

RECLAMATION

Managing Water in the West

Focus Groups on Water Conflict and Collaboration, Upper Colorado Region, September 2006

Synopsis of Findings

Western Water Institutional Solutions Project



**U.S. Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Salt Lake City, Utah**

May 2008

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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1. Background

Upper Colorado Regional Office (Dennis Kubly and Amy Cutler) has been cooperating with staff from the Denver Technical Service Center (Douglas Clark), the Pacific Northwest Region (Michael Beaty), the University of Utah (Beth Murphy), and Oregon State University (Aaron Wolf, Kristel Fesler, and Nathan Eidem) since FY2005 on a research effort called the Western Water Institutional Solutions Project (WWIS).

In the summer of 2006, the Upper Colorado Region Leadership Team recommended that the WWIS research team conduct focus groups in the UC Region's Area Offices to learn how conflict is handled at present, how its management could be improved, and how and in what form the WWIS research would be beneficial to Reclamation water managers. Accordingly, focus groups were conducted at the Grand Junction, Albuquerque, and Provo Area Offices of the Upper Colorado Region during September of 2006. The purpose of the meetings was to determine the primary causes of water conflict, learn how conflict is currently managed, ask what additional conflict detection and management tools would be useful, give the offices an overview of the research, and ask them for comment.

This document synthesizes the results of the focus group meetings and deliberations. The focus groups represented a diverse cross section of water management professionals from regional and Area Office locations, with many years of water management experience, including river system and reservoir operations, adaptive management, water quality, biology, and engineering. (Note: in order to have a free and open discussion of issues, focus group leaders told participants that no one would be quoted or cited in this document. Therefore, names of participants are withheld).

1.1. Overview of the Western Water Institutional Solutions Project

The purpose of WWIS project is to provide a set of tools to water managers to help them detect the onset of potential water conflict and to avoid the conflict where possible or, if not, to successfully resolve the conflict. WWIS is being funded by the Reclamation Science and Technology Program.

The WWIS research effort (a. scales historical events derived from legal cases and media accounts on a conflict-cooperation continuum (b. correlates these scaled events with institutional, bio-physical, and socio-economic driving variables, (c. attempts to determine what the indicators conducive to future

conflict and cooperation are, (d. conducts case studies to get at the social, economic, and institutional dynamics of water conflict at a more refined scale, (e. develops time lines of conflict and cooperative intensity and associates these with significant and defining events such as the release of a biological opinion, a drought, or a court decision, and (f. is coupled with the Western Water Information Network, a Reclamation-wide geographic information system built to investigate water conflict in the West.

The research goals of the WWIS project are:

- To gain a more precise understanding of which factors are conducive to conflict and collaboration.
- To learn how these relationships differ with the scale of analysis (basin, region, state, national).
- To determine when, where, how, and why conflicts have been averted.
- To discover when and where conflicts have been resurgent.
- To investigate when, where, and how they have been resolved and the role of collaborative tools in that process.

2. The Present Nature of Water Conflict

The nature of water conflict was treated in the Grand Junction Area Office. One person explained that there is a finite amount of water co-joined with a need to use the resource differently than it has been used in the past. More and more demands are being placed upon water resources. At the same time there are institutional, contractual, and legal reasons why water cannot be allocated as it has in the past. These reallocations cannot be made quickly. Many water interests want the reallocation process to move swiftly, but it is impossible to simply take water from one use or user and give it to another. These conditions, taken together, give rise to conflict.

3. The Causes of Water Conflict

The primary causes of water conflict mentioned in the Area Offices were (a. change, particularly rapid social, economic, political, environmental, and budgetary change, (b. the inability of science to give definitive answers to questions regarding environmental needs, (c. perception by stakeholders of policy and agency inflexibility, (d. inability of agencies to speak with a single voice, (e. the rewarding of conflict with money, (f. stakeholder perceptions-- the varying degrees of their willingness to settle for the amount of water they need as opposed to the amount of water they may be entitled to, (g. the absence of clear and enforceable laws and policies, and (h. internal stakeholder organizational decision

processes. The importance of any particular factor varied from case to case, though change appeared to be the most universal cause of conflict.

3.1. Change as a Factor

Many causes and settings were described as giving rise to water conflict in the Area Offices. Broadly speaking, change, and especially sudden change, was cited as a primary cause of conflict. The American West faces many new constituencies for water. Among these are recreation users, environmental conservation groups, rapidly growing cities and suburbs, and Native Americans. In addition, individual states are going to court to enforce compact obligations for water deliveries. As these new demands come into play, older constituencies such as irrigation agriculture or mining interests have begun to fear that they will lose their water. The result sometimes is conflict.

Budgetary changes, new legislation, interstate lawsuits, new policy directions, and changes of that sort can also provide new settings for conflict as some constituencies gain while others potentially lose. Most of the above were viewed as external causes of conflict. Other external realities could also impinge on an Area Office and cause conflict. Among these might be drought, an aggressive invasive aquatic plant species, climate change, or other natural calamities. Changes wrought from external sources were generally viewed as more likely to cause conflict than internal sources.

3.2. The Limitations of Science as a Factor

The limited ability of science to provide definitive answers was given as another potential cause of conflict. In particular, water managers, of course, need scientists to give them information as to the capacity of the natural system to adjust and adapt to changes in the amount of water that is available. For instance, what exact flows at what times of year does an endangered fish truly require? Would an additional 5 cfs make a positive difference to an endangered fish, for example? Unfortunately, scientists may either have differing opinions about the amount of water a fish requires, or simply may not know. One person in the Grand Junction Office wryly wished the fish could talk to the managers and tell them what water they needed. In the Albuquerque Office, it was noted that the only matter the scientists seemed to be able to agree on was that the endangered fish needed water. Area Office personnel said they could benefit from strategies for dealing with the limits of science and diverging science.

3.3. The Perception of Agency Inflexibility as a Factor

By its very nature government must take into account the needs of many diverse constituencies. For this reason, decision-makers are often caught in the middle of

conflicts. Since it is a Reclamation manager's responsibility, for instance, to both protect the natural environment and to deliver water, an individual manager may be caught in the middle of conflicts between endangered fish advocates and water users. Inevitably, allocation decisions must be made and occasionally some constituencies will not be completely happy. For instance, it was noted that some water users have accused managers of "caring more about the fish than the people".

Rightly or wrongly, charges of agency inflexibility can occur in such instances, and a stakeholder's perception of agency inflexibility can result in conflict. In other words, if a public agency is perceived in the public's eyes as too rigidly enforcing a law or policy, i.e. "ramming it down the public's throat", conflict can occur. One respondent felt that agencies can and should occasionally look for ways to accommodate varying interests in the "gray areas of the law" where flexibility exists. For instance, it might be possible both to recover an endangered fish and continue water development. A rigid agency stance, say, that "any water diversion will endanger the fish" can result in conflict.

3.4. Agency Failure to Speak in a Single Voice as a Factor

The failure of some agencies to speak with a single voice can result in conflict. For instance, one agency in a state government might support an endangered fish while another may support a trout fishery. Trout, of course, are known to prey upon some species of endangered fish.

3.5. Rewarding Conflict as a Factor

There was some feeling that, intentionally or unintentionally, money in government often "rewards conflict", while those agencies who avoid conflict are not rewarded. This circumstance is further aggravated by the tendency to pull money away from planning or proactive efforts and funnel it to crisis situations. It would sometimes follow that those issues that the planning or proactive efforts were addressing could themselves fester into crisis or conflict situations.

3.6. Stakeholder Scope of Interest as a Factor

Another source of conflict revolved around stakeholders themselves. Especially during the early stages of a conflict, individual stakeholders or stakeholder groups may be exclusively focused on only their own interests. Occasionally, they even fail to see the legitimate needs of other water users and the legal mandates of various government agencies operating in their basin. Their only focus is on the water they are legally entitled to and not the wider interests of the basin. They may not see themselves as part of a larger community of water users. As the

negotiation process goes on this may change. However, initially at least, such views can be a major source of conflict. In a similar vein, the values of a particular set of stakeholders can be at odds with the values embodied in the public laws. For instance, one stakeholder's endangered fish might be considered to a "trash fish" by another stakeholder. Thus, varying values can and do result in conflict.

In addition, even if certain individual stakeholders do at last come to see themselves as part of a greater community, one that may succeed or fail together, they sometimes leave the negotiation process for a variety of reasons. Their replacements may again not see themselves as part of the greater water using community. The result may be conflict.

Yet another source of conflict was concerned with the inclusion and exclusion of stakeholder interests. It was thought that if a concerted effort is not made to include all stakeholders in a deliberation process, the result can be a failed process. The conventional wisdom was that an excluded water user may suddenly angrily appear when success seems close and may scuttle a pending agreement or accord.

3.7. Unclear, Unenforced, or Unenforceable Laws and Policies as a Factor

Finally, clear and enforceable laws and policies were viewed as essential for avoiding conflict. In the absence of such policies and laws, various interests may attempt to expand their entitlements to resources in conflictive ways which could prove difficult to counter.

Failure to enforce laws and policies can result conflicts. For instance, without strict enforcement a producer may illegally build a house fronting a canal and then put an illegal bridge over the canal. If she sells her property and homes are built on the land, the illegal bridge cannot easily be removed and the encroachment on the canal cannot easily be reversed. Further, damage to the canal and risks to the health and welfare of the new residents and their children living on the edge of the canal will be constant sources of conflict. Relatedly, it goes without saying, of course, that enforcement of laws and policies requires manpower and equipment. The lack of manpower and equipment can result in slack enforcement and can lead to conflictive environments.

3.8. Internal Stakeholder Decision Processes as a Factor

Some stakeholder institutional decision processes require consensus before a stance can be taken and others require majority rule. Where consensus is the rule,

prolonged delays can occur, resulting in frustration and conflict. Where majority rules apply, some stakeholders may feel that their interests have been neglected and this, too, can result in conflict.

4. Successful Approaches for Managing Water Conflict

In the view of the UC Area Offices, successful management of water conflict requires experienced, competent, empathetic, and fair-minded leaders to manage an inclusive, scientifically sound, and equitable conflict resolution process. Other factors mentioned as leading to successful management of conflict included adequate funding, strict deadlines, legal imperatives, and accurate measurement of depletions.

4.1. The Importance of Good Leadership

Good leadership was viewed as vital to good outcomes. In the view of respondents, leaders should be able to remain calm during stormy deliberations. They should speak from principle and not emotion. They should listen respectfully, carefully, and empathetically to stakeholders. They must make it a point to understand the relevant federal, state, and local laws. They must be well versed in the policies of their own agency and those of other agencies. They ought to be technically competent, and also be able to communicate technical information effectively to stakeholders. They must keep meetings running in an orderly, disciplined manner and not allow the voice of one constituency to drown out those of others. Finally, they should look for and keep to the moral high ground with a view toward becoming honest brokers in the eyes of those involved in the negotiation process.

4.2. The Importance of Inclusiveness and Creditability in Process

The successful conflict resolution process described in the Area Offices can be characterized as inclusive in nature. One of the first tasks required for a successful process is inclusiveness. A major effort should be mounted to find and include stakeholders or their representatives. Meetings should be announced well in advance. One office suggested devoting a website to the conflict resolution process to facilitate transparency and communication. Inclusiveness was viewed as providing each stakeholder an opportunity to have his or her voice heard and, moreover, to have the satisfaction of knowing that their voice had been heard.

Inclusiveness also had the merit of showing everyone in the process that they were part of a larger community of water users, each member of which had his or her own aspirations, rights, and responsibilities. As such, an inclusive process can help individual stakeholders to see the wisdom of cooperating with others. Peer pressure was thought to be another outcome of inclusiveness. For instance, peer pressure can push water users to identify and settle for the amount of water they truly need as opposed to the amount they are entitled to have under the law. Inclusiveness also creates an opportunity for the building of enduring relationships that can be used to tackle not only present water issues, but future ones as well. It also allows water managers to develop a sense of how various constituencies will react to the many types of emerging issues.

Inclusiveness was also viewed as helping to keep local problems local. It was believed that the need to “go Congressional” or “to knock on the governor’s door” became less inevitable with an inclusive process. Finally, inclusive processes sometimes evolved into enduring problem solving bodies or institutions that could tackle future water issues in an effective manner.

4.3. Addressing Divergent Scientific Viewpoints

The need for good science in conflict resolutions processes can, of course, be stipulated. However, focus group members spoke about the requirement to address issues of competing science—scientists whose research in a particular basin may indicate contrasting courses of action for water managers. Asking the “dueling” scientists to meet and discuss their research before a meeting was said to sometimes serve to mitigate this problem. Having an institution that “made the final decision” after taking into account the contrasting results of scientific research, also sometimes helped to manage, though not solve, the problem of diverging scientists. In other words, while every scientific view was heard, some institution was given the authority to make the final decision. Again, however, it was considered to be important that each scientific viewpoint was heard and taken into account.

When there was no agreement about certain scientific facts in the basin, joint fact-finding efforts were thought to be valuable. In this process, stakeholders and scientists are asked to agree upon a scientific method in advance and then go into the field together to take measurements. Even with all these efforts, however, it appears that science is limited in what it can accurately say about basin needs, as noted in section 3.2. Adaptive management practices were viewed by some participants as a possible remedy in such situations.

In related vein, it was deemed important to accurately measure how much water was being delivered to stakeholders. This was especially true when depletions could result in jeopardy opinions for endangered fish. Differing perceptions of how much water is being depleted were thought to potentially lead to conflict.

4.4. Monetary Requirements

Successful conflict resolution outcomes were said to frequently require substantial expenditures. In New Mexico, for instance, the state legislature agreed to purchase tens of millions of dollars in water rights to ensure that the state met compact requirements with Texas in the Pecos Basin. Many other activities associated with conflict management also require funding: mapping, scientific analyses, legal fees, training, negotiations, monitoring, travel, and mitigation to name only a few.

5. Resources Considered Useful for Successful Water Conflict Management

Area management personnel were asked to list resources they considered to be useful for successful water conflict management. The resources that were listed may be divided into two categories: (a. those currently available and (b. those requiring research and development to obtain. Among the first were:

- Negotiation training.
- Conflict management training.
- Workshops in which water managers and experts in the field of conflict studies could discuss best practices for detecting and managing conflict.

The second set included:

- Development of tools for coming to grips with and understanding current social and political relations surrounding a potential conflict.
- Tools for monitoring social or political or economic developments real time and related tools for predicting conflict.
- Tools for training stakeholders in effective conflict management processes.
- An ongoing survey of training and other resources that managers had found to be useful.
- Research into the ways that institutions can be made more flexible so as to be capable of managing change when it occurs.
- Case studies of and lessons learned from Reclamation and other water conflict resolution histories (e.g. lessons learned from negotiations with Native Americans, lessons learned from ESA negotiations, lessons learned in adaptive management undertakings, etc.).
- Tools for optimally managing media relations during a water conflict.
- Tools for optimally managing political conditions during a water conflict.

6. Recommendations for the Western Water Institutional Solutions Project (WWIS)

A summary of the WWIS project objectives and methods was provided to each focus group, together with the rationale for conducting institutional research in Reclamation. A complete summary of the work conducted as of the end of FY06 accompanies this report as a separate document.

6.1. The Rationale for Conducting Institutional Research in Reclamation

Institutional research on water examines the legal, economic, scientific, social, and other institutions that are parties to water conflict and cooperation. A number of recent publications have endorsed institutional research for water resource management:

The National Research Council, 2005: Managing Construction and Infrastructure in the 21st Century Bureau of Reclamation

Bureau of Reclamation, 2006: Managing for Excellence

The National Research Council, 2001: Envisioning an Agenda for Water Resources Research in the 21st Century

Department of the Interior, 2006: Water 2025

The White House Office of Science and Technology Policy: Science and Technology to Support Freshwater Availability in the United States

Each of these publications has endorsed the idea that institutional research is critically required to come to grips with water supply issues in the American West. Reclamation's Science and Technology Program hosted two workshops in 2006 to support institutional research within the Bureau and it has funded a number of research efforts in this area. One of these is the Western Water Institutional Solutions Project.

6.2. Area Office Recommendations for the Direction of WWIS Research

The Area Office recommendations for WWIS research were as follows:

1. The events timeline graphs should include changes of administration, changes in policy direction, the growth and decline of proactive measures, and changes in budget allocation. Most important, the WWIS team should correlate changes in budget with conflictive and cooperative events.

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2. Provide a list of mitigation skills for different phases of the conflict process: initial hostilities, growing awareness of the interests beyond one's own, compromises, and implementation. Provide a training set for stakeholders as well as Reclamation personnel. Provide training as to what tools are useful under what circumstances.
3. Perform case studies and events traces at more localized scales of analysis, making use of more localized source materials.
4. Determine what, if any, red flags exist to suggest that something is about to go drastically wrong in a conflict-collaboration process.
5. Develop predictive tools for conflict and cooperation.
6. Revisit the event intensity classification scheme to ensure that event types are being assigned to appropriate intensity levels. In particular, should peaceful demonstrations be accorded the same level of intensity as violent demonstrations?
7. Develop strategies to conduct proactive versus reactive policies and activities in a basin.
8. Determine if the sample of newspaper articles and legal cases used in the events database was truly representative of the population of water issues in the UC region.
9. Use the events database and related procedures to examine particular cases. Determine what changes in the conflict-collaboration process occur as groups come into and go out of the resolution process. Determine the influences of local, state, and federal politics on the process.
10. Identify "tipping points" in conflict-cooperation timelines. The Area Offices have a need to recognize a potential disaster or "train wreck" before it happens and a need to know how to determine if the Bureau's actions are putting it on such a path? In the middle of a conflict it would be very useful to see if the organization could know if it was headed down the wrong road.
11. It would be worth looking at the spectrum of the events from negative to positive to see whether the responsiveness of Reclamation to particular events or types of events was related to the evolving degree of conflict or collaboration.

The WWIS group is also evaluating the feasibility of assisting with the some of the other resource needs (listed in section 6.0.2) within Reclamation with regard to managing conflict and fostering cooperation, namely:

1. Conducting a survey of conflict mitigation and management resources such as training classes and providing the results to Reclamation personnel, along with feedback from those who have made use of the resources.
2. Facilitating a conference of Reclamation personnel and conflict management experts who deal with conflict and share what works and does not work. What skills, data, information, techniques, are useful? What are not? What gaps are there, if any?

3. Providing a skills-set for managing the politics around conflict, e.g. dealing with media, local, state, federal, international politics. These tools would be helpful in anticipating what the political ramifications could be at given points in time and in developing strategies for handling them.
4. Providing training on any or all of the following: adaptive management, negotiation, dueling scientists, joint fact-finding, listening, scenario planning.
5. Striving to make the event data “real-time”—i.e. correlating it with real-time data received from reservoirs and rivers. Post these data to the public.
6. Examining strategies to make government institutions more flexible in order to enable them to cope with change and other agents potentially causing conflict.
7. Develop case studies to get at “lessons learned”. For example, what are the lessons learned around Indian water rights settlements? What worked and did not work in the Middle Rio Grande or the Klamath basins?

The WWIS team is currently consulting on the issues and recommendations raised in the Area Offices to determine the best ways to incorporate them.