NEGOTIATE Toolkit:
Case Studies

Community-Based Approaches to Conflict Management: Umatilla County Critical Groundwater Areas, Umatilla County, Oregon, USA

By Todd Jarvis

1. Background

Groundwater declines approaching 400 to 500 feet in the deep basalt aquifers underlying the Umatilla Basin (Oregon) in the Northwestern United States have occurred over the past 50 years due to intensive exploitation for public drinking water supplies and agricultural irrigation. The deep basalt aquifer is “shared” by Washington and Oregon including lands ceded by and reserved for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).

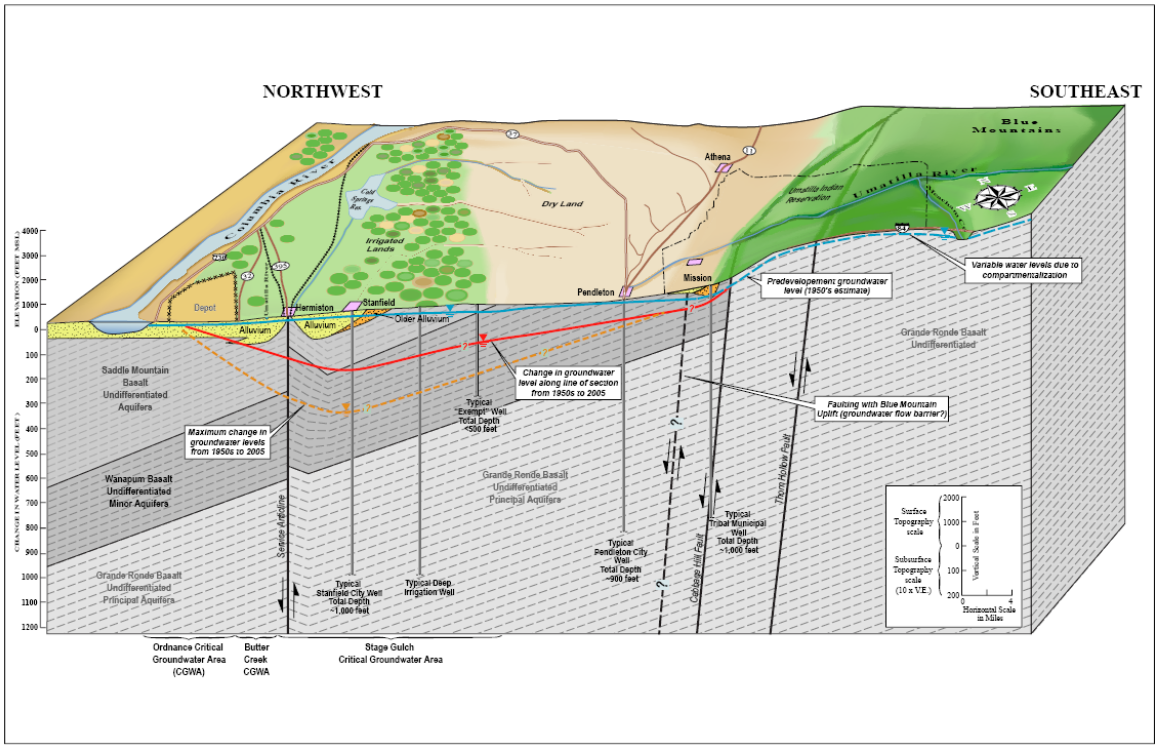

Figure 1. Block diagram of Umatilla Basin hydrogeology. The red and orange lines depict the change in water level across the basin since the 1950s.Water level declines in the basin range from about 100 feet near Pendleton to over 200 feet near Hermiston. Elsewhere in the basin water levels have declined between 400 and 500 feet.

The State of Oregon Water Resources Commission designated a few areas in the Umatilla Basin as “critical” starting in 1976 and ending in 1991, thus precluding additional wells for public

drinking water and irrigation supplies[1]. However, wells designated for domestic use remain "exempt" from the rules in the critical areas. Exempt wells are those not requiring water rights and are commonly used for domestic water use in rural Umatilla County.

Limited federal, state, and tribal funding for water resources planning prompted a community-based approach to groundwater management and exploration of new approaches to manage the sustainability of groundwater and surface water resources. The specific issues that needed to be resolved included (1) how to reverse or recover from the drawdown of groundwater within the state-designated Critical Groundwater Areas (CGAs) to conserve the quantity and quality of groundwater for future generations of farmers, (2) how to manage land use outside of urban growth boundaries which may rely exclusively on individual wells tapping the groundwater stored in basalt aquifers, and (3) how to maintain flows in rivers and streams hydraulically connected to groundwater stored in basalt aquifers for salmon fisheries important to Tribal culture.

The impetus for the creation of the Umatilla County Critical Groundwater Task Force was the state-designated CGAs. After struggling for over eight years to deal with a state mandate to address water quality and quantity declines in western Umatilla County, the Umatilla County Planning Commission (Planning Commission) held a hearing in Hermiston, Oregon in 2003 to consider implementing a land use overlay zone within the state-designated CGAs. The Critical Groundwater Overlay Zone would have prohibited "exempt" well development in the majority of the area encompassing the western part of Umatilla County.

2. The negotiation response

Over 540 Umatilla County citizens, including irrigators, rural residents, city residents, scientists and consultants attended the Planning Commission hearing to voice their opposition to the proposed overlay zone. Twenty of the twenty-five individuals who testified in opposition to the proposed overlay requested that Umatilla County establish a local group of citizens to address the wide ranging issues surrounding the water problems in lieu of adopting an overlay zone only to limit a handful of new domestic wells. Following these stakeholder-based recommendations, the Planning Commission and Umatilla County Board of Commissioners appointed the 20 member Umatilla County Critical Groundwater Task Force (Task Force) to develop and recommend solutions to short and long term water quantity issues in Umatilla County, especially within the CGAs.

Even though the CGAs are in the west part of Umatilla County, the Umatilla County Planning Commission and the Umatilla County Board of Commissioners recognized that water uses throughout the entire basin needed to be addressed prior to enabling them to understand the problems and consider all long-term and short-term fixes to the problem. The Task Force membership was designed to represent the geographic area of the basin as opposed to select areas where either urban, agricultural or Tribal interests were predominant. The members were selected through a screening process by the Board of Commissioners to represent all of the water demands and water management philosophies of the part of the Umatilla Basin where the CGAs were located. The members were all Umatilla County residents and were picked based on their commitment to solving the broad problems of water declines, not to serve a specific special interest in the community. The primary mandate of the Task Force was two-fold: (1) fix the current groundwater problems plaguing west Umatilla County; and (2) design a long-term plan to assure that current and future water use is managed in a sustainable manner. The Task Force is one of the principal actors involved in the process as summarized in Table 1.

[1] http://www1.wrd.state.or.us/pdfs/UmatillaGWWkshpRptApril2003.pdf

Table 1. Generalized summary of actors in the Umatilla Basin, Northwestern US.

Actor	Interest	Involvement
U.S. Bureau of Reclamation	Manages federally-constructed water projects	Limited due to federal budget cuts
Confederated Tribes of Umatilla Indian Reservation (CTUIR)	Environmental flows for Salmon; water supplies for community and domestic use	Sovereign nation located within boundaries of Umatilla County
Oregon Water Resources Department	Develop state water resources to maximum beneficial use. Manage overdraft of groundwater.	Advisory on legality of community action on water resources
Umatilla County Commissioners	Maintain water supplies for agriculture and municipalities.	Convened community-based management approach.
Umatilla County Planning Department	Complying with state land use laws	Appointed planner dedicated to water issues
Critical Groundwater Task Force	Identify and implement technically and economically feasible measures to enhance and protect groundwater quantity and quality.	Over 20 volunteers appointed by County Commission
Municipalities	Drinking Water Supplies, Water Rights	Task Force Membership
Agriculture	Sustainable Supplies, Water Rights	Task Force Membership
Real Estate Investors	Land Development	Task Force Membership
Oregon State University Institute for Water and Watersheds	Land grant university and one of over 50 Water Resources Research Institutes recognized by the U.S. Geological Survey.	Train the trainers for Education and Outreach
Soil and Water Conservation District	Increase stakeholder awareness	Education and Outreach
Media	Public Service	Published newspaper and radio ads developed by Task Force
Non-governmental Organizations	Public Service	Funding and volunteers

The Task Force had the desired outcome of a “2050 Plan” which had consensus support and which assured adequate groundwater for broad community needs through the year 2050. They have the following objectives in their charter: (1) review and evaluate previous studies, plans and actions taken; (2) gather, organize and analyze available information; (3) inventory anticipated needs through year 2050; (4) develop a consensus for a sustainable plan, that is technically and economically feasible, to protect and enhance groundwater quantity, as an essential natural resource; (5) coordinate with entities working simultaneously on plans to protect groundwater quality (for example, the Lower Umatilla Basin Groundwater Management Area Committee); (6) develop lines of communication and coordination to reduce obstacles and to broaden the base of support; (7) develop and advance such other consensus objectives as it determines; and (8) identify and promote development of projects with known multi-beneficial use.

The Task Force serves primarily as an advisory body which has the power to develop their own protocols, procedures and rules for conducting the affairs necessary to complete and extensive, long-term water management plan. The Task Force has consistently met for nearly five years to develop a plan not only to meet current needs and specific interests but to recommend long-term solutions to the Umatilla County water supply debate. The Task Force recommended how to

proceed with plan implementation to the Umatilla County Board of Commissioners who are deciding on the appropriate parties that will be necessary for implementation.

The Task Force recognized the value of public participation so that the public could choose the level of risks rather than serving simply as recipients of risk[2]. The Task Force adopted an education and outreach program based roughly on the principles of Collaborative Learning3 that were developed at Oregon State University (OSU). Collaborative Learning draws upon systems thinking, conflict management, and alternative dispute resolution. Collaborative Learning approaches are well suited for natural resource, environmental and community decision making situations that include (1) multiple parties; (2) multiple issues; (3) scientific and technical uncertainty; and (4) legal and jurisdictional constraints. The advantages of Collaborative Learning approaches to conflict management for this project include the following:

- It is learning-based public participation;
- Stakeholders learn from one another;
- Agencies (Departments within municipalities) interact as stakeholders;
- Technical/Scientific & traditional/local knowledge are respected; and
- Public participation activities are accessible and inclusive.

The Task Force created a subcommittee dedicated to stakeholder participation through education and information. The ongoing work used specialists in water sciences, policy, and management from OSU to train community volunteers for speaking engagements at public schools, newspaper and radio advertising, brochures, radio interviews, telephone interviews, and staffing booths at regional agricultural industry events such as Umatilla County "County Fair" held in the summer and the annual "Farm Fair" held in the winter. Telephone polling by the Soil and Water Conservation District revealed that 75% of the respondents had knowledge of a groundwater problem. OSU and the outreach subcommittee addressed over 200 K-12 students in a two county area, as well as at the CTUIR School. A documentary film of the groundwater situation entitled "*Water Before Anything*" was developed by an OSU graduate student to document the collective action by the community[4].

The four general approaches to addressing the water deficits identified by the Task Force and the public included (1) augmenting groundwater supplies with surface water supplies from the nearby Columbia River either through undeveloped options associated with existing U.S. Bureau of Reclamation projects or regional investments in delivery and storage infrastructure; (2) funding more intensive investigations of groundwater resources to better determine the estimates of groundwater reserves; (3) exchanging water rights to acknowledge CTUIR water rights and fisheries; and (4) more aggressive management of the existing water rights.For Collaborative

Learning to be effective, it needs to focus not only developing a good working relationship between the disputants, but also begin the process of getting high quality data and information on the table. Situation maps are routinely developed as part of the Collaborative Learning process as depicted on Figure 2. As part of the process of getting information on the table, speaking engagements started at a regional groundwater conference where an entourage from Umatilla County presented the situation from the perspective of county planners and tribal water resources research and concerns.

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[2] Delli Priscoli, J. 2004. What is Public Participation in Water Resources Management and Why is it Important. *Water International*. 29(2):221-227.

[3] Daniels, S.E., and Walker, G.B., 2001, Working Through Environmental Conflict: The Collaborative Learning Approach, Prager, Westport, CT.

[4] The four minute trailer of "Water Before Anything" can be viewed on YouTube and Google Video.

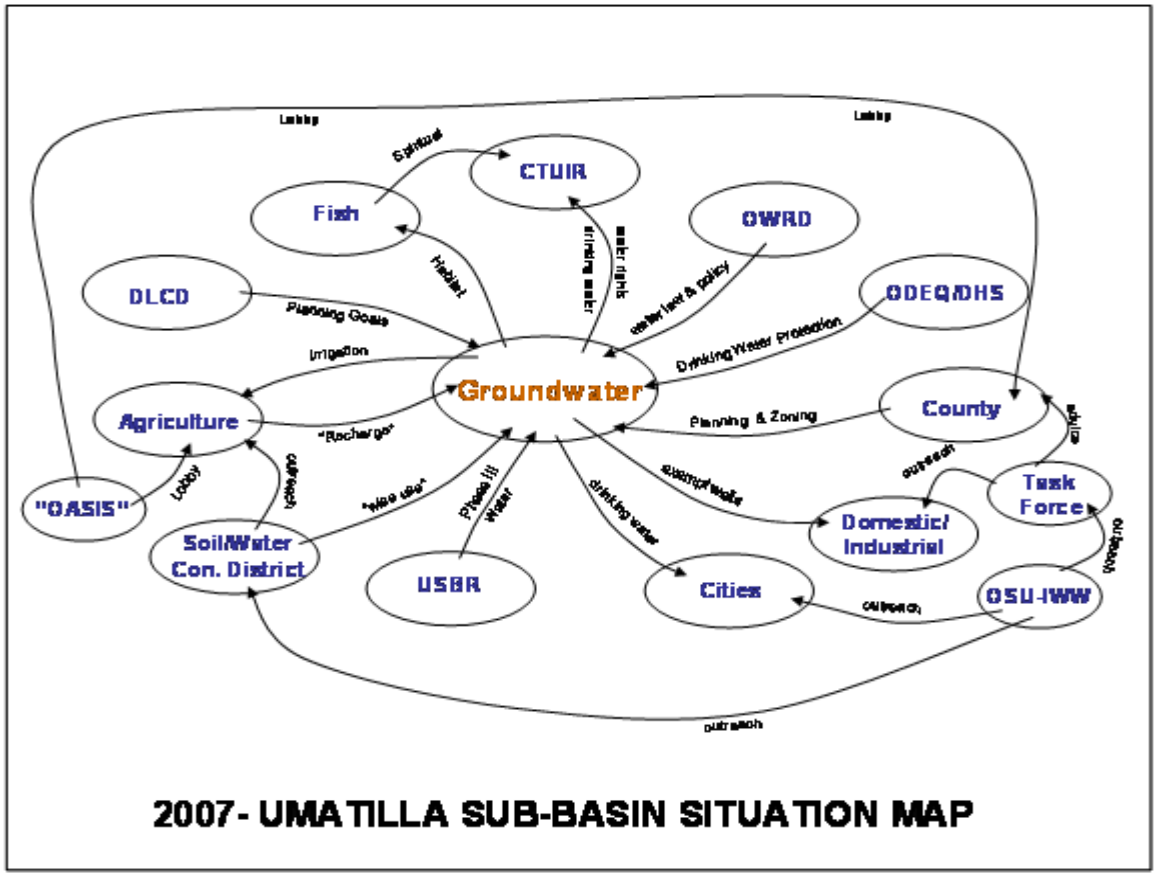

Figure 2. Preliminary depiction of stakeholders and linkages for the groundwater situation in the Umatilla Basin, Northwestern US. "OASIS" was a proposed project to divert water from the Columbia River. DLCD denotes the Oregon Department of Land and Conservation and Development. USBR is the US Bureau of Reclamation. OWRD is the Oregon Water Resources Department. CTUIR is the Confederated Tribes of the Umatilla Indian Reservation. ODEQ/DHS are the Oregon Department of Environmental Quality and the Department of Human Services. OSU-IWW is the Oregon State University, Institute for Water and Watersheds.

Limited federal, state, and local funding required experimentation of different resources to synthesize existing socioeconomic and hydrologic information gathered over the course of nearly 20 years. In 2006, OSU graduate students synthesized data into a 50 page document to serve as a single text negotiating document focusing on what was known with certainty and would likely not be contested and what was unknown and likely contestable. A place-based three dimensional conceptual model of the hydrogeology and groundwater declines depicted on Figure 1 has been portrayed on brochures, posters, and webpage[5]. These documents served as the "single text" during the early negotiation phases of preparing the future planning documents to maintain trust and expedite review.

The data synthesis and conceptual model provided the foundation for the Umatilla Sub-Basin 2050 Water Management Plan. The data synthesis provided much of the background to portray the history of water development in the Umatilla Basin, as well as the background for the 2050 Water Management Plan. The Management Options represented and defended in the 2050 Water Management Plan ultimately will be negotiated locally, regionally and at the state and federal level.

Some of the major disputes that were at the heart of the negotiations:

[5] http://umatillacounty.net/planning/Groundwater.htm

- How to protect the rights of existing, certificated water rights holders in a basin with over appropriations in both ground and surface water resources;
- How to integrate management of both ground and surface water quality and quantity;
- How to augment water supplies without impacting existing water right holders, federal investments and aquatic/fishery resources;
- How to deal with the political pressure of providing water supplies to junior users cut-off in CGAs (Once a water right is perfected the political pressure will always be there to assure a water supply for the investment);
- How to bridge the gap between land use and water planning/management;
- How to implement a county generated water plan when the State of Oregon has sole jurisdiction over water management; and
- How to coordinate local and state water management with that of a sovereign nation (the Confederated Tribes of the Umatilla Indian Reservation).

Even before the draft of the water management plan was completed, the first source of tension among some of the "science-based" stakeholders focused on the conceptual hydrogeologic model. This comes as no surprise as the technical training of hydrogeologists focuses on the intellectual method of "multiple working hypotheses" introduced in the late 1890s by the first hydrogeologist in the United States, Thomas Chamberlain[6]. The structure of method of multiple working hypotheses or "affirmative action science[7]" revolves around the development of several hypotheses to explain the phenomena under study.

3. Lessons Learned

The "lessons learned" focus on the fact that community-based resource management and policy development takes time, especially when negotiating a "hidden" resource such as groundwater. Collaborative Learning takes time and patience to see tangible benefits. In this case, the program is still in its infancy after nearly four years. However, the Collaborative Learning approach, specifically as it relates to the public education and outreach program, matters by increasing public awareness and building trust. The project has lead to an investment by the Oregon State Senate when they passed Senate Bill 1069 in 2008 dedicating US$750,000 for the purpose of conducting the Umatilla Basin regional aquifer recovery assessment. Many state legislators and senators attribute the outreach program for the support of Senate Bill 1069. Governor Kulongoski's 2009-2011 budget recommends an additional US$2.5 million to further develop the Umatilla Basin Regional Aquifer Recovery Project. According to Rick George, program manager for the environmental planning department of the Confederated Tribes of the Umatilla Indian Reservation "This is the only water supply investment the state is making."

For more information: Visit http://umatillacounty.net/planning/Groundwater.htm or contact, Institute for Water and Watersheds, Oregon State University, 210 Strand Agriculture Hall, Corvallis, Oregon, 97331 USA. Email: todd.jarvis@oregonstate.edu

[6] Chamberlin, T.C. 1897. The method of multiple working hypotheses. Journal of Geology, 5:837-848.

[7] Renevier, L. and M. Henderson. 2002. Science and Scientists in International Environmental Negotiations. In Transboundary Environmental Negotiation – New Approaches to Global Cooperation, L. Susskind, W. Moomaw, and K. Gallagher, editors. San Francisco, CA: Jossey-Bass, A Wiley Company.