



Carpe Diem

WESTERN WATER & CLIMATE CHANGE

A PROJECT OF EXLOCO – PATHFINDING IN THE NEW WEST

Getting Ready – Western Water & Climate Change in the Southwest

Convening Thursday, May 29, 2008 • Mid-Region Council of Governments • Albuquerque, NM

Convening Summary

June 30, 2008

On May 29, 2008, seventy-five leaders from the non-profit, private, academic, policy and government sectors met in Albuquerque at the offices of the Mid-Region Council of Governments to examine the impacts climate change will have on water supply, water quality and riparian ecosystems in the Southwest.

The goals of this convening were to:

1. **Present** the current science on climate change and water adaptation, and to explore the challenges facing New Mexico and the Southwest.
2. **Examine** three key issues: the nexus of climate change, energy production and use, and water supply; the impact on ecosystems and the role of ecosystem services; the challenges facing key sectors and stakeholders.
3. **Discuss** the key aspects of the policy, economic, institutional, cultural and management changes needed to adapt.
4. **Provide** a forum for a diverse, cross-sector stakeholder group to discuss opportunities for common agendas.

This summary presents the highlights of the convening - background material, participant list, speaker bios and many of the convening's power point presentations are available on line at www.wiserearth.org/group/carpediem.

This **Carpe Diem – Western Water & Climate Change** convening was hosted by the Mid Region Council of Governments and presented in cooperation with the New Mexico Association of Grantmakers. Sponsorship was provided by CH2M HILL, with support from the Biophilia Foundation; Messenger of the Healing Winds Foundation; the SB Fund; Thaw Charitable Trust; and, the Wilburforce Foundation.

Post-convening work in New Mexico includes:

- The New Mexico Association of Grantmakers is hosting a small convening this summer with key NGO and public sector leaders in New Mexico to identify specific strategies for moving towards water resiliency.
- Currently under consideration is formation of a working committee of NM policy leaders to identify specific policy options and opportunities to expand the state's pioneering work on mitigation to include adaptation.
- A follow-up web-seminar will be held with convening participants; convening participants and invitees also now have access to the **Carpe Diem** project's on-line forum.

Carpe Diem – Western Water & Climate Change

The Albuquerque convening was the second western gathering presented by Exloco's **Carpe Diem - Western Water & Climate Change** project. Launched in Fall 2007, the project supports and partners with key stakeholders across the West by:

- Providing a neutral convening ground for diverse stakeholders to exchange ideas, solutions and common agendas; and, to establish relationships for creating long-term change.
- Tracking and assessing emerging issues.
- Helping translate current science into public policy and strategic management practices.
- Providing an on-line communications forum to exchange ideas and information and developing communications research and tools.
- Identifying and encouraging new philanthropic support for the issues.

Exloco incubates new campaigns and initiatives, developing solutions to environmental sustainability challenges in the western United States. We partner with investors — venture philanthropists, social change organizations, progressive public agencies and for-profits — committed to advancing new strategies for a healthy and vibrant West.

ex·lo·co (ex'loco) *adj.*, beyond the place [*Latin*]

www.exloco.org

Convening – Key Observation & Findings

- Climate change impacts are accelerating - and many changes will come abruptly, not gradually. The impacts on water resources and supply are directly tied to economic prosperity, wildfires, community viability, human health, ecosystem health, and energy development. Many key economic sectors in the Southwest - including ecosystem management, water supply and quality, agriculture and tourism - will be most immediately and dramatically impacted by climate change.
- Substantial progress - in framework and direction - has been made on climate change **mitigation** (reduce [greenhouse gas emissions](#) and enhance [sinks](#) aimed at reducing the extent of [global warming](#)) but not on climate change **adaptation** (taking action to minimize the [effects of global warming](#).) However, adaptation work is evolving rapidly as decision makers are starting to accept that strategic planning and new thinking is required.
- Climate change may serve as a catalyst for changes in water management that have been under discussion now for decades.
- A better understanding of vulnerability assessment and risk management is critical, along with the need to integrate adaptation and mitigation strategies.
- Vulnerable human populations and riparian ecosystems will be most severely impacted, receiving less and poorer quality water. Local, state and federal policies and practices are needed to ensure some level of protection.
- Western water management and land use decision-making institutions, policies and laws, were created to accomplish goals that are no longer needed in our society – encouraging development and consumption. Climate change demands a fundamental rethinking of water policy based on management for optimal use and efficiency.
- Resilient ecosystems can play a critical role in off-setting climate change impacts on water supply by enhancing flow, providing natural storage systems (ground water), increased resistance to drought and better absorption of flash-flood events. These services will become increasingly important as rising temperatures mean more rapid evaporation from reservoirs and, in many cases, lower water quality.
- We have now hit the “peak” of available water in the Southwest. Supply can be augmented by new technologies (e.g. desalination, recycling, reuse, etc.) but any new supply can only supplement, not replace, existing supply and these new supplies require additional sources of energy.
- There is a growing understanding of the relationship between energy generation and water use as it affects both supply and quality. Increased energy development will severely impact water resources. Regions need to develop integrated energy and water resource planning and decision making tools.
- It is no longer possible to effectively manage water resources from “silos” - water supply and quality managers, planners, stakeholder groups and users must cooperate, collaborate and integrate practices to optimize the total water cycle.
- There is a fundamental and core need for political, NGO and community leadership at the local, state, federal and international levels.

Quotes from the day

- *“Climate change challenges us all to create a more simple lifestyle - otherwise we will become increasingly vulnerable if we are not able to adapt.”* **Gil Sauzo**, former Tribal Chair, Taos Pueblo
- *“We know what the end game looks like - smarter use of less water. The question is not so where do we need to go, the question is how do we get there – strong community and political leadership is needed to address both water availability and the challenge of statutory and institutional restructuring.”* **Anne Watkins**, Special Assistant to the NM State Engineer
- *“Water will be the delivery mechanism for the impacts of climate change.”* **Kathy Jacobs**, Water Institute, University of Arizona (as quoted by Brad Udall)
- *“Our current western water system is one of winners and losers. If, for example, there is a 10% overall reduction in water use, that means that 90% of us won't experience any great hardships while 10% suffer greatly - the vulnerable human populations and ecosystems will bear the brunt.”* **Doug Kenney**, Director, Western Water Policy Program, University of Colorado
- *“The Colorado River Compact encourages ‘Thelma and Louise’ water management. It penalizes for overuse, but only after the fact.”* **Brad Udall**, Western Water Assessment, NOAA
- *“The Southwest can expect significantly more warming than the planet as a whole over the next century. Climate change is real – it's in the data and it's not trivial.”* **Dave Gutzler**, Professor of Climatology, University of New Mexico
- *“Communities and water managers need to adapt - the adaptation part is critical.”* **John D'Antonio**, New Mexico State Engineer
- *“The science is clear, the politics are not.”* **Mark Sanchez**, Executive Director, Albuquerque/Bernalillo County Water Authority; Member, NM Interstate Stream Commission
- *“There's no silver bullet, no prescription at hand, no road map. This indeed is wilderness. We're at the trailhead and the first part of the path before us is becoming illuminated. Let's start walking.”* **Kimery Wiltshire**, Director, **Carpe Diem - Western Water & Climate Change Project**

Convening Program

(Note: Most presentation power points are online www.wiserearth.org/group/carpediem)

A. Western Water & Climate Change: What the science tells us

Moderator:

Sarah Cottrell, Energy & Policy Advisor, Office of Governor Bill Richardson

“For too long, adaptation discussions have taken a back seat to political efforts aimed at greenhouse gas reductions. This convening is the start to addressing the adaptation challenges and opportunities.”

Presenters:

Brad Udall, Director, Western Water Assessment, NOAA

“Natural drought cycles are part of the explanation, but it is also clear that human-caused climate change is making the situation worse. We have three options: mitigation, adapt, suffer. Our ability to adapt will be a function of our flexibility and willingness to implement creative solutions.”

Dave Gutzler, Climatologist, University of New Mexico

“New Mexico has a small ‘water bucket’ - most of what has not been developed is in brackish aquifers and will be difficult and expensive to develop. We’re starting to see geographic winners and losers in the West among all species including humans.”

B. The Imperative of Adaptation

Moderator:

Terry Odendahl, President, New Mexico Association of Grantmakers

“This convening provides the science and policy background to build a cross-sector collaboration in New Mexico to move towards water resiliency in our state.”

Presenters:

Gregg Garfin, Director of Outreach, ISPE, University of Arizona

“Risk = hazard (natural event) X vulnerability (social factors). Climate change in the Southwest is tied to increasing temperatures leading to more water use (urban heat islands), diminished water quality and quantity, increased fires (and resulting impact on water quality), disruptions to agriculture (reduced water, decreased chill accumulation, weeds) and decreased tourism (less snow for skiing, summer temperatures too hot for visitors) and health (hotter temperatures increase risks to vulnerable populations.)”

Doug Kenney, Director, Western Water Policy Program, University of Colorado & Carpe Diem Project Team

“Urban areas in the West are doing an admirable job of conserving water - especially since they are ‘downstream’ of most water demand decision making. To make further progress, we need to broaden the ‘water management’ definition to include decisions and decisions makers in land use, growth, building permits, and energy use and perhaps even immigration policy and transportation. This presents an expanded set of institutional challenges.”

C. Water, Energy & Climate Change: Co-Management Opportunities

Moderator:

Joanna Prukop, Cabinet Secretary, New Mexico Energy, Minerals & Natural Resources Department

“Climate change will further complicate the already intractable problems associated with the water demands of fossil-based and nuclear energy production.”

Presenters:

Mike Hightower, Senior Fellow, Sandia National Laboratories

Drinking water supplies, agriculture, energy production and generation, mining and industry all require large quantities of water. In the future, these sectors will be competing for increasingly limited freshwater resources, making water-supply availability a major economic driver in the twenty-first century.

Fernando Martinez, Director, Energy Conservation & Management Division; New Mexico Energy, Minerals & Natural Resources Department

“Water supply, treatment and distribution require energy, energy supply and distribution requires water. Co-managing conservation programs for both water and energy is the smart path forward.”

D. Ecosystems – Riparian Habitat, Water Supply & Climate change

Moderator:

Sterling Grogan, New Mexico Project Manager, Biophilia Foundation

“Climate change will disrupt and threaten the ecosystem services upon which industrial societies depend.”

Presenters:

Cindy Deacon Williams, Senior Scientist, National Center for Conservation Science and Policy.

“Existing stressors will be magnified by climate change - loss of freshwater, loss of riparian shade, deep pools and undercut banks will reduce species reproduction potential, along with increased disturbance from extreme flooding, fire, drought and hydrology change.”

Steve Malloch, Senior Western Water Program Manager, National Wildlife Federation & Carpe Diem Project Team.

“If fish and wildlife are to have any hope of making it through climate disruption, humans will have to reduce our water footprint. We need to think about water differently, looking at the

economic, social and environmental returns to water use. That means we need to do some serious water accounting as part of our adaptation to changing climate."

E. New Mexico Adaptation - Challenges & Opportunities

Moderator:

Anne Watkins, Special Assistant to the New Mexico State Engineer & Carpe Diem Project Team

"New Mexico has a long history of limited and highly variable water supplies. Climate change will exacerbate those problems and every constituency and sector in the State needs to be assessing vulnerabilities and developing strategies for managing and making difficult decisions when conflicting needs or emergencies arise."

Presenters:

Holly Hartmann, Director, Arid Lands Information Center, University of Arizona & Carpe Diem Project Team

"The challenge facing scientists and water resource managers is translating and down-sizing the science for planning purposes; how to realistically quantify uncertainties for modeling purposes; and, how to work with multiple scenario studies and ranges of data to generate appropriate management options."

Paula Garcia, Executive Director, New Mexico Acequia Association

"The acequias have a strong interest in how water policy is going to evolve in the next few years. In particular, our concern has been that we are very vulnerable to water transfers as water demands increase. Climate change means that our communities are at even more risk."

Matt Holmes, Executive Director, New Mexico Rural Water Association

"Watershed health is critical for rural water supply. For our watersheds to be healthy, we need to maintain resilient ecosystems - the watersheds provide essential services to the human communities."

Gil Suazo, Water Resources Specialist & former Governor, Taos Pueblo

"On our land we see the changes climate change is bringing. The winds dry up the land and streams and, we are seeing more 'false storms' - water that falls up high and never reaches the ground."

Mark Sanchez, Executive Director, Albuquerque/Bernalillo County Water Authority; Member, NM Interstate Stream Commission

"Our current supply of water is what we have - if we're lucky. New technology and aquifer storage are important, but these can only supplement existing supply - conservation is a must."

Dave Cowley, Associate Professor, Department of Fish, Wildlife & Conservation Ecology, New Mexico State University

"Climate change and warming temperatures means we'll see fewer species because changes in water quantity and run-off timing, as well as quality will create new conditions in which many cannot survive."

In Conclusion

Report from the New Mexico Office of the State Engineer, July 2006 - ***The Impact of Climate Change on New Mexico's Water Supply and Ability to Manage Water Resources:***

Climate change will likely have a significant impact on the availability of and demand for New Mexico's water during the next century. The key to successful adaptation is a robust planning structure that incorporates highly certain predictions (such as temperature increases) as well as less certain forecasts (such as precipitation changes) into scenarios that can direct implementation of flexible management strategies. The State Water Plan (SWP) and the regional plans provide a policy framework to which climate change can be added as an additional pressure, albeit a potentially more threatening one. Doing so will better position the State's water resource managers to meet objectives that might otherwise be compromised by changing climatic conditions, while waiting for improved climate predictions may compromise the State's ability to anticipate and capture potential benefits and avoid potential negative impacts.

Adapting to climate change will not be a smooth process and will require multiple management tactics rather than a one-time solution. Given the latest scientific research and modeling on the impacts of climate change, New Mexico could gain substantial benefits from anticipatory stoking of its water management toolbox with proactive policies and clearly beneficial "no regrets" strategies that also alleviate the additional pressures to the State's water resources.

"In the Southwest, water is absolutely essential to our quality of life and our economy. Addressing climate change now, before it is too late, is the responsible thing to do to protect our water supplies for future generations."
- Governor Bill Richardson