

# New Mexico Water Rights

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Written by Linda G. Harris, 1984

First Update by Leslie Blair, 1992

Second Update by Catherine T. Ortega Klett, 2002



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## WRII Miscellaneous Report No. 15

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Designed by WRRI, based on a flow chart by J.W. Everheart, New Mexico Office of the State Engineer	



## Introduction

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*Charles de Bremond farm near Roswell around the turn of the century. Courtesy of the Rio Grande Historical Collection, NMSU.*

New Mexico, as a pioneer in water rights, has set the standard for water rights law throughout the Southwest. Long before other states began thinking about protecting their water, New Mexico was passing water laws. The State Legislature, and before it, the Territorial Legislature, mandated the state engineer (called the territorial engineer before New Mexico's statehood) to oversee water rights administration. Today, the Office of the State Engineer (OSE) remains the expert caretaker of New Mexico's water rights.

Because water is crucial to the state's livelihood, every New Mexican should have an understanding of how the state's most precious resource is managed. This publica-

tion was written with the lay person in mind. Its purpose is not to make you a water rights expert, but to help you understand more about the history, the laws, and the administration of New Mexico's water rights. When a technical term is used, it will be defined in the text and again in the glossary. In the back of this publication, you will find a list of where to get more information on New Mexico's water resources.



*Flume, northern New Mexico.*

## Historical Perspective

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*It was common for Pueblos to irrigate using water from the Acequia Madre. Photograph by William H. Jackson c. 1880; courtesy of the Museum of New Mexico, Negative No. 49167.*

For over a thousand years, inhabitants of New Mexico have been regulating their water supply. The ruins of ancient irrigation canals are reminders that even prehistoric Indians controlled their water resources. Soldiers with the expedition of Antonio de Espejo in 1582-83 wrote of finding irrigation ditches supplying water to pueblos near Socorro, and referred to the Acoma Indians as having “many partitions of water” in a marsh two leagues from the pueblo. Writing about the Piro Indians on the Rio Grande,

near what is now Socorro, Espejo wrote: “They have fields planted with corn, beans, calabashes, and tobacco in abundance. These crops are seasonal, dependent on rainfall, or they are irrigated by means of good ditches.”

These 16<sup>th</sup> century Spanish conquerors brought to their new colony technological advances in ditch irrigation and a European legal system of water control. Some historians believe the legal system was borrowed from ancient Roman law, reasoning that the two were “remarkably alike concerning water rights and appropriation.”

Part of the legal process involved the formation of *acequias*, or community ditches, for irrigation. Required community participation in maintaining the extensive acequia system bound the early Spanish settlers into social units that still exist today. The ditch master, or *mayordomo*, who granted the right to use water and meted out the duties necessary to maintain the ditch, was an important village leader.



*Waffle garden irrigated with rainwater or water hauled in buckets, Zuni Pueblo. Photograph by Jesse L. Nusbaum, 1910, courtesy of the Museum of New Mexico, Negative No. 8742.*

The pueblos adopted many of the Spanish irrigation practices such as the system of labor under a mayordomo and technical aspects of dam and acequia construction, but continued ancient ceremonial practices associated with irrigation. In the mid-1800s, Josiah Gregg described the Pueblo Indians as the best horticulturists in New Mexico.

## **Territorial Expansion**

When New Mexico became a United States territory in 1848, it also became heir to an expansive agricultural system based on conflicting rules of land ownership and water rights. In the last half of the 19<sup>th</sup> century, massive irrigation projects were begun, dams were built, and the technology to pump water from underground sources was developed.

About the same time, mining also entered the competition for water. German miners, like the American settlers and the Spanish explorers before them, brought along their special brand of water law. Each mining camp designed its own water laws based loosely on civil law originating from the Germanic Middle Ages.

By 1851, the Territorial Legislature had begun establishing water laws based on the Indian-Spanish concept of public control of water and community ownership of ditches. The Legislature continued its protectorate role in water rights and by 1907 adopted the territory's first comprehensive surface water law. This law included the basic concept of prior appropriation and established the territorial engineer as the administering officer. Simply, *prior appropriation* means the first person to take the water and put it to beneficial use is entitled to the right of that water—first in time, first in right. Similar laws regulating groundwater were adopted by the State Legislature in 1931.

In the following decades, improved technology made it possible to tap vast underground water supplies and open new areas to irrigated agriculture. The oil and gas industry also began to boom, creating yet another demand for the state's water and adding to the complexity of administering New Mexico's water law.

New Mexico as the beneficiary of historic custom, classic civil law, and modern technology, today has a set of strong, workable water laws that enable the state to make the best use of a scarce resource in an arid environment.

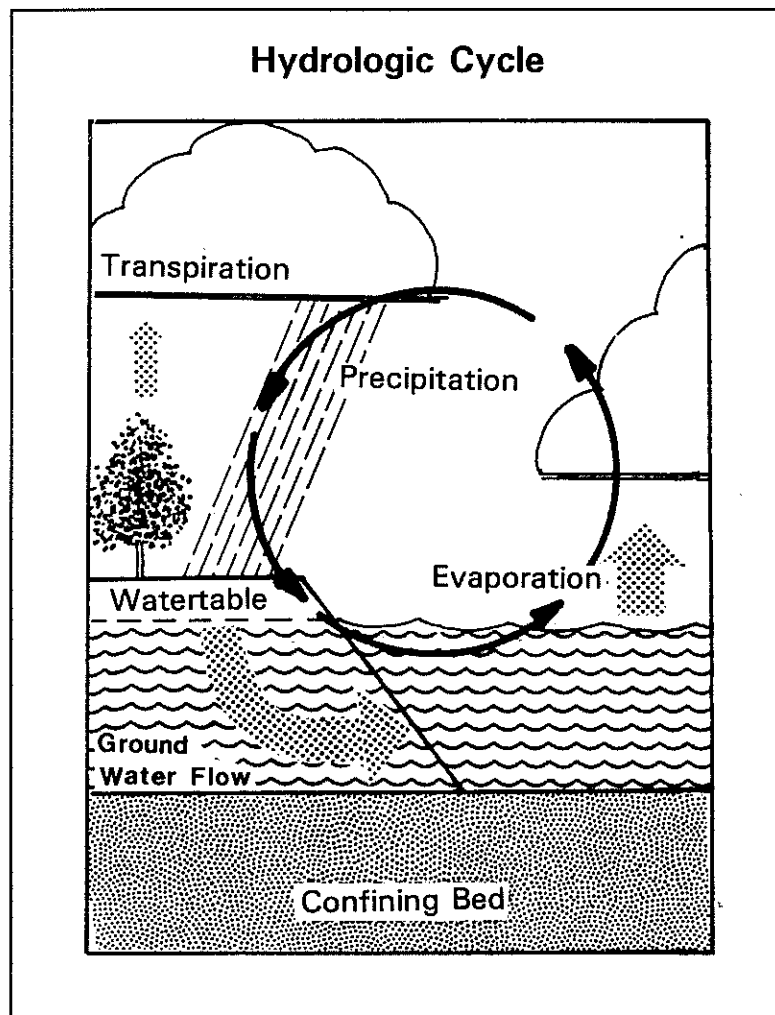


*Rio Puerco, New Mexico*

## The Nature of Water

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An appreciation of the complexity of water law must begin with an understanding of the nature of water. Water is a dynamic resource that is in nearly constant motion as it travels from one stage to the next in the hydrologic cycle. Movement gives it life, but this motion also makes it a most difficult resource to manage.



Efficient management is crucial. On average, New Mexico receives about 14 inches of precipitation a year, earning it the dubious honor of being the third most arid state in the nation. Precipitation varies from about 7 inches per year in the northwest to about 20 inches per year in the mountains. Precipitation plus river flows into the state

add 87.7 million acre-feet of water each year to the state's total. However, 97 percent of this supply evaporates. Water flowing out of the state and other losses leave a net of 1.2 million acre-feet of usable surface water. An **acre-foot**, the standard measure of water, is the quantity of water it takes to cover one acre of land to a depth of one foot or 325,851 gallons.

New Mexico's vast underground water supply is estimated at 20 billion acre-feet—enough to cover the entire state to a depth of about 260 feet. However, most of this water is saline and some that is considered fresh water is not desirable for public use.

## Surface Water

*Surface water* is all water located on the surface of the land, such as rivers, lakes, and streams. Because the Continental Divide runs through New Mexico, the state's surface water also divides to follow gravitational pulls either to the Pacific Ocean or the Gulf of Mexico. Of the five main rivers in the state, two flow westward and three flow southeasterly. The largest river, the Rio Grande, travels some 1,800 miles from its source in Colorado before emptying into the Gulf of Mexico. Most of the state's small streams flow intermittently, except in mountainous areas.

As a thoroughfare for these rivers, New Mexico must share the surface water with its neighboring states according to the terms of the interstate compacts and court decrees. Allocating an equitable share of the river flows requires close cooperation between New Mexico and its bordering states. For example, before New Mexico can build a dam on one of its interstate rivers, special care must be taken to make sure the state downstream receives its legal share of the water.

For many years, most of New Mexico's surface water supply has been *fully appropriated*, meaning that all available water has been allocated to prior water users. Much of this is dedicated to agricultural uses. Only about 7 percent of New Mexico's population depends on surface water for domestic water needs.

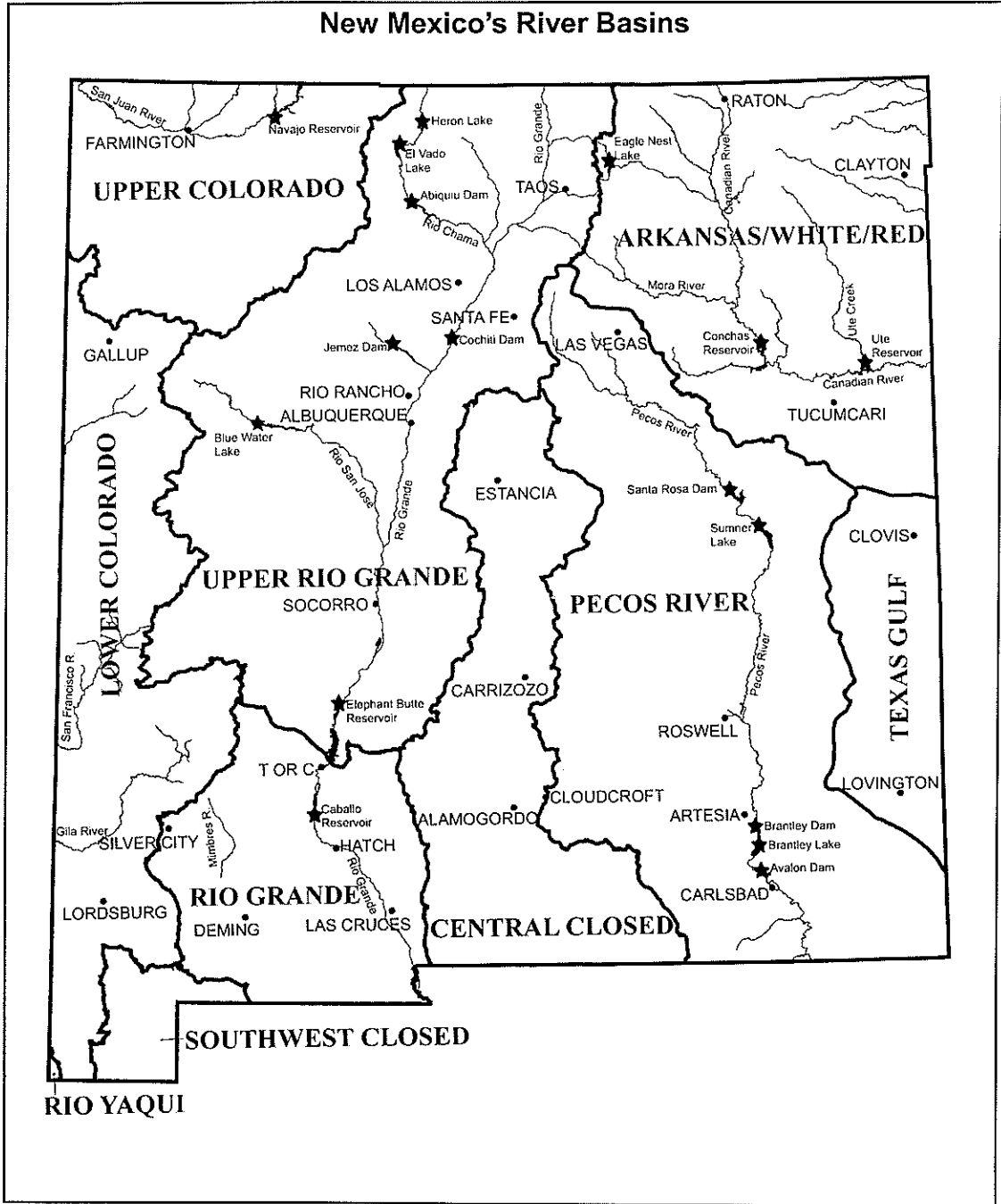
## Groundwater

Understanding *groundwater* requires some science and a little imagination. Because it is for the most part unseen, groundwater has been viewed with both superstition and uncertainty. For centuries, only dowsers with divining rods claimed the magical power to locate groundwater.

Fortunately, modern hydrology has removed much of the uncertainty and has made groundwater easier to understand. Even so, many people still think of groundwater as huge pools of water stored in underground caverns or as rivers flowing uninterrupted beneath the earth.



## New Mexico's River Basins



In truth, and in New Mexico, groundwater either flows through gravel beds or takes a slow route through rock crevices. An underground water source is called an *aquifer*. When water flows through gravel beds, it is found in unconsolidated deposits such as silt, loose sand, and gravel. This type of pebbly aquifer is porous like a sponge. It's a young aquifer, usually only about two million years old, and was formed when eroded debris from mountains washed into the valleys and stream channels. The Mesilla Basin, which underlies part of the Rio Grande, is typical of an unconsolidated aquifer.

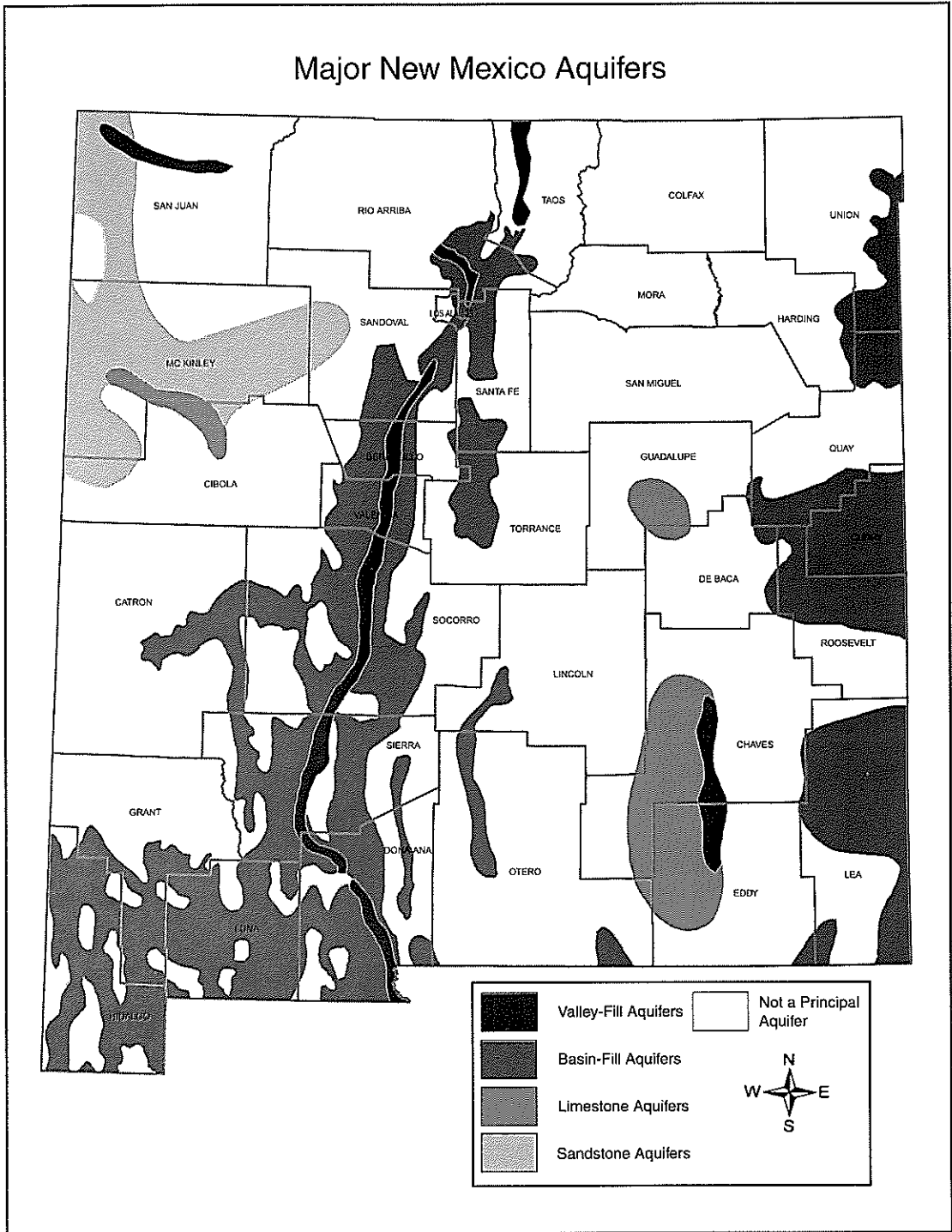
The second and more prevalent type of aquifer is a consolidated rock aquifer, which can be billions of years old. It consists of mineral particles of different shapes and sizes welded by heat and pressure or chemical reactions into a solid mass. In a consolidated aquifer, water flows through tiny cracks, pores, and channels within the rock. This type includes the water-bearing rocks of the San Juan Basin and the limestone aquifer in the Roswell Artesian Basin.

The map on page 11 shows the principal aquifer types in the state. The valley-fill aquifers are mostly unconfined, consisting of sand, silt, gravel, and clay. The water quality of these aquifers is suitable for most uses. The basin-fill aquifers may be unconfined or confined, consisting of sand, silt, gravel, and clay. In some areas the water from the basin-fill aquifers may be too saline for municipal or domestic use. Sandstone aquifers like those found in the northwestern part of the state are made up of very-fine and medium-grained sandstone. Water quality of sandstone aquifers near the outcrop areas are generally suitable for most uses. An outcrop area is where the aquifer "crops out" at the earth's surface. The limestone aquifers are usually confined, consisting mostly of limestone, dolomite, gypsum, and anhydrite. In some areas water from the limestone aquifers may not be suitable for municipal or domestic uses because of excessive chloride.

## **Mutually Dependent Systems**

Both consolidated and unconsolidated aquifers operate in an intricate balance with the surface water supply. Generally, surface and groundwater systems are mutually dependent. Surface waters drain into underground crevices and gravel beds to replenish the aquifer, while springs and seepage from the aquifer provide underflow to streams and rivers. Changes in one system often cause changes in the other.

## Major New Mexico Aquifers



*Adapted from the National Water Summary, USGS, 1984.*



*Rio Grande near Las Cruces*

# The Riparian Doctrine v. The Doctrine of Prior Appropriation

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## The Riparian Doctrine

When the founding fathers wrote the United States Constitution, they borrowed heavily from English common law. The Riparian Doctrine was part of this adopted law. By definition, riparian means adjacent to or located on the bank of a river or lake. A *riparian right*, then, entitles the landowner the automatic right to use water from a natural watercourse on or next to his property.

Under this doctrine, rights to surface water are governed by two concepts. The first concept is natural flow where each owner of property on a watercourse is entitled not to have his streamflow retarded, diminished, or polluted. The second concept is reasonable use where each owner may use water for any purpose as long as the purpose is reasonable with respect to other owners along the stream and the purpose does not unreasonably interfere with their uses.

While the principle of riparian rights worked as well in the humid eastern states as it had in England, the Riparian Doctrine was not suited to the arid West. New Mexico expressly rejected the Riparian Doctrine, first in its Territorial Supreme Court in 1891 and again in 1945 in the New Mexico Supreme Court.

Some states, however, have revised the Riparian Doctrine to fit their groundwater needs. California, for example, adopted a Doctrine of Correlative Rights that stated each overlying landowner had a right only to a “reasonable” share of the groundwater that would not damage his neighbor’s supply. Reasonable depended on how much water was available.

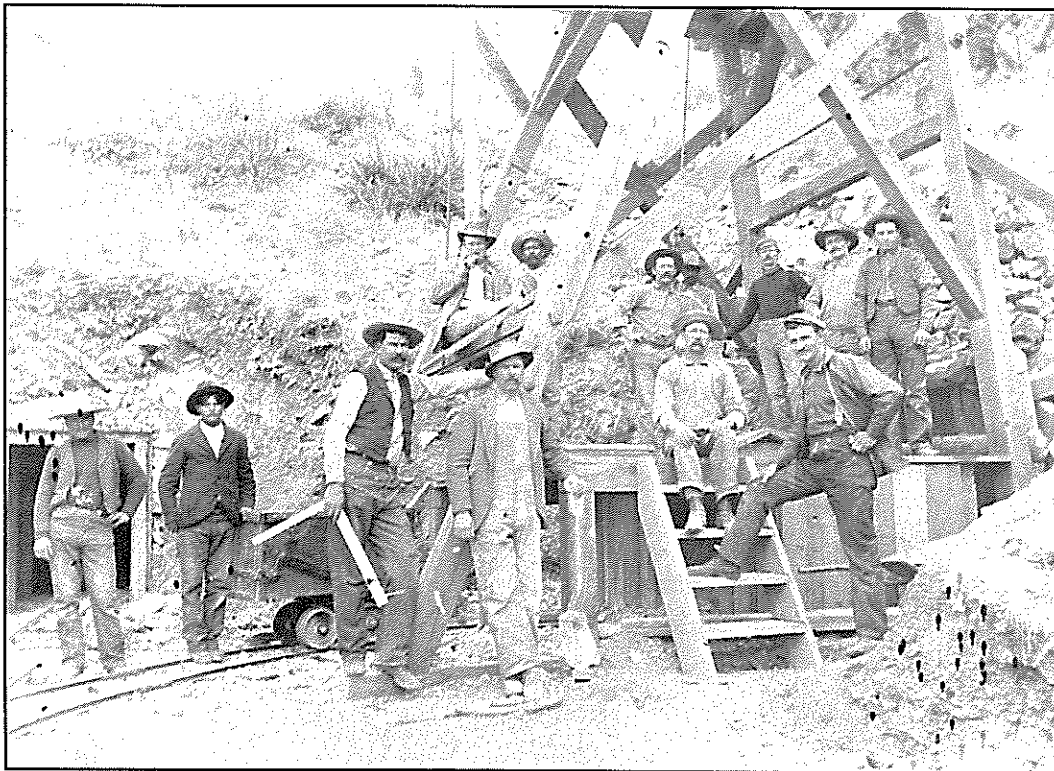
## Prior Appropriation

Although the Riparian Doctrine protected the property rights of the well owner, it failed to protect those of its neighbors. Instead of the Riparian Doctrine, New Mexico adopted into its constitution the concept of prior appropriation. Under the definition of prior appropriation, a person who takes water and puts it to a beneficial use is an *appropriator*. The taking of the water constitutes an *appropriation*, which includes a priority date. This priority entitles the appropriator to receive his full appropriation before those with junior, or newer, water rights receive their appropriations.

## Development of a Doctrine

The development of the Doctrine of Prior Appropriation had its beginnings in three unrelated movements. The first was the Spanish colonization of the Southwest in which the settlers introduced the acequia system of community-controlled irrigation. The second was the Mormon migration to Utah where the religious settlers became the first Anglos to use irrigation on a large scale. When the Mormon church took possession of lands in the region, it also supervised parceling the land, including the right to water for irrigating the land.

Farther west, a third event also was affecting water rights—the California gold rush. Prior appropriation evolved from customs and rules established by gold miners trespassing on the public domain, diverting water from its natural banks to wash away soil clinging to the gold. Gold also lured thousands to the West and Southwest who otherwise wouldn't have risked the hardship of the arid territory. Whether it was brought about because of mining demands or the accompanying population boom, the Doctrine



*Miners in New Mexico, late 1800s. Photo courtesy of the Rio Grande Historical Collection, NMSU.*

of Prior Appropriation was adopted in seven western states, including New Mexico, during the 25 years following the 1849 gold rush.

## Owning a Water Right

An appropriation *water right*, like equipment or furniture, is considered property and can be separated from the land to another location. However, in most states, including New Mexico, the appropriator “owns” only the right to use the water and not the “corpus,” or body of water itself.

New Mexico law broadly states that “all natural waters belong to the public and are subject to appropriation.” The law further classifies all underground water as public. Arizona and Colorado also follow this doctrine.

The federal Desert Land Act of 1877, in recognizing the special needs of arid lands, validated the Doctrine of Prior Appropriation. The act provided that water rights on desert land should depend on “bona fide prior appropriation.” The act also provided that all surplus water above actual appropriation and necessary use should be available for public appropriation for irrigation, mining, and manufacturing.

## Building a Diversion

The necessity of a man-made *diversion*, such as a dam or irrigation ditch, is the first of two requirements for establishing a water right in New Mexico. For example, a person who builds a ditch to carry water from the stream to a field is fulfilling the intent of establishing a water right. On the other hand, a person who uses water in a stream for fishing or rafting isn’t establishing a right to that water because water hasn’t been diverted from the stream. These in-stream uses are allowed, but are not protected by water rights. The act of diverting water, then, sets the stage for the second requirement for water right ownership—beneficial use.

## Beneficial Use

According to New Mexico law:

*Beneficial use* shall be the basis, the measure and the limit of the right to the use of water . . .

Priority in time shall give the better right.

The constitutions of a majority of the western states contain language similar to New Mexico’s in determining water rights.

Although the law sets beneficial use as its standard for awarding a water right, and sets penalties for uses that aren’t beneficial, the law doesn’t specify what those uses are. Generally, nearly all uses are considered beneficial, whether water is used for agriculture, recreation, industry, or secondary recovery of oil. New Mexico courts have vali-

dated uses such as stock watering as a beneficial use. However the law does classify the “willful waste of surface or underground water to the detriment of another or the public” as a misdemeanor. “Willful waste,” then, is not a beneficial use.

In New Mexico all beneficial uses are considered equal regardless of the economic value produced by the use. Municipalities and counties may condemn water rights for public purposes at a reasonable price set by the court. This allows for population growth and its accompanying demand for more water.

New Mexico Supreme Court Justice Irwin S. Moise said the broad definition of beneficial use is workable because it makes the greatest use of water at the earliest date “when to have held it for future use would result in waste if not loss.” He also said the law of supply and demand would take care of changes from one beneficial use to another or better use.



*Cement mixer, East Side Canal, Dona Ana County. Photo courtesy of the Rio Grande Historical Collection, NMSU.*



# The Water Right

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New Mexico historically has considered its water a public resource, and early on set forth rules governing its use. Gen. Stephen W. Kearney, who claimed New Mexico for the United States in 1846, followed historic precedent in recognizing the territory's public control over its water resources. The 1907 Water Code confirmed these earlier laws and stated that "all natural waters flowing in streams and watercourses, whether such be perennial or torrential, within the limits of the state of New Mexico, belong to the public and are subject to appropriation for beneficial use."

## Administration

Water rights development in many areas in the Southwest has a checkered history of chaos and bloodshed. This wasn't the case in New Mexico. Here the development of water rights evolved both naturally and formally throughout the state's history.

Administration has played a key role in this development. The 1907 Water Code established "the right to use of water" as regulated either by permit of the territorial engineer or by court decree. The state engineer, as he is now called, is appointed by the governor and confirmed by the state Senate. He is responsible for the general supervision of the state's water resources, including their measurement, appropriation and distribution.

The 1907 Water Code referred only to the state's surface water because at that time the technology for groundwater development was in its infancy. The state's original water rights laws, then, applied only to surface water.

At the turn of the century, farmers first began using the Roswell Artesian Aquifer for irrigation. By 1909 they had drilled 800 wells. By 1916 the basin had shrunk from 663 square miles to 499 square miles. Because the water supply was so uncertain, the Federal Land Bank of Wichita refused to grant loans to farmers using groundwater for irrigation. Concerned Roswell businessmen decided to study the situation, and enlisted the help of U.S. Geological Survey engineer Albert G. Fiedler on a cost-share basis. Fiedler studied the basin for a year and submitted a report to the businessmen in 1926. With Fiedler's help, attorney Herman Crile drafted a bill which was passed by the state legislature in 1927, paralleling the state's surface water code. In 1931 the groundwater code was slightly revised and reenacted substantially in its present form. Sixteen western states followed New Mexico's lead to some degree when establishing their groundwater regulations.

The state engineer's initial jurisdiction over the state's surface water now includes responsibility over groundwater in *declared groundwater basins*. When the state

engineer finds that the water of an underground source has reasonably ascertainable boundaries, he can assume jurisdiction over the appropriation and use of such water by “declaring” or describing the administrative boundaries of the basin. Within a declared underground water basin, no well may be drilled without a permit and drilling may be done only by a well driller licensed by the Office of the State Engineer. Currently declared groundwater basins cover approximately 110,345 square miles or 90 percent of the state.

The state engineer makes a declaration to protect prior appropriations, to guarantee the water’s beneficial use and to ensure the orderly development of the resource. He may declare a basin without prior notice. However, after declaring the basin, he must hold a public hearing on the declaration within a specified time. The state engineer has no jurisdiction outside declared underground basins, except to prevent waste.

Declaring a basin has no effect on water rights initiated before the declaration date. After that date, however, those wanting a water right or wanting to drill additional wells for an existing right must apply to the state engineer for a permit. If the water in a basin has been fully appropriated, no new water rights will be issued. Although many people refer to such basins as “closed,” the correct term is “fully appropriated.”

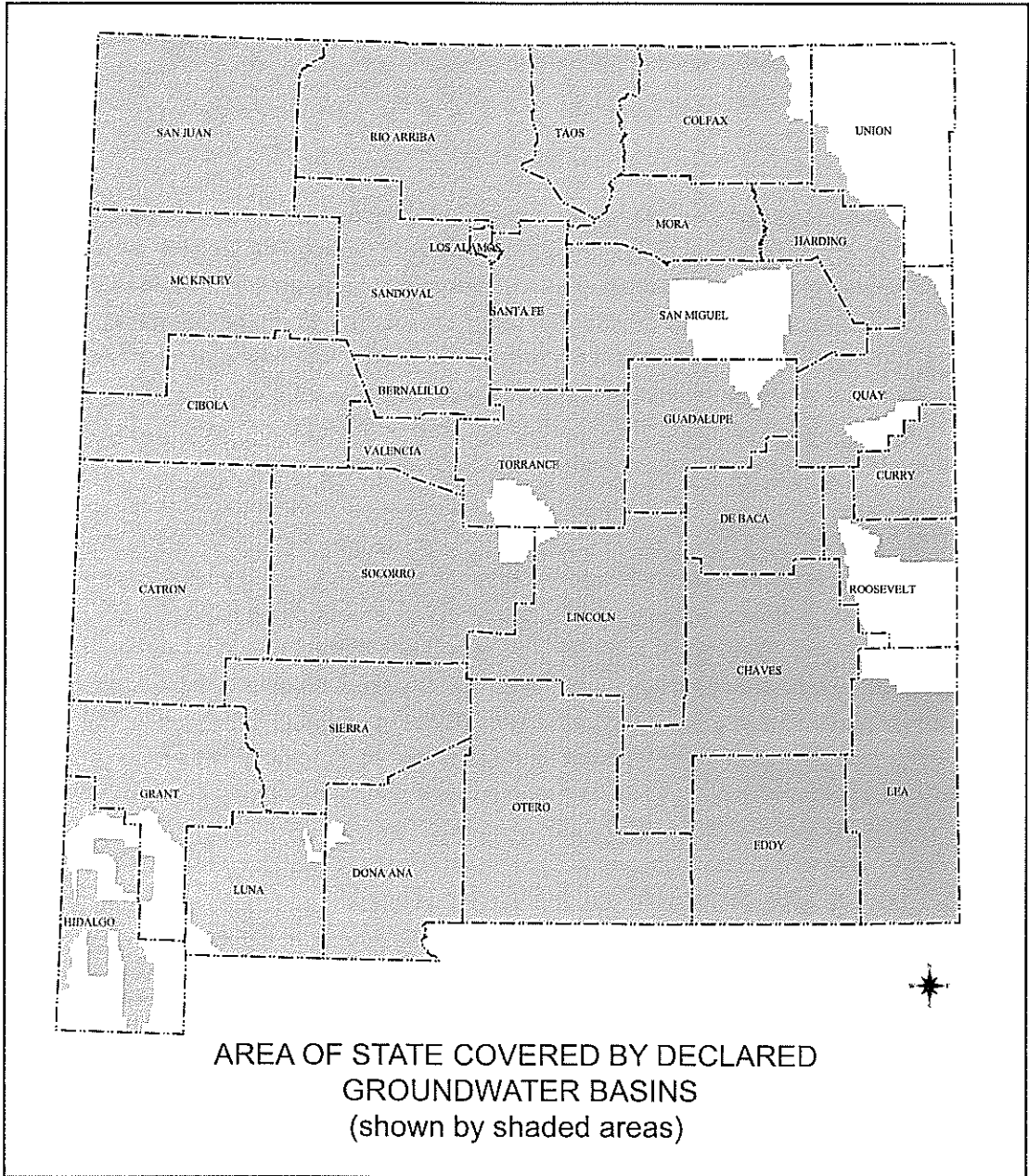
## **Adjudication**

Although the Office of the State Engineer plays an administrative role, rather than a legal one, New Mexico statutes guarantee the authority of that office in the *adjudication* of water rights disputes. An adjudication is the legal action taken either by individual appropriators or by the state engineer to protect a water right and to ensure that it is properly recognized. A water right adjudication is similar to a title search used to investigate and guarantee proof of the ownership of property such as a house or land.

New Mexico law specifically allows the state engineer to:

Adopt regulations and codes to implement and enforce any provision of any law administered by him and may issue orders necessary to implement his decisions and to aid him in the accomplishment of his duties.

Adjudication, especially in water rights disputes, often depends on scientific studies for validation. The court can require the state engineer to provide this scientific information. For example, the court normally requires him to furnish a complete hydro-



AREA OF STATE COVERED BY DECLARED  
GROUNDWATER BASINS  
(shown by shaded areas)

*Courtesy of the New Mexico Office of the State Engineer, 2001.*

graphic survey of a stream system or groundwater basin under dispute to determine the rights involved. The court has the jurisdiction to hear and determine questions necessary for the adjudication of all water rights within a stream system. During adjudication, the court, armed with scientific studies and other factual information, determines the amount of water allocated to the right.

## **Litigation**

The state engineer also may intervene in some legal cases. Intervention may be necessary, for example, where the rights on an interstate stream system have been subject to legal dispute, or *litigation*. Because lawsuits can tie up water entitled to other users, the state engineer assumes control of all or any part of an interstate stream during litigation. During this period, he also controls the diversion and distribution of the water and administers it in the public interest. In all legal cases, the state engineer is represented by the special assistant to the attorney general, by the attorney general himself, or by the district attorney of the county where the legal questions arise.

## **Apportionment**

The state engineer's prime responsibility is supervising the *apportionment* of water in the state. Apportionment, usually the result of an adjudication, is the fair, but not necessarily equal, division of the state's waters. The state engineer supervises the apportionment of water according to the water rights permits issued by him and his predecessors and according to the adjudications of the courts.

In general, a stream system must be adjudicated by the courts before the state engineer will appoint a watermaster. The watermaster assumes responsibility for supervising the apportionment of the water in that stream system.

## **Determining the Amount of a Water Right**

One of the most crucial steps during an adjudication is deciding how much water to allocate to a water right. If the water right is historic, the amount is based on the established use of the water and the water needed to continue that use.

The amount allocated to a new right depends on reasonable need and water availability. If the water is vested for a municipal or industrial use, the amount of the right generally is recognized as 60 percent of the pumping capability of the existing well. It is not generally feasible to pump a well more than 60 percent of the time over a year's period.

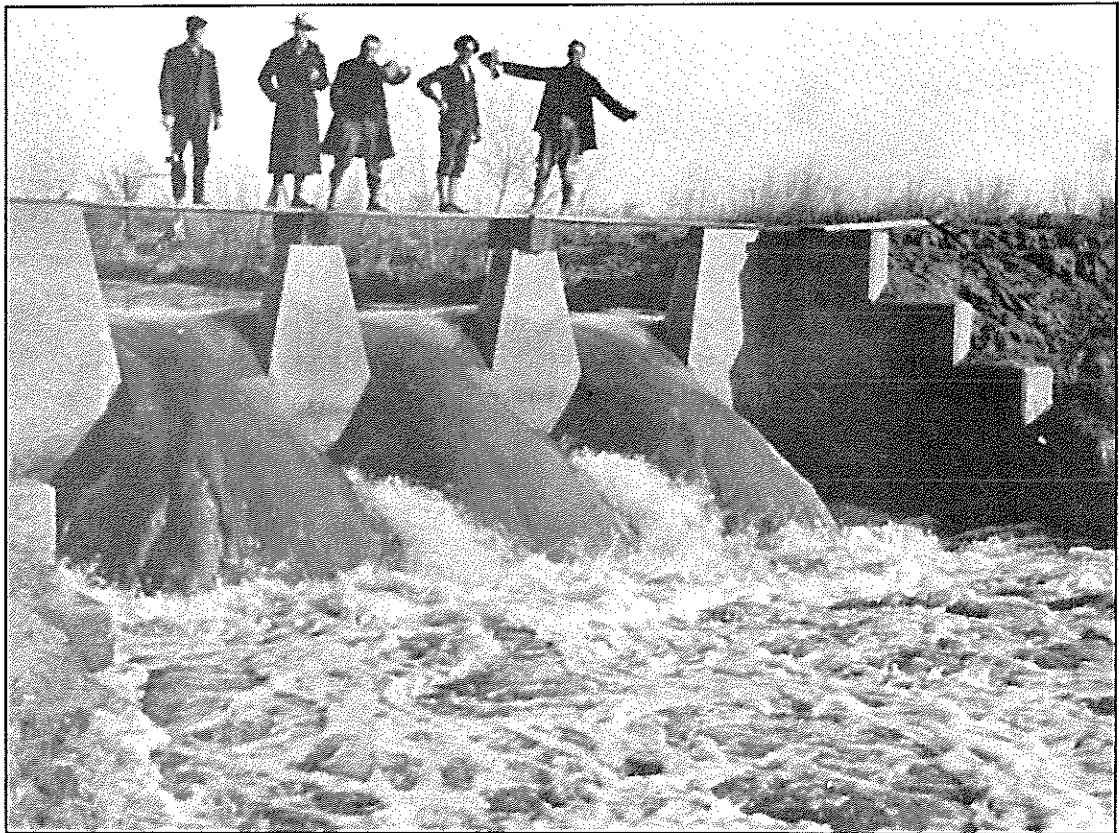
The amount allocated to any agricultural water right is based on the average *consumptive irrigation requirement* for all crops grown in the area. The requirement, as determined by the Blaney-Criddle method, is the amount of water a plant needs over

the entire growing season for transpiration and for building plant tissue, plus evaporation from the soil surface. Blaney-Criddle takes into consideration influences such as average temperature, sunlight, precipitation, and growing or irrigation season for the area.

Another important consideration in determining an allocation to an agricultural right is the amount of *return flow*. Return flow is water that finds its way back to its source of supply.

Return flow also includes water that could return to its supply source if its course were not obstructed, and water unused by a plant because the water has seeped below the plant's root zone.

Return flow from irrigation, either as surface water or groundwater, is an important factor in determining the water supply for downstream users and in considering municipal and industrial uses.



*Leasburg Canal, Dona Ana County, 1916. Photograph courtesy of the Rio Grande Historical Collection, NMSU.*



## Water Rights Constraints

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Constraints on New Mexico's water rights are a mix of good news and bad news. New Mexico's pioneers in water rights administration set precedents that still protect the state's water. But some view those precedents as barriers to competition for water rights. New Mexico, through interstate compacts, gets an equitable share of the surface water flowing through the state. In turn, however, it can't use so much water that a downstream state fails to receive its equitable share.

The Bill of Rights in the U.S. Constitution protects a water right, which is legally considered property, by virtue of its prohibition against taking private property without due process of law and just compensation. However, federal jurisdiction prevents New Mexico from having sole authority over the water within its boundaries.

### Vested Water Rights

New Mexico's 1907 Water Code set the criteria for rights to the state's water. The code also confirmed the priority of water rights established before that date. Those water rights, based on historical and current uses, are called *vested*, or automatic, rights and date from the initiation of the claim. Since 1907, anyone wanting a surface water right has had to apply for a permit to the territorial or state engineer.

### Senior Water Rights

Those with *senior water rights* have priority over those with junior water rights. The seniority, however, applies only to the water in the original right. Any surplus water becomes available to junior appropriators. Sometimes there is no surplus. In a dry year, not uncommon in the Southwest, the more junior the right, the less likely it is that the junior right holder will get water.

Sometimes it's the senior right holder who objects to junior appropriators. A case in point concerns senior water right holders in the Carlsbad Irrigation District. They have asked the state engineer to prevent junior right holders in the Pecos River drainage area from pumping groundwater from the Pecos River Basin. They contend that the junior right holders have caused a decrease in the flow of the Pecos River and a corresponding decrease in the supply available to downstream senior right holders.

## Interstate Compacts

One constraint in apportioning surface water is that most of New Mexico's surface water supplies also are governed by eight *interstate compacts* to which New Mexico is a party. Although the Constitution forbids alliances and treaties between states, it permits states to enter into agreements, or compacts, with the consent of the

### New Mexico's Interstate Water Compacts

Compact	Parties to Compact	Date Signed
Colorado River Compact	Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming	November 22, 1922
La Plata River Compact	Colorado, New Mexico	November 27, 1922
Upper Colorado River Basin Compact	Arizona, Colorado, New Mexico, Utah, Wyoming	October 11, 1948
Rio Grande Compact	Colorado, New Mexico, Texas	March 19, 1938
Costilla Creek Compact	Colorado, New Mexico	September 30, 1944
Pecos River Compact	New Mexico, Texas	December 3, 1948
Canadian River Compact	Oklahoma, New Mexico, Texas	December 6, 1950
Animas-La Plata Project Compact	Colorado, New Mexico	June 30, 1986



U.S. Congress. Compacts may supersede state laws and constitutions and are preferable to judicial procedures in resolving interstate water conflicts. Compacts generally have the flexibility to meet changing physical and economic conditions.

States that share a surface water or groundwater resource enter into a compact first by reaching an agreement among the states concerning the conditions of the compact. Then, when the legislature of each state involved ratifies the compact, it is sent to each state governor for approval. After state approval, the compact is sent to the U.S. Congress for approval and then to the president where it is signed into law.

The Rio Grande Compact, which was adopted in 1938, is a major compact affecting New Mexico. The compact divides the river water, according to a set percentage among Colorado, New Mexico, and Texas. Its purpose is to ensure that each state continues to receive its share of the surface water supply.

The Pecos River, Colorado River, Upper Colorado Basin, La Plata River, Canadian River, Animas-La Plata Project, and Costilla Creek compacts also have had considerable importance in determining New Mexico's relations with its neighboring states.

## **Federal Reserved Water Rights**

Federal water rights deserve some mention because 46 percent of New Mexico's land is federally owned. Some of the water rights on these federal lands come under the *Reserved Rights Doctrine*. This doctrine asserts that when the federal government withdraws, or reserves, land from the public domain for a particular purpose, by implication, it also reserves the amount of water necessary to fulfill that purpose. These federal reservations include most national parks, forests, and monuments as well as military reservations.

For example, the amount of water reserved for a national forest would have to be sufficient for growing trees and fighting fires. That right cannot be extended for additional purposes such as fishing, lake development, and irrigated pasture for deer. However, water above the amount in the original allocation can be acquired from the state through the normal water rights application procedure.

The issue of federal reserved water rights is especially important in public land states because large quantities of water originate or flow through national forests and parks. In addition, federal reserved rights can complicate state water planning because the state often doesn't know how much water the federal government can claim for each reservation.

## **Indian Water Rights**

Indian water rights also have a profound effect on New Mexico because nearly 10 percent of the state's area is Indian reservation. Indian water rights are similar to

federal reserved rights in that the right pertains to a reservation for a particular purpose.

Federal control over Indian water rights is based on the *Winters Doctrine*. The doctrine is the result of a dispute in the early 1900s over water in the Milk River, which bordered the Indian reservation at Fort Belknap, Montana. Upstream land owners who acquired land under the Desert Land Act had constructed dams and reservoirs to divert the majority of the Milk River flow for their irrigation.

The United States, as the legal guardian of the Indians, sued to halt diversion construction. The settlers said they had a right to appropriate “unused” water under Montana state law. The Indians countered that the river was reserved for future agricultural uses on the reservation based on an 1888 treaty. The U.S. Supreme Court in *Winters v. United States* ruled in favor of the Indians, reasoning that their right was based on the riparian right on federal land. The *Winters* decision was construed as a federal treaty with an Indian tribe, based on the power of the United States to exempt these waters from appropriation under state law.

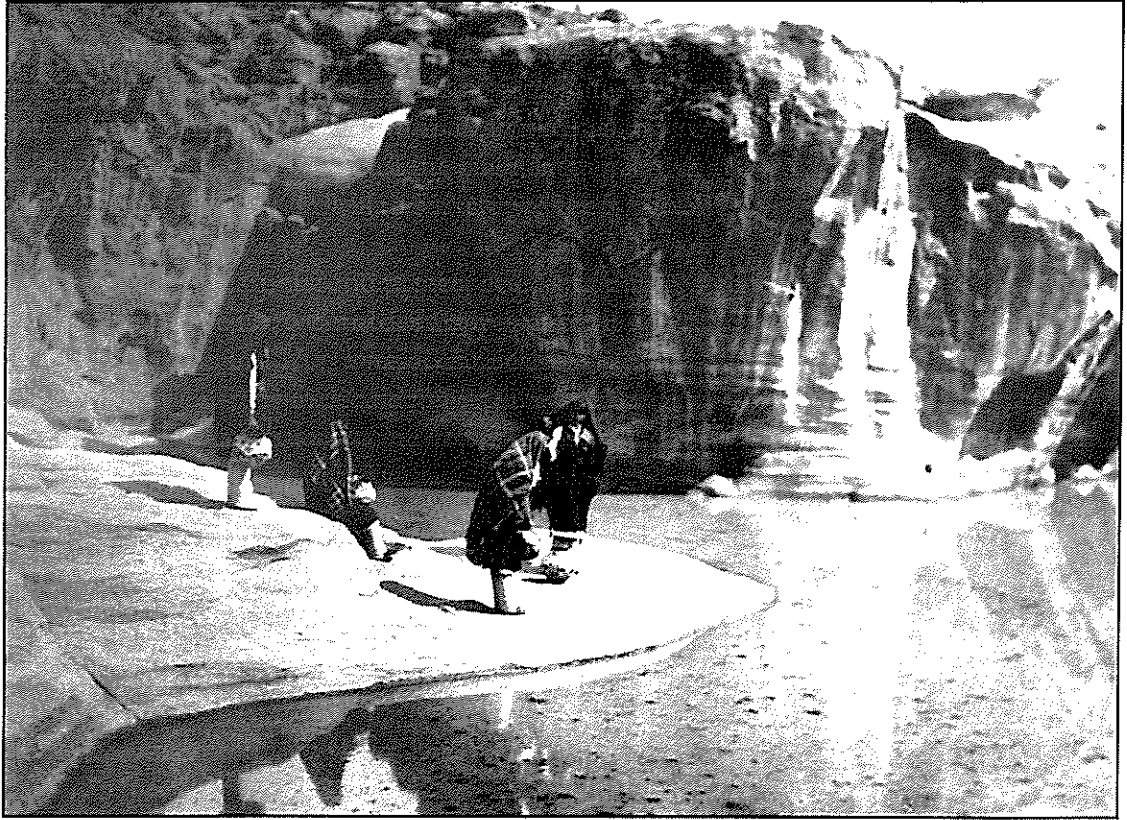
Basically, the Winters Doctrine states that each reservation of Indian land carried with it, by implication, a reservation of water sufficient for all future purposes. The right is exempt from the traditional beneficial use requirement.

The Winters Doctrine stands as a cornerstone of American Indian water rights. In upholding the doctrine, the court ruled that “Indians have the right to occupy and use a large tract of arid lands.” The court recognized water as essential to the purpose of the reservation.

Most Indian reservations were established before extensive water development in the West. Although current studies of water uses have addressed the issue of Indian water requirements, the fact remains that the quantities involved often are unknown or in dispute. Regional water development is dependent on knowledge of existing and proposed water uses.

New Mexico has Indian water lawsuits in progress, among them a lawsuit involving four Pueblo reservations on the Rio Grande. New Mexico is also involved in negotiations over water with the Navajo Tribe on the San Juan River.

New Mexico suffers from the same problem as many water-deficient states in contending with Indian water rights. When the Indians have attempted to claim their reserved water rights, other appropriators—many of them long-standing—may be deprived of the water they have used traditionally. On the other hand, the Indians may need these waters to develop their own lands.



*Pueblo de Acoma, 1904. Photograph by Edward S. Curtis; courtesy of the Museum of New Mexico, Negative No. 31962.*

## **Pueblo Water Rights**

Another federal jurisdictional area that affects New Mexico is *pueblo water rights*. Often pueblo water rights are confused with Indian water rights because of the similarity in terms. The term pueblo actually means town. The early Spaniards upon discovering Indians living in towns, called them pueblo Indians to distinguish them from the nomadic Apache, Commanche and Navajo Indians.

Each pueblo is a quasi-public corporation having a right by reason of its title to the use of the stream waters which were “situated . . . within the pueblo limits.” Civil pueblos held water as a common property for domestic use and irrigation. The right was administered by town officials. Apparently, the pueblo had a prior right to use water over other appropriators on the same stream.

The New Mexico Supreme Court in 1959 recognized pueblo rights as generally superior to appropriation rights. Las Vegas, New Mexico, as the successor city to the

Mexican pueblo known as Nuestra Senora de Los Dolores de Las Vegas, holds pueblo water rights. The city was established under Mexican law in 1835 and as a pueblo was granted rights to a certain amount of water in the Gallinas River flowing through the pueblo. This water was granted as needed for the inhabitants and for the continued use of water by future inhabitants.

The treaty of Guadalupe Hidalgo, which sealed the peace between the United States and Mexico, foreclosed the establishment of any more pueblos in 1848, and so even the most junior pueblo right has a priority date of 1848.

## **Interstate Groundwater Transfer**

Under a January 1983 Federal District Court decision, New Mexico can no longer prohibit the out-of-state export of groundwater. New Mexico's statute banning the export of its groundwater was struck down as violating U.S. Constitutional protections for interstate commerce.

The decision was based, in part, on the decision of the U.S. Supreme Court in *Sporbese v. Nebraska* in which the court ruled that water was an article of commerce and that states are therefore limited in their power to ban its export.

The *Sporbese* decision has made state water laws more vulnerable to constitutional challenge. In *Sporbese*, the court held that the state's interest in conserving and preserving scarce water resources in the arid West clearly has an interstate dimension. The state could not, however, totally prohibit the export of state waters.

Because of the 1983 District Court decision, New Mexico's 1983 Legislature passed a law that allows groundwater export under certain conditions. The law states that:

In order to approve an application under this act, the state engineer must find that the applicant's withdrawal and transportation of water for use outside the state would not impair existing water rights, is not contrary to the conservation of water within the state and is not otherwise detrimental to the public welfare of the citizens of New Mexico.

Under the new law, the state engineer considers several factors in deciding whether to approve a permit to withdraw water from surface or groundwater sources in New Mexico for transport outside the state. The law then lists six of the factors to be considered:

- the supply of water available to the state of New Mexico;
- water demands of the state of New Mexico;
- whether there are water shortages within the state of New Mexico;

- whether the water that is the subject of the application could be transported feasibly to alleviate the water shortages in the state of New Mexico;
- the supply and sources of water available to the applicant in the state where the applicant intends to use the water; and
- the demands placed on the applicant's supply in the state where the applicant intends to use the water.

To date, this new law has withstood legal challenge.



*Irrigation system near Las Vegas, New Mexico, c. 1900. Photograph courtesy of the Museum of New Mexico, Negative No. 9482.*



## **Obtaining a Water Right**

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Virtually all of the state's surface waters are already appropriated. This means the right to use nearly every acre-foot of surface water is appropriated already. And, as was pointed out earlier, declared underground water basins cover approximately 90 percent of the state's area. The scarcity of high quality "new" water forces water rights holders to maneuver existing rights to their best advantage, or market the rights to a new owner. Therefore, most of the transactions involving both surface and groundwater rights are water right transfers.

However, it's important to first understand the legal procedure under which those original rights were obtained.

### **Applying for a Surface Water Right**

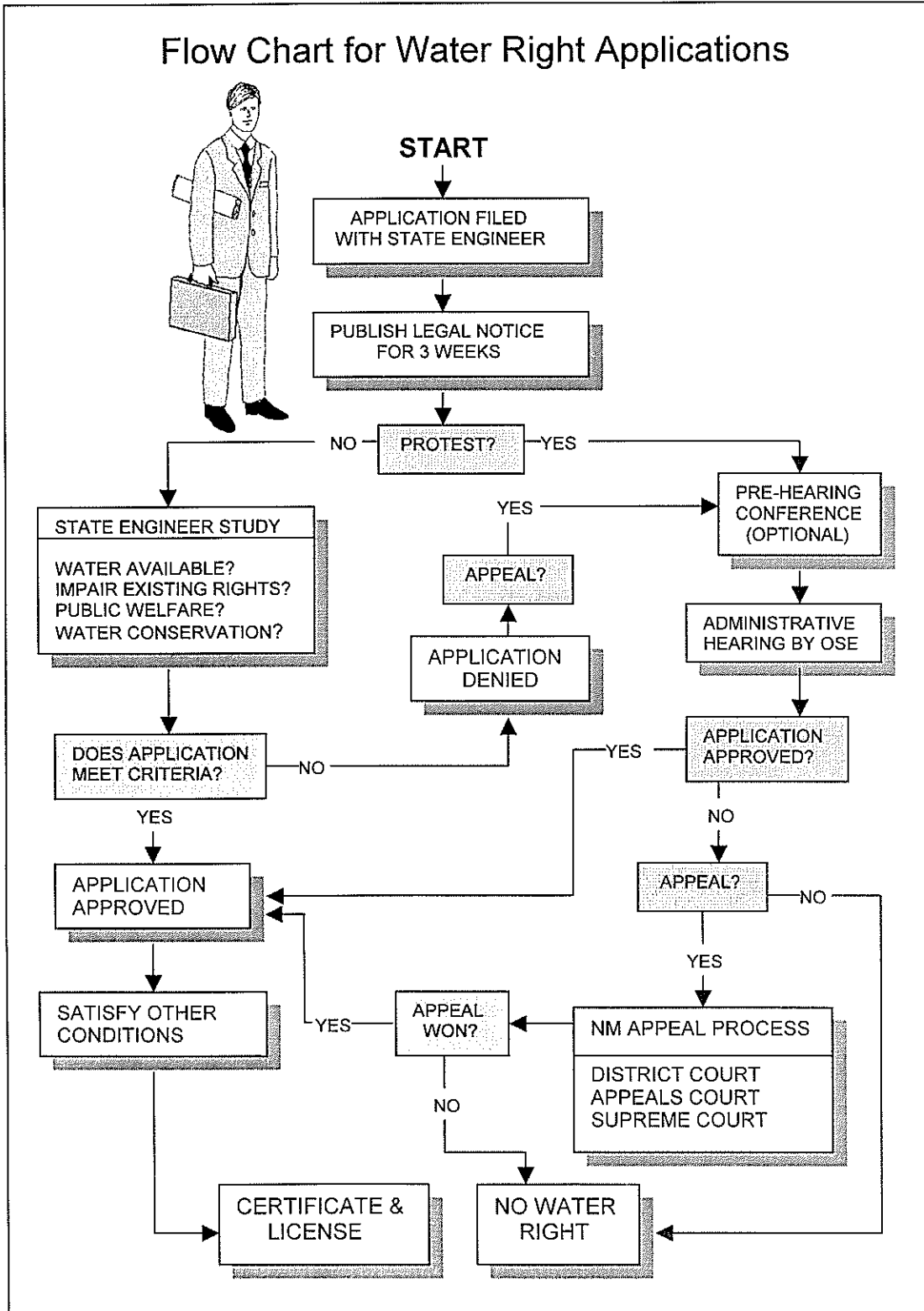
The process for obtaining a surface water right begins when the applicant files with the state engineer for a permit to appropriate water. Application forms are available at the Office of the State Engineer in Santa Fe and at its district offices in Albuquerque, Roswell, Deming and Las Cruces.

The applicant must state the amount of water to be used, place, purpose, and point of diversion. The application also may require information such as maps showing the location and nature of the proposed project, and the applicant's ability to accomplish construction. Plans and specifications may be required on dams more than 10 feet high. Permits are not required for stock tanks that do not impound more than 10 acre-feet of water.

After filing, the applicant publishes a legal notice in a newspaper having general circulation in the area where the water will be appropriated. The notice is published once a week for three consecutive weeks within each county affected by the application, giving all essential facts such as the applicant's name and address, the amount of water to be used, and the purpose and location of its use. Protests to the application must be filed with the state engineer within 10 days of the last published notice.

The state engineer will hold a hearing on protested applications. He may order that a hearing be held before he makes a decision, whether or not a protest has been filed. He will deny an application if unappropriated water is not available, if the new use will impair existing water rights, or if he believes approval would be detrimental to the public welfare or contrary to conservation of water in New Mexico.

# Flow Chart for Water Right Applications



*Designed by WRRJ, based on a flow chart by J.W. Everbeart, NM Office of the State Engineer*



If the state engineer determines from the evidence that unappropriated water is available and that other criteria are met, he approves the application which then becomes a permit to appropriate water. The permit states when construction should be completed and when the water will be put to beneficial use. The completion deadline depends on the size and complexity of the project, but normally is not more than five years. Also, four years may be granted to allow the application of water to beneficial use.

When construction is completed, or at the construction deadline, the state engineer has the site inspected. The inspector determines the capacity of the works, its safety and efficiency. If the inspector finds the construction satisfactory, he signs a certificate of construction setting forth the actual capacity of the works and the limits of the water right. However, if the construction fails inspection, the state engineer can require that certain changes be made within a reasonable time.

## **Applying for a Groundwater Right**

The application procedure for rights to groundwater is basically the same as for surface water rights. The difference is that the state engineer has jurisdiction only over water in declared basins. In a declared basin, after a permit has been granted, a well can be drilled only by a driller licensed by the state engineer. As with surface water rights, those with vested rights are exempt from the application procedure, but should document their prior use with the state engineer.

The important effect of declaring a basin is that within the basin, the applicant bears the burden of proof showing that his appropriation will not impair existing rights in either surface or groundwater. Water right owners outside the basin boundaries are protected by the Appropriation Doctrine. If they believe their water right would be impaired, they have recourse to the courts, not the state engineer.

An application for a groundwater right also must comply with certain requirements before the application will be considered. First, the applicant must designate:

- the particular underground stream, channel, artesian basin, reservoir or lake from which water will be appropriated;
- the beneficial use to which the water will be applied;
- the location of the proposed well;
- the name of the owner of the land on which the well will be located;
- the amount of water applied for;
- the use for which the water is desired; and
- if the use is for irrigation, the description of the land to be irrigated, and the name of the owner of the land.

In addition, if the well will be located on privately owned land and the applicant is not the land owner, further information must be provided showing that the applicant has the owner's permission to drill and operate the well.

As with a surface water right, the state engineer looks at the groundwater application and determines whether unappropriated water is available and whether granting the permit will impair existing rights. If water is available and the new permit won't harm other rights and isn't detrimental to the public welfare or contrary to conservation of New Mexico's water, the permit will be granted.

Under Section 72-12-1, NMSA, applications for domestic wells for household uses and noncommercial gardens of less than an acre are approved automatically. In recent years, there has been concern over the magnitude of well permits and their impact on New Mexico's ability to meet compact delivery obligations. It is likely that future legislation will provide tighter controls over domestic well permits.

If the seller of a parcel of land has water rights that the buyer expects to obtain with the property, the buyer should require that the water right be conveyed in the property deed and that all documents related to the water right be given to the buyer. Under a 1991 state law, the buyer must file a change of ownership form at the county clerk's office in the county where the water right is located. Those who inherit or purchase water rights must also complete the change of ownership form.

## **Conditioned Water Rights**

The state engineer also can attach strings to a permit approval for either a surface or groundwater right. These strings are called conditions. A condition on a surface water right, for example, might hold the appropriator accountable for evaporation and transmission losses. Conditions also are attached to groundwater permits, for example, where there is a hydrologic connection between the surface water and the groundwater supply.

Most water rights conditions are made so that the condition must be met before the water may be diverted. If the appropriator fails to meet or maintain the condition, the permit will be canceled.

## **Appealing a Decision**

New Mexico, as guardian of the state's water, also guarantees the legal rights of those who dispute the decision of the state engineer in a water rights allocation. A person objecting to such a decision has recourse through the state court system. When the state engineer rejects an application for a water right, the rejected applicant has 30 days to appeal that decision back to the state engineer. The state engineer then holds a hearing on the appeal and makes a second decision. The applicant then has 30 days to appeal that decision to the New Mexico District Court. Appeals from district court are then made to the New Mexico Court of Appeals.

appeal that decision to the New Mexico District Court. Appeals from district court are then made to the New Mexico Court of Appeals.

Generally, water rights issues come under the authority of the federal courts only if there is dispute over the constitutionality of a state law, if Indian water rights are involved, or if the dispute involves other states. The *El Paso v. Reynolds et al.* case, for example, came before the federal courts only because El Paso challenged the constitutionality of the New Mexico law banning export of the state's groundwater.



*Irrigated pecan orchard in the Mesilla Valley.*



*Artesian well on Main St., Roswell, New Mexico, c. 1900. Photograph courtesy of the Rio Grande Historical Collection, NMSU.*

## **Water Rights Transactions and Penalties**=====

In areas of full appropriation, and that includes most of New Mexico, water rights become the object of supply and demand. Even in the marketplace, however, water rights are subject to state water laws. In New Mexico, a water right is a property right and inherent in that ownership is the prerogative to change the point of diversion, place or use of the right. These changes, however, are governed by the overriding question of whether or not the change will impair existing water rights holders. Simply, if the change would result in an impairment to other rights, the transfer won't be allowed. The right retains its priority date and its specific quantity of water as long as the right continues to be exercised.

### **Separating the Right from the Land**

Although the right to water is transferred with the sale of the land, unless reserved in the deed, a water right can be sold separately from the land and sold for a new use in another area (an application to the state engineer is required). For example, an owner can sell the rights in one area for use in another area if the transaction will not impair other rights in the new area. By doing so, he withdraws the use of that water in the first area. The water withdrawn from use is adjusted for losses associated with the change of the point of diversion and credited to the water supply in the second area. The new owner then is allowed to draw from the credited supply.

### **Changing the Place or Purpose of Use**

Most water rights transfers today are in groundwater and generally are transferred from agricultural uses to municipal, commercial or industrial uses. Remember, under New Mexico law, all beneficial uses are equal regardless of the value of the use.

A water right transfer does not always mean a new owner. A transfer can mean that the owner wants to change the use of the water, the amount of the allocation, or the location of the well under his recognized water right. Changes in place and purpose of use or changing the location of a well require application to the state engineer and then showing that the change would not impair existing rights.

In the case of well changes, the transfer might simply mean that the owner wants to "rearrange" wells or drill replacement wells. For example, a farmer wanting to take a water right from one field and use it on a second field, which he also owns, applies to the

state engineer for that change. The change may be allowed depending on the water source location, location of other rights, and return flow. Another instance might be where an owner applied for a permit to move a well because the casing in an old well was broken and could not be repaired.

The state engineer must guard against injury to downstream users from upstream changes. This is especially true of changes that affect *depletion*. Depletion is the amount of water used up and not returned to a surface or groundwater system. A water right owner, for example, might want to change his use from agricultural to domestic, which would decrease the depletion percentage of the total amount diverted. In agriculture, for example, as much as 70 percent, or 2.1 acre-feet of the 3 acre-feet of water per acre delivered to a field actually may be consumed. The remaining 30 percent could seep back to the water source as return flow and be available for other uses.

However, if a subdivision could show that 50 percent or more of the water delivered could be returned to the water supply as sewage effluent, the subdivision could be allowed 4.2 acre-feet because it has depleted only 2.1 acre-feet.

In contrast, road construction depletes nearly 100 percent of its withdrawal, and so a transfer from irrigation would be allowed a diversion of only 2.1 acre-feet per acre. A use in a new location is never allowed to deplete more water than was granted in the original permit.

A change within an agricultural use can affect the amount of water depleted, but if the use is changed from one type of crop to another, the state engineer doesn't require a new permit. This type of change is allowed because the water use within a given area is determined by the average cropping pattern for the area, not on the amount used on a specific field.

## **Leasing a Water Right**

A water right owner can lease all or part of his right for not more than 10 years without affecting his original water right. A major benefit of leasing the right is that the owner avoids losing the right due to nonuse. New Mexico water law requires that a water right unused for four years be subject to forfeiture.

The lease may be effective immediately, or the lease may be for future uses, as long as the use is not allowed to accumulate or impair other water users.

Municipalities, counties, state universities, public utilities supplying water to municipalities or counties, and member-owned community water systems are allowed to lease water for up to 40 years.

## **Basin Transfers**

Transfers of water rights from one groundwater basin or drainage basin to another are not allowed. This prohibition maintains that the retirement of a right in one basin would not offset the effects of a new use in another basin. A transfer to another basin would amount to a new appropriation.

Generally, the physical transport of water from one basin to another is not allowed. One exception to this has been water from the San Juan-Chama project transported from the San Juan River by way of the Chama River to the Rio Grande for uses within the Rio Grande drainage area. In this case, it is the water that is transported, not the water right.

## **Special Districts**

Water right owners can form irrigation and conservancy districts for their mutual benefit. Members of the districts share the costs and expenses of transporting the water and also the right to use the water.

The major districts in New Mexico are the Middle Rio Grande Conservancy District, the Elephant Butte Irrigation District, the Carlsbad Irrigation District, the Pecos Valley Artesian Conservancy District, and the Bloomfield Irrigation District.

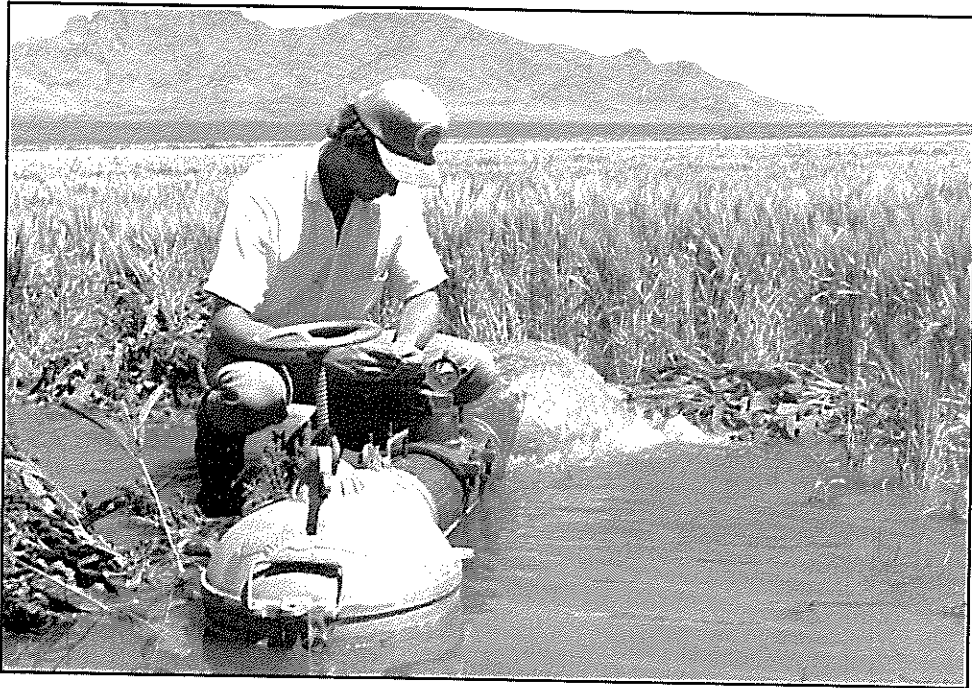
## **Penalties**

Just as New Mexico law governs water rights ownership and transfer, the law also carries penalties for neglecting those rights.

The most serious penalty is loss of the water right. In New Mexico, a water right owner may forfeit his right if he doesn't beneficially use all or any part of the water right for four years. If, after official notice from the state engineer, the right holder still doesn't use his right within one year, the right reverts back to the public. The law provides for exceptions under circumstances beyond the owner's control. Not included in the four-year limitation are periods allowed incorporated municipalities or counties for implementing their water development plans or for preserving municipal water supplies. Also exempt from the time requirement are active duty members of the armed forces.

Other water right transgressions are judged as misdemeanors and are punishable by a fine of up to \$100 or imprisonment of up to six months. The unauthorized use of water that belongs to someone else or willfully wasting surface or groundwater to the detriment of another or the public are misdemeanors.

It's impractical to save every acre-foot of water, and so some "waste" is inevitable. **Waste**, in the definitive sense, means unnecessary waste that reasonably can be avoided. Transmission loss of artesian water in excess of 20 percent is defined by law as waste. An example of willful waste would be a well allowed to flow 24 hours a day onto grazing land that has no constructed irrigation system.



*A New Mexico State University engineer performs efficiency tests on an irrigation pump near Deming, 1988.*



## Preparing for Change

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New Mexico's aridity and isolation protected it from outside pressures long enough—about four centuries—to build a strong and workable water rights system.

Times change, however. The West's dry climate and wide open spaces now promote, not discourage development. Out-of-state demands as well as demands of new residents, new businesses, and new industries make it increasingly important that the state's water is managed well. This calls for us, as New Mexicans, to increase our understanding of our most valuable natural resource. We need to learn more about how science and technology conserve and preserve the quality of our water resources. And we need to know more about the hydrology that drives our underground and surface water systems.

As water resources increasingly change from a state to a regional or national issue, we need to look at how the water problems of other states affect New Mexico's water resources management.

It's only natural that when an increasing population is faced with a limited resource, it will press for changes in the laws which govern the distribution of that resource. It is important that when considering changes, New Mexicans have a thorough understanding of the history and reasoning behind those laws.



## Glossary

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*Acequia:* Spanish, meaning a community irrigation ditch.

*Acre-foot:* quantity of water which will cover one acre of land to a depth of one foot; 43,560 cubic feet or 325,851 gallons of water.

*Adjudication:* a formal court proceeding which results in the determination of the validity and extent of a water right.

*Apportionment:* the division and distribution of water according to a plan.

*Appropriation:* water set aside and put to beneficial use, associated with a date on which the water was first put to beneficial use.

*Appropriator:* a person who takes either surface water or groundwater and applies it to a beneficial use.

*Aquifer:* a geologic formation that contains sufficient permeable material saturated with water as to yield a usable quantity of water to wells or springs. The word aquifer is derived from Latin—"aqua" meaning water and "fer" from a word meaning to carry.

*Beneficial use:* generally, all uses including agricultural, commercial, industrial, and recreational are considered beneficial; the exception is willful waste of water.

*Conditioned water right:* the case where a water right is granted under a condition that would prevent the right from adversely affecting the flow of a stream or another water right.

*Consumptive irrigation requirement:* the amount of water a plant needs over the entire growing season for transpiration and for building plant tissue, plus evaporation from the soil surface.

*Declared groundwater basin:* an area with definite hydrogeologic boundaries that has been designated by the state engineer to prevent the impairment of existing water rights and to ensure the orderly development of water rights.

*Depletion:* the amount of water used and not returned to a surface or groundwater system; similar to consumptive use.

***Diversion:*** a man-made construction that diverts water from its natural source for beneficial use.

***Drainage basin:*** the entire area drained by a stream or system of connecting streams so that all the stream flow originating in the area is discharged through a single outlet.

***Fully appropriated:*** when all available water has been reserved for existing water rights.

***Groundwater:*** water located below the surface of the earth, including underground streams.

***Interstate compact:*** an agreement made between two or more states, which is approved by Congress and the president, on the division of waters in rivers and streams that flow from one state into another.

***Litigation:*** legal action.

***Mayordomo:*** the ditch master, or person who directs activities of water users in an acequia system, or community irrigation ditch system.

***Prior appropriation:*** doctrine that entitles the first person who diverts water and puts it to beneficial use the right to that water; first in time, first in right.

***Pueblo water right:*** the pueblo rights doctrine holds that any municipality tracing its origins to a Spanish or Mexican pueblo grant, has a prior and paramount right to all waters of non-navigable streams flowing through or by the pueblo to the extent necessary to serve its future growth. It is peculiar to California and New Mexico.

***Recharge:*** the addition of water to an aquifer by infiltration, either directly into the aquifer or indirectly by way of another rock formation; recharge may be artificial, as when water is injected through wells or spread over permeable surfaces for the purpose of recharging an aquifer.

***Reserved Rights Doctrine:*** water reserved for a particular use on a federal reservation; supersedes a state-granted water right.

***Return flow:*** water diverted for a use that finds its way back to its source of supply.

***Riparian water right:*** a doctrine common to the Eastern United States where one has the automatic right to use water from a natural water course on or next to a land owner's property; includes the right to have the natural flow continue.

***Senior water right:*** determined by date of initiation of a right; first user takes precedence over users who come later.

***Surface water:*** all water located on the surface of the land.

***Vested water right:*** rights established before the 1907 Surface Water Code, or a groundwater right established prior to the state engineer's declaration of an underground water basin.

***Waste:*** any water diverted by man that is not put to beneficial use.

***Water right:*** a legal right to divert water to a specific beneficial use.

***Winters Doctrine:*** cornerstone of American Indian water rights; implies a reservation of water for the Indians' present and future use and exempts Indian reservations from state water law.



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For a thousand years inhabitants of New Mexico have been protecting and apportioning their water supplies—first by tribal custom, then by community rule, and finally by today’s codified system of water rights.

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Photograph on front cover taken by Edward S. Curtis, Pueblo de Acoma, 1904. Courtesy of the Museum of New Mexico, Negative No. 31962.