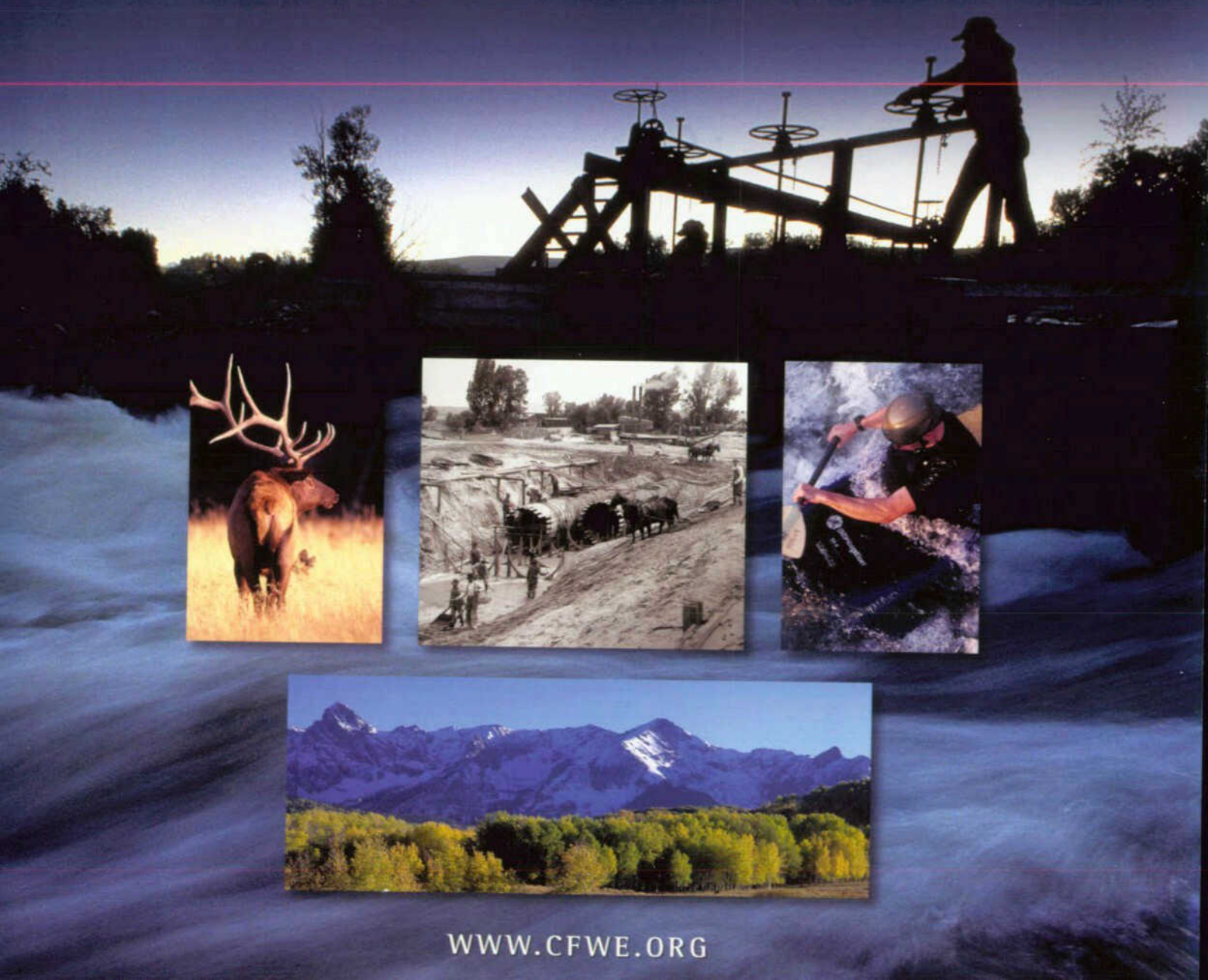


CITIZEN'S GUIDE TO

COLORADO WATER LAW

Prepared by
Colorado Foundation for Water Education

2004
Revised Edition



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Citizen's Guide to Colorado Water Law

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Mission Statement

The mission of the Colorado Foundation for Water Education is to promote a better understanding of water issues through educational opportunities and resources, so Colorado citizens will understand water as a limited resource and make informed decisions. The Foundation does not take an advocacy position on any water issue.

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TWO RIVERS

by Thomas Hornsby Ferril

Two rivers that were here before there was
A city here still come together: one
Is a mountain river flowing into the prairie
One is a prairie river flowing toward
The mountains but feeling them and turning back
The way some of the people who came here did.

Most of the time there people hardly seemed
To realize they wanted to be remembered,
Because the mountains told them not to die.

I wasn't here, yet I remember them,
That first night long ago, those wagon people
Who pushed aside enough of the cottonwoods
To build our city where the blueness rested.

They were with me, they told me afterward,
When I stood on a splintered wooden viaduct
Before it changed to steel and I to man.
They told me while I stared down at the water:
"If you will stay we will not go away."



Written by Thomas Hornsby Ferril in reference to the confluence of Cherry Creek and the South Platte River. The discovery of gold at the confluence of these rivers in 1858 led the way towards development of what is now the metropolitan Denver area.

From *Thomas Hornsby Ferril and the American West*, edited by Robert Baron, Stephen Leonard, and Thomas Noel

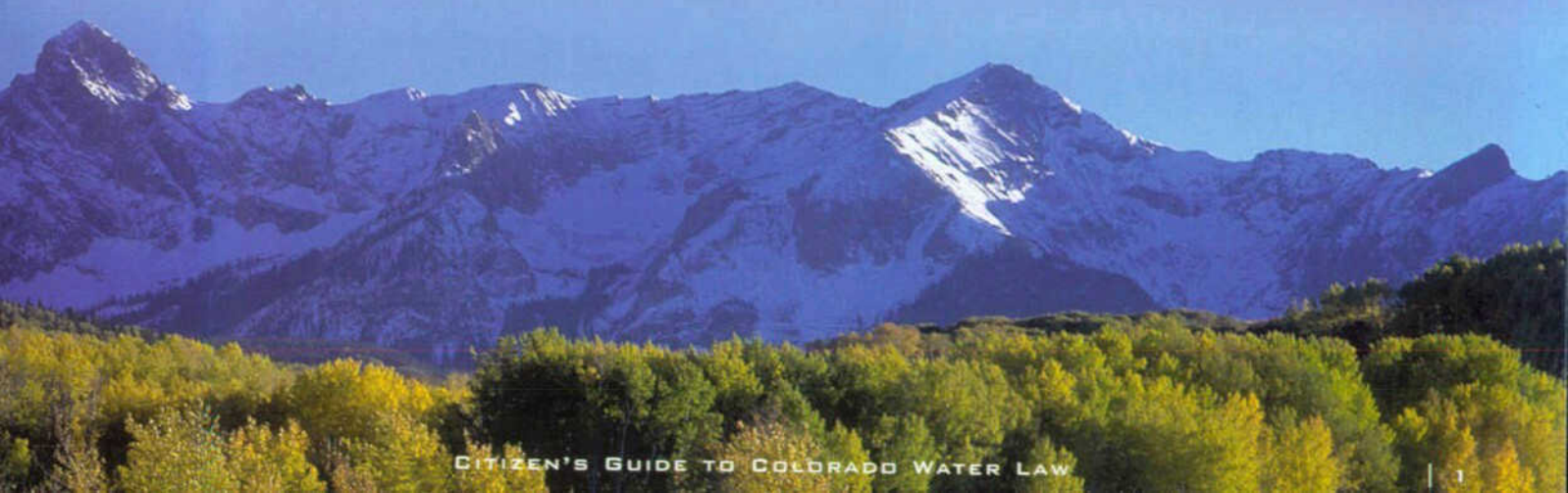
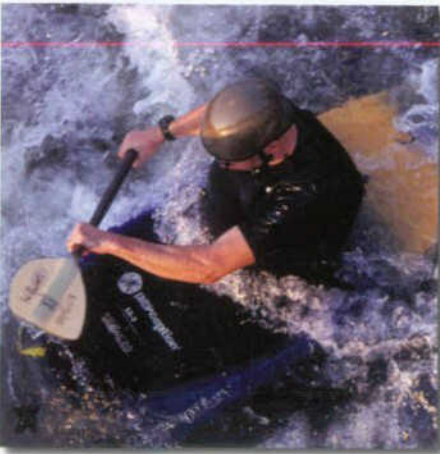


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Under Colorado water law, environmental and recreational needs are acknowledged as a beneficial use of water. Recreational in-stream diversions provide courses for kayakers and instream flow requirements benefit fish and fishermen. The Sandhill Crane's habitat (above) in Nebraska is protected in part by interstate agreements governing water in the South Platte River.



In some cases water rights that have been traditionally used for agriculture are being transferred to urban use. The water right that provided irrigation for these mountain pastures near Kremming, Colorado now provides water for the Denver area.

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The availability of our most precious resource – water – is often taken for granted in the semi-arid west. Times of drought and flood focus attention on water resources, but it is our system of laws and regulations that protect individual and community rights.

History of Colorado Water Law: Adaptation & Change

Introduction

Colorado water law rests on a foundation of 143 years of territorial and state law. These laws prove a basic proposition time and again. Water is a public resource, and water law evolves with the customs and values of the people.

The story of Colorado water law is one

receive an average of less than 12 inches of precipitation each year. In contrast, mountainous regions may receive more than 40 inches of precipitation annually. The timing of precipitation also varies throughout the year. Rivers may flood with the rush of spring snowmelt, or dry up during hot

Water is a limited resource, vital to Colorado. The Colorado census of 1861 reported slightly over 26,000 persons. By 2003, the state's population had grown to some 4.4 million. Still, natural limitations on the state's water resources have not changed.

of adaptation and change. Territorial law that started out to promote mining and irrigation has turned into state law that serves a multitude of human and environmental needs.

Water is a limited resource, vital to Colorado. The Colorado census of 1861 reported slightly over 26,000 persons. By 2003, the state's population had grown to some 4.4 million. Still, natural limita-

summers interrupted only by the occasional thunderstorm.

In light of water's scarcity and value in this arid region, Colorado water law must guarantee security, assure reliability, and create flexibility in the development and protection of water resources.

- Security resides in the law's ability to identify and protect water rights;
- Reliability is assured by the system's capacity to administer and enforce water rights over time; and,
- Flexibility allows water rights to be leased, changed, transferred, sold or exchanged.

This Citizen's Guide is designed to provide a comprehensive and balanced overview of Colorado water law. It is for educational purposes only and is not intended to substitute for legal or engineering advice regarding Colorado water law or water rights.



The first diversion of the Colorado River, Rocky Mountain National Park.

The Colorado General Assembly

The Colorado General Assembly is comprised of the House of Representatives (65 members) and the Senate (35 members). The General Assembly meets in regular session from January to mid-May each year. The House and Senate Committees on Agriculture and Natural Resources consider most water-related legislation. If state funding is involved, the appropriations committees of the House and Senate also consider water-related bills. Follow the legislative process and even listen to hearings and floor proceedings by visiting the General Assembly's Web site at www.leg.state.co.us

Statute – A law enacted by a legislative body, such as the U.S. Congress or the Colorado General Assembly.

Riparian – Referring to land or habitat immediately adjacent to the stream channel.

tions on the state's water resources have not changed.

Many areas of Colorado receive little natural precipitation. The average yearly precipitation in Colorado is some 17 inches, although there is substantial variation across the state. For example, the San Luis Valley and parts of south central Colorado

Native American and Hispanic Water Uses

Water scarcity has always been a fact of life in the Americas. The relatively new science of paleohydrology (i.e., the archeological study of ancient water structures) has uncovered ditches, reservoirs, and

History of Colorado Water Law: Adaptation & Change

fountains crucial to native peoples for water supply and worship.

Here in Colorado, paleohydrologists have discovered that mounded areas at Mesa Verde National Park – once thought to be dance platforms – were actually reservoirs positioned to intercept runoff. Survival in this arid region necessitated the construction of these prehistoric water works.

Hispanic peoples from northern New Mexico who first settled in Colorado's San Luis Valley brought with them the tradition of community irrigation ditches, known as acequias (pronounced ah sek e ahs). More than 300 acequias operated in New Mexico by the 1800s. Today in Colorado, the oldest continuous water right is the 1852 People's Ditch of San Luis, diverting water from Culebra Creek in Costilla County.

Colorado's Early Territorial and State Law

In 1861, when Congress created the Colorado Territory, Colorado's settlement and growth depended on the ability of its citizens and businesses to obtain property rights to federal territorial lands. Accordingly, the first territorial legislature enacted land and water laws taking the broadest possible approach towards settlers' rights.

Yunker v. Nichols was the Territorial Supreme Court's first major water law decision. The court held that water could be diverted from the stream, and ditches built across public and private land to convey water to its place of beneficial use.

Chief Justice Moses Hallett proclaimed that "in a dry and thirsty land it is necessary to divert the waters of the streams from their natural channels." Justice Wells added that Colorado water law is based on "the force of necessity arising from local peculiarities of climate."

The court decided that Colorado law broke away entirely from the water law framework followed in many other areas of the country, known as the Riparian



This aerial view shows the restored Far View Reservoir (above) in Mesa Verde National Park. Formerly known as "Mummy Lake" and thought to be an ancient dance pavilion, recent research has shown it was actually an important water storage facility for the native Pueblo people dating from AD 950-1180. Before the structure was restored, cowboys (at left, ca 1915) would water horses there while riding on Chapin Mesa.

Doctrine. Under riparian law, those with land next to the stream have a water right for that stream. However, in Colorado, just because you own land next to the stream, does not necessarily mean you have the right to use its water.

Federal law also made public land and water available for private use. In 1862, Congress adopted the Homestead Act. It followed with the 1866 Mining Act and subsequent federal statutes that allowed settlers to build ditches and reservoirs and divert water on public lands. Congress did not enact a federal water law. Instead, it allowed the territories and states to create their own water law by statutes and court decisions.

Over time, these founding legal principles have evolved into a framework of water law known as the Colorado Doctrine.

The Colorado Doctrine

The Colorado Doctrine is a set of laws regarding water use and land ownership, adopted by the people of Colorado starting in the 1860s. It defines four essential principles of Colorado water law:

- 1) All surface and groundwater in Colorado is a public resource for beneficial use by public agencies and private persons;
- 2) A water right is a right to use a portion of the public's water resources;
- 3) Water rights owners may build facilities on the lands of others to divert, extract, or move water from a stream or aquifer to its place of use; and,
- 4) Water rights owners may use streams and aquifers for the transportation and storage of water.

Basics of Colorado Water Law

The Prior Appropriation System

A legal framework called the prior appropriation system regulates the use of surface water in rivers and tributary groundwater connected to the river basin. This system is mandated by Colorado's Constitution. It is also referred to as the "priority doctrine."

Tributary Groundwater

Tributary groundwater is found below the Earth's surface. It is hydrologically connected to a river and is often called shallow groundwater. The interaction between streams and tributary groundwater occurs in three basic ways:

- 1) Streams gain water from inflows of shallow groundwater;
- 2) Streams lose water to aquifers via outflows from the stream; or
- 3) Streams do both by gaining water from aquifers in some reaches and losing it to aquifers in other reaches.

Water added to a shallow groundwater system can increase the flow of the surface stream; conversely, well pumping can deplete the surface stream. An aquifer is a water-bearing geological formation. Inflows to an aquifer, also called recharge, occur when surface water percolates through soil or geologic fractures into the aquifer. Discharge is the contribution of water from the aquifer to the surface stream or spring. Storage refers to the capability of the aquifer to hold water for a period of time.



An irrigation headgate near Kremmling, Colorado controls the amount of water diverted from the Colorado River.

Diversion or Divert – Remove or control water from or within its natural course or location, by means of a water structure such as a ditch, pipeline, boat chute, reservoir, or well.

Injury – The action of another that causes or may cause the holders of decreed water rights to suffer loss of water in the time, place, and amount they are entitled to use that water.

To better understand how this system works, let's begin word-by-word.

Prior

Water users with earlier water rights decrees (senior rights) have better rights in times of short supply, and can fill their needs before others (junior rights) can begin to use water. The phrase "first in time/first in right" is a shorthand description of the prior appropriation doctrine.

Appropriation

Appropriation occurs when a public agency, private person, or business places water to a beneficial use according to procedures prescribed by law. Only previously unappropriated surface or tributary groundwater can be appropriated. The appropriator must have a plan to divert, store, or otherwise capture, possess, and control the water for a beneficial use.

System

The prior appropriation system provides a legal procedure by which water users can obtain a court decree for their water rights (see Water Courts p. 12). This process of court approval is called adjudication. Adjudication of a water right sets the priority date of the water right, its source of supply, amount, point of diversion, type and place of use. It also confirms that this water right will not cause injury to existing water rights holders.

There are two basic types of prior appropriation water rights: direct flow rights and storage rights. The first takes water directly from a stream to its place of use. The second puts water into a reservoir for later use.

The prior appropriation system also lays out an orderly procedure so that state officials can distribute water according to decreed water right priority dates, shutting off junior rights as needed to satisfy senior rights. The only exceptions to this

order of priority occur when there is an approved replacement water supply plan in place that would allow out-of-priority diversions (see Augmentation Plans, Exchanges, and Substitute Supply Plans p. 15-17), because of a statutory exemption from administration (see Exempt and Non-Exempt Wells p. 17), or in instances of a futile call (see Futile Call p. 32).

Beneficial Use

Beneficial use is the basis, measure, and limit of a water right. Colorado law broadly defines beneficial use of water as a lawful appropriation that employs reasonably efficient practices to put that water to use without waste.

What is reasonable depends on the type of use and how the water is withdrawn and applied. The goal is to avoid water waste, so that the water resource is available to as many water rights holders as possible.

Over time, the uses of water considered "beneficial" have increased in response to the changing economic and community values of Colorado's citizens. Recognized beneficial uses now include among others:

- Colorado Water Conservation Board instream flows
- Commercial
- Domestic
- Dust suppression
- Fire protection
- Fish and wildlife culture
- Flood control
- Industrial
- Irrigation
- Mined land reclamation
- Municipal
- Nature centers
- Power generation
- Recreation
- Recreational in-channel diversions
- Release from storage for boating and fishing
- Snowmaking
- Stock watering

Domestic Preference

The Colorado Constitution provides in times of shortage that domestic water use has preference over any other purpose, and that agricultural use has preference over manufacturing use.

In an early 20th century court case pitting a junior municipal use against a senior irrigation use, the Colorado Supreme Court said that this provision did not intend to alter the priority system. However, it does give municipalities the power to condemn water rights, if the owners of those water rights are paid just compensation. For example, in 1911 the City of Grand Junction used this power to condemn water rights others had previously held on Kannah Creek. A Colorado statute regulates how cities may use their water rights condemnation power.

According to 2002 estimates from the Colorado Office of the State Engineer, municipal and domestic use currently amounts to about 6.7 percent of water delivered for use in Colorado; agriculture 86.5 percent; industrial and commercial 1.9 percent; recreation and fisheries 3.0 percent; augmentation 1.0 percent; and recharge of groundwater aquifers 0.9 percent.



Up to half of all annual household water goes to watering lawns. Plant selection and proper management can greatly reduce this demand.

Colorado's prior appropriation doctrine has evolved to include beneficial uses that were previously thought to be incompatible with Colorado's constitution. In 1973, for example, the State Legislature recognized the "need to correlate the activities of mankind with some reasonable preservation of the natural environment." To accomplish this, it created the Instream Flow Program within a state agency, the Colorado Water Conservation Board (CWCB).

Newly-appropriated instream flows are

the minimum stream flows or lake levels needed to preserve the natural environment to a reasonable degree. The CWCB currently holds instream flow rights on 8,500 miles of Colorado streams and 486 lakes.

In 2002, the Legislature enacted a new law allowing the state to also acquire senior water rights for more than minimum stream flows, to improve stream conditions. The CWCB is the only entity legally permitted under state law to hold instream flow water rights.

Basics of Colorado Water Law

Another example of the evolution of the prior appropriation doctrine occurred in 2001, when Colorado legislators adopted a statute that provided cities, counties, and water districts the opportunity to obtain water rights for recreational in-channel diversions for boating and kayaking. The water amount allowed is the minimum necessary for a reasonable recreational experience. The CWCB consults and makes recommendations to the water

court regarding these applications.

Entities that have obtained recreation-related flow decrees in the past, or are in the process of obtaining them, include Aspen, Breckenridge, Fort Collins, Eagle River Water and Sanitation District, Golden, Littleton, Pueblo, and the Upper Gunnison River Water Conservancy District.

Water Waste and Return Flows

In Colorado, a water right is a special

kind of property right known as a usufructuary right. Usufructuary means having the right to use a resource without actually owning it. Ownership of the water resource always remains in the public domain under Colorado law.

The saying that a water appropriator must “use it or lose it” reflects only one facet of a usufructuary right. This simply means that if you do not need to use all or part of your decreed right, the water goes to those who can use the water beneficially, according to the priority date specified in their water right decrees.

Colorado Supreme Court water law decisions state that a water user may not take from the stream any more water than is needed for beneficial use at the time the actual diversion is made, despite the amount allowed on the face of the water right decree. To divert more water than is needed for beneficial use is water waste, and water waste cannot be included within the measure of a water right.

What defines need for beneficial use? Need is a combination of the amount required to move water to the place where it will be used, and the amount needed for beneficial consumptive use.

For example, agricultural water use can be 20 to 75 percent consumptive, depending on soil type, crop planted, geographic location, or irrigation method. Municipal use varies from 5 percent consumptive during the winter, to 50 percent consumptive during summer landscape irrigation.

Beneficial consumptive use over a representative historic time period is the measure and limit of a water right. However, it is calculated by volume of acre-feet only when a water right is changed to another type of use, point of diversion, or place of use.

Many types of water use produce ground or surface water return flows. Some examples of return flows are water that percolates below the root zone of a crop and into the shallow groundwater, water seeping from unlined earthen ditch-

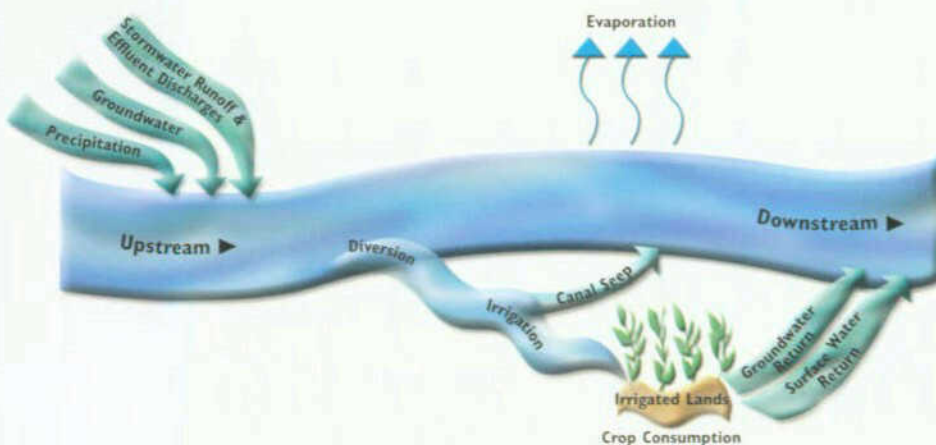
Efficiency of Water Diversions

Colorado water law requires reasonably efficient methods of diversion. For municipal use, Colorado law favors pipelines as a reasonable means to convey water. For agricultural use, unlined irrigation canals and reservoirs of all types – despite the seepage and evaporation they cause – are also considered reasonably efficient. The present law adopts such a stance, in part, because seepage recharges aquifers and streams and because evaporation accompanies reasonable methods of conveyance and storage.

Conjunctive Use

One way water rights may be used more efficiently is through conjunctive use. Conjunctive use involves coordinated use of surface and groundwater to meet water needs more efficiently.

For example, as part of a conjunctive use project, water courts may issue decrees for storage of water in groundwater aquifers. Water managers can use wells or unlined ponds to transfer surface water into a groundwater aquifer for storage and later extraction and use, or to generate “credits” for out-of-priority well pumping.



Irrigation diversions can take away then return water to the stream system. Streams also receive inputs from natural sources – precipitation and groundwater – and from municipal and industrial discharges.

es, or discharges from wastewater treatment plants, among other sources. Return flows are important for satisfying downstream water rights, providing instream flows, and delivering water for interstate compacts (see Interstate Compacts p. 22).

Many water rights depend on surface and subsurface return flows. Under Colorado case law, return flows are not wasted or abandoned water. Junior water users cannot intercept return flows upon which senior water rights depend, unless they replace them with another water supply of suitable quantity and quality for the historic use of the senior rights. This is because decreed water rights are entitled to maintenance of the same stream conditions that existed at the time the appropriation began. However, if the water is imported into a river basin via an entirely different source, that water can be used and reused to extinction.

Over-Appropriation

A watershed or stream segment is considered over-appropriated if the water court has approved more water rights decrees on that stream than there is water actually available. Water availability is determined by physical and legal constraints. Physical constraints refer to the water supply available from natural stream flows and tributary aquifers. Legal constraints refer to the amount of water already placed to use by senior water rights within Colorado, and the water Colorado must allow to flow downstream and out of the state to fulfill interstate water compacts or U.S. Supreme Court equitable apportionment decrees (see Interstate Compacts p. 22).

By the late 1960s, if not before, it became apparent that the South Platte, Rio Grande, and Arkansas Rivers within Colorado were reaching over-appropriated status. This spurred increased use of groundwater, conservation, reuse of imported water, change of agricultural rights to municipal use, water exchanges, and augmentation plans (see



During 2002, rivers across Colorado experienced record low flows, including Cochetopa Creek (above) near Gunnison. Tree ring data suggests that the spring and summer of 2002 may have been the driest in more than 300 years.

Abandonment of Water Rights

Prior appropriation water rights are presumed to have been abandoned if they are not exercised during a 10-year period. Owners of water rights may rebut this presumption in water court, by showing intent not to abandon. All or a part of a water right can be declared abandoned through a water court process. The State Engineer compiles a periodic ranking list of active decreed water right priorities and an abandonment list.

Augmentation Plans, Change of Water Rights, and Exchanges, p. 15-17).

In addition to conditional and perfected appropriations, provisions of the 1969 Water Right Determination and Administration Act address court approval of water exchanges, changes of water rights, and augmentation plans. These provisions allow newer uses of water, such as municipal, environmental, and recreational uses, to come into being and operate even though a basin is over-appropriated. This occurs only because water court decrees for new or changed uses contain provisions to protect against injury to other water rights.

Consumptive Use – Water use that permanently withdraws water from its source; water that is no longer available because it has evaporated, been transpired by plants, incorporated into products or crops, consumed by people or livestock, or otherwise removed from the immediate water environment.

Return Flow – Water that returns to streams and rivers after it has been applied to beneficial use. It may return as a surface flow, or as an inflow of tributary groundwater.

Developed or Imported Water – Water brought into a stream system from another unconnected source, for example, transmountain surface water or nontributary well water. This type of water can be reused to extinction, or used in augmentation or exchange plans.

Deep Groundwater

Different Types of Groundwater

Coloradans rely heavily on pumping of deep groundwater for a variety of municipal, agricultural, industrial, and other uses. Deep groundwater refers to aquifers geologically confined such that they have no measurable connection to surface waters.

Because it is not connected to the surface stream, use of this water is not regulated by the prior appropriation system. In fact, deep groundwater requires different management than surface streams and tributary groundwater.

Tributary groundwater is recharged from precipitation and seasonal runoff. Deep groundwater is not readily replenished.

Groundwater pumping at a rate in excess of annual recharge creates what is called a mining condition. Unless the rate of pumping is regulated, mining will ultimately lower groundwater levels to a depth where water can no longer be withdrawn economically.

In Colorado, deep groundwater is divided by statute into three categories: (1) designated, (2) nontributary, and (3) Denver Basin groundwater. Geothermal groundwater is another classification of groundwater; it can be tributary or nontributary and is regulated by the Geothermal Resources Act.

Designated Groundwater

Managed by the Colorado Ground Water Commission, designated groundwater is water not used to recharge or supplement continuously flowing surface streams under natural conditions.

In 1965, the Legislature authorized the Colorado Ground Water Commission to create designated groundwater basins. These are areas where groundwater has historically been the predominant water supply, primarily along the Front Range and eastern Colorado.

There are currently 8 designated basins located on Colorado's eastern plains: Kiowa Bijou, Southern High Plains, Upper Black Squirrel Creek, Lost Creek, Camp Creek, Upper Big Sandy, Upper Crow Creek, and the Northern High Plains.

Colorado Ground Water Commission

The Colorado Ground Water Commission is the regulatory and permitting agency authorized to manage and control groundwater use in designated groundwater basins. It may hold rulemaking and court hearings, subject to judicial review. Its web site address is www.water.state.co.us/cgwc

The Commission has 12 members, nine appointed by the governor, and three others consisting of the directors of the Department of Natural Resources, Colorado Water Conservation Board, and the Division of Water Resources.

For a detailed description of the well permit application process, different types of wells, and other subjects related to groundwater management, see the *Guide to Colorado Well Permits, Water Rights, and Water Administration*, published by the Colorado Division of Water Resources.

Nontributary Groundwater

Nontributary groundwater is water outside of a designated groundwater basin whose pumping will not affect surface water levels within 100 years. As specified in the 1965 Ground Water Management Act, it is available to the overlying landowner at a rate of 1 percent per year, assuming a 100-year life of the aquifer. It is important to note that this is not a determination that the aquifer could actually provide the permitted well with a 100-year water supply. This assumption is only used to calculate an annual pumping rate.

Tributary Groundwater – Water below the Earth's surface that is hydrologically connected to a river. Deep groundwater is not connected to a river.

Ground Water Management Districts – Local districts formed to consult with the Ground Water Commission on groundwater use in designated basins. There are 13 districts in Colorado.



Colorado Designated Groundwater Basins

Geothermal Resources

All subsurface geothermal fluids are considered part of the state's groundwater resources and are subject to the Colorado Geothermal Resources Act. Use of this resource requires a permit from the State Engineer, as with all other types of groundwater extraction.

Not Nontributary and Nontributary Denver Basin Groundwater

Denver Basin groundwater refers to deep groundwater within the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers. There are two types of Denver Basin groundwater, not nontributary and nontributary. Both are allocated to overlying landowners like nontributary water, at a rate of 1 percent per year assuming a 100-year life of the aquifer.

However, pumping of either resource requires some of the water to be put back into the surface stream, because the General Assembly presumes by statute that there might be some hydraulic connection between these aquifers and the South Platte Basin.

Groundwater Use Rights

According to the 1965 Ground Water Management Act, every new well in the state of Colorado that diverts tributary, nontributary, Denver Basin groundwater, or geothermal resources must have a permit. Groundwater use rights depend on the source of the groundwater and the type of beneficial use.

In order to obtain a permit to drill a well, one must file an application with the Colorado Division of Water Resources, also known as the State Engineer's Office. To obtain a water right decree for tributary groundwater, one must file a well permit application and submit other required documentation to the regional water court.

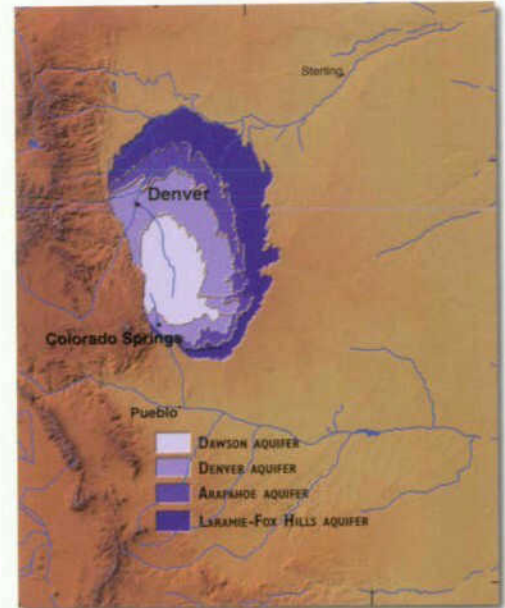
When well permit applications are submitted, division staff determine the amount of groundwater available, the potential for groundwater use to injure other existing water rights, and if the withdrawal will not be unreasonably wasteful. The State Engineer also has authority to adopt and amend tributary, nontributary, and Denver Basin groundwater regulations that are subject to court review.

The designated groundwater permit

system was designed to protect and maintain reasonable groundwater pumping levels. The Division of Water Resources assists the Colorado Ground Water Commission in reviewing designated groundwater permit applications.

Designated groundwater is allocated and administered in a coordinated manner by the State Engineer's Office, Colorado Ground Water Commission, and local Ground Water Management Districts.

Nontributary groundwater and Denver Basin groundwater is allocated to the overlying landowner and can be withdrawn at a rate of 1 percent a year, based on an assumed 100-year supply. The Ground Water Commission issues permits for the designated portions of the Denver Basin. The regional water court



The Denver Basin Aquifer System (above) is comprised of four aquifers that lie under the plains east of the mountains.

Denver Basin Aquifer System

Water in the four Denver Basin bedrock aquifers is allocated to overlying landowners at a withdrawal rate of one percent per year until exhausted.

The Colorado Geological Survey estimates that up to 292 million acre-feet of water lies in the 6,700 square-mile Denver Basin, although less than one-third of that may be economically recoverable. New communities, homeowners, and other landowners in the southern Denver metropolitan area have begun to depend heavily on this finite resource.

issues decrees for the non-designated portions of the Denver Basin.

Current statutes allow public entities, such as cities and water districts, to claim and use Denver Basin groundwater underlying the lands of others, if the entity makes water service available to the landowners, and if the landowners have not already claimed the groundwater rights by obtaining a court decree or a well permit from the State Engineer.

The Denver Basin statutes and rules are in place because the General Assembly recognized that deep groundwater is of great economic importance to overlying

landowners and to local public water suppliers, and therefore should be available for present and future use, to the extent it exists.

Geothermal resources are administered and managed according to the "Geothermal Well Rules."

Water Rights and Decrees

Monthly Water Resumes

Each water court publishes a monthly resume of the applications it has received, both in newspapers and by mailing individual copies to persons on the water clerk's mailing list. This is how the citizens of Colorado are informed of pending water cases.

The Colorado Courts post all seven water court division monthly resumes on the Colorado Courts' Web site at www.courts.state.co.us

Statements of Opposition

Owners of water rights may file a statement of opposition to any water right application they think might cause injury to their water rights. A statement of opposition must be filed within 60 days of when notice of the application appears in the resume. Any citizen may oppose a water rights application, but Colorado law does not allow citizens to raise questions of injury to water rights they do not own. The State and Division Engineers can file a statement of opposition to any application. Colorado law generally does not allow opposition on public interest or environmental grounds.

Water court forms for applications and statements of opposition are maintained at the local water clerk's office and on the Colorado Courts' Web site at www.courts.state.co.us

Water Courts

Starting with an 1879 statute, the Colorado General Assembly assigned the duty of setting water right priority dates and amounts to the courts. This differs from almost all other western states, which use a permit system. A water court decree confirms a water right, but does not create it. Actual application of water to a beneficial use creates a water right.

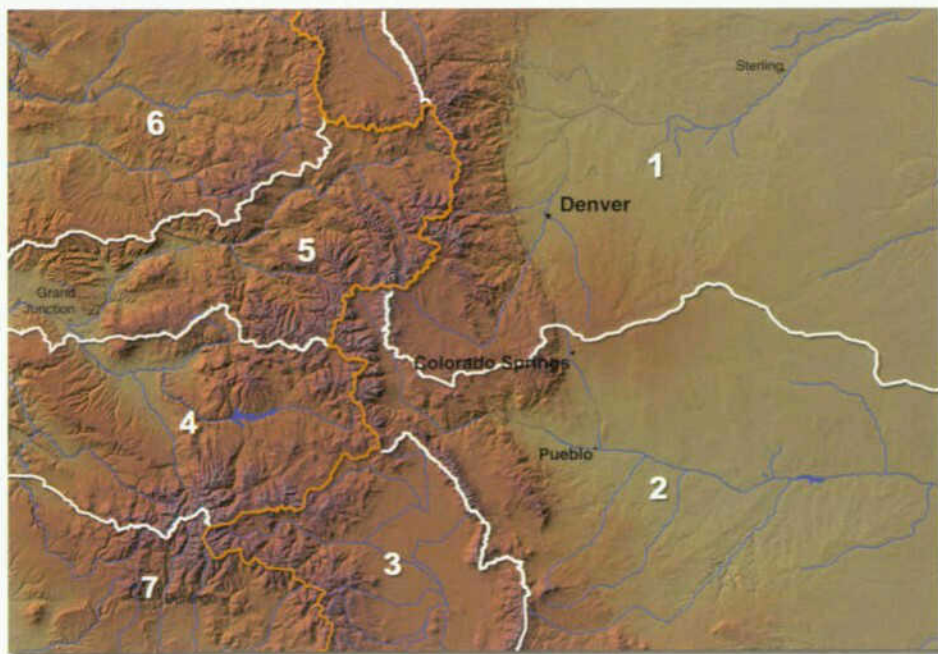
In 1969, the Legislature created seven water divisions based on the major watersheds of the state. The water court for each division is headquartered in the following locations:

- Greeley: South Platte River Basin
- Pueblo: Arkansas River Basin
- Alamosa: Rio Grande River Basin
- Montrose: Gunnison, Little Dolores, and San Miguel River Basins
- Glenwood Springs: Colorado River Mainstem
- Steamboat Springs: Yampa, White, and North Platte River Basins, and
- Durango: San Juan River Basin and portions of the Dolores River.

In Colorado, water courts have jurisdiction over all water right decree applications for surface water, tributary groundwater, nontributary, Denver Basin groundwater outside of designated groundwater basins, and geothermal resources. In addition, they review cases of reasonable diligence for conditional water rights, changes of water rights, exchanges, and augmentation plans, and appeals from State or Division Engineer enforcement orders.

Water courts also have jurisdiction to review cases where the state and division engineers have refused to enforce reductions or shutdowns of undecreed water uses or decreed junior water rights after a "call" was placed by a senior water right (see *The Workings of a River Call*, p.18). Appeal of any water court decision goes directly to the Colorado Supreme Court.

Water courts set the priority date for



Colorado Water Divisions

- Division 1 – South Platte River
- Division 2 – Arkansas River
- Division 3 – Rio Grande River
- Division 4 – Gunnison, San Miguel and portion of the Dolores River
- Division 5 – Colorado River
- Division 6 – Yampa, White and North Platte Rivers
- Division 7 – San Juan, Animas and portion of the Dolores River

water rights decrees based on the year in which the application is filed, and, within that year, the date when the water appropriation was initiated.

In decreeing water rights priorities, Colorado water courts are not free to choose between different types of beneficial uses. They are also not allowed to deny water right applications based on public interest or environmental grounds.

The public trust doctrine is not recognized in Colorado, although the Colorado Supreme Court has ruled that the Colorado Water Conservation Board has a legal responsibility to the people of Colorado to enforce its instream flow water rights.

Water Rights

All water in Colorado is a public resource known as "water of the state." In creating water rights, Colorado law distinguishes between waters of the natural stream, which includes surface water and tributary groundwater, and deep groundwater, which includes designated groundwater, nontributary groundwater, and Denver Basin groundwater.

Obtaining a Decree for a Conditional Water Right

A new water user can no longer appropriate water by simply going out to the stream and digging a diversion ditch. Modern water projects involve a complex process of planning, permitting, engineering, and financing.

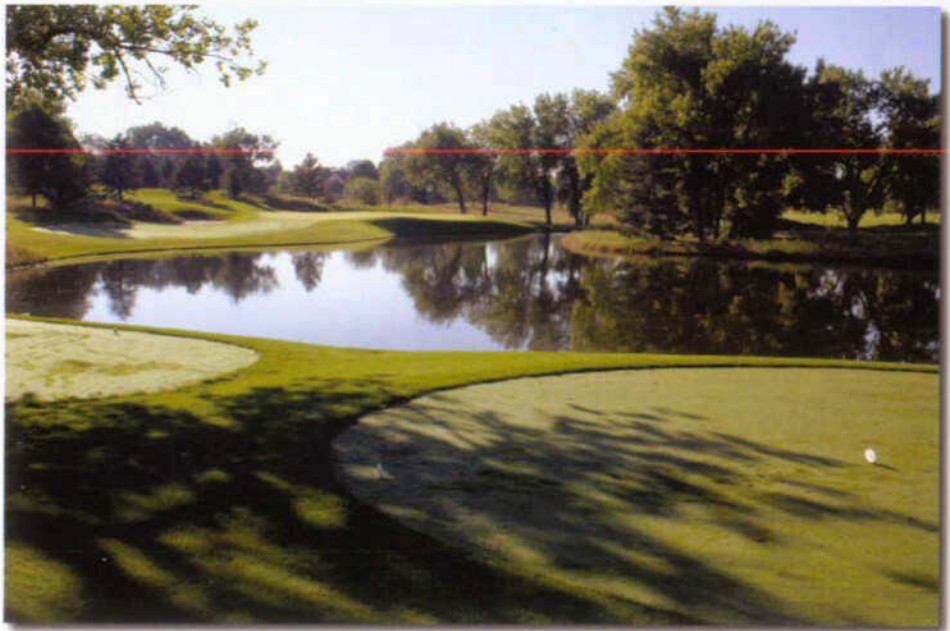
To allow time for these efforts, while also holding a date in the priority system, waters users apply for conditional water right decrees. A conditional decree holds a date in the priority system, which is then finalized when the water is actually put to beneficial use.

To obtain a conditional water right decree, the applicant must show there is still unappropriated water available, taking into account the historic exercise of

decreed water rights. In the over-appropriated watersheds of Colorado, such as the South Platte, Arkansas and Rio Grande basins, an individual with a new water use may still obtain a water decree, but the water may only be available during a small part of the year, or only in some years. Greater reliability can be gained by obtaining a decree for an out-of-priority diversion using an augmentation plan (see Augmentation Plans p. 16) or by changing existing water right decrees (see Change, Sale, and Transfer of Water Rights p. 15).

Obtaining a court decree for a conditional water right can be a complex pro-

Public Trust Doctrine – A doctrine of state ownership of stream and lakebeds that has been applied, most notably in California, to preserve water flows and in some instances cut back on historic diversions, in order to sustain fish and wildlife habitat and recreation.



Building golf courses in the semi-arid west can create substantial water use issues, but proper planning, construction and management, as well as the use of water not suitable for human consumption, can reduce the demand on water supplies.

cess, although individuals may choose to proceed through the trial of a water case without a lawyer. Corporations may appear before the water judge only through an attorney. Generally, applicants seek both legal and water engineering advice.

The following steps for obtaining a decree for a conditional water right are provided as a guideline. They are not intended to address all situations. The Colorado Courts Web page contains application forms for the various types of water



Early irrigation project near Eaton, Colorado.

Water Rights and Decrees

Different Types of Decrees and Water Rights

Absolute Decree: a water court decree recognizing that a water right has been perfected, or made real, by placing previously unappropriated water to a beneficial use.

Augmentation Decree: a water court decree that allows a water user to divert out of priority by replacing water depletions made to the stream system.

Change of Water Rights Decree: a water court decree that allows a different use, different point of diversion, or different place of use, while retaining the senior priority of the original water right. The water consumption under the change is limited to the beneficial historic consumptive use of the original water right based on a representative time period, maintenance of the historic return flow pattern, and other conditions necessary to prevent enlargement of the water right or injury to other water rights.

Conditional Decree: a water court decree recognizing a priority date for a new proposed appropriation. The priority becomes fixed when the water is actually placed to beneficial use. The applicant for a conditional decree must show that there is unappropriated water available, and must have a plan to divert, store, or otherwise capture, possess, and control the water. To continue to hold a conditional decree, the potential water user must prove to the court that he or she is making diligent progress towards putting the water to a beneficial use. A holder of a conditional decree must show diligence every six years after issuance of the original conditional

decree or issuance of the most recent diligence decree.

Direct Flow Right: a right that takes its water directly from the surface stream or tributary groundwater for application to beneficial use. It is expressed in cubic feet per second of flow (cfs).

Exchange Decree: a water court decree that allows an upstream diverter to take the water that would usually flow to a downstream diverter. The upstream diverter must provide the downstream diverter with a suitable replacement supply of water, in amount, timing, and quality, from some other source.

Federal Reserved Right: a right to previously unappropriated water expressly created by federal law. Federal reserved rights may also be created by implication, meaning that even if such rights were not named explicitly, Congress implied that it was necessary to reserve water rights for use on federal lands such as tribal reservations, national parks, forests, and monuments (see Federal Reserved Water Rights, p. 24).

Instream Flow Water Right: a water right held by the state to protect or improve the water-dependent natural environment.

Recreational In-channel Diversion Right: water right held by a local governmental entity for structures that control the flow of water for boating and kayaking.

Storage Right: a right to impound water in priority for later use, expressed in number of acre-feet of water that the reservoir or storage vessel can hold.

applications at www.courts.state.co.us

To initiate a surface or tributary groundwater right and obtain a conditional decree, the water user must:

- 1) Intend to divert previously unappropriated water;
- 2) Demonstrate this intent openly, for example, by conducting field surveys, posting notice at a diversion point, or filing for a well permit application;
- 3) File an application with the regional water court. The year in which the application is filed sets the date of priority;
- 4) Publish the application through the water division monthly water resume and by legal notice in local newspapers;
- 5) Allow two months for other parties to file statements of opposition;
- 6) Colorado Division of Water Resources engineers at the local Division Engineer's Office review the application;
- 7) Staff from the Division Engineer's office, generally the local water commissioners, perform field investigations to confirm the claims in the application;
- 8) Division Engineer submits a written report to the regional water court, with recommendations;
- 9) If there is no opposition, the application is reviewed by a water court referee who then issues a ruling;
- 10) If no protest is filed, the referee's ruling goes before the water court judge and he/she signs it in the form of a decreed water right.
- 11) If there is a protest, the case goes before the water court judge for trial, unless the parties can reach agreement. In that instance, the water court may enter an agreed-upon decree.

Access for Building and Operating Water Facilities

The right to cross another person's land to construct, maintain, and operate a water facility, such as a reservoir, ditch, or

headgate, has always been an essential feature of Colorado water law. Maintenance may include activities such as cleaning of ditches, weed control, or monitoring water diversions, among others.

Those who interfere with the operation of a water facility, damage it, or prevent access for those who own the structure, are subject to trespass lawsuits, payment of damages, and restoration of the structure.

If applying for a new water right, the applicant must have the necessary legal interest in the land where the water facilities will be built, or show that he or she can obtain it. If the landowner does not consent, the Colorado Constitution and statutes provide a private right of condemnation across the lands of others for the construction and operation of water facilities, such as pipelines and reservoirs, upon payment of just compensation to the property owners.

Consent is also typically required when a governmental entity owns the land. This is usually obtained through a permit process.

Exchanges

A water exchange can occur within the prior appropriation system. An exchange allows an upstream diverter to take water a downstream diverter would otherwise receive, if the water is replaced at the time, place, quantity, and suitable quality the downstream diverter enjoyed before the exchange. The four critical requirements for a water exchange are: (1) the source of substitute water supply must be upstream of the senior diversion calling the water; (2) the substitute water supply must be equivalent in amount and of suitable quality for the downstream senior; (3) substitute water must be from legally available flows; and (4) the water rights of others cannot be injured when implementing the exchange.

Court approval of an exchange assigns it a priority in relation to other water rights and exchanges operating in the same stream reach. But, the State Engineer

Historical Excess in Granting Conditional Decrees Brings About the “Can and Will” Requirement

Historically, many early conditional water right decrees awarded in Colorado were in excess of the amount necessary for the petitioner’s true beneficial use. Old decrees may have allowed for diversion amounts not actually available under natural conditions, or did not take into account the fact that senior water rights were already diverting and using all of the available water. Some decrees even went so far as to grant more water than a particular ditch could carry.

In 1979 the General Assembly adopted the “can and will” requirement for conditional water rights decrees. It requires the applicant to show that there is unappropriated water available, and that the applicant can and will place the water to a beneficial use with diligence and within a reasonable time.

may allow a water exchange without a court decree, if water is available in priority and the exchange will not cause injury to other water rights. A water exchange may decrease water flows into a particular stream segment in return for placing the water in another stream segment.

Change, Sale, and Transfer of Water Rights

Colorado water law provides a market for water rights. A water right holder may change the water right to another type and place of use, retaining its priority date. However, the change is (1) subject to obtaining a court decree, (2) measured by the decreed water right’s historic beneficial consumptive use in time and quantity, and (3) must include conditions preventing enlargement of the water right or injury to other water rights.

A critical component of the change of water right procedure is measurement in acre-feet of the amount of water historically put to beneficial consumptive use. No more than that amount of water consumed under the prior right may be consumed under the changed right. In this way, the new right removes from the stream system no more water than was consumed beneficially by the old. However, given conditions in the decree to protect against injury to other water rights, the priority date of the decreed original right will still

be maintained so that it may be utilized in different uses and locations. Ditch companies may adopt bylaw restrictions against transferring water out of the ditch system.

In 2003, the Legislature established water banks in each of Colorado’s seven water divisions. Upon request by a sponsoring governmental entity in the water division, the State Engineer will create rules for operation of the bank. This legislation allows a farmer to lease, loan, or exchange legally stored water for payment, without losing the water right or permanently selling it. Direct flow water rights are not included in the bank, only storage rights.

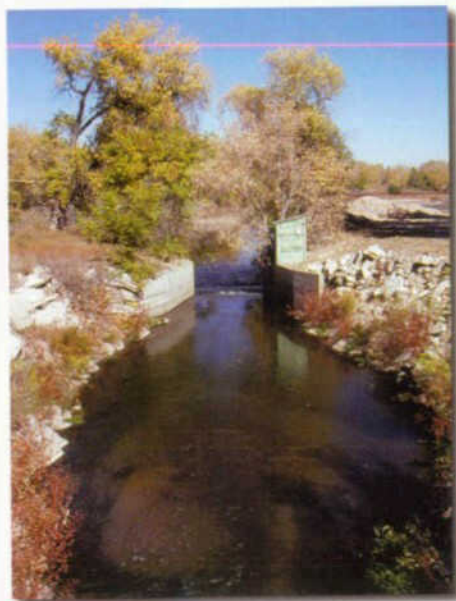


The headwaters of the Colorado River (above) are in Colorado Water Division Five.

Water Rights and Decrees



Siebring Reservoir (above) and the Lower Latham Ditch in northern Colorado are two of the water developments used by the Central Colorado Water Conservancy District to store and convey water to the South Platte River to replace water used by member wells.



Augmentation Plans

In 1969, the General Assembly first required the development of augmentation plans. An augmentation plan is a court-approved plan designed to protect senior water rights, while allowing junior water rights to divert water out of priority.

In some areas of Colorado, residents are unable to obtain a well permit for tributary groundwater or make a surface diversion, without an augmentation plan. Augmentation plans are required for diversion of water at times when there is no unappropriated water available, in all watersheds that are over-appropriated during at least part of the year. In an over-appropriated basin, junior water rights would be shut off, unless they replace the depletions they make, when there is no unappropriated water available.

Augmentation plans allow for out-of-priority diversions by replacing the water that junior water users consume. However,

the replacement water must meet the needs of senior water rights holders at the time, place, quantity, and suitable quality they would enjoy absent the out-of-priority diversions. For example, this allows well owners with junior rights to pump their tributary groundwater wells, even when a river call has been placed (see *The Workings of a River Call*, p.18).

Replacement water may come from any legally available source and be provided by a variety of means. An augmentation plan identifies the structures, diversions, beneficial uses, timing, and amount of depletions to be replaced, along with how and when the replacement water will be supplied, and how the augmentation plan will be operated.

A person who wants to divert out of priority by implementing an augmentation plan must file an application with the regional water court. For example, some irrigators along the South Platte River and Rio Grande River have decreed augmentation plans that use unlined irrigation ditches and ponds during the non-growing season to recharge the groundwater aquifers that feed the river. In this way, they generate augmentation credits to replace depletions from out-of-priority groundwater pumping.

Under statutes adopted in 2003, the State Engineer may approve temporary changes of water rights and substitute supply plans, allowing water deliveries to continue, while water court applications for changes of water rights or augmentation plans are pending. A substitute supply plan for a junior well usually requires adequate replacement water to cover depletions of water from senior water rights.

Augmentation plans allow for out-of-priority diversions by replacing the water that junior water users consume. However, the replacement water must meet the needs of senior water rights holders at the time, place, quantity, and suitable quality they would enjoy absent the out-of-priority diversions.

Administering, Managing and Regulating Water

Administration of Water Rights: Colorado Division of Water Resources

The Colorado Division of Water Resources, which includes the State Engineer, division engineers, and water commissioners, has the authority to administer all surface and tributary groundwater in the state of Colorado.

The 1969 Act, section 37-92-501(2)(e), states that rules of the State Engineer "shall have as their objective the optimum use of water consistent with preservation of the priority system of water rights." Although Colorado statutes and court decisions appear to refer interchangeably to maximum utilization and optimum use, the Colorado Supreme Court says that Colorado water law does not require squeezing out every drop of water available. Rather, the law favors optimum use, specifically "proper regard for all significant factors, including environmental and economic concerns be taken into account."

Throughout Colorado, the holders of decreed water rights depend on the State Engineer to shut down or reduce junior decreed uses, in addition to undecreed uses, to satisfy the demand of decreed senior uses.

There is a division engineer's office located in each of the seven water divisions in Colorado. Each division office employs a number of water commissioners. It is the primary job of the water commissioners to go into the field and distribute the waters of the state. This involves monitoring headgates, responding to calls for water, issuing orders to reduce or cease diversions, and collecting data on diversions. The State Engineer operates a state-wide satellite-linked monitoring system that records stream flows on a real-time basis. This system is a vital component to water administration and flood monitoring efforts.

The State Engineer also administers nontributary and Denver Basin ground-

water under its well permit and rulemaking authority. The Colorado Groundwater Commission and local groundwater management districts administer groundwater in the designated groundwater basins (see Designated Groundwater Basins, p.10). The State Engineer has the authority to adopt and amend regulations for tributary, nontributary, and Denver Basin groundwater, subject to judicial review.

Much information regarding water administration in Colorado appears on the Division of Water Resources' Web site www.water.state.co.us

Substitute Supply Plans

Substitute supply plans allow out-of-priority diversions if sufficient replacement water can be provided to senior rights to cover depletions. Substitute supply plans are approved by the State Engineer for defined periods. In contrast, augmentation plans, which are long-term, must be approved by water court.

In 2002, the Colorado General Assembly adopted legislation allowing the State Engineer to approve substitute supply plans while augmentation plan applications are pending in water court. A specific provision of this legislation requires that notice of the substitute supply plan and water court application be provided to all opposing parties, so they can submit comments to the State Engineer's Office. In 2003, the General Assembly granted a grace period of three years for out-of-priority tributary groundwater well pumpers in the South Platte Basin to file augmentation plans in water court.

After a substitute supply plan has been reviewed, the State Engineer may also require terms and conditions to assure that operation of the plan will replace all out-of-priority depletions in time, location, and amount to prevent injury to other water rights.

In 2003, the General Assembly also gave the State Engineer authority to

Exempt and Non-Exempt Wells

There are two categories of groundwater wells: (1) exempt wells, meaning those that are exempt from water rights administration under the priority system, and (2) non-exempt wells, meaning those that are governed by the priority system.

Permits for exempt wells typically limit the pumping rate to no more than 15 gallons per minute. Examples of exempt wells include: household use only, domestic and livestock wells, pre-1972 unregistered wells, commercial exempt wells, monitoring and observation wells, and replacement wells. Exempt wells cannot be pooled to constitute a subdivision water supply. Until 1971, wells providing groundwater for domestic use were not regulated. Now, although still exempt from the priority system, they do require a permit from the State Engineer's Office.

The State Engineer does not curtail exempt wells when responding to a senior call, because the legislature presumes non-injury to other water rights due to the low amount of consumptive water use from these wells.

Non-exempt wells are governed by the priority system, and may be curtailed. These wells include any other type of well not noted above. In over-appropriated areas of the state, new non-exempt wells are required to replace out-of-priority diversions by means of an augmentation plan.

For more detail, see the *Guide to Colorado Well Permits, Water Rights, and Water Administration*, published by the Colorado Division of Water Resources.

The Workings of a River Call

In Colorado, after the streams peak from spring snowmelt, the reservoirs have filled as much as they can based on their allotment in the priority system, and stream flows start to drop, some water rights in the river system may not have sufficient water to fulfill their court-decreed diversion amount. Water users may then start to call for their water based on the priority system of "first in time, first in right."

For example, in late July, irrigator Jane is not getting enough water to irrigate her garlic farm. She has a decreed water right with a 1940 priority date. Time to place a call.

- 1) Irrigator Jane contacts her local designated ditch official, and says she needs to call for her water. She can only call for the amount of water provided in her water right decree, and only for the amount that she can actually put to beneficial use (e.g., irrigation of a crop).
- 2) The ditch official contacts the local water commissioner at the Colorado Division of Water Resources and places the initial call. Depending on the river system, a verbal call may be made, but in many cases a formal written call for water is required.
- 3) When the call comes on, the water commissioner verifies its legitimacy, then starts looking upstream to shut down all undecreed uses. Still not enough water!
- 4) The water commissioner then limits all decreed upstream users to decreed amounts of diversion. Still not enough water to fulfill irrigator Jane's 1940 water right!
- 5) Now, the water commissioner will use the priority system to look upstream from Jane's headgate diversion, for decreed users with priority dates more recent than 1940.

These users are considered "junior" and their diversions will be reduced or shut down.

- 6) Each decreed junior water user, based on their order of priority, junior to senior, is shut down until Jane gets enough water to fulfill her 1940 water right.
- 7) However, stream levels are still dropping, and now, downstream municipal user Blue City does not have enough water to fulfill its 1927 water right. Blue City places a call.
- 8) The water commissioner will go through the same process, reducing or shutting down all rights more recent than 1927 until Blue City's rights are met. This may mean that irrigator Jane will have to let water flow past her headgate to fulfill Blue City's senior downstream right.
- 9) If you don't comply, the water commissioner will lock down your headgate!

The priority date of the river call may change each day depending on the stream flow available, and the seniority of the diversions that need water on that day.

An additional consideration: Some water must be carried down river, and cannot be diverted. This could include reservoir water, trans-basin diversion water, the state's instream flow water rights, or water that must be delivered under interstate compacts or U.S. Supreme Court equitable apportionment decrees.

The Colorado Division of Water Resources keeps track of all calls for water on its Web site www.water.state.co.us

Adapted from *What Exactly is a River Call?* by Ken Beegles, Colorado Division of Water Resources, Division 7.



Administering, Managing and Regulating Water

approve emergency water supply plans and short-term water uses. This legislation requires the State Engineer to fashion conditions that will protect other water rights against injury when exercising this administrative authority. In the severe drought year of 2002, the State Engineer approved some 16 emergency supply plans.

Colorado Water Conservation Board

The Colorado General Assembly created this statewide board in 1937. Its purpose is to aid in the protection and development of the state's waters. The CWCB has 15 members. The Governor appoints eight members from each of the state's major river basins and one member from the City and County of Denver. All appointees are subject to Senate confirmation and serve three year terms. Other members of the Board appointed by virtue of office or position include the executive director of the Department of Natural Resources, attorney general, state engineer, commissioner of agriculture, and director of the CWCB.

The CWCB is responsible for flood control and protection, development of statewide water policy, and identifying and recommending water development projects, among other duties. It also makes loans and grants available for the construction of water projects.

In 1973, the State Legislature recognized the "need to correlate the activities of mankind with some reasonable preservation of the natural environment." It created the Instream Flow Program as part of the CWCB's responsibilities. Instream flows, according to legislative definition, are the flows or lake levels needed to preserve or improve the natural environment to a reasonable degree.

Citizens can follow CWCB activities and find other useful information on its Web site at www.cwcb.state.co.us



Trout are among the species that benefit from the CWCB's Instream Flow Program.

Instream flows, according to legislative definition, are the flows or lake levels needed to preserve the natural environment to a reasonable degree.

Local and Regional Water Management Agencies

Local water management agencies include water conservancy districts, water conservation districts, groundwater management districts, water and sanitation districts, towns and cities, and irrigation districts. Legislation for each of these types of water management entities spells out their roles and authority.

Water conservancy districts are local government agencies originally created to construct, pay for, and operate water projects. There are 51 water conservancy districts in Colorado. A conservancy district may issue bonds and levy taxes and user fees.

A water conservation district is a local policy-making body that the General Assembly created directly by statute to protect and develop the waters to which Colorado is entitled. Each conservation

district covers a large geographical area and has a number of conservancy districts within it. Conservation districts also have the power to issue bonds and levy taxes and user fees.

There are currently three conservation districts in Colorado: Colorado River Water Conservation District, Rio Grande Water Conservation District, and Southwestern Water Conservation District.

Administering, Managing and Regulating Water

Trans-mountain Diversions and Basin of Origin Protection

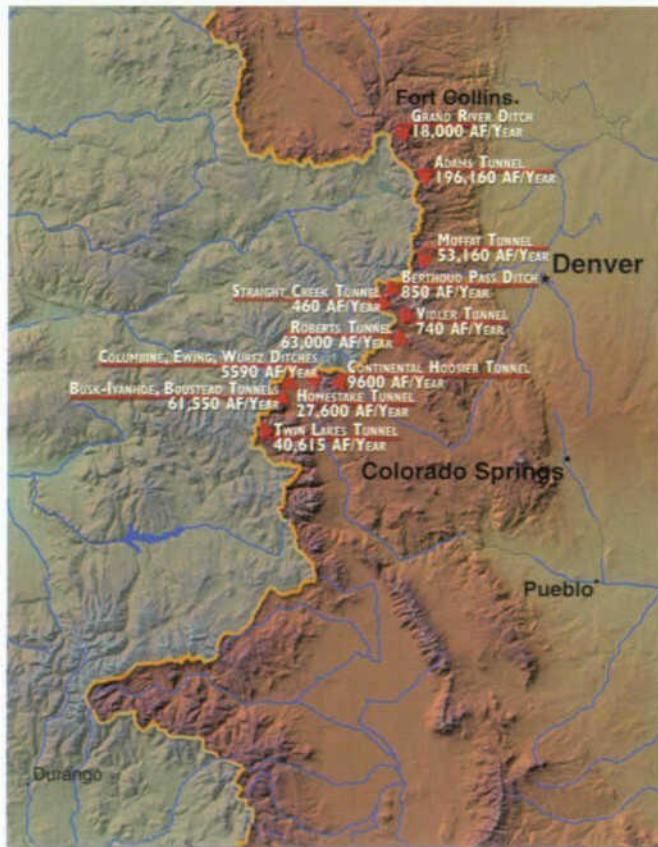
A trans-mountain diversion occurs when water is exported from one watershed into another. West Slope water diverted to points east of the Continental Divide supplies many Front Range water uses. This imported water is 100 percent consumptive. This means that the water can be reused to extinction, and is not required to provide return flows. This is because the law recognizes that no water from the diversion will ever flow back to its basin of origin.

In the Colorado River Basin specifically, Colorado statutes require that water conservancy districts have basin of origin protection plans in place as a condition for exporting water from the natural Colorado River Basin to other areas of the state. The General Assembly has not extended this requirement to other entities, such as municipalities, or to water appropriated and removed from other basins.

According to the statute, a basin of origin protection plan must include measures for the design, construction, and operation of water exportation facilities, so that present and future beneficial consumptive water uses will not be impaired, nor increased in cost, at the expense of the water users within the natural basin.

A 2003 statute provides for replacement of lost tax revenues for up to 30 years when agricultural water rights are permanently removed from one county for use in another county.

Trans-continental diversion projects bring water from west of the Great Divide to the more populous eastern slope. Throughout Colorado, there are many diversions between river basins and sub-basins that are not shown on this map.



Water Storage

In his 1879 *Report on the Lands of the Arid Regions*, John Wesley Powell stressed the necessity of water storage in the western United States. He feared that corporate monopolies would control the sale and use of water unless government intervened on behalf of the farmers.

In 1902, Congress passed the Reclamation Act to help Colorado and the other western states finance reservoirs. Under a provision of the Reclamation Act, all reclamation projects must obtain water rights based on state law.

Faced with requirements in the Reclamation Act for local project sponsors to help repay a portion of project costs, the Colorado General Assembly adopted laws creating irrigation districts, water conservancy districts, and water conservation districts. These entities were given authority to contract directly with the U.S. Bureau of Reclamation. The contracts for early reclamation projects were devoted almost entirely to irrigation. Later projects, like the Colorado-Big Thompson and Frylingpan-Arkansas projects, also served some municipal and industrial uses.

The Colorado-Big Thompson Project provides up to 240,000 acre-feet of water annually for some 600,000 acres of farmland and 30 cities and water districts in seven northeastern Colorado counties. The Frylingpan-Arkansas Project supplies water to farmers and cities in the Arkansas River Basin delivering an average of 74,982 acre-feet of project water annually.

Other examples of U.S. Bureau of Reclamation projects include the Uncompahgre Project in the Gunnison River Basin, and the Grand Valley Project which diverts water from the Colorado River near Grand Junction. These two federal projects currently irrigate approximately 122,000 acres in western Colorado.

The Aspinall Unit of the Colorado River Storage Project near Gunnison helps the Colorado River upper basin states (Colorado, New Mexico, Utah, and

Administering, Managing and Regulating Water

Wyoming) meet their Colorado River Compact water delivery requirements to the lower basin states (Arizona, California, and Nevada). It operates in connection with Navajo Dam in New Mexico, Glen Canyon Dam in Utah, Fontenelle Dam in Wyoming, and Flaming Gorge Dam in Utah.

In addition to reclamation reservoirs, many other reservoirs owned by farmers, cities and businesses exist throughout the state. There are approximately 2,000 reservoirs in Colorado, with an active storage capacity of some 6.42 million acre-feet of water. They are the backbone of the state's water supply infrastructure and, together with flowing streams, constitute a valuable fishing and boating resource. In the 2002 drought year, Colorado evacuated nearly 6 million acre-feet of water from these reservoirs to keep taps and irrigation ditches flowing.

Water Quality Control Commission and Division

The Colorado Water Quality Control Commission is the governmental agency responsible for developing state water quality policies and regulations for the surface and groundwaters of the State. The Commission classifies all of Colorado's streams and lakes for designated uses, including aquatic life, drinking water, agriculture and recreation. Then, the commission adopts numeric and narrative standards and other regulations to protect those uses (see *Citizen's Guide to Colorado Water Quality Protection*).

Located in the Colorado Department of Public Health and Environment, the Water Quality Control Division is responsible for implementing the state water quality statutes and the Commission's rules. To do this, the Division issues permits for discharges of pollutants into streams, certifies that federally-issued permits will protect Colorado water quality, evaluates proposals for new or expanded wastewater treatment plants, and administers a non-point source pollution control program.



Lake Granby (above) provides storage for the Colorado-Big Thompson Project which diverts water beneath the Continental Divide through the Alva B. Adams Tunnel (below).

The U.S. Environmental Protection Agency (EPA) must approve the Commission's water quality classifications and standards. In addition, the EPA has the authority to step in and enforce state-issued permits if the Division does not do so.

The Commission has the authority to prescribe and enforce water quality standards, but it is prohibited by state statute from requiring instream flows to dilute pollution. In addition, neither the Commission nor the Division can take regulatory action that impairs the exercise of a water right. This places a premium on treatment techniques that control pollution at its source, so that the surface water and groundwater in Colorado will be suitable for beneficial uses under the water rights system.

While the Commission has the authority over water quality issues, the water courts, with input from the State Engineer's office, have authority over the quality of the replacement water used in exchanges and augmentation plans (see Exchanges p.15, and Augmentation Plans, p.16). In this way, the state's water quantity and water quality laws interact with one another.

You will find the Web site for the Colorado Water Quality Control Commission at www.cdphe.state.co.us/op/wqcc/wqcchom.asp



Interstate and Federal Law



The Imperial Dam at Yuma, Arizona (top) diverts Colorado River water to the All-American Canal to irrigate fields in the Imperial Valley in California. Interstate agreements govern how water is shared among the states. The system of pumps and canals that make up the Central Arizona Project (CAP) is monitored from a control room in Phoenix (above). The CAP carries water from the Colorado River.

Interstate Compacts, Equitable Apportionment Decrees, and Treaties

Colorado must live within its water constraints. The first and most basic constraint on water use within the state is the amount of rainfall and snowfall that occurs each year.

The second constraint is legal: Colorado's obligation to deliver water to downstream states under interstate water compacts and United States Supreme Court equitable apportionment decrees. International treaties with Mexico also affect Colorado's water use.

The unbridled ability of states to allocate and govern water use within their states halted early in the 20th century. In 1907, the Supreme Court in *Kansas v. Colorado* held that all states sharing a stream system were entitled to an equitable share of river water.

Under equitable apportionment, the U.S. Supreme Court has authority to allocate a state's share of river water from time to time based on another state's need, if a state files directly with the high court.

The compact clause of the United States Constitution allows

states to fix their allocations in perpetuity by contract, with Congressional approval. An interstate compact is both state law and a law of the United States. This promotes long-term planning and reliability, and diminishes the rush to develop water as soon as possible.

Due in great measure to the efforts of Delph Carpenter, son of a Weld County homesteader, Colorado entered into nine interstate water compacts as alternatives to court-apportionment. Colorado water use is also affected by three U.S. Supreme Court equitable apportionment decrees.

Because of interstate and international requirements, and because Colorado has not yet fully developed all of its water allocations, Colorado passes a large amount of water out of state. In an average year, Colorado generates approximately 16 million acre-feet (maf) of renewable water which flows in streams and well hydrologically connected (tributary) to streams. After accounting for all the water consumed for beneficial use, the state's rivers deliver out of state an annual average 8.8 maf to the Pacific side of the Continental Divide, and 1.4 maf to the Atlantic side. Thus, up to two-thirds of Colorado's surface water is obligated to downstream states and Mexico.

Drought can greatly alter the amount of water Colorado produces for in-state and out-of-state use. For example, in the drought year 2002, natural flows in Colorado rivers were closer to 4 maf, compared to the 16 maf average. Approximately 6 maf of reservoir storage was used up in 2002 to supplement these meager natural streamflows.

For a summary of the compacts, equitable apportionment decrees, and treaties, see www.cwcb.state.co.us/Fact_Sheets/Compact_Facts.pdf

Colorado River Compact of 1922

The Colorado River Compact of 1922 divides the water of the Colorado River between what are known as the upper and

Interstate Compacts, Treaties and Decrees

- Colorado River Compact, 1922
- La Plata River Compact, 1922
- South Platte River Compact, 1923
- Rio Grande River Compact, 1938
- Republican River Compact, 1942
- Arkansas River Compact, 1948
- Upper Colorado River Compact, 1948
- Amended Costilla Compact, 1963
- Animas-LaPlata Project Compact, 1968
- U.S. – Mexican Water Treaty, 1906
- Rio Grande, Colorado and Tijuana Treaty, 1944
- Wyoming v. Colorado
- Nebraska v. Wyoming
- Colorado v. New Mexico

lower basin states. The lower basin states are comprised of Arizona, California, and Nevada, and those parts of New Mexico and Utah below Lee Ferry, Arizona. The upper basin states include Colorado, New Mexico, Utah, and Wyoming and that part of Arizona above Lee Ferry.

This compact allocates 75 million acre-feet of water for consumptive use averaged over a running 10-year period, for the Lower Colorado River Basin. The remainder is for use by the upper basin states. Lake Powell, located immediately upstream of Lee Ferry, is managed to deliver some 7.5 maf annually to the lower basin states, plus 750,000 acre-feet for Mexican treaty obligations.

Arkansas River Compact of 1948

This compact apportions the waters of the Arkansas River between Colorado (60 percent) and Kansas (40 percent) based on the inflow to John Martin Reservoir during the winter storage season (December 1 to March 31). This water in storage can be released at the demand of either state after April 1.

Colorado and Kansas have often been in litigation before the U.S. Supreme Court over Arkansas River water since the early twentieth century. In 1995, the U.S. Supreme Court found that Colorado had depleted the flow of the Arkansas River at the state line in violation of the compact. Irrigation wells installed after execution of the compact caused these depletions. The states are now litigating the nature and extent of the injury to Kansas, and Colorado's method of repayment, before a U.S. Supreme Court Special Master. In response to an order of the Special Master, the Colorado State Engineer has developed well administration rules to bring Colorado into compliance with the compact (see 37-69-101 to 37-69-106 C.R.S.). In 2003, the Colorado General Assembly affirmed the State Engineer's authority to adopt and enforce the Arkansas Basin rules.

Upper Colorado River Basin Compact of 1948

This compact distributes the consumptive use of Colorado River water among the upper basin states. Subject to interpretation of the compacts and other laws, as well as the amount of water available in the river, Colorado's consumptive use rights for Colorado River water can vary.

The following calculation is a way of viewing how the 10-year running average 75 million acre-feet delivery requirement to the lower basin might translate into water available for consumptive use by the upper basin states in an average water year:

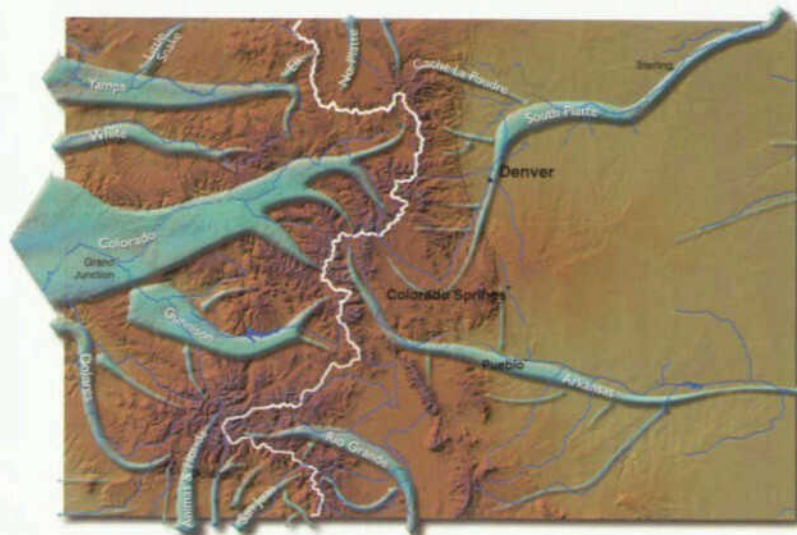
Acre-feet per year	Provisions
14,800,000*	Total average annual water production in the Upper Colorado River Basin
Minus 7,500,000	Or the amount to be delivered to the Lower Basin under the current 10-year running average
Minus 750,000	Mexican Treaty obligations (a disputed point)
Minus 50,000	For portion of Arizona above upper/lower basin dividing point (above Lee Ferry)
= 6,500,000 Total Annual Average Available to Upper Basin	

* Long-term average 1896-2003. Upper Colorado River Comm'n 55th Annual Rpt. (2003).

Within the Upper Basin, the Colorado River is allocated according to the following percentages:

Colorado = 51.75%, Utah = 23%, Wyoming = 14%, New Mexico = 11.25%

For water planning purposes, the Colorado Water Conservation Board assumes that there is up to 400,000 additional acre-feet of Colorado River water remaining for consumptive use that Colorado can develop under the 1922 and 1948 Colorado River compacts.



Colorado is a source state. This map shows the relative, historical average annual stream flows leaving Colorado.

Interstate and Federal Law



Millions of people depend on state, federal and international law to allocate and protect the water resources that begin their journey to the sea in Colorado. Eighteen states and Mexico depend on water from Colorado. Water from the headwaters of the Colorado River in Rocky Mountain National Park (above) may make its way to the Sea of Cortez (below) in Mexico or a dinner table in Los Angeles.



Federal Reserved Water Rights

In 1907, the Supreme Court in *Winters v. United States* determined that the states could not deprive Native Americans of the water reserved for them by implication when Congress created tribal reservations. This generated the concept of federal reserved water rights, created expressly or by implication.

Implied federal reserved rights refer to water that was unappropriated on the date the reservation was created, in the minimum amount necessary to achieve the primary

purposes of the reservation. The priority date of this type of reserved water right is the date the reservation was created.

Subsequently, the U.S. Supreme Court and various state supreme courts have upheld implied federal reserved rights for numerous national parks, monuments, and other federal reservations created through acts of Congress.

Federal reserved water rights may also be created expressly, for example, by the Wild and Scenic Rivers Act.

As a result of this legal precedent, and to allay western concerns about exclusive federal control over tribal and federal water claims, Congress adopted the 1952 McCarran Amendment. This amendment permitted state courts to adjudicate federal and tribal water claims. These included express and implied federal reserved water rights, and federal claims to state law-based water rights. Since then, Colorado has adjudicated federal and tribal reserved rights claims, and the state administers them in priority, along with state-based water rights.

For example, Rocky Mountain National Park and the Cache La Poudre Wild and Scenic River have Colorado water court decrees for federal reserved water rights.



A brief summer rain falls on the Pawnee National Grasslands. The eastern prairie receives an average of approximately 12 inches of annual precipitation, while parts of the mountains may receive more than 70 inches. Denver averages approximately 14 inches of precipitation a year.

A negotiated decree entered in Colorado water court for the Rio Grande Basin, recognizes U.S. Forest Service rights. The Southern Ute and Ute Mountain Ute Tribes settled their federal reserved water rights claims in return for the Animas-La Plata Project, which is now under construction by the U.S. Bureau of Reclamation.

Currently, a proceeding to determine the amount of the reserved water right for the Black Canyon of the Gunnison National Park is pending in regional water court.

Environmental Protection

The 19th century's pro-development policies of the state and federal governments had consequences. Back then, the beauty and natural resources of Colorado must have seemed inexhaustible, and the need to use them so pressing.

By the close of the 19th century, national and state agendas began to shift from unmitigated use of natural resources to progressive conservation. As a result, President Teddy Roosevelt and his forester, Gifford Pinchot, pushed to protect the forested lands from impacts caused by uncontrolled timber harvesting, homesteading, and other uses. More than 14 million acres of national forest land exists in Colorado today and, within that, nearly 4 million acres of designated wilderness.

Creation of the national forests initially caused alarm in Colorado because many reservoirs and ditches existed within the forest due to the earlier laws that allowed entrance on public lands for water diversion, storage, and delivery systems. President Roosevelt convinced farmers and cities that forest protection was important to water production.

To alleviate concern that creation of the forest reserves would obstruct the on-going use and development of water resources on the national forests, the 1897 Forest Organic Act contained a provision preserving federal law and forest rules and also saying that state water law would



Congress created the Cache la Poudre Wild and Scenic River in 1986, preserving some 75 miles of river north of Fort Collins from future dam building. This legislation created a federal reserved water right for this Wild and Scenic River but also protected all pre-existing perfected and conditional water rights and exchanges along the river.

By the close of the 19th century, national and state agendas began to shift from unmitigated use of natural resources to progressive conservation. As a result...more than 14 million acres of national forest land exists in Colorado today.

continue to apply to water rights on the national forests.

By the mid-1960s, 100 years of United States policy favoring water development was beginning to shift to include environmental protection and preservation. Laws such as the Wilderness Act, National Environmental Policy Act, Clean Water Act, Endangered Species Act, and Federal Land Policy and Management Act imposed regulatory constraints on the construction of new water projects.

These laws have greatly expanded citizen participation in water decision-making processes. No significant action affecting the environment can go forward without the opportunity for citizens to comment. In turn, this has pushed Colorado decision-makers to examine alternatives to



Fish are not the only animals affected by instream flows. Elk (above) and other species are impacted by river flows, drought, flood and water developments.

Interstate and Federal Law



U.S. Fish and Wildlife Service biologists – pictured near Vernal, Utah (top) – are part of the effort to restore populations of pikeminnow, humpback chub, bonytail chub (above) and razorback sucker under the Upper Colorado River Endangered Fish Recovery Program.

proposed water projects.

Compliance with the Endangered Species Act is important to Colorado's ability to use the waters provided in its interstate compacts. In connection with further development of their Colorado River Compact entitlements, for example, the upper basin states – Colorado, New Mexico, Utah, and Wyoming – participate in a program called the Upper Colorado River Endangered Fish Recovery Program.

The recovery program is a joint effort with the U.S. Fish and Wildlife Service and other federal, state, water user, and

environmental organizations to recover endangered Colorado River native fish, including the pikeminnow, humpback chub, bonytail chub, and razorback sucker. Participation allows upper basin state water users to qualify for federal permits and other approvals needed to construct water facilities and apply for new water uses.

Federal laws and regulations add much complexity to Colorado's ability to meet its water needs. For example, section 404 of the Clean Water Act requires a U.S. Army Corps of Engineers permit to place dredged or fill material into waters of the United States, which includes rivers and wetlands. This means that virtually all dams require federal approval. The U.S. EPA exercises veto authority over these permits. In the 1980s, the U.S. EPA vetoed the Denver Water Board's application for the Two Forks Dam, which had attracted substantial opposition throughout Colorado.

Particularly controversial have been cases where the U.S. Forest Service has required by-pass flows as a condition for issuing or renewing permit right of ways for on-Forest diversions and reservoirs.

A by-pass flow is an amount of water required to flow past a dam or diversion to support downstream forest water needs, such as wildlife habitat or recreation. Opponents of by-pass flows argue they illegally and inappropriately intrude into Colorado's legal authority to allocate and manage water use; supporters insist they are a necessary tool for protecting water-dependent resources on the national forests, given the existing decreed water rights held by private water users with on-forest dams and diversions.

In the state's instream flow law, the Colorado General Assembly has urged the U.S. Forest Service and other federal agencies to work with the Colorado Water Conservation Board on instream flow needs.



Construction of new dams is subject to federal approval. The controversial Two Forks Dam project in Colorado was vetoed by the Environmental Protection Agency (EPA) in the 1980s. When completed in 1935, Hoover Dam (above) on the Colorado River, which produces more than four billion kilowatt hours of electricity each year, was the largest dam in the world.

Colorado's Water Future

Efficient water diversion and storage, beneficial use without waste, recognition of all beneficial uses that Coloradans value—these have always been fundamental precepts of Colorado water law. The era of their fuller implementation is upon us.

As Colorado's water consumption reaches the limits of its allotments under interstate compacts and treaties, intensive water management will become even more critical. Water management decisions will involve examination of all options. Conservation will be indispensable.

Inevitably, as each generation must learn, the land and the waters will instruct us in the ways of community. Thomas Hornsby Ferril reminds us of this in his profound poem, "Time of Mountains."

So long ago my father led me to
The dark impounded orders of this canyon,
I have confused these rocks and waters with
My life, but not unclearly, for I know
What will be here when I am here no more.

From *Thomas Hornsby Ferril and the American West*, edited by Robert Baron, Stephen Leonard, and Thomas Noel

Chronology

This chronology traces significant historical events in federal and Colorado water law and is not intended to be comprehensive.



This 1950s map shows a portion of the Colorado-Big Thompson Project, which is managed by the Northern Colorado Water Conservancy District.



An American Water Works survey showed that North American households included in the study used approximately 146,000 gallons of water annually. Of this amount, 42 percent (61,300 gallons) were used indoors. The remaining 58 percent (84,700 gallons) were used outdoors.

- 1803** United States makes the Louisiana Purchase, adding the territory of the Mississippi, Arkansas, and Missouri River watersheds to the Continental Divide.
- 1848** The United States and Mexico sign the Treaty of Guadalupe Hidalgo. Mexico cedes to the U.S. the entire area west of the Continental Divide all the way to California.
- 1852** Hispanic settlers in Colorado's San Luis Valley construct the People's Ditch, the oldest prior appropriation water right existing in Colorado today.
- 1861** Congress established Colorado Territory out of the Kansas, Nebraska, New Mexico, and Utah Territories.
- 1861** The first legislative session in the Colorado Territory enacts statutes recognizing the right of irrigators to withdraw water from the streams.
- 1862** Congress adopts the Homestead Act, allowing settlers to occupy public land and obtain land ownership if they live on and improve the land for five years (later reduced to two years).
- 1866** Congress enacts the Mining Act, allowing Territories and States to adopt their own water laws, which will also apply to public lands.
- 1872** Territorial Supreme Court of Colorado decides *Yunker v. Nichols* holding that Colorado water law arises from necessity in an arid climate and includes the right to cross public and private lands to build water diversion and conveyance structures.
- 1876** Colorado adopts its Constitution and is admitted to the Union. The Constitution provides that the natural waters of the streams are a public resource dedicated to the use of the people, and the right to appropriate unappropriated water for beneficial use shall never be denied.
- 1879** Colorado General Assembly adopts the state's first adjudication and administration statute, which provides for court decree of water rights to establish priority dates for irrigation uses. It also established water commissioners to enforce the priority system. The Adjudication Act was re-adopted with changes in 1881.
- 1882** Colorado Supreme Court in *Coffin v. Left Hand Ditch* holds that Colorado law recognizes prior appropriation water rights and not riparian water rights. The court also holds that the Colorado constitution permits diversions of unappropriated water from one watershed for beneficial use in another watershed.
- 1891** Colorado Supreme Court decides *Strickler v. City of Colorado Springs*, holding that cities may buy and transfer agricultural water rights to municipal use, so long as injury to other water rights does not occur.
- 1897** Congress adopts National Forest Organic Act. This prohibited further homesteading and sale of forested watersheds. The U.S. Supreme Court in *United States v. New Mexico* has held that this and other forest statutes do not create instream flow rights for fish and recreation within the national forests.
- 1897** Colorado General Assembly adopts first statute for exchanges of water rights.
- 1899** Colorado General Assembly adopts first statute for changes of water rights.
- 1902** Congress adopts the Reclamation Act providing federal financing for construction and operation of water diversion, storage, and delivery projects to assist irrigation in the western states.

- 1903** Colorado General Assembly extends the system of court decree of water rights to all beneficial uses, not just irrigation.
- 1907** United States Supreme Court in *Kansas v. Colorado* establishes the law of interstate equitable apportionment (states sharing a river system are entitled to a water allocation for their use).
- 1907** United States Supreme Court in *Winters v. United States* establishes the implied federal reserved water rights doctrine, first made applicable to Native American tribal reservations.
- 1913** Colorado Supreme Court decides *Comstock v. Ramsay*, holding that "return, waste, and seepage" from diversion of native water belongs to that stream system. New water rights can be created from this water, but only to the extent that senior rights will not be injured.
- 1922** Colorado enters into Colorado River Compact and La Plata River Compact.
- 1922** United States Supreme Court in *Wyoming v. Colorado* limits Colorado's use of Laramie River.
- 1923** Colorado enters into South Platte River Compact.
- 1938** United States Supreme Court in *Hinderlider v. La Plata & Cherry Creek Ditch Co.* holds that interstate water compacts and equitable apportionment decrees apply to the water rights established by the Territories and States before the compacts and equitable apportionment decrees were adopted.
- 1938** Colorado enters into Rio Grande River Compact.
- 1942** Colorado enters into Republican River Compact.
- 1948** Colorado enters into Upper Colorado River Compact and Arkansas River Compact.

1951 Colorado Supreme Court decides *Safranek v. Town of Limon*, holding that all groundwater in Colorado is presumed to be tributary to a surface stream and is subject to the prior appropriation system, unless the groundwater is proved to be nontributary by clear and convincing evidence.

1952 Congress adopts the McCarran Amendment, allowing the states to determine the existence, priority, and quantity of federal and tribal water rights claims. These claims may be based on state law or federal law or both.

1956 Congress adopts Colorado River Storage Project Act, authorizing Glen Canyon, Flaming Gorge, Cuerecanti (Aspinall), and Navajo dams in the Upper Basin to meet the 1922 Compact delivery requirements to the Lower Basin.

1963 Colorado enters into Amended Costilla Creek Compact.

1964 United States Supreme Court in *Arizona v. California* determines the Colorado River Compact allocations of Arizona, California, and Nevada based on the Boulder Canyon Project Act. Court also determines that the federal reserved water rights doctrine is applicable to other federal reservations, in addition to tribal reservations. Existence, priority, and amount of the water reserved depend on the intent and wording of Congressional legislation.

1965 Colorado General Assembly adopts the Groundwater Management Act.

1968 Colorado enters into Animas-La Plata Project Compact.

1968 Congress adopts Colorado River Storage Project Act, authorizing the Central Arizona Project and the Animas-La Plata Project.



Increasing population and development puts additional demands on Colorado's water resources. Water that flows in the Indian Peaks Wilderness Area (below) may find its way to homes in Denver (above) and the eastern plains, being used and re-used along the way for agriculture, wildlife, power generation, industry and recreation.



Chronology

- 1968** Colorado Supreme Court decides *Fellhauer v. People*, requiring the State Engineer to adopt tributary groundwater regulations.
- 1969** Colorado General Assembly adopts Water Rights Determination and Administration Act, with seven water divisions in the state and a division engineer and water court in each division.
- 1969** Congress adopts the National Environmental Policy Act (NEPA).
- 1972** Colorado Supreme Court decides *City and County of Denver v. Fulton Irrigating Ditch Co.*, holding that water imported from one river basin to another can be fully consumed by reuse and successive use, to extinction.
- 1972** Congress adopts Water Pollution Control Act Amendments.
- 1973** Colorado General Assembly adopts the instream flow and lake level law, allowing the Colorado Water Conservation Board to obtain new water rights sufficient to "preserve the natural environment to a reasonable degree."
- 1973** Congress adopts Endangered Species Act.
- 1976** United States Supreme Court decides *Colorado River Dist. v. United States (Mary Akin)*, recognizing the authority of the Colorado water court over the Native American reservation water rights of the Southern Ute and Ute Mountain Ute Tribes.
- 1976** Congress adopts the Federal Land Policy and Management Act.
- 1977** Congress adopts Clean Water Act.
- 1979** Colorado Supreme Court decides *People v. Emmert*, holding that Colorado does not follow the public trust doctrine and the stream beds belong to the adjoining landowners.
- 1979** Colorado Supreme Court rules in *Colorado River Water Conservation Dist. v. Colorado Water Conservation Board* that the state instream flow program is not unconstitutional under the state constitution's prior appropriation provisions.
- 1980** Colorado Supreme Court in *Weibert v. Rothe Bros.* holds that the historic beneficial use of a water right governs its change to a different point of diversion, place, or type of use.
- 1983** Colorado Supreme Court in *Colorado v. Southwestern Colo. Water Conservation Dist.* holds that the prior appropriation doctrine applies only to surface water and tributary groundwater. The General Assembly may decide how to allocate nontributary groundwater.
- 1992** Colorado Supreme Court decides *City of Thornton v. City of Fort Collins*, recognizing the validity of water rights for boat chute and nature center diversions.
- 1992** Colorado Supreme Court decides *Board of County Commissioners v. Upper Gunnison River Water Conservancy Dist.*, upholding the storage, release, and administration of water for use downstream for recreation and fishing flows.
- 1995** United States Supreme Court decides *Kansas v. Colorado*, holding that Colorado post-compact well pumping of Arkansas River tributary groundwater caused violations of the 1948 Arkansas River Compact.
- 1996** Colorado Supreme Court decides *City of Thornton v. Bijou Irrigation Co.*, establishing standards for large agricultural water transfers to municipal use.
- 1997** Colorado Supreme Court decides *Shirola v. Turkey Canon Ranch Ltd. Liab. Co.*, recognizing the standing of any citizen to oppose an application filed in water court, in order to hold the applicant to a strict standard of proof. However, to assert injury to a water right, a person must have a legally protected interest in a vested water right or conditional decree. The State and Division Engineers have broad standing to appear in water court cases.
- 2001** General Assembly adopts Arkansas River Basin Pilot Water Bank and Recreational In-Channel diversion statutes.
- 2002** Colorado Supreme Court decides *Board of County Commissioners v. Park County Sportsman's Ranch*, restating the "Colorado Doctrine" and holding that aquifers can be used to store water under a decreed water right. To obtain such a storage decree, the appropriator must capture, possess, and control water and place it into the aquifer. The applicant for this kind of decree must prove that storage space is available in the aquifer without injury to other water rights.
- 2002** General Assembly adopts law allowing Colorado Water Conservation Board Instream Flow Program to purchase or accept donation of senior water rights to improve stream conditions. Previously, the Board could acquire instream flow rights only to provide minimum stream flows or lake levels necessary to preserve the natural environment to a reasonable degree.
- 2003** General Assembly adopts legislation for stored water banks in all seven Water Divisions, prohibits new residential covenants that restrict use of drought-tolerant landscape, authorizes conservation easements for water rights, requires financial mitigation to a county when transferring agricultural water permanently out of the county. During drought emergencies, the General Assembly authorizes interruptible water supply agreements between farms and cities, and loans of water to the CWCB for instream flows.

Abandonment Loss of whole or part of a water right by intent to permanently discontinue use. Period of non-use for ten years raises rebuttable presumption of abandonment. A conditional water right is conclusively presumed to be abandoned, if an application for finding of reasonable diligence is not made within six years of the entry of the conditional decree or the most recent diligence decree. The State Engineer prepares a periodic abandonment list. Water rights are declared abandoned through a water court proceeding.

Acre-Foot Volumetric measurement of water used for quantifying reservoir storage capacity and historic consumptive use. This is the amount of water that will cover an acre of land at a depth of one foot, or 325,851 gallons of water.

Adjudication The process for obtaining a water court decree for a conditional water right, a finding of reasonable diligence, an absolute water right, an exchange, an augmentation plan, a change of water right, or a right to withdraw nontributary water or Denver Basin groundwater that is outside of a designated groundwater basin.

Appropriation Placement of a specified portion of the waters of the state to a beneficial use pursuant to the procedures prescribed by law. Speculation is prohibited. The appropriator must have its own use for the water or have a contract to serve the customers that the water will benefit. Only previously unappropriated surface or tributary groundwater water can be appropriated. The appropriator must have a plan to divert, store, or otherwise capture, possess, and control the water for beneficial use.

Aquifer A subsurface water-bearing geological structure capable of storing and yielding water to streams, springs, or wells.

Augmentation Replacing the quantity of water depleted from the stream system caused by an out-of-priority diversion. When adjudicated and operated to replace depletions to the stream system, the out-of-priority diversion may continue even through a call has been placed on the stream by senior decreed rights.

Beneficial Use Beneficial use is the basis, measure, and limit of a water right. Colorado law broadly defines beneficial use of water as a lawful appropriation that uses reasonably efficient practices to put that water to use without waste.

Call Demand for administration of water rights. In times of water shortage, the owner of a decreed water right will make a "call" for water. The call results in shut down orders against undecreed water uses and decreed junior water rights as necessary to fill the beneficial use need of the decreed senior calling right.

Colorado Revised Statutes or C.R.S. The annual compilation of Colorado statutes and court rules published by the Colorado General Assembly. Also called "the red books."

Conservation Easement for Water Rights Legal provision under 2003 statute allowing owners of water rights to covenant for keeping the water in use for open space, wetlands, recreation, ecological diversity, or farming.

Consumptive Use Water use that permanently withdraws water from its source; water that is no longer available because it has evaporated, been transpired by plants, incorporated into products or crops, consumed by people or livestock, or otherwise removed from the immediate water environment.

Cubic Feet Per Second (cfs) Measurement of flow rate of water in running stream or taken as direct diversion from the stream. Water flowing at 1 cfs will deliver 448.8 gallons per minute or 648,000 gallons per day.

Denver Basin Groundwater Groundwater of the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying the Front Range area from Colorado Springs to Greeley. This water is allocated to the overlying landowner by statute, administered by rules of the State Engineer, allowing pumping at a rate of one percent per year assuming a hundred-year life of the aquifer and requiring some of the pumped water to be put back into the stream system.

Designated Groundwater Groundwater areas not adjacent to a continuously flowing natural stream, where groundwater has been the principal water supply for at least fifteen years preceding the designation of the groundwater basin. Eight designated groundwater basins exist on Colorado's eastern high plains. Use of designated groundwater requires a permit from the Colorado Groundwater Commission.

Developed or Imported Water Water brought into a stream system from another, unconnected source, for example, transmountain diversion water or nontributary well water. This type of water can be reused and successively used to extinction, and is often used in augmentation or exchange plans. In contrast, native basin water is subject to one use, and the return flow belongs to the stream system to fill other appropriations, unless a decree was obtained for the right to reuse and successively use return flows.

Glossary

Diligence Reasonable progress towards making a conditional water right absolute by putting unappropriated water to a beneficial use. Must be proved in a water court proceeding through an application initiated every six-years after entry of the conditional decree or most recent diligence decree. Acts demonstrating diligence include engineering, permitting, financing, and construction of water facilities needed to complete water diversion and delivery to the place of use.

Diversion or Divert Removing water from its natural course or location, or controlling water in its natural course or location, by means of a water structure such as a ditch, pipeline, pump, reservoir, or well. The Colorado Water Conservation Board may appropriate instream flows without diversion, and local governmental agencies may make recreational in-channel diversions, under specified statutory procedures.

Futile Call Determination made by the State or Division Engineer to lift a shut down order if cessation of diversions by junior decreed water rights will not result in making water available to the senior calling right.

Injury The action of another that causes or may cause the holders of decreed water rights to suffer loss of water at the time, place, and amount they would be entitled to use under their water rights if the action had not occurred. Injury is a significant issue in any water court proceeding and in determinations of the State and Division Engineers.

Interruptible Water Leasing Authorization by 2003 statute to allow farmers to lease water to cities during drought emergencies.

Nontributary Groundwater Groundwater outside of the boundaries of any designated groundwater basin, the with-

drawal of which will not, within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal.

Not Nontributary Groundwater Denver Basin groundwater, the withdrawal of which will deplete the flow of a natural stream at an annual rate of greater than one-tenth of one percent of the annual rate of withdrawal.

Priority The ranking of a water right vis-à-vis all other water rights drawing on the stream system. Priority is determined by the year in which the application for the water right was filed. The date the appropriation was initiated determines the relative priority of water rights for which applications were filed in the same year. Priority is the most valuable aspect of a water right because priorities determine who may divert and use water in time of short water supply.

Public Trust Doctrine A doctrine of state ownership of stream and lake beds that has been applied, most notably in California, to cut back on historic diversions to sustain fish and wildlife habitat and recreation. Has not been recognized in Colorado, although the Colorado Supreme Court has ruled that the Colorado Water Conservation Board has a fiduciary duty to the people of Colorado to enforce the instream flow water rights it obtains.

Return Flow Water that returns to streams and rivers after it has been applied to beneficial use. It may return as a surface flow, or as an inflow of tributary groundwater.

Riparian Referring to land or habitat immediately adjacent to the stream channel.

Riparian Water Law A legal system that permits water use only by those who own land along the banks of a stream or lake. The right is for reasonable use and is correlative with the right of every other property owner to prohibit unreasonable use that diminishes the instream quantity or quality of water. Colorado law does not recognize riparian rights.

Statute A law enacted by a legislative body such as the U.S. Congress or the Colorado General Assembly.

Substitute Supply Plan A State Engineer-approved temporary plan of replacement supply allowing an out-of-priority diversion while a plan for augmentation is proceeding through the water court. The State Engineer may also approve substitute supply plans for water exchanges, water uses that will not exceed 5 years, and limited emergency situations affecting public health or safety.

Tributary Groundwater All subsurface water hydraulically connected to a surface stream, the pumping of which would have a measurable effect on the surface stream within one hundred years.

Water Bank A program operating under rules of the State Engineer in each of Colorado's seven water divisions to facilitate the lease, exchange, or loan of legally stored water as an alternative to sale of water rights, while protecting against injury to other water rights.

Water Right A property right to the use of a portion of the public's surface or tributary groundwater resource obtained under applicable legal procedures.

Well Any structure or device used for the purpose or with the effect of obtaining groundwater for beneficial use from an aquifer. Every well requires a State Engineer-issued permit.

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The South Platte River, pictured near Kersey, is one of the major rivers that carries water to other states.



THIS 1841 MAP OF THE AMERICAN WEST, COMPILED BY NAVY CAPTAIN CHARLES WILKES, ILLUSTRATES ONE OF THE FIRST ATTEMPTS TO MAP THE LARGELY UNEXPLORED AMERICAN WEST. MUCH OF THIS MAP IS VAGUE AND LARGELY HYPOTHETICAL. THE INTERIOR PART OF THE WEST BEARS THE NOTATION, IN PART, "THIS PLAIN IS A WASTE OF SAND, WITH A FEW DETACHED MOUNTAINS, (SOME OF WHICH ARISE IN THE REGION OF PERPETUAL SNOW), WHOSE POSITIONS ARE UNKNOWN; FROM THESE FLOW SMALL STREAMS THAT ARE SOON LOST IN THE SAND."

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