crops that we can sell elsewhere."

While most farmers were modest about their planning for the future, they were all involved in making choices that gave them alternatives to their irrigated farms. One farmer we interviewed talked about diversifying through different crops. For the past couple of years, he had been looking for different ways to make money. According to him, "that's a given."

Some business owners told us that although their businesses had not been affected by the water situation, they too had been planning for an economy that is not so heavily dependent on agriculture. One shop owner told us that she had been buying carefully but was surprised to find that her business remained strong. She worked with other local business owners to promote a "buy locally" campaign that she believed had been successful. She found that her sales stayed up, and she was

> "almost embarrassed. I was afraid to tell anyone I was doing well here…. You know how people are suffering and things are happening. So I began to talk slowly to other friends and businesses … [and found that] the other businesses … were doing well…. We have people shopping now that I haven't seen before. So there are new customers, not only old customers…. [I'm] making sure that we have items that are like in the $20 and under range … making sure that we can capture the feel-good dollars."

This business owner identified businesses that weren't doing as well, including ag-related businesses, many restaurants, and hair salons. Ice cream, espresso, and gift shops didn't seem to be affected, in her view. She reported that the Small Business Development Center at the Oregon Institute of Technology told her that most local businesses were up, except for a "select few that were down."

Farmworkers

One group of people who had not been able to develop alternative sources of income were the farmworkers, some of them undocumented, who work the fields and harvest the crops of the Project area. All of the workers we talked with had lived in the area for at least 3 years, many for up to 20. They and their families consider this area their home. Some have incomes that are nonagriculture-related, but most rely on at least two family members working in the fields. They told us, however, that there was little work in 2001. Most workers were unemployed and waiting for a change in the situation, or they had left the area to find work.

One farmworker described how the foreman of the packing shed where her husband worked said, "They were [told by the farmer that he was]

gonna pay them as if they were still working. That'd be about 20 hours a week, that they were gonna pay them that … but there's never been a check that they've gotten." Another person in the group continued the story:

> "As an owner I think he would feel terrible [for not being able to pay his workers]. So you might say something stupid like 'I'm going to pay you.' [But when the workers didn't get paid] it felt like they were playing a joke on them. It's a terrible thing because then you plan. 'Whew, I'll have some work.'"

Another participant finished the story, "This farmer got money, they gave him money for not planting because there was no water. But the workers got nothing."

Some of the farmworkers qualified for unemployment, although assistance ran out early in the season. Workers with children born in the U.S. were eligible to receive about $80 to $100 a month in food stamps for a family of four. Undocumented workers received no assistance beyond that provided by nonprofit service agencies such as local food banks. When asked what they needed, one farmworker said, "What we need most of all is work. Because when you're not working, you feel sick."

The role of information

While all participants agreed that information was needed, there was little agreement about what constituted "good" information that could help move conversations and decisions forward. There was almost unanimous disapproval of the way the media had handled the situation, although some claimed the media were too biased toward the farmers and others claimed the farmers weren't getting a fair shake.

One farmer learned through personal experience not to believe everything he read in the paper or heard on the news. He told us about attending a hearing with Congressional representatives, listening carefully, and taking notes. "And then you see an article in the paper by an individual that you know is pro the other side, and it was as if he had been at a completely different meeting."

Others were highly critical of the media for sensationalizing the situation and leading to more polarization. One agency staff told us that she thought "the level of attention has not been equivalent to the amount of adverse effects; that it has been a lot of hype." She believed the media language prevented people from coming together to find a resolution.

Many respondents reported getting calls from family and friends outside the area concerned about their safety after reading or hearing reports in the media. A farmer told us that his brother-in-law flew in over Upper Klamath Lake and couldn't believe what he saw. "From everything I've read in the paper, I thought the lake was dry."

The decline of the suckers was serious enough that the Klamath Tribes stopped harvest on the lake in 1986, 2 years before the fish were listed under the Endangered Species Act. A tribal leader described the type of information needed to restore the system.

> "We need some tremendous studies on the system itself and to start doing some restoration work from the headwaters to the ocean. It's a massive task. We used to have salmon runs before the dams came in and we lost those you know…. We need studies done on the full aquifer system, from the headwaters to the ocean. We need studies on the terrestrial system, what effect logging and everything has had on the watershed and how to do some restoration work for wildlife…. We need to get the studies first for comparison and begin on how to do some restoration work."

We heard that farmers in the area believed that much of the science had been done and only needed to be applied. They echoed the call for good information. They expressed concern that some decision makers listen only to science that supports their agendas and ignore other data.

One farmer told us that he believed the federal agencies

> "are not looking at all the facts that are available. There are a lot of noted scientists out there, some of them work right up here at Klamath Falls, world-renowned even we've got. I mean they know their business. They've presented it to the Fish and Wildlife at some of those meetings we had last winter on those suckerfish. And they just disregarded it. They picked out what they wanted; they just disregarded some very pertinent information on studies that have been done on suckerfish up here for years."

Another farmer told us he believed that "most everyone in the county is capable of making an intelligent decision on something if they have all the facts." There seemed to be great frustration that science had been unable to provide "facts" that would allow water allocation issues to be resolved. Challenges to the science used to make decisions were common, and challenges to scientists' credibility were frequent.

Farmers would like their own local knowledge and experience to count for more in the decision process, "because we live this and we know that some of this stuff is just outright boldfaced lies." Conservationists have challenged the data provided by both the agencies and the farmers, while the Tribes have been collecting their own data all along. The National Academy of Science met in November 2001 to review the science behind the 2001 Biological Opinions, but farmers we talked with were convinced that this review would be the "same old, same old," and that no academic scientists would be challenged on their findings.

> "You get people all pumped up about that [the NAS review] until you find out who is on the review committee. Same old people, same old science, same old answers. They say, 'Oh no, you'll get a fair review.' Bullshit."

When the media are suspect for sensationalizing the news, and science is suspect for not being able to solve community problems, people end up with no shared understanding of the world. Their disagreements are amplified by any lack of common explanation of what is happening. One result is that some farmers and business owners interpreted actions and information about the agencies' decisions as additional evidence of a conspiracy to "save the West from being developed and growing food out here and turn this into huge wetlands."

A general distrust of government was expressed by many of the participating farmers, business owners, and social service providers. Whether the current situation created or enhanced existing feelings is difficult to determine. One farmer told us that the "general feeling in the Basin is betrayal. And our government is doing nothing. Rural America elected the Bush Administration, and they're not helping us hardly at all." He went on to explain:

> "We got the $20 million, but how long did it take them to get that done? Overnight we can find billions of dollars to go to New York. How many flags do you see in Merrill? There are people in Merrill that won't give the Pledge of Allegiance, and I'm one of them."

Getting help

All of the participants we interviewed expressed concern about helping the farming community and others who were not used to receiving assistance. As one social service provider noted, "Food stamps and public assistance really isn't in the vocabulary, especially in the ag community. There is no way." Yet, everyone recognized that without assistance of many kinds, the farmers, farmworkers, and others in the community would continue to be negatively affected.

Farmers, business owners, conservationists, agency staff, and tribal members all described assistance programs available to farmers. One woman described her husband as very successful

"with a lot of the assistance programs and the water buy-out programs, the set-aside acreage program." She thought that older farmers might not know how to access these programs, or perhaps didn't use them because of pride and unwillingness to ask. One farmer told us:

> "We've never played government games before. And just in the last couple of years that we've been getting some at all. So now this year is really full bore in trying to get everything you can out of everything… if it wouldn't have been for the government programs this year, we'd be in big trouble."

When asked about support networks, most participants told us that their personal networks were strong, and that support came primarily from family and friends. Very few told us that they had asked for assistance beyond the family. One farmer described how he and his brother had begun to take on more responsibility with their mother because she lost the rental payment from her farm.

> "Social security is not there to support her, pay for insurance, the things on her land, taxes. If the farm is not operating and generating money, she is down to her flat social security check. How does she keep her insurance or the house or car? Right now, we're all here, but if we all leave to find work, she'll be left out here by herself."

Another woman described how she was pitching in to help her son's family by babysitting so that her daughter-in-law could work outside the home.

Agency staff told us that, in general, their offices were close-knit and supportive of each other. One reported, "We have been trying to keep everyone aware of what's happening. That way nobody gets blindsided by some activity." Another person told us that the staff had had a "lot of counseling…. I have lost several employees and am losing another one now. And, quite frankly, it is tough to get people to come here." One agency tried to keep individuals out of the media as much as possible. Agency staff also reported that they had received support and encouragement from agency and professional colleagues around the country.

Another woman told how her children tried to protect her from the unfolding events. They hid the newspaper one day, and she "never found it. There was a bunch of bad news in it, so they rented a comedy at Blockbuster…. So they put up with me being crabby."

Resistance to change

Underneath the stories of solid support, we also heard stories of increased drinking, isolation, and separation and divorce. One farmer said his wife had left, saying that she just couldn't take how the uncertainty and resulting depression affected their marriage. The stress of the situation undoubtedly exacerbated existing problems in the marriage.

Conservationists and agency staff expressed frustration with the farmers and their supporters who insisted on claiming the right to continue current practices even though others were starting to recognize that multiple concerns would need to be considered for any permanent solution. One agency participant remembered how wrenching the shift to considering multiple perspectives had been for him and others.

> "Well, my God, a paradigm shift for me. … After the 1994 drought, we found people knocking at our door. 'Hey, what about us? We are the Indians upstream.' 'What about us, we are the Indians downstream.' 'What about us, we are the ONRC' [Oregon Natural Resources Council]. 'What about us, we are the fishermen.' Open the door and you have to let them all in and start listening to all of them…. that shift—we are a multifaceted agency and we're listening to everybody…. It is easy to have a guidebook that says once you get to this point you lean this way to the farming community or maybe you…. And it isn't that way

> anymore. Now you come to a decision point and you don't have a book anymore. How do you do it and make everyone happy? Our guidelines are so fuzzy anymore…."

We heard from a conservationist who noticed that

> "people in the agricultural community every year just expect to get their water and now all of a sudden things have changed. How are they responding? Are they being proactive and saying, 'I have to do something differently? Or find water somewhere else? Dig a well? Find a different crop?' Or, are they just saying, 'The government is doing this to me and I am going to lash out and wait for my water to come back.'"

Other participants reinforced this perception that the farmers felt a sense of entitlement to a stable world that others had been asked to move past long ago. A farmer declared:

> "So I guess somehow someone has to decide is this community worth having? And to do that as it stands today, that involves irrigation water…. If these people are going to be allowed to live and pursue their happiness and their occupations as they've been pursuing them, there has to be a tolerance of the use of the land as we've been using it."

A business owner in Klamath Falls described how a

> "lady comes in and starts crying because they didn't know how they were gonna make it because the rent that they received from someone farming their property was their way of life…. And they're not going to go to Wal-Mart and become greeters. They're just not. Their pride's too thick, it's just too strong to do that."

At the same time, tribal members wanted to remind the farming community that they had been asked to give up their traditional ways of life many times. As one told us, "We know what it is to lose everything, and it's not a good feeling."

Needed: Visionary leadership

As the farmers became more politically active and experienced over the summer, it became clear to many of our participants that the visionary leadership needed to craft workable solutions in the area was not there. A social service provider from a small town found the most frustrating thing was the "complete void in leadership." She explained:

> "[That] is not to say that our local politicians and community leaders aren't doing a good job in managing the situation, but in a year from now we are going to be in the same place. Five years from now we're going to be in the same place. And, 5 years ago we were in the same place but just didn't know it because the water was flowing."

Tribal members and agency staff shared their concerns about the leadership void in almost identical terms. It was not clear from our interviews what participants would like from leadership beyond bringing people together. Farmers would like leaders to "make sure that agriculture stays whole to protect our society," while others looked for someone to initiate a broad discussion (conservationist), provide concise national policy from the top (agency staff member), promote education about the situation (business owner), and see the big picture and bring people together (service provider).

Concerns about lack of leadership were supplemented by concerns about slow responses from agencies and the courts to problems being experienced in the here-and-now. One farmer, who is supportive of the Bush Administration, said:

> "We're learning a lot about how slow the process is. Once you appoint the Secretary of the Interior, then the undersecretaries, and there's a whole level

> under that. And until the new people are appointed, all the old ones are still there. I think we're finding out how powerful bureaucrats are."

Another farmer, however, recognized that any solution was going to take time, regardless of changes in the national bureaucracy. Yet, he reminded us that

> "you just can't put a career or a life on hold for 10 years while you truly take the time you need to take. The lives and occupations and the farms that are at stake—it's instant."

Conclusions

The area encompassing the Klamath Reclamation Project faces a number of challenges in the coming years. Although the water restrictions in 2001 had a dramatic effect on approximately 1,000 farm families, the effects rippled out beyond those farms. Furthermore, the families directly affected by the lack of water faced difficulties not only in 2001. Rather, they have faced many years of restricted incomes due to high costs and low prices for their crops, and they are likely to face an extended period of recovery.

It is clear from our conversations with farmers, business owners, government employees, representatives from the Hispanic and Native American communities, conservationists, and social service providers, that the consequences of water restrictions are both deep and wide. While many participants talked about the ways in which the community had come together to support the farmers, many also talked about the ways in which the community had become polarized. Farmers who were thinking of selling their farms feared being ostracized by those who wished to continue farming. Conservationists and government workers were particularly scorned, although participants were quick to point out that it was not the local conservationists or government workers who were at fault. Some farmers were quick to blame tribal members, and farmworkers reported that farmers were not doing enough to help them. The polarization resulted in community members' pulling back and avoiding social situations that they perceived to be risky.

In addition to polarization, uncertainty about the future and the inability to make long-range plans troubled our participants. This was particularly true for farmers who were older and faced the prospect of finding a new occupation. Although the unpredictability of water access had encouraged many affected individuals to begin thinking about alternative sources of income and farming strategies, most people we talked with who relied on farming income still hoped that with some precipitation and/or a court decision, they would be able to continue their current practices.

The uncertainty was exacerbated by a perceived lack of information. Many community members felt that information was being withheld; others noted that the media were presenting a very biased view of the situation. The work of scientists was viewed as the "same old science" when answers to the communities' problems were not forthcoming.

Farmers in particular questioned the lack of large-scale assistance, although accepting direct and immediate aid already available through social and financial assistance programs was rare (except possibly food bank usage). Community members, however, were willing and did seek and receive social support from family members and friends. This support seemed, at least so far, to be mutual only within one's particular group.

Finally, frustration was expressed frequently about the resistance to changing how both the water and the land are managed. There was an acknowledgment, most likely precipitated by frustration with current natural resource management policies, that the community was desperate for active and unified leadership that considers the voices of all those concerned.

The communities affected by the curtailment of irrigation water during the 2001 growing season took a social hit, the effects of which are likely to be fully realized only in the months and

years ahead. To date, they have shown contradictory and complex responses to a dynamic and ambiguous situation. They have worked together to help the most affected community members, polarized around already existing stress lines, and learned quickly how to operate in a highly visible political arena. It seems that most members of these communities are committed to finding solutions that are acceptable to all. They are likely to craft workable solutions, however, only if they can apply the lessons they are learning as they move forward into the uncertain future.

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Appendix A. Upper Klamath Basin social impact assessment focus group and interview protocol

1. Introduction: Name and pertinent background information (e.g., where they work, what they do, how long they've lived in the area—general get-to-know-each-other details)

2. How has the current water shortage/situation affected your community, friends and neighbors, and any other social group that is important to you (e.g., church groups, membership organizations)?

   How has the current water shortage/situation affected your family?

   How has the current water shortage/situation affected you personally?

   Probe for details about *changes* in physical/mental health, relationships with others, job opportunities, general sense of the world.

   Additional questions for farmers/ranchers, business owners, and others as appropriate:

   - Did you look for alternative income-earning opportunities to compensate for lost income from irrigated agriculture? How successful were you in finding alternative income?
   - Can you estimate the percentage of the losses due to water restrictions that was offset with supplemental earning?
   - Including government payments, what percentage of the losses due to water restrictions was offset by all supplemental sources of income?

3. How has the current water shortage/situation changed the way you do your job(s)?

   Probe for details about *changes* in the way they work, the types of people they interact with, how they approach their job.

4. What types of support or help do you receive from others such as family, friends, neighbors, church groups, public service providers, etc. in dealing with the impact of the current water shortage? Is this different—in type or amount—from the assistance you've received in the past?

5. What other kinds of support or help do you need to get along over the next 6 months? What about in the longer term (1 to 2 years)?

Appendix B. Focus group and interview participants' demographic information

In order to compare the results across the several focus groups we are doing, we would appreciate some general information about you. Your answers to this questionnaire and the things you said during the focus group will be held in strict confidence. All of our reports will summarize statements within and among the focus groups without direct reference by name or details to individuals.

Thank you for your time in the focus group. If you are interested in seeing a copy of our report, please provide your name and address on the signup list.

1. How long have you lived in the area?

2. What is your occupation?

3. How long have you been in this occupation?

4. What is your age?
   18–25
   26–35
   36–45
   46–55
   56–65
   65+

5. What is your gender?
   Male _____ Female _____

6. What is your race/ethnicity?
   ____ White
   ____ Hispanic
   ____ Native American
   ____ African American

7. What is your level of education?
   ____ Less than high school
   ____ High school degree
   ____ Some college
   ____ College degree
   ____ Some graduate school
   ____ Graduate degree