



NORTHERN ARIZONA
UNIVERSITY



Arizona Water Summit

Northern Arizona University ~ August 3-5, 2005

Produced by the Center for Sustainable Environments
Sponsored by the Salt River Project

ARIZONA
WATER

SUMMIT

Welcome to the 2005 Arizona Water Summit!

Dear Participant,

Thank you for joining us in Flagstaff for this three-day event focusing on water resources and water management in Arizona and the Southwest. Clearly, this is a topic of highest significance for all of us who live in this region of the world.

I hope the Summit advances appreciation and understanding of the challenges and opportunities regarding water availability and use, both now and in the future. By coming together to discuss the latest issues, policies and research, I hope we can build a better foundation for working together in the future.

Already the Summit has advanced our collective efforts by bringing together the water programs at all three Arizona universities, tribal representatives engaged in significant water issues, and state officials who help to set water policy.

One of the unique and personally rewarding aspects of this Summit has been the genuine involvement of a wide cross-section of people and programs in the planning and organization. I want to thank each of the following groups and respective staff for their valuable contributions. Without them, this event simply would not have happened.

- *University of Arizona (UA)*: The Water Resources Research Center (WRRC), Climate Assessment for the Southwest (CLIMAS)/Institute for the Study of Planet Earth (ISPE), and Sustainability of Semi-Arid Hydrology and Riparian Areas (SAHRA)
- *Arizona State University (ASU)*: Decision Center for a Desert City (DCDC), International Institute for Sustainability, and Sustainable Materials and Renewable Technologies (SMART)
- *Tribal Organizations*: The Indigenous Environmental Network (IEN) and Black Mesa Trust (BMT)
- *Northern Arizona University (NAU)*: The Center for Sustainable Environments (CSE), The NAU Water Collaborative, and the Institute for Tribal Environmental Professionals (ITEP)

Very special thanks go to the Salt River Project (SRP) for financial sponsorship of the Arizona Water Summit. SRP's generosity has enabled us to provide what we hope is a first-class event while keeping registration fees reasonable.

Again, thank you for participating. I hope you learn a lot, renew acquaintances, and enjoy yourself.

Sincerely,



Gary Deason, Chair
Arizona Water Summit
Center for Sustainable Environments
Northern Arizona University

Arizona Water Summit

Northern Arizona University Union
August 3-5, 2005

WEDNESDAY AUGUST 3

- 7:15AM-5:30PM WEST SIDE UNIVERSITY UNION. *Tours of water-related sites and facilities in Northern Arizona.* Box lunches provided for all day tours. Participants pre-registered for a tour meet in parking lot P16 on the west side of University Union at 7:15AM. Vans leave promptly.
 - *Fossil Creek-* With the decommissioning of the 89 year-old Childs-Irving Dam, a broad collaboration of university, utility, federal and non-profit researchers are taking advantage of this rare opportunity to study, monitor and manage the return of this rich riparian ecosystem to more natural conditions. Visit this beautiful section of Fossil Creek and learn about the rewards and complexities of this 10 year, 13 million dollar project.
 - *Hopi Springs-* The freshwater springs on the Hopi Reservation have provided cultural and biological sustenance for local residents for hundreds of years. Drought conditions and the pumping of groundwater have increased threats to these sources, but recent efforts through the Hopi Cultural Preservation Offices, the Center for Sustainable Environments (CSE) at NAU, and other collaborators have begun to reverse this trend. This tour of two or three springs will enable participants to get a first-hand look at issues surrounding spring use and revitalization at Hopi.

- 10:00AM-4:30PM OLD MAIN ART GALLERY. *The Politics of Water: A Multi-Media Art Exhibition,* Wednesday through Friday, Knoles at McMullen Circle, NAU Campus

- 9:00AM-10:00AM HAVASUPAI ROOM UNIVERSITY UNION. Participants in the tribal caucus register for the Arizona Water Summit to receive agenda, name badges and meal tickets.

- 10:00AM-5:30PM HAVASUPAI ROOM. *Tribal Water Caucus.* Closed session for tribal members and invited guests. Organized by Black Mesa Trust and Indigenous Environmental Network.
 - Welcome & Introductions
 - Indigenous Water Knowledge, Water Ethics and Future Water Management
 - What are today's water concerns from an indigenous perspective?
 - *Working Lunch*
 - How can we better shape policy to be in harmony with indigenous perspectives? Relationship between indigenous and western water management
 - Development of a water proclamation by regional tribes of the Little Colorado River Plateau
 - Planning for the 2006 World Water Forum in Mexico City

- 1:00PM-5:00PM WEST SIDE UNIVERSITY UNION. *Tour of Water-related Facilities in the Flagstaff Area.* Participants pre-registered for the tour meet at 1:00PM in parking lot P16 on the west side of University Union. Vans leave promptly.
 - *Flagstaff Water Recycling Plant and the SCA Tissue Manufacturing Plant-* The City of Flagstaff is recognized as one of the leading municipalities in the nation in reclaiming used water for irrigation and other non-potable applications. The SCA Tissue Manufacturing Plant uses reclaimed water from the nearby municipal plant, saving significant water resources and financial costs. Visit both the Flagstaff recycling plant and the SCA Manufacturing plant in this single half-day tour.

- 6:00–8:00PM MUSEUM OF NORTHERN ARIZONA. *Tribal Dinner and Water Guardian Awards*, 3101 North Fort Valley Road, Flagstaff, AZ. Dinner open to all conference participants who have reserved dinner seats. Hosted by Indigenous Environmental Network (IEN), Black Mesa Trust and the Institute for Tribal Environmental Professionals (ITEP).

Keynote: Dr. Gary Paul Nabhan, “Sacred Water, Sacred Land and Traditional Gathering Grounds”

THURSDAY AUGUST 4

- 7:00AM-5:00PM INFORMATION KIOSK UNIVERSITY UNION. *Water Summit Registration*. Confirm your registration, pick up the conference agenda and receive a dinner ticket for the Thursday evening buffet with the Governor. Dinner tickets will be checked at the door.
- 7:30AM-5:00PM GRAND CANYON ROOM. *Refreshments*. Breaks will be available throughout the conference in the Grand Canyon Room. A literature table is available in the same room.
- 8:15AM-11:45AM WALNUT ROOM. *Water Education and Water Management Workshops for Tribes*. Organized by the Institute for Tribal Environmental Professionals at NAU
 - Project WET: Water Education
 - Topic 1: Water Conservation
 - Topic 2: Healthy Water, Healthy People
 - Case Study - Wetlands for Wastewater Secondary Treatment
 - Case Study - Community Infrastructure and Capacity Building
- 8:15AM-9:45AM HAVASUPAI ROOM. *Ecological Implications of Climate Variability and Change*, Gregg Garfin, convener, Climate Assessment for the Southwest (CLIMAS)/Institute for Study of Planet Earth (ISPE), University of Arizona
 - Neil Cobb, Merriam–Powell Center for Environmental Research/Department of Biological Sciences, Northern Arizona University, “Global Warming, Insect Outbreaks, and Southwest Forest Ecosystems”
 - Mark Dixon, Ecology, Evolution, and Environmental Science/School of Life Sciences, Arizona State University, "Climate and Riparian Ecosystem Dynamics in the Southwest"
 - John Brock, Applied Biological Sciences Department, Arizona State University, “Climate Variation and Arizona’s Rangelands”

Comments:

- Tom Collazo, The Nature Conservancy
- Elaine Zieroth, Apache–Sitgreaves National Forest
- 10:15AM-11:45AM HAVASUPAI ROOM. *Water Management Implications of Climate Variability and Change*, Kathy Jacobs, convener, Water Resources Research Center (WRRC) and Sustainability of Semi-Arid Hydrology and Riparian Areas (SAHRA), The University of Arizona.
 - Mark Anderson, U.S. Geological Survey, “Role of Climate in Western Water Challenges”
 - Gregg Garfin, Climate Assessment for the Southwest (CLIMAS)/Institute for Study of the Planet Earth (ISPE), University of Arizona, “Climate, Drought and Water Management”
 - Abe Springer, Department of Geology and NAU Water Collaborative, Northern Arizona University, “Groundwater Responses to Climate Change”
- 11:45AM-12:45PM LUNCH IN “THE EATERY” UNIVERSITY UNION
 - Enei Begaye, Indigenous Environmental Network, “Report on the Tribal Water Caucus”
 - Vernon Masayesva, former chair, Hopi Tribe, “The 2006 World Water Forum in Mexico City”
- 1:00PM-2:15PM HAVASUPAI ROOM. *Water, Agriculture and Resource Economics*, George Frisvold, convener, Department of Agricultural and Resource Economics, University of Arizona

- Gary Nabhan and Catherine Freeman, Center for Sustainable Environments, Northern Arizona University, "Effects of Drought and Land Conversion"
- Paul Wilson, Department of Agricultural and Resource Economics, University of Arizona "Policy-Induced Water Conservation in Agriculture: Fact or Fiction?"
- George Frisvold, Department of Agricultural and Resource Economics, University of Arizona "Arizona Agricultural Land and Water Use: 1945-2005"

Comments:

- Steven Barker, Rangeland Management Specialist, U.S. Department of Agriculture, Natural Resources Conservation Service
 - John Hunt, Associate Director, Arizona Department of Agriculture
- 2:30PM-3:45PM HAVASUPAI ROOM. *Creating a Culture of Conservation*, Panel convened by Rand Decker, Department of Civil and Environmental Engineering and the Water Collaboration, Northern Arizona University
 - Mary Alexander, Vice President and Chief Counsel, DMB, Phoenix
 - Karen Smith, Deputy Director, Arizona Department of Water Resources
 - Mansel Nelson, Director, Environmental Education Outreach Program, Institute for Tribal Environmental Professionals, Northern Arizona University
 - 4:00PM-5:30PM HAVASUPAI ROOM. *Strange Bedfellows: Water and Electricity*, Gary Deason, convener, Center for Sustainable Environments, Northern Arizona University
 - Larry Flowers, National Renewable Energy Lab (NREL), "Interrelations of Water and Electricity: the Supply Side"
 - Jay Golden, Sustainable Materials and Renewable Technology (SMART), Arizona State University, "Interrelations of Water and Electricity: the Demand Side." Presented by Harvey Bryan, College of Architecture and Environmental Design, Arizona State University.
 - Panel of Arizona State Officials Addressing the Topic "Advantages and Barriers to Integrating Water and Energy Planning and Policy in Arizona"
 - Ken Clark, Director of Energy Office, Department of Commerce
 - Karen Smith, Deputy Director of Arizona Department of Water Resources
 - Kristin Mayes, Commissioner, Arizona Corporation Commission
 - Representative Tom O'Halleran, Arizona House of Representatives
 - 5:35PM UNIVERSITY UNION WEST SIDE PARKING LOT. *Buses load for DuBois Center for dinner with the Governor*. Buses leave promptly and will return to the Union at 7:30PM.
 - 5:45PM-7:30PM DU BOIS CENTER BALLROOM SOUTH CAMPUS. *Buffet Reception with the Governor*. Seating limited to registered participants in the Water Summit and Sustainability Expo who have reserved dinner tickets. Name badges and tickets will be checked at the door. Due to the Governor's schedule, please expedite the process by arriving early, having your ticket or name badge ready, and moving through the serving line.

Welcome President John Haeger, Northern Arizona University
Introduction Mr. Richard H. Silverman, General Manager, Salt River Project
6:30PM Keynote Speaker: Governor Janet Napolitano

FRIDAY AUGUST 5

Note: The Arizona Department of Commerce Tribal Energy Program will conduct a workshop for their pre-registered participants 10:00AM-5:00PM on Friday, August 5 in Ashurst Auditorium on the NAU campus.

- 7:00AM-10:30AM UNIVERSITY UNION INFORMATION DESK. Water Summit Registration.
- 7:15AM-8:15AM WALNUT ROOM. *Arizona Virtual Water University Update for Stakeholders*. Continental breakfast served at 7:15AM. Sponsored by the Office of the Provost at Northern Arizona University.
- 7:30AM-11:00AM GRAND CANYON ROOM. *Refreshments*. Breaks will be available throughout the conference in the Grand Canyon Room. A literature table is available in the same room.
- 8:15AM-9:45AM OAK CREEK ROOM. *Panel and Dialogue on Water Commodification*. Session open to all. Organized by the Indigenous Environmental Network. There is a growing threat of viewing water as a commodity, an item that can be bought and sold to the highest bidder. This view does not acknowledge that water is a common and basic need for all life. Throughout the world people are struggling for this basic human right to water; join us for a look at water internationally and locally.
Moderator: Enei Begaye, Indigenous Environmental Network (IEN)
Panelists:
 - Wahleah Johns, Black Mesa Water Coalition.
 - Art Babbot, City of Flagstaff Council Member
 - Andy Bessler, Sierra Club
 - Laura Watchempino, Acoma Pueblo Water Program
- 8:15AM-9:45AM HAVASUPAI ROOM. Urban Water Sustainability, convener, Patricia Gober, Decision Center for a Desert City, Arizona State University
 - Patricia Gober, Decision Center for a Desert City and Charles L. Redman, International Institute for Sustainability, Arizona State University, “New Tools and Approaches for Decision Making Under Uncertainty”
 - Joseph A. Zehnder, Southwest Consortium for Environmental Research and Policy; Suzanne Grossman-Clarke, International Institute for Sustainability; Subhrajit Guhathakurta, Department of Planning and International Institute for Sustainability, Arizona State University, “Implications of Urban Growth Patterns for Heat Island Effects and Water Use: A Case Study of Metropolitan Phoenix”
 - Peter H. McCartney, International Institute for Sustainability and William A. Griffin, Department of Family Resources and Human Development, Arizona State University, “Coupling Agent-Based Models of Decision Making to Groundwater Resources via MODFLOW”
 - Dave White, Department of Community Resources and Development and Elizabeth Corley, School of Public Affairs and International Institute for Sustainability, Arizona State University, “Citizen and Expert Perspectives on Water Sustainability in Arizona”
 - Comments: Grady Gammage Jr., Morrison Institute for Public Policy, Arizona State University
- 10:00AM-11:30AM HAVASUPAI ROOM. *Water Resource Development in Rural Growth Areas*, Patricia Gober, convener, Decision Center for a Desert City, International Institute for Sustainability, Arizona State University
 - Jim Holway, International Institute for Sustainability, Arizona State University, “Water Resources Issues and Potential Management Approaches”
 - Bob Bolin, School of Human Origins and Social Change, Arizona State University, “Urban Growth, Drought, and Rural Vulnerability: A Research Agenda”
 - Timothy W. Collins, Department of Geography, ASU and Bob Bolin, School of Human Origins and Social Change, Arizona State University, “Drought Vulnerability in Mogollon Rim Communities”

- John Hetrick, Salt River Project and Decision Center for a Desert City, Arizona State University, “Growth on the Verde River Watershed and Potential Impacts to the Phoenix Area/SRP Water Supply”
 - Comments: Representative Tom O’Halloran, Arizona House of Representatives
- 11:45AM-12:45PM LUNCH IN “THE EATERY” UNIVERSITY UNION.
 - Mansel Nelson, Institute for Tribal Environmental Professionals (ITEP), “Native American Education at Northern Arizona University: The Virgil Masayesva Memorial Scholarship Fund.”
 - Participants interested in discussing the Arizona Water University (AVWU) should look for tables with “AVWU” placards
- 1:00PM-9:00PM. NAU UNION AND FIELD HOUSE. The 2005 Southwest Sustainability Expo organized by the Center for Sustainable Environments at NAU and the Greater Flagstaff Economic Council. The Expo includes representatives of organizations and businesses giving presentations and displaying their services and products related to sustainability. See separate program guide for EXPO events.
- 1:30PM-5:30PM HAVASUPAI ROOM A. Tribal Vision Statement for the 2006 World Water Forum in Mexico City. Open to all participants.
- 7:00PM-8:00PM KAIBAB ROOM. 2005 Southwest Sustainability Expo
 - Keynote Speaker: Anthony Brown, Director, ECOSA Institute, “Creating a Sustainable Future.”

SATURDAY AUGUST 6

- 9:00AM-5:00PM UNIVERSITY UNION AND FIELD HOUSE. *The 2005 Southwest Sustainability Expo* organized by the Center for Sustainable Environments at NAU and the Greater Flagstaff Economic Council. The Expo includes representatives of organizations and businesses giving presentations and displaying their services and products related to sustainability. *See separate program guide for EXPO events.*
- 10:00AM-3:00PM. NAU ART MUSEUM. *The Politics of Water: A Multi-Media Art Exhibition.*
- 12:00NOON-5:00PM ORPHEUM THEATER. *Water Film Festival* at the Orpheum Theater, 15 West Aspen Avenue, Downtown Flagstaff organized by the City of Flagstaff and Indigenous Environmental Network (IEN)
- 8:00PM-11:00PM ORPHEUM THEATER. *Winds of Change Concert* featuring The Blue Stone Project with Aaron White and Ed Michaels at the Orpheum Theater, 15 West Aspen Avenue, Downtown Flagstaff organized by the Sierra Club and Indigenous Environmental Network (IEN)