

Water Law 101

A. Prior Appropriation

The prior appropriation system was adopted in Colorado in 1882 following the Colorado Supreme Court decision in *Coffin v. Left Hand Ditch Co.* This decision held that water rights in Colorado divest based on the notion of “first in time, first in right.”¹ This means that the first person to appropriate water for a beneficial use has the first right to use that water within that particular stream system. An appropriation occurs when an individual physically takes or diverts water from a stream to another location for a beneficial use. This first appropriator is said to have a “senior” water right, and that right must first be satisfied before any other junior rights are fulfilled.

Users of Colorado water under this system gain water rights through court decrees. These rights are guaranteed pursuant to Article XVI, Section 6, of the Colorado Constitution which states, “[t]he right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied.”² Appropriators usually first begin to use the water and then go to the water court for a decree legalizing their use. This beneficial use must be demonstrated by the user in order for the court to grant the decree or “perfect” the water right. If granted, the decree shows the priority date of the diversion, the type and place of the use, and the amount of water to be diverted. The water amount is calculated in either total acre-feet and/or cubic-feet-per-second.

The amount of water permitted for diversion is the amount that is able to be put to a beneficial use in a reasonable time with reasonable diligence. What is reasonable depends on the type of use and how the water is taken and applied. The goal is to eliminate water waste, so that the resource is available to as many users as possible. Diverting more water than what is necessary for the beneficial use is not considered part of the water right.

Water rights, like other property rights, may be sold, leased, or exchanged. The designation and place of the use may also change as long as there is “no-injury” (see definitions). “No-injury” applies even if the user suffering the injury has a junior right to the user causing the injury.

Water rights are not forever guaranteed and may be lost through non-use. This is called abandonment and occurs when a person stops using their water right with the intent to abandon it. In Colorado, a water right is abandoned if it is not used within ten years and the water rights’ holder intends to abandon the right. Forfeiture, on the other hand, refers to the abandonment of a water right and does not take into consideration whether the rights’ holder intended to abandon the right or not. Colorado does not have a forfeiture statute.

¹ *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882).

² Colo. Const. Art. XVI, § 6 (2000).

B. Beneficial Use

Beneficial use is the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made and, without limiting the generality of the foregoing, includes the impoundment of water for recreational purposes, including fishery or wildlife. For the benefit and enjoyment of present and future generations, beneficial use shall also include the appropriation by the state of Colorado of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree.³

The definition of beneficial was intentionally left open and given generality by the legislature in order to allow it to change in accordance with the changing ways people and entities use water. Historically, beneficial uses were limited to agriculture, industry, and municipal uses. These uses have expanded to include CWCB instream flows and recreational in channel diversions, such as kayak parks.

C. Administration

Along with providing a definition of beneficial use, the Water Right Determination and Administration Act of 1969 established seven major water divisions in Colorado based on the major river basins. Each division has their own water court and judge to deal with issues related to the watershed. Most of the divisions also have a water referee to assist the judge in dealing with minor water-related issues. Some of the controversies that necessitate adjudication relate to water rights, changes in water rights, plans for augmentation, findings of reasonable diligence with regard to conditional water rights, abandonment of conditional and absolute water rights, and requests for alternate points of diversion and storage. Decisions by the water courts are appealed directly to the Colorado Supreme Court.

Many of these hearings occur due to the over-appropriation of a watershed or stream segment. Over-appropriation occurs when the water court divvies out more water rights decrees than there is water actually available. This practice is allowed, but causes problems when senior users put calls out for water causing a junior user to lose the water previously available to them.

The amount of available water is determined by combining the physical and legal constraints currently in place. Physical restraints refer to water that is available from natural stream and river flows, as well as water found in tributary aquifers. Legal restraints are those senior water rights whose appropriation has already occurred. This includes senior water rights in Colorado, as well as the water the state must allow to flow beyond its borders to comply with interstate water compacts, U.S. Supreme Court equitable apportionment decrees, and international treaties.

³ Colo. Rev. Stat. § 37-92-103(4) (2000).

The courts are not the only bodies in charge of the administration of water matters. The state engineer, division engineers, water commissioners and the Colorado Water Conservation Board (CWCB) also are involved in the process. Their general duties and information are listed below:

State Engineer

- Appointed by the governor.
- Employed by the Colorado Division of Water Resources.
- Responsibilities include supervision and regulation of the:
 - State's water
 - Division engineers
 - Groundwater permitting and management system
 - Interstate water administration
 - State's reservoir operations

Division Engineers

- Appointed by the state engineer.
- Employed by the Colorado Division of Water Resources.
- In charge of the State's water distribution.
- There is a division engineer's office located in each of the State's seven water basins.
- Each division engineer's office employs several water commissioners.

Water Commissioners

- Appointed to handle the daily distribution matters of the State's water. These matters include:
 - Monitoring of headgates
 - Responding to calls for water
 - Issuing orders to reduce or cease diversions
 - Collecting data on diversions
- Employed by the Colorado Division of Water Resources.

CWCB

- Entity created by the Colorado General Assembly in 1937.
- Its principal purpose is to help in the protection and development of the State's waters.
- Its main functions include:
 - Planning and implementing flood controls
 - Conducting water studies
 - Resolving interstate water conflicts
 - Coordinating federal and interstate water resources
 - Conserving water and power resources
 - Protecting minimum stream flows.

D. Water Exchange and Substitute Supply

Under Colorado law, appropriators are allowed to transfer their water rights from one location to another using a plan of augmentation and exchange with the approval by the water court.⁴ An exchange occurs when a junior user, who normally would not be in priority, takes water and satisfies the senior users' needs through replacement water from another source. In other words, water is added to the stream down river (for the downstream senior) in order for an equal amount of water to be taken at an upstream location (by the upstream junior), so as not to injure the senior appropriator's rights. So long as the senior priority receives its allotment of water, no matter what the source, it may not complain of out of priority diversions by a junior user.

The water added at the downstream location in the exchange is known as the "substitute supply." Substitution may be carried out between any combination of ditches and reservoirs and may be either voluntary or involuntary.

E. Trans-basin Diversions

Introduction

A trans-basin diversion exports water from one basin to another; for example from the Colorado River Basin to the South Platte River Basin. The most common trans-basin diversion in Colorado is water exported east from Western Slope basins to the Front Range. These diversions crossing the Continental Divide are termed "trans-mountain diversions." There are twelve major diversions taking water from the Colorado River basin to East Slope entities. This amounts to a total of 450,000-600,000 acre/feet per year, which is enough water to inundate the entire metropolitan area of Denver up to six feet deep. During dry years, this accounts for up to 65% of the streamflow for the entire upper basin.⁵

Imported water, such as that found in the Front Range that originates on the Western Slope, is generally referred to as "foreign water." In Colorado, "foreign water" can be used to extinction (e.g. can be used over and over again), and the return flow is not required to go back to its place of origin. This provides flexibility to the Front Range, as return flows produced from the Western Slope water may be used over and over again. The one exception to this involves the waters of the Colorado-Big Thompson (C-BT) Project. These waters are administered like "native water" and only allowed for single use. This allows senior users downstream from the C-BT Project to fulfill their water rights without placing a call to junior users who are upstream of the project.

Environmental Impacts

- Basin of Origin

⁴ Colo. Rev. Stat. §§ 37-83-101 et seq (2000).

⁵ Colorado River Water Conservation District, *H2Oh!: "Moving Water,"* available at <http://www.crwcd.gov/H2Oh/MovingWater.pdf> (last visited July, 20 2004).

- Loss of assimilative capacity and concentration of pollutants
 - Wastewater treatment plants = loss of dilution flows
 - Acid mine drainage = loss of dilution flow
- Loss of natural hydrograph and volume of flow
 - Lower base flows
 - Lower flushing flows
 - Impacts to terrestrial fauna and freezing of exposed fish spawning beds
 - Impacts to threatened and endangered (T&E) and other species
- Water quality degradation
 - Temperature increase
 - Sediment increase
- Loss of wetlands values and functions
 - Habitat
 - Flooding
 - Pollution control
- Receiving Basin
 - Channel issues
 - Scouring
 - Flooding
 - Loss of habitat
 - Takings issues (have to maintain habitat for endangered or threatened species, or else face liability for a “taking” of the species)

Economic Impacts

- Increased treatment costs for water and treatment plants
- Increased carriage and other costs to remaining agricultural system users – harder to get water in head gates
- Loss of return flows
- Loss of recreational income
 - West Slope’s current recreation-based economy
 - Recreational impacts to receiving basin
- Loss of growth related income

Existing Facilities⁶

- Tunnels
 - Adams Tunnel (Grand County to Fort Collins area)
 - Part of the Colorado - Big Thompson (CBT) project, which is owned by the U.S. Bureau of Reclamation and managed by the Northern Colorado Water Conservancy District.

⁶ John N. Winchester, *A Historical View: Transmountain Diversion Development in Colorado*, Hydrosphere Resource Consultants, Inc., available at www.hydrosphere.com/HRC/Projects/Jnw_Trans_Mtn_Div/Transmountain_paper.htm (June 27, 2001).

- CBT provides water for supplemental irrigation, domestic uses, and hydroelectric power in the South Platte River basin. It also conveys water from the Windy Gap project from east to west.
 - The tunnel travels under Rocky Mountain National Park at Andrews Pass.
 - Diverts approximately 200,000 a/f of water per year.
- Moffat Tunnel (Grand County to Boulder)
 - Owned by the Denver Water Board.
 - Diverts water from the Williams Fork where it travels under the Continental Divide into South Boulder Creek (near Winter Park Resort) to Gross Reservoir.
 - Diverts approximately 60,000 a/f of water per year.
- Roberts Tunnel (Summit County to Park County)
 - Owned by the Denver Water Board.
 - Longest major water delivery tunnel in the world (23.3 miles).
 - Water is taken from the bottom of Dillon Reservoir, piped under the Continental Divide and discharged near the town of Grant, on the North Fork of the South Platte
 - Diverts approximately 65,000 acre/feet (a/f) of water per year.
- Hoosier Pass Tunnel (Summit County to Park County)
 - Owned by the city of Colorado Springs for municipal purposes.
 - Diverts water out of the upper Blue River. It is stored in Montgomery Reservoir and then is piped through the tunnel where it is discharged into the South Platte and Middle Fork Rivers.
 - Diverts approximately 9,600 a/f of water per year.
- Vidler Tunnel (Summit County to Clear Creek)
 - Owned by the city of Golden.
 - Water is used primarily for augmentation and municipal purposes in the Clear Creek basin. Also provides some water for Summit County augmentation purposes.
 - Takes waters from Peru Creek, a tributary of the Blue River and Snake, under Argentine Pass and discharges into Leavenworth Creek, a tributary of Clear Creek.
 - Diverts approximately 740 a/f of water per year.
- Straight Creek Tunnel (Summit County to Clear Creek)
 - Owned by Coors and CDOT (Colorado Department of Transportation). The water is used by the Coors Company or others to which it leases the water.
 - Diverts out of Straight Creek, and the water is stored in an underground tunnel, just west of Eisenhower Tunnel. It is then piped under the Continental Divide and discharged into Clear Creek.
 - Diverts approximately 460 a/f of water per year.
- Boreas Pass Ditch (Summit County)
 - Owned by the city of Englewood for municipal purposes.

- Diverts water from Indiana Creek, a tributary of the upper Blue River, and discharges into North Tarryall Creek, a tributary of the South Platte River.
 - Diversion amount
- Homestake Tunnel (Eagle County to Lake)
 - Owned jointly by the cities of Colorado Springs and Aurora and is used for their municipal purposes.
 - Diverts water out of the tributaries of Homestake Creek where it is stored in Homestake Reservoir, near Leadville. It then passes through the Homestake Tunnel to Lake Fork, above Turquoise Reservoir. Water moves from Turquoise to Twin Lakes Reservoir through the Mt. Elbert conduit and power plant, then through the Otero Pump Station to the South Platte and on to Aurora and Colorado Springs. The rest remains in the Arkansas
 - Diverts approximately 27,600 a/f of water per year.
- Wurtz Ditch (near Tennessee Pass in Lake County)
 - Owned by the Pueblo Board of Water Works, which uses it for municipal purposes or leases it to other water users as a supplemental irrigation water supply or for augmentation purposes.
 - Diverts waters out of the South Fork of the Eagle River and delivers it into the headwaters of Tennessee Creek, a tributary of the Arkansas River.
 - Diverts approximately 2,800 a/f of water per year.
- Columbine Ditch (Lake and Eagle County)
 - Owned by the Pueblo Board of Water Works, which uses the water for municipal purposes or leases it out to others for use as a supplemental irrigation supply or for augmentation.
 - Water is diverted from the East Fork of the Eagle River and discharged into Chalk Creek. The ditch is located approximately 13 miles north of Leadville.
 - Diverts approximately 1,800 a/f of water per year.
- Ewing Ditch (Lake and Eagle County)
 - Owned by the Pueblo Board of Water Works, which uses the water for municipal purposes or leases it out to others for use as a supplemental irrigation supply or for augmentation.
 - Diverts waters from Piney Creek, a tributary of the Eagle River, over Tennessee Pass and into Tennessee Creek, a tributary of the Arkansas River.
 - Oldest trans-basin diversion in the Arkansas Basin (1880).
- Busk-Ivanhoe Tunnel (10 miles west of Leadville)
 - Originally developed as a railroad. Now owned jointly by the Pueblo Board of Public Works and the city of Aurora.
 - Water is diverted from Ivanhoe Creek, a tributary of the Fryingpan River, and delivered to Turquoise Reservoir in the headwaters of the Arkansas River.

- Boustead Tunnel (Pitkin County)
 - Constructed by the Bureau of Reclamation to provide supplemental water for irrigation and municipal use on the Front Range, though the project also generates electrical power.
 - Transports water from the Fryingpan River under the Continental Divide to the head of Turquoise Reservoir in the Arkansas River Basin.
 - Diverts approximately 60,931 acre-feet of water per annum.
- Twin Lakes Tunnel (Lake County)
 - Diverts approximately 40,615 acre-feet of water per annum.
 - Tunnel runs through the Sawatch Mountains taking water from the Roaring Fork River through the Continental Divide where it is deposited into North Fork Lake Creek, which is a branch of the Arkansas River.
- Major Reservoirs
 - Dillon Reservoir⁷ (Summit County)
 - Owned and developed by Denver Water.
 - Stores 254,000 AF
 - Located at the confluence of the Blue River, the Snake River, and Ten Mile Creek where the old town of Dillon used to lie.
 - Water is diverted through the Roberts Tunnel.
 - Green Mountain Reservoir⁸ (Summit County)
 - Constructed for the primary purpose of providing replacement storage for the CBT project under the conservancy act. It also provides for generation of electric power, a domestic and irrigation water supply to rights junior to the CBT project, and for future development of the West Slope.
 - Stores surplus flows from the Blue River and is located on the River 13 miles southeast of Kremmling.
 - Stores 154,000 AF
 - Granby Reservoir (Grand County)
 - Owned by the Northern Colorado Water Conservancy District and operated by the Bureau of Reclamation.
 - Largest Colorado-Big Thompson storage reservoir with the active capacity to store 465,500 a/f.
 - Shadow Mountain Reservoir (Grand County)
 - Contiguous with Grand Lake at normal operating elevation.
 - These two areas have the ability to store 18,400 a/f.
 - Willow Creek and Windy Gap systems

⁷ C. Reich and N. Stowe, *Operating Information: Dillon Reservoir and Roberts Tunnel*, Denver Water PACSM staff (February 4, 1999) (on file with the NWCCOG Water Q/Q Committee).

⁸ C. Reich and N. Stowe, *Operating Information: Green Mountain Reservoir*, Denver Water PACSM staff (February 4, 1999) (on file with the NWCCOG Water Q/Q Committee).

- Operated by the Northern Colorado Water Conservancy District, though Middle Park Water Conservancy District owns 3,000 a/f of this water.
 - Diverts approximately 50,000 a/f of water to Lake Granby every year.
 - Williams Fork Reservoir
 - Owned and operated by the Denver Water Board for the purposes of meeting downstream calls which could call out Denver's use of Blue River water.
 - Located about three miles above the confluence of the Williams Fork and Colorado Rivers.
 - Stores approximately 97,000 a/f.
 - Wolford Mountain Reservoir
 - Constructed by the Colorado River Conservancy District on Muddy Creek. Denver Water owns 40% of the water with the rest being available by lease through the Conservancy District.
 - The reservoir can hold up to 60,000 a/f of water.

F. State v. Federal Rights

Federal Reserved Rights

Federal laws tend to complicate Colorado's prior appropriation system. The concept of "federal reserved rights" is at the heart of most water conflicts that occur between federal and state interests. These rights permit the federal government to reserve unappropriated adjunct water to the extent needed when it takes land from the public domain and reserves it for a federal purpose. These water rights vest on the date the government reserves the lands. Common acquisitions where the government gains reserved water rights include national forests, national grasslands, national parks, wilderness areas, wildlife refuges, Indian reservations, military installations, as well as a variety of other public lands.

Problems occur with these federal reserved rights because few of the rights are accounted for by states prior to their attainment. This leaves great uncertainty in regards to the amount of water necessary to fulfill the reservations, and, thus, makes it difficult to incorporate these federal rights into the administration of stream systems at the state level.

G. Interstate Obligations

Interstate Compacts

Compacts provide a way to apportion water between states. A compact is a legal contract that allows states to fix their allocations in perpetuity. Congressional approval is necessary for an interstate compact to become law. Once a compact is approved, it becomes part of both state and federal law

The first major interstate compact entered into by Colorado was the Colorado River Compact of 1922. This agreement, which is still in effect, divides the water of the Colorado River into an upper and lower basin. The upper basin includes Colorado, Wyoming, New Mexico, and Utah. The lower basin is comprised of Arizona, California, and Nevada, as well as parts of New Mexico and Utah that fall below the town of Lee Ferry, AZ. Lee Ferry is the basin dividing point. Lake Powell, which is located just upstream of Lee Ferry, and Lake Mead, which is located outside of Las Vegas, are the primary reservoirs responsible for water delivery to the lower basin states under the Compact. It is at the discretion of the Secretary of the Interior to divvy up the water flowing from the upper basin into these two reservoirs. Lake Powell also releases water to Mexico to fulfill the U.S.-Mexico Water Treaty of 1906.

Other interstate water compacts that involve Colorado, apportion the waters of the La Plata (1922), South Platte (1923), Rio Grande (1938), Republican (1942), and Arkansas (1948) Rivers.

H. Colorado Groundwater Law

Colorado follows a unique classification scheme that divides groundwater into four different categories:

- 1) **Tributary groundwater** – this water interacts with surface water and is considered as part of the surface stream under the appropriation doctrine.
- 2) **Designated groundwater** (most located on eastern plains) – groundwater located within a basin. This groundwater must either (i) not be available and needed to fill surface rights or (ii) be in areas not adjacent to a natural stream wherein groundwater withdrawals have constituted the principal water usage for 15 years prior to the first hearing on proposed designation of the basin.
- 3) **Nontributary groundwater** – groundwater located outside the boundary of any designated basin, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream at an annual rate greater than 1/10 of one percent.
- 4) **Denver Basin Groundwater** – groundwater located wholly within the Denver Basin.

I. References

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