

# Pueblo studies complete

When 16th century Spanish explorers came up the Rio Grande to New Mexico, they found more than 130 separate settlements. They named these civilized people "Indios de los Pueblos," or Indians of the towns.

More than 400 years later that distinction still sets the Pueblos apart in their struggle for water rights.

"The legal history of the Pueblos is unique," says University of New Mexico law professor Albert Utton. "The Spanish law treated them as wards of the crown and honored the laws and practices of their society, including those on water rights," he says. The Pueblos' status was unchanged under Mexican rule, except they were awarded Mexican citizenship. No other group of Indians was given this right, he says.

and preserve the rights granted citizens under the Mexican and Spanish sovereignties.

"Under a treaty right, the user is entitled to his historic right plus any additional water he needs as long as the needs of others are considered," Utton says.

The third theory, which is based on the Winters Doctrine, grants rights regardless of need or the impact on other users. *Winters* reasons that when Congress reserved lands for Indians, it also reserved enough water to sustain the livelihood of the Indian community. The priority date of these water rights is the date the Indian reservation was created. The amount of a reserved right was determined by calculating the "practicably irrigable acreage" of the reservation.



*When the Europeans "discovered" the Pueblo Indians, they found that each Pueblo community had established its own government, lifestyle and irrigation system. Their distinctive pottery designs also set one Pueblo apart from the next. Drawing by Francis H. Harlow, Museum of New Mexico.*

## divining rod

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Utton, along with Charles DuMars and Marilyn O'Leary, are authors of "Pueblo Indian Water Rights: Struggle for a Precious Resource." The book is the first of a three-volume study on Pueblo Indian water rights funded through the New Mexico Water Resources Research Institute.

Volume one discusses three legal theories that dominate Pueblo water rights. At the heart of each theory are the questions of the priority of the water right and the quantity of that right.

The first theory is based on an aboriginal right, which says the Pueblos as the first inhabitants of the land hold first claim to the water right on that land.

The second theory holds to a treaty right. When the United States acquired the New Mexico territory, it agreed, under the Treaty of Guadalupe Hildalgo, to recognize

"The key issue," Utton says, "is which theory should be applied in expanding the Pueblos' water rights beyond their historic uses." Under the Winters Doctrine, the quantity would be calculated by multiplying the number of irrigable acres by the amount of water needed per acre.

Under the treaty theory, the pueblos would be entitled to expand their water rights as they need more water. However, the needs of all other users also must be considered.

*New Mexico v. Aamodt* demonstrates the clash among quantification theories. The Pueblos argue that the Pueblos are entitled to an expanding right to fulfill the purpose of the reservation, while New Mexico favors the equitable water right under the treaty theory. The 23-year-old case has yet to be decided.

Volume two of the study documents the history of the Pueblos' water use through crop records, land use and population figures. "Historic use provides a foundation for legal criteria in determining the amount of the water right," explains Brian McDonald, director of UNM's Bureau of Business and Economic Research.

Under an historic use standard, the quantity of the Pueblos' water rights would be based on the amount of water actually used in the past. "The modern legal criteria of 'practicable irrigable acreage' would entitle the pueblos to more water rights," McDonald says.

Volume two also traces Pueblo land ownership through centuries of foreign and federal rule. The Spanish conquest, along with the ravages of famine and disease, so

See Pueblo, next page



# Pueblo

Museum of New Mexico drawing

decimated the Pueblos that they were hard pressed to cultivate their fields. The reconquest after the Pueblo Revolt of 1680 further decreased their numbers.

The population of the 14 New Mexico Pueblos dropped from 26,500 in 1630 to 1,070 in 1744. Not until 1980 did the Pueblos regain their original population count.

A well-meaning decision by the Supreme Court in 1876 severely depleted the Pueblos' land holdings. The court ruled that because the Pueblo Indians were more civilized than other Indians, they did not require legal guardianship. The ruling allowed the Pueblos, as free agents, to sell their lands.

By the time that position was reversed in 1913, nearly 90 percent of the Pueblo lands had been sold to non-Indians. Much of the lost land was later recovered through the Pueblo Lands Act.

Important agriculture gains did not follow in the wake of the expansion, mainly because those lands were not well suited to agriculture. Land inheritance patterns also broke up agricultural lands into smaller, less efficient farms.

As the Pueblos have moved into a cash economy, they have left agriculture in further decline. Cultivated acreage for the 14 Pueblos dropped from 20,310 acres in 1937 to 12,334 acres in 1973.

The third volume of the study discusses the economic consequences of different legal outcomes of Pueblo Indian water rights in the Upper Rio Grande Basin. Economist John Tysseling says, "The study didn't prejudge what was or was not a correct legal theory, but it did decide on those that were defensible." He conducted the study through UNM's Bureau of Business and Economic Research.

With the legal theories as the foundation, Tysseling set up three, 25-year scenarios for an economic resolution of Pueblo water rights.

The baseline scenario assumes the Pueblos will neither lose water rights nor receive new water rights. "The most significant of the baseline results," he says, "is that

in the overall basin, water will *not* be scarce in the year 2000." The surplus is credited to the 100,000 acre-feet augmented water supply from the San Juan-Chama project.

The agricultural use scenario assumes the courts will assign increased water rights to the pueblos based on their ability to use the water in new agricultural enterprises. "Because existing agricultural practices are not state-of-the-art, the introduction of new enterprises will automatically increase agricultural efficiency," Tysseling says.

Two benefits are the outcome of this scenario. First, the resolution of the Pueblo water rights claims eliminates uncertainty. Second, improvements in agricultural water use efficiency increase the basin's total economic output. Tysseling says, however, that water scarcity will increase as agricultural sectors compete for and use the available water supply.

The Pueblo water leasing scenario assumes the court will assign a particular quantity of water

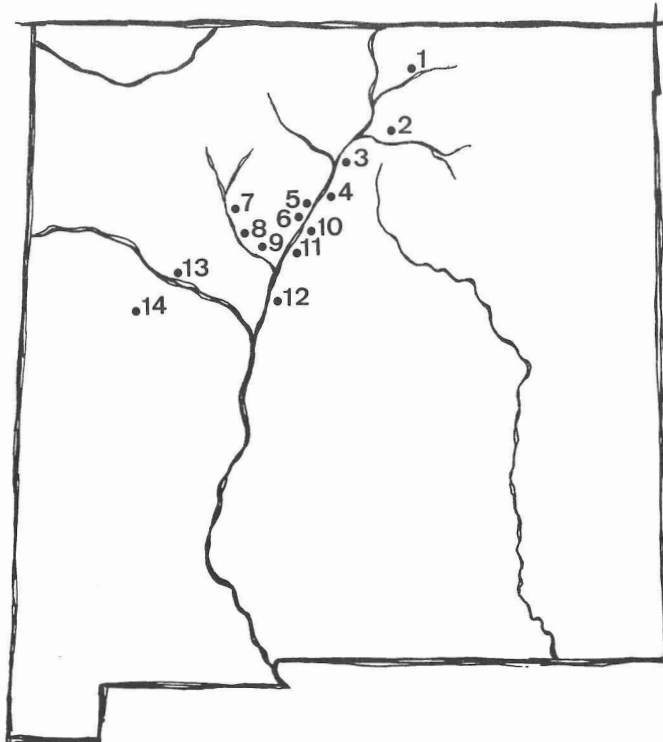
rights to the Pueblos, which they will be allowed to lease to non-Indians in the basin. The study found that the basin would receive the maximum economic benefit by allowing the Indians the greatest measure of water rights that can be claimed.

"Under leasing, the water can be freely moved among users and locations. Leasing is economically efficient because it offers the greatest flexibility in water rights," he says.

One effect of the scenario would be to price economically marginal users out of the market. Although this scenario would accelerate water scarcity, it would increase efficiency by putting the water to the best economic use.

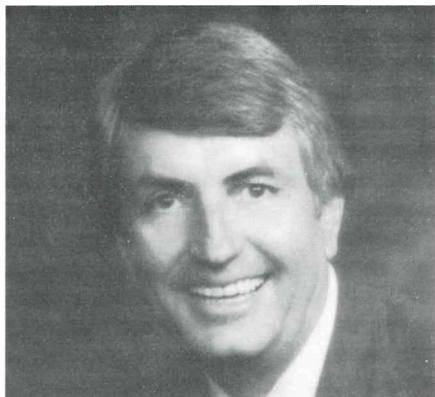
Tysseling cautions that this scenario does not address the sociological question of whether Pueblo Indians would benefit from their role as the major water broker in the basin.

Volumes two and three are available from the New Mexico Water Resources Research Institute. Volume one is available from the University of Arizona Press.



Volume two of the study contains socioeconomic profiles of 14 Pueblos located in the Rio Grande basin. The pueblos are: 1) Taos 2) Picuris 3) San Juan 4) Santa Clara 5) Cochiti 6) Santo Domingo 7) Jemez 8) Zia 9) Santa Ana 10) San Felipe 11) Sandia 12) Isleta 13) Laguna 14) Acoma.

# Former institute director to become next governor



Garrey Carruthers, who was acting director of the New Mexico Water Resources Research Institute from 1976-77, has been elected New Mexico's next governor. He brings to his new office two decades of experience in natural resources and economic development.

"Because Carruthers comes from the university setting, he has a strong appreciation for research and the role of higher education in our society," says Tom Bahr, institute director. Bahr says Carruthers can be credited with the idea of using brackish water for aquaculture. Partly as a result of this foresight, the institute in 1983 was awarded \$500,000 for saline water research.

Carruthers is also no stranger to the federal side of natural resources issues. He was named a White

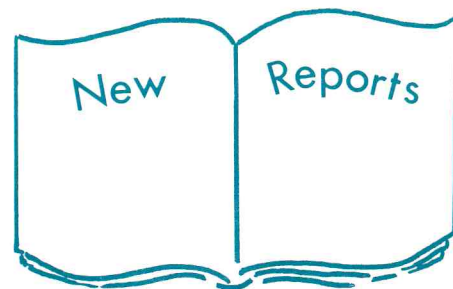
House Fellow in 1974, serving under the secretary of agriculture.

In 1981 President Reagan appointed him as assistant secretary for Land and Water in the Department of the Interior. In that position he was responsible for the Bureau of Reclamation, the Bureau of Land Management and the Office of Water Policy.

When the department was reorganized in 1983, the land and water functions were split and Carruthers became the assistant secretary for land and minerals management. He resigned that position at the end of the first Reagan administration to return to New Mexico.

Bahr believes the management experience Carruthers gained in Washington will benefit New Mexico. "New Mexico consists of tremendous amounts of federal lands. Carruthers is familiar with the agencies that deal with those lands and he knows how to deal with the federal bureaucracy to get the job done," he says.

The new governor also is expected to have a regional impact on water resources. "I think he will be an effective leader among the western governor by building a consensus for the kinds of water problems facing the western states," Bahr says.



## PUBLICATIONS

#164 — *Evaluation of an Experimental Recycled-Water System for Brackish Water Aquaculture* — King, T.A.

#167 — *Irrigation Cost Reduction and Energy Conservation through Upgrading of Pumping Plants* — Abernathy, G.H. and Hohn, C.M.

#175 — *An Evaluation of Brackish Water for Growing Nursery Crops under Hydroponic Conditions* — Cotter, D. and Fisher, J.

#177 — *Field Study of Natural Ground Water Recharge in a Semi-Arid Lowlands* — Stephens, D.B. et al.

#201 — *Economic Impact of Alternative Resolutions of New Mexico Pueblo Indian Water Rights: An Historical Perspective, Vol. II* — Farah, P. and McDonald, B.

#202 — *Economic Impact of Alternative Resolutions of New Mexico Pueblo Indian Water Rights: Rio Grande Basin, Vol. III* — Tysseling, J.C.

#203 — *Consumptive Use and Salt Accumulation with Trickle Irrigation on Row Crops* — Wierenga, P.J.

#205 — *Preliminary Studies Characterizing Wastewater from the Intensive Culture of Channel Catfish and Nitrification in Laboratory Scale Submerged Filters* — Jacques, R.B.

#206 — *Selecting Genotypes of Valencia Peanuts for Salt Tolerance and Efficient Saline Water Utilization* — Hsi, D.C.H.

#207 — *Optimization of Irrigation Scheduling with Alternative Saline Water Supplies in the Roswell-Artesian Basin, 1985* — Lansford, R.R. et al.

#208 — *A Guide to Water Records of New Mexico, 1897-1983* — Lee, J.T. et al.

#209 — *Criteria for the Identification of Potential Sites for Irrigation with Saline Waters in New Mexico* — Hernandez, J.W.

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## Feds set proposal deadline

The deadline for the \$4.3 million U.S. Geological Survey FY 87 Water Resources Research Program, formerly known as the Matching Grant Program, is Jan. 23, 1987. However, Darlene Reeves, institute project coordinator, says those wishing to submit proposals through the institute must meet two earlier deadlines.

The deadline for the institute-required preproposal is Dec. 15, 1986. "By reviewing your preproposal, we may suggest changes in the content that could

improve the chances for approval. The lead time also allows us to prepare the final budget forms," she says. Guidelines for the preproposal are available from the institute.

After the preproposal has been approved, the researcher has until 5:00 p.m. Jan. 12, 1987, to submit the final proposal to the institute.

Researchers also may submit proposals directly to the U.S. Geological Survey by the Jan. 23, 1987, deadline. For more information, call Reeves at 646-1194.

# El Paso hearings begin on Hueco

After several months of behind-the-scenes maneuvering, the two sides in the *El Paso* suit have taken the next public step in the six-year battle over rights to New Mexico ground water. New Mexico State Engineer Steve Reynolds began administrative hearings November 18 on El Paso's well applications in the Hueco Bolson. The hearings, which are expected to last until January, are being held in Las Cruces.

The hearings had been postponed twice this year in hopes the two sides would reach a compromise. However, negotiations fell apart in September when Elephant Butte Irrigation District (EBID) and Doña Ana County refused to participate in any agreements. Soon after, Stahmann Farms and the cities of Las Cruces and Alamogordo ceased active participation in the suit.

Also in September, the EBID filed suit to have the State Engineer Office inventory all water rights along the Lower Rio Grande. The

EBID reasoned that it was not appropriate to determine whether to let water go out of state until an inventory was completed.

Such an inventory, which is made from hydrographic surveys, could take 10 years or more and involve as many as 6,000 people who claim water rights. Results of the hydrographic surveys are usually contested. These differences are then resolved in the courts. It is not unusual for such cases to last 20 years.

The Hueco hearing is the first significant test of the state engineer's interpretation of the public welfare and water conservation criteria set forth in New Mexico's 1984 ground water law. That law allows ground water export only with proof that the transfer "is not contrary to the conservation of water within the state and is not otherwise detrimental to the public welfare of the citizens in New Mexico."

Under that law, the state engineer must consider export

requests based on six factors, including water availability and demand in El Paso. The hearing is expected to place heavy emphasis on those two factors.

Many of the presentations are expected to deal with the role of conservation in keeping these demands at a minimum. Also expected is testimony concerning sources of water in Texas, particularly the Rio Grande, that could be used to satisfy those demands by retiring agricultural rights.

If the state engineer determines that El Paso has enough water from its own resources to satisfy a 40-year demand, then the state engineer has the authority not to grant any water. If the state engineer makes such a ruling in the Hueco hearings, it is possible that the well applications in the Lower Rio Grande Basin also could be denied on that basis without the need for a hearing. However, most observers believe that no matter which way the state engineer rules, the issue will end up back in court.

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Linda G. Harris, editor**

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