

# **WATER CONSERVATION SYMPOSIUM**

## **WHAT'S NEW IN THE WEST? WATER CONSERVATION AND THE USE OF CONSERVED WATERS**

Sponsored by the

**WESTERN STATES WATER COUNCIL  
WYOMING STATE ENGINEER'S OFFICE  
U.S. BUREAU OF RECLAMATION  
and  
NATURAL RESOURCES CONSERVATION SERVICE**

Casper, Wyoming  
July 12-14, 2000

### **SUMMARY**

The Western States Water Council, the Wyoming State Engineer's Office, the U.S. Bureau of Reclamation, and the Natural Resources Conservation Service co-sponsored a symposium on Water Conservation and the Use of Conserved Waters in Casper, Wyoming on July 12-14, 2000. The meeting focused on state and federal statutes, policies and programs that instigate, influence and provide incentives for saving water in the western region of the United States. An additional focus was to highlight successful state water conservation activities and innovations in state laws and policies that affect water management. Tools, policies and programs that will enhance partnering and foster cooperation in addressing future water needs through conservation were also addressed.

### **An Historical Perspective**

Water management and conservation in the western region of the United States has a well documented history. Anne MacKinnon, Water Rights Historian and former Editor, Casper Star-Tribune, provided a perspective of this history. The title of her presentation was "Water Conservation and the Wyoming Connection: Tales from the Land of Elwood Mead". Anne suggested that around the western region of the United States, water and conservation issues raise a classic conflict connotation, particularly in light of developing consumptive versus non-consumptive uses arenas. Although tradition is holding change at bay, the western states must decide how water conservation activities will be incorporated into longstanding water law.

Elwood Mead, as Wyoming's first State Engineer, laid a foundation for water appropriation that maximized putting water to beneficial use in order to create and maintain communities in the arid West. This was a view of water as a private property right that largely excluded the concept of public need. What Mead established was a system of centralized state control that relied on the user for implementation. However, the envisioned result of a highly productive agricultural economy failed to develop with

the actual beneficiaries being riparian areas, wetlands and maintenance flows resulting from delayed releases of “stored” waters becoming available as return flows from excessive irrigation water diversions.

Today, water conservation talks focus on competing uses stimulated by downstream growth, largely unrestrained by water supply limits. This is also important not only to the influx of newcomers with interest in and capital to finance reworking water rights for the benefit of the environment, but also to those existing agricultural producers interested in adding a cash generating enterprise based on fishing and other water related outdoor tourist activities. In addition to competing uses, increased efficiencies, water quality concerns, leasing needs, salvaged water credits and the value of non-consumptive, in-stream uses are also current viable issues.

### **Saving Water and New Uses: Where Do We Go From Here?**

Sue Lowry, Wyoming State Engineer’s Office Director of Policy and Administration opened the working part of this symposium with a talk about saving water in Wyoming and potential new uses. She addressed this in the context of where we go from here. Sue talked about the lack of incentives for water conservation and also about some of the options that may be available to improve this situation. She touched on the definition of beneficial use and the discretion of the State Engineer and the Board of Control in making such determinations.

Sue also mentioned the development of trout ponds in the Jackson area and the right to develop wetlands and waterfowl production areas. She concluded with a discussion of statutory limitations and potential changes that could address some of the issues related to water saving activities. These include recognition of and allowance for salvage water, allowing transfers through leases or sale and a change to permanent, privately held instream flow uses.

### **What’s New in the West?**

The focus for a roundtable discussion was policy and program innovations and challenges in western states water conservation programs. Chris Bridges with the U. S. Bureau of Reclamation provided a review of their Water Conservation Field Services Program and “Bridging the Headgate”. The Bureau recognizes competing demands for existing water supplies and available storage. The Field Services Program effort is focused on the preparation of water conservation plans, the implementation of plans, demonstration of innovative technology and promotion of education and information.

Duane Klamm, Wyoming Natural Resources Conservation Service provided a description of his agencies water conservation related programs. He explained the Environmental Quality Improvement Program (EQIP) and technical and financial assistance that is available through that program. Priorities are grazing lands, irrigation water management and water quality, which includes both nutrient management and movement through runoff. Duane also explained the snow measuring program and the

subsequent capacity for forecasting water availability. He commented on the difficulties in tracking saved water and raised the concern about interrupting return flows and impacting tail water releases at reservoirs.

### **Saving Water in Western States and Putting Water to New/Additional Uses**

This session focused on highlighting successful state water conservation activities and innovations in state law and policy development. Mark Frank, Director of the Phoenix Active Management Area for the Arizona Department of Water Resources talked about Arizona's water management approach. Their goal in the Phoenix Active Management Area is to reach a safe groundwater yield between pumping and recharge with a no net loss of ground water. They anticipate the use of increased efficiencies for agricultural and municipal uses and around 5000 acres of irrigated agriculture going out of production annually. There has been no new agricultural use of water in Arizona since 1980. Also, new residential use has to find a renewable source of supply.

Naomi Duerr, Nevada Department of Conservation and Natural Resources Administrator of State Water Planning talked about water planning and conservation efforts in Nevada. Planners in Nevada are expecting a population growth from a current population of 1.8 million people in 2000 to 3.5 million people by 2020. Las Vegas is expected to reach its limitation of water supply by the year 2013 (or less). An earlier estimate was for this point to be reached by 2030. Nevada requires the use of low flow fixtures, water conservation plans, local watering restrictions and landscaping requirements. Water rights in Nevada are usufructory rights that can be sold and traded.

Dallas Wall, Engineer with the Utah Division of Water Resources opened his remarks by explaining that Utah requires water conservation plans. They have also determined water use in Utah will increase almost three times in the next 50 years from 645,000 acre feet in 2000 to 1,695,000 acre feet in 2050. By that time the state will be facing a projected water shortage of an estimated 186,000 acre feet even though conservation and conversion of water use by agriculture will contribute 783,000 acre feet of savings. Conservation is expected to create savings larger than any water development in the state.

Bill Stanton, Chief of the Conservation Planning Section for the Colorado Water Conservation Board talked about their instream flow program and a loan program for local water development. This is a \$12 million annual revolving loan program. However, Colorado's water conservation effort is largely unorganized although water conservation plans are required. Projections show that the state's population is expected to double every 23 years, in part stimulating agricultural water rights being marketed to cities. Colorado is starting water basin planning and is considering water conservation as a part of their drought planning effort.

Mike McLane with the Montana Department of Natural Resources and Conservation talked about water conservation as a tool. He mentioned that Montana is a water limited state and as such they have closed 18 basins, mostly in western Montana primarily in

areas with highly appropriated streams. Their objectives are to increase security of water supplies and increase instream flows for fish. To address this interest, Montana has a process that allows response to low flows through leasing or conversion of water to an alternate use through a salvaged water law.

Tommy Knowles of the Texas Water Development Board shared that many streams in Texas are now fully or over appropriated. To deal with water shortages, Texas allows for water marketing, generally from agriculture to municipalities, with tax credits for water conservation. Municipal water use now accounts for 45% of water consumed, is increasing and is expected to reach 55% in the near future. There is a water development loan program that carries a conservation plan requirement. Texas is now drafting drought management plans and modeling for water availability.

Ron Vore, Wyoming State Engineer's Office Water Conservation Officer provided an update of Wyoming's fledging water conservation program effort. He is developing a multi-faceted approach to water management and conservation that encompasses review of information and regulations, identification of funding and technical assistance, creation of a conservation component to the state water plan and providing public outreach. Wyoming can benefit from both improved agricultural irrigation efficiencies and maintenance of existing riparian conditions resulting from irrigation water diversion practices. The challenge is to balance consumptive and non-consumptive uses through the development of water management and conservation incentives and options.

An afternoon tour was conducted by the Wyoming Area Office of the Bureau of Reclamation in Mills, WY, the Casper-Alcova Irrigation District (CAID) and the City of Casper. Pathfinder Dam and reservoir was the first stop to view a proposed reservoir expansion project and to Alcova reservoir to look at the irrigation outlet works. The tour traveled down the CAID irrigation conveyance system to look at conveyance loss mitigation implementation such as canal linings and lateral rehabilitation. Discussions during this tour were led by Ken Randolph, BOR, Butch Francis, CAID and Dave Hill, City of Casper. This project was undertaken to improve irrigation water delivery efficiencies with the saved water transferred to the City of Casper.

### **The Future of Irrigation, Urban/Rural Water Supply and the Environment**

Larry MacDonnell, author of Water, Agriculture and the Environment in the West discussed irrigation as the core of the history and development of the west. He offered that the west is becoming more urbanized and the population has interests in water resources that differ from those already here. A community-based program is crucial to gaining a better understanding of various points of view. Agricultural reuse of water is an important consideration in that this is largely responsible for creation of new habitat and environmental systems and change to that system is difficult without impacts. However, irrigation demand has likely peaked and large, future water development projects are unlikely.

Future pressure on existing uses of water will mount as a result of urban migrations. Urban demands will also be the least satisfied by conservation of agriculture water because that results in only a change in timing and place of use but not a reduction in consumptive use. Therefore, competing demands such as instream flow values and water quality issues will likely cause a movement towards staying within what a system can sustain. We started out with a rule of taking no more than what can be used and now need to move toward a rule of taking no more than is needed. It will probably take a combination of incentives and regulations to achieve this goal.

### **State Water Conservation Activities in the Northwest**

Doug Parrow, Field Liaison/Program Coordinator with the Oregon Department of Water Resources talked about the water trust program in Oregon. Oregon has watermaster districts that have authority to distribute water within the district. Districts are empowered to reduce diversions to protect instream flows. There is also a water trust for the purpose of buying and selling water leases. There is also a water conservation incentive law that allocates 75% of conserved water to the applicant, which carries a right one minute junior to the original right, and 25% to instream flow. The original legislation was intended to provide a conservation incentive and although this creates water as a marketable commodity, to date they have had only 5 proposals. The Oregon water trust has funded conservation measures in return for the total amount of water but it is cheaper to buy the water right.

Norm Young, Administrator of the Water Management Division of the Idaho Department of Water Resources described the increased expansion of irrigation in Idaho with the use of sprinkler irrigation. This has been largely due to energy and labor savings while most water conservation implementation is a means to reduce labor costs for agriculture. Idaho instituted a water bank in 1980 in cooperation with the BOR. They also have had an instream flow law since 1980 and have a water conservation bill proposed. Currently, there is no statutory opportunity to protect maintenance flows. Issues relating to water management and conservation in Idaho are recognition of salvage water, lack of ability to convert water from an established beneficial use to instream flows and flexibility within and changes to prior rights for irrigation.

### **Essential Elements for Success in the Future**

In many areas of the western United States, water quality and the Endangered Species Act are driving the need for water conservation. However, one national program will not fit all needs. Storage may still be an important component of water conservation as there is still a question of what to do with saved water. There is a need for better explanation of the benefits of water use efficiency. This can be partially addressed through better water use planning but that is expensive. Some states are moving in the direction of moving water from one use to another but this remains a difficult issue for many. There is a need to look at improvements made to flows and return flows in light of the incentives offered.

Water conservation is a tool to meet an end. There are many similarities throughout the region but there is a need for a sharing and transfer of alternatives. There is a need of a process for sharing information and ideas on a timely basis in addition to the exchange opportunities available through the Internet and electronic media. An opportunity to participate in conferences and symposiums is valuable in the development of water management and conservation programs.

### **Thoughts, Suggestions and Recommendations**

- Is there a need for a state water conservation program clearinghouse?
- What will it take to accomplish the implementation of conservation plans?
- Funding is a major problem. Partnering, coordinating and leveraging money is needed.
- Quality of plans and criteria for review needs to improve.
- Educating districts on cost effectiveness and benefits of piping is needed.
- What is a quality plan?
- What water conservation measures have what benefits?
- There needs to be a better compilation of available materials
- There is a need for technical materials for districts use.
- Market water conservation; a lot of people are not yet convinced.
- How do we best define and provide technical assistance?
- How do we address the problem that in a district, everybody knows what the problem is but nobody wants to put it in their plan.
- It may take years to get where we want to be.
- We need to work on a matrix of tools to address water management and conservation.
- WSWC subcommittee - focus on policy and politics, process for bringing groups together.

- We need to look at statutes but also do an assessment of technical opportunities.
- We're beyond the stage that water conservation is optional due to ESA, NMFS and TMDL issues.
- We need a white paper on efficiency levels of various actions
- Take only what is needed and leave the rest in the river
- Recognize Bridging the Headgate opportunities and funding for state working groups.