



DIVINING ROD

NEW MEXICO WATER RESOURCES RESEARCH INSTITUTE

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Student Grant Recipients Conduct Research in New Mexico

by Sara Ash, WRRRI

NMSU student studies interactions between native and nonnative fish

Las Animas Creek in New Mexico is an intermittent stream that flows during the summer monsoon season and after winter snow melts, but most of the creek does not run throughout the rest of the year. During dry periods, small, isolated pools serve as refugia to harbor

relatively large numbers of fish. Ryan McShane, a fishery and wildlife sciences graduate student at NMSU, received a WRRRI student research grant to study the interactions between the native Rio Grande sucker and Rio Grande chub and the nonnative longfin dace in these refugia.

About 50 years ago, the longfin dace was introduced to Elephant Butte Reservoir and eventually invaded part of the Rio Grande system. Because of similar feeding habits, Ryan suspected competition between the native and nonnative species would exist. The small pools that last in Las Animas Creek's dry sections become the only habitat for the fish. "There are fairly strong biotic interactions because there is nowhere else for the fish to go," Ryan said.

He investigated three different aspects of the pools: the effects of competition between the invertebrate community and food resources, the competition between chub and invertebrate predators, and the impact of feeding habits on trophic guilds.

Ryan set up four enclosures in each of three pools to study fish growth and impacts on the invertebrate community and benthic resources, such as periphyton (microalgae) and detritus (decaying organic matter), for a 28-day period. The three pools had enclosures with invasive species alone, native



Ryan collects fish with a backpack electroshocker.

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species alone, a combination of native and nonnative species, and no fish. Ryan measured the lengths and weights of the fish prior to placing them in the

scraped off a measured area of the rock. All of the samples were then dried and ashed so that the energy flow, represented by the amount of carbon in

efficient at consuming food or converting energy.

Some of his results were surprising and suggest that this particular desert ecosystem may function more like a tropical system than a temperate system, Ryan said. The longfin dace feeds primarily on detritus—at the bottom of the food web—and has the greatest impact on the system, much like is seen with tropical systems. Often, the greatest impact on temperate systems comes from fish feeding at the top of the food web.

“There is a conservation biology aspect of this research in terms of the applicability of intermittent systems to species conservation in rivers,” Ryan said. “With global climate change, many smaller rivers will begin to

function in much the same way as intermittent streams. It will have an impact on native species survival and abiotic and biotic interactions.”

Ryan will graduate with his master’s degree this fall, after which he will continue to work on other research projects at NMSU until the spring. He plans to pursue a Ph.D. in eco-

system and landscape ecology, particularly in the area of dam regulation of rivers and spread of invasive species.



Top: Ryan samples benthic invertebrates, periphyton, and organic matter with a vacuum sampler to be processed in the lab. Right: The mouth structure of the Rio Grande chub.



enclosures, and at the end of the 28-day period, Ryan measured the fish again.

Ryan also collected samples of microalgae and invertebrates. Because the substrate of the creek is cobble and gravel, he had to use a special vacuum system to collect invertebrate and organic matter samples. “A tube is placed into the water and fitted to the substrate,” Ryan said. “A pump then vacuums out water and pulls out organisms and organic matter from the bottom of the pool.” To collect the periphyton, Ryan collected several rocks with microalgae on them and

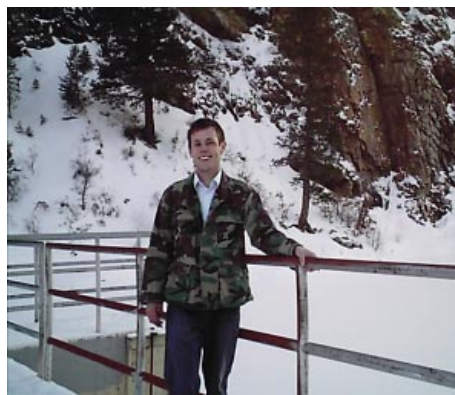
the samples, could be approximated from one trophic level to the next.

Ryan found that the native fish lost weight in the enclosures in which both native and nonnative species were present. The dace out-competed the native species for resources in the enclosures, effectively reducing the growth of native species. In the enclosures in which individual species were present, both the native and nonnative species gained weight. However, the dace gained more weight than either of the native fish species, which suggests that the dace is more



NMHU students investigate heavy metals in Gallinas Watershed using macrophytes

Recent studies conducted in the Gallinas River near Las Vegas, New Mexico, have found that arsenic and other heavy metals are present in the water. The methods used in these studies only offer a snapshot of the river at the particular time a water sample is taken. To investigate the overall levels of heavy metal contamination through time, Chemanji (Che) Shu-Nyamboli, a graduate student at NMHU, and Joel Lowry, an undergraduate NMHU student, are collecting different species



Joel, from Lovington, NM, will graduate with a B.S. in geology, after which he plans to study geophysics.

of macrophytes from four different sites along the river.

Macrophytes are aquatic plants that are visible to the naked eye; they are good indicators of metal contamination because they collect heavy metals in their tissue.

The samples were prepared and sent to a lab in Canada to be tested for heavy metals. They also conducted on-site tests of the water quality.

The preliminary results indicate that the roots of several of the macrophyte species contain higher levels of heavy metals than the shoots. At the headwaters of the river, over 60 ppm of zinc was found in the sediment and two species of macrophytes. One species of macrophyte contained nearly 100 ppm copper. At the USGS site at Montezuma, the macrophytes contained copper ranging from about 45 ppm to 95 ppm and zinc ranging from 55 ppm to 90 ppm. The moss collected at the site above the wastewater treatment plant contained approximately 950 ppm zinc, while the sediment contained nearly 700 ppm. At this site, two of the macrophytes had arsenic concentrations exceeding 14 ppm. The macrophytes collected below the wastewater treatment plant contained levels of zinc ranging from 100 ppm to over 500 ppm.

“The concentrations of arsenic and cadmium are low when you look at them in absolute terms,” Che said. “But the

concentrations in the plants in relation to those in the sediments are almost equal, meaning that some plants took up as much arsenic as there was in the sediment and even more. To me, that is significant because it suggests that the metals in the sediment occur in bioavailable forms, which means they are readily available for uptake by living organisms.”

The researchers will collect a second set of samples this fall. The spring and fall sample analyses will be compared to determine heavy metal contamination over time and correlation with sediment metal concentrations.

The students hypothesize that there is a positive correlation between heavy metal concentrations within macrophyte tissues and those in the river sediments and that heavy metal contamination will decrease in the fall because there is minimal runoff and low water levels. The contamination has been found to be primarily from the underlying geology of the area, so when there are periods of high runoff, the Gallinas River carries higher metal concentrations in its suspended sediments.

Che and Joel expect that their research will contribute to understanding the overall health of the Gallinas watershed, especially in relation to arsenic and heavy metal contamination. “Maintaining water quality is probably the most important challenge that we face,” Joel said. “It is important that we continue to develop new ways to monitor contaminants in our watersheds.”



Che identifies a macrophyte sample in the lab. From Cameroon, Central Africa, he will graduate with an M.S. next spring and will pursue a Ph.D. in environmental engineering.



New Mexico Tech student investigates tufa mound spring near Santa Rosa

Near Santa Rosa, New Mexico, there are several sinkholes and springs, but only Blue Hole has been studied extensively. Approximately 800 meters away from Blue Hole there is a tufa spring mound with five meters of deposition, but the springs in the immediate vicinity of this spring mound do not precipitate. WRRRI student grant recipient Katrina Koski, a doctoral student in hydrology at New Mexico Tech, performed a number of analyses to determine why this particular spring precipitates and the others do not.

Katrina evaluated the spring mound, Blue Hole, and Blue Hole Bowl and found that their geochemistries are identical. "That means that the water comes from the same aquifer," Katrina said. "So the reason spring mound precipitates isn't because the water comes from a different aquifer." The other possibilities include evaporation and biology.



Katrina will graduate with a Ph.D. in hydrology in 2009 after which she hopes to become a professor.

To test whether the precipitation is caused by evaporation, Katrina will examine stable isotopes of the water on the surface of the spring mound. Another possibility is that microbes in

the water use carbon dioxide, accumulate it on their bodies, or create it, which may account for the deposition of calcium in the spring. To test this hypothesis, Katrina put substrates of stainless steel and copper in the areas of active precipitation. Copper is an extremely effective indicator of the presence of microbes. The results of this test have not yet come back, but Katrina is hopeful that they will help her find out the cause of the precipitation.

Katrina graduated with a B.A. in physics from Lake Forest College and an M.S. in physics from New Mexico Tech. This is her first experience working in hydrology and has been a very valuable experience for her. "This was my first intro into field work. I learned how to measure pH, calculate flow rates, gather water samples, and use a multiparameter probe," she said. "I am so grateful for this opportunity."

New Mexico Tech student uses remotely sensed datasets to improve model

Remotely sensed imagery is a useful source of spatiotemporal data for hydrologic models. However, current distributed hydrologic models typically lack spatiotemporal variations in the input datasets. The land cover, snow cover, soil, and other surface characteristics lack spatiotemporal details. Using remotely sensed imagery allows indirect estimates of land surface characteristics, such as vegetation, land use, surface temperature, and soil moisture, in high spatial and temporal resolutions.

Taufique Mahmood, a doctoral student working with Dr. Enrique Vivoni at New Mexico Tech, is focusing on incorporating remotely sensed imagery into the TIN-based Real-time Integrated Basin Simulator



(tRIBS) to improve model predictions. He is using Landsat 5 TM imagery to characterize the watershed conditions

and estimate vegetation dynamics of the Valles Caldera National Preserve in the Jemez River basin.

Taufique has collected Landsat 5 TM imagery from May (pre-monsoon), July (early monsoon), August (mid-monsoon), and September (late monsoon) 2005, and field observations of soil moisture and soil moisture estimates are available from five weather stations and field observation sites.

Using the vegetation-soil relationship, topography-soil relationship, and a detailed soil survey, Taufique developed a detailed soil map. The near infrared, red, green, and SWIR I bands of the remotely sensed imagery are sensitive to varying levels of vegetation

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conditions, which allowed Taufique to make an indirect estimate of soil texture. The multi-temporal analyses of remotely sensed vegetation parameters indicated a general decrease in the albedo, soil moisture, and vegetation fraction during the monsoon season.

Currently, Taufique is parameterizing and setting up the tRIBS distributed hydrologic model for numerical simulation with dynamic update of the remotely sensed vegetation parameter. He will test the model results with the observed daily soil moisture, observed hourly soil moisture, and the channel stage data at different sites in the study area.

“Remote sensing from Landsat 5 TM has the potential to provide high resolution soil and land cover information for the detailed characterization of the watershed,” Taufique said. “Incorporating remotely sensed observations into tRIBS will provide more real-time scenarios to model for better predictions and lead to new ways of model testing and verification.”

Taufique will graduate with his Ph.D. in hydrology in 2011. He plans to continue his research in land cover dynamics, hyperspectral and active remote sensing, and distributed hydrologic modeling.

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FY 2007 National Competitive Grants Program Announces Top-Ranked Proposals

The U.S. Geological Survey in cooperation with the National Institutes for Water Resources has announced the top-ranked proposals for the Fiscal Year 2007 NIWR/USGS National Competitive Grant program competition. The USGS has not received an FY 2007 appropriation for this program for FY 2007 but it intends to fund as many of these proposals as possible if a FY 2008 appropriation is received.

The program received 63 proposals requesting a total of nearly \$10 million in federal funds. The top-ranked proposals are listed in the recommended order of funding.

Improving aquifer storage recovery operation to reduce nutrient load and benefit water supply

A. Fisher and M. Los Huertos, Univ. of California, Santa Cruz; \$242,508 (3 yrs)

Multi-scale investigation of seawater intrusion and application in coastal Georgia

Jian Luo, Georgia Institute of Technology; \$194,083 (3 yrs)

A Bayesian approach to snow water equivalent reconstruction

N.P. Molotch and S. Margulis, Univ. of California, Los Angeles; \$61,312 (2 yrs)

Integration of stormwater management ponds into urban communities: Long-term water quality protection, wildlife, and environmental awareness

J.W. Snodgrass and R.E. Casey, Towson University; \$187,474 (2 yrs)

Nutrient and carbon delivery to streams in artificially drained landscapes of the Midwest: Matrix flow, overland flow, or macropore flow?

P.G. Vidon, Indiana University–Purdue University at Indianapolis, and N.T. Baker, U.S. Geological Survey; \$129,042 (3 yrs)

Tracing seasonal and spatial sources of nitrate and organic matter within the Willamette River Basin: Development of a new isotopic approach for the investigation of major human-impacted river ecosystems

K. Lajtha, J. Frentress, and J.J. McDonnell, Oregon State University, and C.W. Anderson, H. Johnson, and C. Kendall, U.S. Geological Survey; \$149,104 (2 yrs)



52nd Annual New Mexico Water Conference

Beyond the Year of Water: Living within Our Water Limitations

November 29-30, 2007; Santa Fe La Fonda

Preliminary Program

Thursday Morning, November 29, 2007

- 8:15 Introduction by **Karl Wood**, WRI Director
Welcoming Remarks, Santa Fe Mayor **David Coss**
- 8:45 Keynote Address: What Happens after the
Year of Water?
New Mexico Lt. Gov. **Diane Denish** (invited)
- 9:30 USGS Water Programs and Initiatives
Robert M. Hirsch, Associate Director for Water,
U.S. Geological Survey
- 10:00 Break
- 10:30 Update on the State of the State's Water
John D'Antonio, NM State Engineer
- 11:00 New Mexico Indian Water Rights Settlements and
Their Economic Impact on Tribes and Pueblos
Chairman **Joe Garcia**, All Indian Pueblo Council
- 11:30 Preview of Legislative Water Issues 2008
New Mexico Representative **Andy Nunez**, Chair,
Committee on Agriculture and Water Resources
- 12:00 Lunch on Your Own

Thursday Afternoon, November 29, 2007

- 1:30 Demographics and Water Demand in New Mexico
and the Southwest
Adelamar Alcantara, Bureau of Business and
Economic Research, University of New Mexico
- 2:00 Market Prices as Measures of Water Scarcity in
New Mexico and the West
F. Lee Brown, University of New Mexico
- 2:30 A Living River Fund
John Horning, Forest Guardians
- 3:00 Break
- 3:30 Western Agriculture at Risk from Climate Change
and Competing Water Demands
Pat O'Toole, Family Farm Alliance

- 4:00 Panel Discussion: The Federal Perspective and
Initiatives on Water
Moderated by **Karl Wood**, WRI Director
Mike Connor for Senator Jeff Bingaman
Zane Vaughn for Senator Pete Domenici
Tim Charters for Congressman Steve Pearce
Matt Miller for Congressman Tom Udall
Robert Cushing for Congresswoman Heather Wilson
- 5:00 Reception hosted by Daniel B. Stephens & Assoc.
- 6:30 Dinner Banquet

Friday Morning, November 30, 2007

- 8:30 Climate Research and Applications Needs in
Support of Climate Services
Roger Pulwarty, National Oceanic and
Atmospheric Administration
- 9:00 Governor's Task Force Report on Climate Change
David Gutzler, University of New Mexico
- 9:30 Climate Change and Its Implications for New
Mexico's Water Resources and Economic
Opportunities
Brian Hurd, New Mexico State University
- 10:00 Break
- 10:30 What to Do with Water Left Over after
Needs are Met?
Bob Grant, Grant Enterprises, Inc.
- 11:00 New Mexico's EPSCoR Proposal to NSF
Regarding Climate Effects on Mountain Water
Supplies
Albert Rango, USDA-ARS-Jornada Experimental
Range, New Mexico State University
- 11:30 Water Capital and Water Productivity – Ways to
Address Fresh Water Availability Limitations
Mike Hightower, Sandia National Laboratories
- 12:00 Adjourn



2007 Water Research Symposium



The 2007 New Mexico Water Research Symposium took place on the New Mexico Tech campus in mid-August. Over 100 participants, including 45 students, reviewed 28 posters and chose from among 22 oral presentations.



The one-day symposium gives scientists and other water experts an opportunity to meet and share with each other their research ideas and findings. Participants include faculty and students from universities, water agency personnel from the federal and state government, and their colleagues from the private sector.



The symposium is sponsored by the WRI in cooperation with Sandia National Laboratories, Los Alamos National Laboratory, New Mexico Interstate Stream Commission, U.S. Geological Survey, AWRANew Mexico Section, and the state's major research universities.

Poster and oral presentation abstracts are available on the WRI website at: <http://wri.nmsu.edu/publish/sympabs/abstracts2007.html>. Photos by Steve Nowaczek.





2007-2008 Student Research Grant Recipients Announced

The New Mexico Water Resources Research Institute (WRI) has announced recipients of the 2007-2008 Student Water Research Program. This program funds water-related research projects conducted by students at any of New Mexico's universities.

The program encourages and supports graduate and undergraduate student research in disciplines relevant to water resources issues and assists New Mexico educational institutions in developing student research expertise and capabilities. Students began research on these projects in August 2007 and will submit final reports on their projects by September 30, 2008. Students work with a faculty advisor on their campus. The WRI monitors the student projects, and updates are available at the institute's website at wri.nmsu.edu/research/researchprogram.html. The WRI website also provides summaries and final reports for previously awarded student projects.

New Mexico State University

Veera Gnaneswar Gude, Civil Engineering Department (advisor: Nirmala Khandan)

Feasibility Study of Wastewater Purification by Low Temperature Distillation Method

Wade Berry, Agricultural Economics and Agricultural Business Department (advisor: Frank Ward)

New Mexico Water Rights Prices Database Development

Jimmy Moreno, Civil Engineering Department (advisor: A. Salim Bawazir)

Estimating Evaporation from Elephant Butte Reservoir with the Monin Obukhov Similarity Theory Using Simple Instrumentation

Arely A. Torres, Chemical Engineering Department (advisor: Shuguang Deng)

Drinking Water Purification for U.S.A.-Mexico Border Region

Dipendu Saha, Chemical Engineering Department (advisor: Shuguang Deng)

Carbon Nanotube-Based Biosensor for Pathogens Concentration and Detection

Sylvia Nemmers, Plant and Environmental Sciences (advisor: April Ulery)

Land Application of Wastewater Containing Arsenic: Impacts on the Sorption and Mobility of Arsenic in Soil

Ciara Cusack, Animal and Range Sciences (advisor: Sam Fernald)

The Effects of Acequias and Riparian Evapotranspiration on the Rio Grande Flow Levels

Elena Sevostianova, Plant and Environmental Sciences (advisor: Bernd Leinauer)

Investigating Potential Salt Contamination of Aquifers from Irrigated Landscapes

New Mexico Highlands University

Celestine Ngam, Department of Natural Sciences (advisor: Michael Meyer)

Arsenic Adsorption and Desorption in Storrie Lake Sediments

Bildad Eta Eyong, Department of Natural Sciences (advisor: Edward Martinez)

Bioassessment of Arsenic Contamination of the Gallinas River Using Benthic Macroinvertebrates

New Mexico Tech

Andrea Higdon, Department of Chemistry (advisor: Michael Pullin)

Iron(II) Oxidation in New Mexico Waters: Experimental Development of a Molecular-Level Predictive Model



New Mexico Tech's Enrique Vivoni Awarded "Most Promising Engineer"

New Mexico Tech's Enrique R. Vivoni has been named this year's "Most Promising Engineer—Advanced Degree" award winner by the Hispanic Engineer National Achievement Award Conference (HENAAC) Selection Committee, an independent group of representatives from industry, government, military, and academia.

Vivoni, an assistant professor of hydrology at the state-supported research university in Socorro, is also a New Mexico Tech research hydrologist who specializes in studying the hydrological processes associated with surface water.

Vivoni came to New Mexico Tech in 2003 from MIT, where he earned his bachelor's, master's, and Ph.D. degrees.

In addition to his teaching and research duties, Vivoni serves as a faculty research advisor to several New Mexico Tech graduate students and often employs these very same students—graduate, as well as undergraduate—in his various research projects.

"It's important to get students actively involved in research, especially since New Mexico Tech has a longstanding tradition of students working on research," Vivoni said.

As a research hydrologist at the university in Socorro, Vivoni also has collaborated with scientists at Sandia and Los Alamos national laboratories as well as with researchers at other national universities.

A few of his recent research collaborations also have taken on an international aspect, with cooperative arrangements being forged between New Mexico Tech and several Italian universities, as well as with researchers from Mexican universities, with Vivoni's assistance.

As in past summers, Vivoni and an international research group spent part of this summer in Mexico, doing extensive field work for a National Science Foundation-supported study of the North American monsoon and its hydrological effects on the southwest region of the United States and the northwest region of Mexico.

Vivoni is the author or co-author of more than 30 research papers in refereed journals and has made more than 100 technical presentations on his research at various professional society and academic conferences.

Currently, Vivoni is the principal investigator on a WRII Seed Grant entitled, "Development of Geospatial Modeling Tools for Watershed-based Water Resources Management in New Mexico." He has been the faculty advisor on three WRII Student Research Grant projects. He is providing guidance currently to Taufique Mahmood for his project entitled, "Use of Remotely Sensed Observations for Improved Distributed Hydrological Modeling in the Jemez River Basin." Vivoni also serves on the WRII Water Conference Advisory Committee.



***Beyond the Year of Water:
Living within Our Water Limitations
has been approved by New Mexico MCLE
for 8.7 general credits***



Brackish water testing plant dedicated in Alamogordo

On August 16, 2007, the National Research Center for Desalination of Brackish Groundwater was dedicated in Alamogordo, New Mexico. The facility is designed to explore small-scale desalination systems, hybrid systems, and produced water solutions, according to Michael Gabaldon, director of the U.S. Bureau of Reclamation's Technical Service Center.

Small-scale systems are meant to help small communities that need drinkable water in a hurry. Hybrid systems combine traditional and experimental water systems. Produced water is the contaminated water left from the oil and gas wells.

The research plant is a collaboration between federal, state, and private enterprises. New Mexico's congressional representatives including Senator Pete Domenici, Senator Jeff Bingaman, and Representative Steve Pearce attended the dedication. Dignitaries toasted the facility with glasses of water produced from a test area.

Water for experiments will be available at low, medium, and high levels of salinity. The indoor facility includes a room that can handle up to nine projects. Six bays inside offer water at the rate of 30 gallons a minute; three more outside can supply up to 60 gallons per minute. Researchers will also study desalination in relation to renewable energy and agriculture, such as raising crops that require high levels of salt.

"We have long worked with the Bureau of Reclamation and other partners to make this badly needed facility a reality. It is my hope that it will help us identify and pursue more efficient and affordable ways to sustain the water needs of New Mexico and other arid states," said Senator Domenici. "I am please to play a part in the desalination facility's commissioning, and I sincerely look forward to the knowledge and ingenuity it will bring."

The 15,000-square-foot facility was completed in June. The Tularosa Basin was chosen as the facility's site because it provides one of the most ideal locations in the world for desalination research due to the abundant availability, easy accessibility, and variability of its saline water supplies. The northeast portion of the basin alone contains over 200 million acre-feet of saline water ranging from 1,000-10,000 parts per million total dissolved solids (TDS), with over 20 million acre-feet that is less than 4,000 ppm TDS. In addition, water levels are relatively shallow, allowing easy access to the saline groundwater supplies.

The WRRI hosted and supported the Bureau of Reclamation and Sandia National Laboratories in coordinating technical information for the planning stages of the research center. Senator Domenici has introduced legislation that will direct the operation and management of the center to be conducted by New Mexico State University. He also intends for the WRRI to play a significant role by administering the center's research program.



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WRI Technical Reports Available Online

All New Mexico WRI Technical Research Report Series publications and water conference proceedings are available online in pdf format. The most recently published report, TR338, *Mitigation of Membrane Biofouling by Harnessing Bacterial Cannibalism* by Frank Huang and Snezna Rogelj, of New Mexico Tech, is available online and in hard copy.

To view WRI technical reports, go to: <http://wri.nmsu.edu/publish/techrpt/browse.html>.

Upcoming Meetings

September 17-26: Climate Change Workshops, Las Cruces, Roswell, Farmington, Albuquerque, Las Vegas (<http://www.nmfirst.org>)

October 10-12: SAHRA Seventh Annual Meeting: Supporting Regional and International Water Management, Westward Look Resort, Tucson, AZ (<http://www.sahra.arizona.edu/>)

October 13-18: New Mexico Environmental Health Conference, Hotel Albuquerque at Old Town (<http://www.nmehc.net/>)

November 5-7: New Mexico Water Conservation Alliance, "Saving Every Drop" – NM Landscaper Training, Central New Mexico Community College, Albuquerque, NM (<http://wri.nmsu.edu/wrdis/nmwca/alliance.html>)

November 7–9: NWRA annual conference, Hyatt Regency Albuquerque (<http://www.nwra.org/>)

November 12-15: AWRA 2007 Annual Water Resources Conference, Albuquerque, NM (<http://www.awra.org/>)

November 29-30: 52nd Annual New Mexico Water Conference, La Fonda, Santa Fe, NM (<http://wri.nmsu.edu/conf/conf07/conf.html>)

December 3-4: Land Use Law: Water, Transportation, Agriculture – Dealing with the Impact of Growth, Hyatt Regency Hotel, Albuquerque (<http://www.cle.com/landusenm>)

March 17-19, 2008: AWRA Spring Specialty Conference GIS and Water Resources V, San Mateo Marriott Hotel, San Mateo, CA (http://www.awra.org/meetings/San_Mateo2008/index.html)



Beyond the Year of Water: Living within Our Water Limitations

November 29-30, 2007; Santa Fe La Fonda

Hotel Information

The conference will be held at La Fonda in downtown Santa Fe and a block of rooms has been reserved for participants. The rate for a single occupancy room is \$85 and double occupancy is \$105 plus prevailing taxes, currently 14.625%. This group rate will be honored two days pre- and post-conference, based upon availability. The cutoff date for the block of rooms is **Wednesday, October 31, 2007**. Individual reservations can be made by calling La Fonda's Reservations Department at 1-800-523-5002 and then choosing #1. Make reservations online at: <http://www.lafondasantafe.com/email-group.htm>. **To receive the conference rate, identify yourself as a participant of the New Mexico Water Conference.** La Fonda has provided us with exceptionally good rates, and we encourage you to make your reservations early.



Beyond the Year of Water: Living within Our Water Limitations

November 29-30, 2007; Santa Fe La Fonda

Conference Registration Form

Name _____

Affiliation _____

Mailing Address _____

City, State, Zip _____

Phone No. _____

Fax No. _____

Email address _____

Registration Fees

Please check the following:

- Registration \$175 received by Oct. 15 (Early Bird)
- Registration \$225 from Oct. 16 - Nov. 16
- Registration \$250 after Nov. 16 and at door
- Full-time student registration \$75
- Dinner ticket(s) for guest(s) \$50/guest
- Vegetarian Meal

Amount Enclosed _____

Check enclosed _____

Purchase order enclosed No. _____

Please bill my credit card: (Visa, MasterCard, Discover)

Card No. _____

Expiration Date _____

Signature _____

Payment Information

Send this form with a check made payable to NMWRRI to:
NMWRRI, NMSU, MSC 3167, PO Box 30001, Las Cruces, NM
88003-8001.

Register Online

Check WRRI's Homepage for updated information about the conference. You can also register for the conference at wri.nmsu.edu. Choose the Water Conference link and follow the instructions.

The registration fee includes all conference functions and a copy of the proceedings on CD to be published after the conference. The registration fee will be refunded if written notice of cancellation is received by November 16, 2007. A \$25 cancellation fee will be charged.

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