

## Glossary of Water Terms

**Abandonment** – Statutory principle in Colorado mandating that a person who stops using their water right with intent loses that right permanently. Intent to abandon must be shown, but no specific period of non-use is required.

**Absolute water right** – A water right that has been put to beneficial use and therefore gained permanent status as the result of a court proceeding. Water rights may be conditional and then granted absolute status when placed to beneficial use.

**Acre-foot (AF)** – The amount of water needed to fill an acre of land with one foot of water. This equals 43,560 cubic feet or 325,851 gallons. One acre-foot typically supplies 2-3 families of five, depending on location, a supply of water for one year. It takes three or more acre-feet per season to irrigate a single acre of cropland.

**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.

**Administration** – The action taken by the State Engineer's Office when there is not enough water physically available to meet the demands of water rights holders within a river basin. Through the process of administration, senior water rights are satisfied by shutting off water supplies to junior water rights, beginning with the most recent priority dated and moving back chronologically, until the supply of water available for a diversion is expended.

**Alluvium** – Sand and gravel deposits in river channels or flood plains, hydraulically connected to streams.

**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 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** – An underground formation of rock, gravel and sand where water is stored. *Confined aquifers* are separated from the atmosphere by materials that restrict the movement of the water into or out of the aquifer. *Designated aquifers* are groundwater areas not adjacent to a continuously flowing stream, where groundwater has been the principal water supply for at least fifteen years preceding the designation of the groundwater basin.

**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 though a call has been placed on the stream by senior decreed rights.

**Basin** – A river basin is the drainage area of a particular river. The Colorado River drains or is fed by an area of 250,000 square miles, (creating the Colorado River Basin).

**Beneficial use** – Applying water to a useful purpose in an efficient and responsible manner without being wasteful. Historically beneficial uses included only agriculture, industry, domestic use, and municipal use. Now Colorado also recognizes fish, mining, wildlife, snowmaking and recreation as beneficial uses.

**Blue River Decree** - The Blue River Decree was finalized by a federal court decision in 1955 and was the result of a dispute dating back to 1937. In 1937, Congress authorized a reclamation project known as the Colorado-Big Thompson Project (“CBT”). This project was developed to store replacement water at Green Mountain Reservoir for use by the western slope to compensate for other Colorado River water diverted to the eastern slope as part of the CBT. The Decree recognized the Federal Government’s right to fill and utilize Green Mountain Reservoir and described Denver’s water rights to the use of Blue River water and its tributaries.

**Bypass flows** – U.S. Forest Service (USFS) requirements of water diverters, with structure on USFS land, to maintain minimum flow levels from reservoirs or in the routing of water around diversion facilities, typically to serve environmental purposes. These requirements are controversial because it was found by a federally established task force that Congress had not delegated the necessary authority to the Forest Service to require bypass flows as a condition of renewing or reissuing authorization for existing projects, and that such actions undermine McCarran adjudications.<sup>1</sup>

**Call** – A “call” on a river may be placed by a senior water right holder who experiences a shortfall in the water that they are entitled to divert. The state will then force junior water right holders upstream to stop diverting in order to permit more water to reach the senior holder.

**Change in use** – Most western states allow water rights holders to file for a change in use or point of diversion where such changes will not result in injury [defined below] to other users.

**Colorado River Water Conservation District (CRWCD or River District)** – A public water policy agency created by the Colorado General Assembly in 1937 whose purpose is to conserve, use and develop the water resources of the Colorado River and its principal tributaries. The District is made up of 15 West Slope Counties in which a majority of the

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<sup>1</sup> Kenney, Douglas S., Megan K. Murphy and Peter D. Nichols, *Water and Growth in Colorado: A Review of Legal and Policy Issues*, Natural Resources Law Center, University of Colorado School of Law, 2001, p. 25.

Colorado River Basin in the State is located. These counties are Moffat, Routt, Grand, Eagle, Summit, Pitkin, Gunnison, Rio Blanco, Garfield, Mesa, Ouray, Delta, and parts of Montrose, Saguache and Hinsdale.

**Colorado Water Conservation Board (CWCB)** – Statewide agency created by the Colorado General Assembly in 1937 to aid in "the protection and development of the waters of the state for the benefit of present and future inhabitants of the state..."<sup>2</sup> Its main responsibilities include holding instream flow water rights, flood control and protection, development of statewide water policy, identifying and recommending water development projects, as well as providing loans and grants to fund those projects. They are the only entity that can legally hold instream water rights.

**Compact** – A legal contract adopted by two or more states and ratified by the U.S. Congress which allocates water flowing by or through those states. Compacts typically guarantee headwater states a future right to a fraction of the water when it becomes needed. Colorado is a member of 10 such compacts.

**Compensatory Storage** – Refers to the concept that the impacts of a transbasin diversion may be partially offset by constructing a second diversion within the basin of origin. Green Mountain Reservoir was constructed as compensatory storage on the West Slope for the Colorado Big Thompson project which diverted Colorado River Water to the East Slope.

**Conditional right** – Conditional rights are a way to essentially hold your place in line within the priority system. A conditional right is a right to use water conditioned upon completion of a specified project within a reasonable amount of time. Maintaining a valid conditional right requires a showing of diligence. A conditional water right becomes an absolute water right (is "perfected") when the water is actually used.

**Conjunctive use** – Conjunctive use is the coordinated use of both ground and surface water resources to maximize the availability of both. In wet periods, surface water will generally be the preferred water source, and excess surface water may be used to recharge underground aquifers. During drought periods when surface water is scarce, a greater reliance can be placed on ground water to meet consumptive needs. The Front Range, with substantial ground water resources, is increasingly looking to conjunctive use as a way to optimize their water supplies.

**Conservancy districts** – Entities organized pursuant to CRS 37-45-101 et seq. (i.e. Middle Park Water Conservancy District, Upper Gunnison River Water Conservancy District). Property taxes in the district's area provide for water projects that allow for economic and environmental benefits.

**conservation district** – A conservation district is a policy-making body that is chartered by the General Assembly of Colorado for the purpose of protecting and developing the water resources of a portion of the state. Many conservancy districts can be located

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<sup>2</sup> C.R.S. § 37-60-102 (2004).

within the boundaries of a conservation district. There are four water conservation districts in Colorado: The Colorado River Water Conservation District covers northwest and west central Colorado, The Southwestern Water Conservation District covers the southwest corner of the state, the Rio Grande Water Conservation District covers the San Luis Valley and the Republican River Water Conservation District that represents the Republican River Basin in eastern Colorado.

**Consumptive use** – The amount of water consumed, as apposed to diverted, from the stream as a result of industrial processes, manufacturing, power generation, municipal uses, and evapotranspiration by irrigated crops.

**Cubic foot per second (c.f.s.)** – A common measure of water flow where one cubic foot of flows by a given point in one second of time. One c.f.s. is roughly equal to the flow produced by thirty garden hoses all running at the same time, or 499 gallons per minute.

**Decree** – Legal document issued by a water court that specifies the rights of a water rights' holder. It shows the priority date of the diversion, the type and place of the use, and the amount of diverted water.

**Diligence** – Reasonable progress towards making a conditional water right absolute by putting unappropriated water to a beneficial use. This 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.

**Diurnal** – Diurnal describes the fluctuations of streamflow throughout the day. The rate of snowmelt increases with periods of sun exposure and increased temperature. Streamflows increase after the sun exposure of daylight hours and corresponding decrease after periods of darkness.

**Diversion** – Diverting water from a stream means taking the water out of the stream. A diversion is a physical structure that removes water from a natural stream. In-channel diversion means that water is controlled through structures within the stream channel.

**Duty of water** – The amount of water required for the practical and beneficial irrigation of a give amount of land; for example one c.f.s. to irrigate 80 acres.

**Effluent** – Effluent is any outflow of water. In connection with human water uses, the term effluent is most often used in the context of water whose quality has been impaired by human use, animal use or otherwise compromised by its diversion for its natural source. *Treated effluent* is the term used for discharges from wastewater treatment plants and returned to a river, stream or other water source.

**Endangered Species Act** (16 U.S.C. § 1536) – Section seven of this federal statute requires that the government take no action that may jeopardize the continued existence

of any endangered or threatened species. Where the federal government is involved in a water project, this act may prohibit the project from proceeding if the loss of water will be harmful to such species. Some states have their own state laws regarding endangered species as well.

**Exchange** – Diverting water at one place and replacing it with another source without causing injury to other water rights.

**Exempt well** – A well, usually domestic or stock watering, that is presumed to be exempt from administration as a result of statutory provisions assuming non-injury to other water users.

**Fee well** – A well that is not exempt and requires a finding by the State Engineer of non-injury to other water rights before a permit can be issued.

**Foreign or imported water** – Water conveyed into a new watershed. In Colorado, as well as in most western states, this water is treated differently, in that an importer of foreign water is not required to return the flow back into the stream, but instead may use it to extinction.

**Free river** – Free river conditions occur when there is more water than all perfected water rights on a river system, enabling any water user, with or without water rights, to use water from that waterway. A free river is most likely to occur during the spring runoff or on streams that have few water users.

**Futile call** – An unenforceable call that occurs when shutting down upstream users will not result in more water reaching the downstream senior user.

**Groundwater** – Water that is under the ground. Legally, there are three kinds of ground water: tributary, non-tributary, and not-non-tributary.

- *Tributary groundwater* refers to seepage, underflow, and percolating water that will eventually become part of the natural stream. In Colorado, all groundwater is presumed to be tributary unless proved otherwise.
- *Nontributary groundwater* is water that is not physically connected to a stream system, and in Colorado is defined by statute.
- *Not nontributary groundwater* applies only to Denver Basin Aquifers and has different rules for administration for non-tributary.

**Groundwater mining** – The practice of taking groundwater out of an aquifer at a rate faster than it is being replenished.

**Headgates** – Control devices at the head of an irrigation system used to control the diversion of water from a stream, canal, or reservoir. When these are turned off, no irrigation water will be delivered.

**Historic use:** Historic use documents the physical diversion and consumptive use of a water right over a period of time. Private diversion records or State Engineer's office records typically document a water user's historic use.

**Hydroelectric** – Hydroelectric power generation is the production of electricity from running or falling water, either from free-running watercourses or releases from a dam.

**Injury** – Occurs when a change in use or point of diversion by one water user results in diminished supplies to another water user. The “no-injury” rule requires that requests for changes in use be denied where they will result in injury to others, including junior users.

**Instream flow (ISF)** –Legal right for water to remain in the stream to protect the natural environment. Only the CWCB can hold an instream water right.

**Junior priority** – A water right whose date of appropriation is more recent than another right.

**McCarran Amendment (43 U.S.C. § 666)** – A federal law that waives governmental sovereign immunity and permits the federal government to be brought into state court where general adjudications of water rights are under way. If the federal government fails to assert its water rights, including reserved rights, in the course of such a proceeding, such rights are lost.

**Minimum stream flow** – Colorado recognizes the benefits of waterflowing in the state's rivers and streams. The Colorado Water Conservation Board (CWCB) has been granted the exclusive authority to hold water rights for the minimum flows necessary to protect the natural environment.

**Mitigation** – Mitigation is the remedy of negative consequences of certain actions. Mitigation is required or requested for most water development projects. Mitigation may be required when constructing reservoirs, diverting large quantities of water from a stream or transferring water from one basin of the state to another. Mitigation can take the form of constructing new wetlands, building new storage to compensate for a loss of water, repairing a stream channel and any other action deemed prudent by affected parties.

**Non-consumptive** – Any use of water that does not consume or deplete water through its use is non-consumptive. Recreation and aethics are examples of water use that are non-consumptive.

**Non-point sources** - Pollutants that emanate from an un-concentrated source; such as rainfall/snowfall, agricultural runoff, septic systems and contaminated soils.

**Phreatophytes** - Plants and trees whose roots reach below the water table and which consume a large amount of water through evapotranspiration. Removal of such vegetation along a river may significantly increase streamflow.

**Point sources** – Contaminated discharges flowing into a water body from any discernible, confined, and discrete conveyance (essentially from the end of a pipe).

**Prior Appropriation** – Also known as “first in time, first in right”, the prior appropriation doctrine is the fundamental basis of Colorado water law. Water rights are ranked according to the chronology, not location; the older the right, the more senior the right. When supplies are limited, senior rights are met first; junior rights may not be met.

**Priority date** – The date attached to all water rights in Colorado indicating when the water right was first obtained. This determines how senior the water right is.

**Public trust** – Doctrine making states’ responsible to hold certain valuable property rights in trust for the benefit of the citizens of the state. In California, this has been extended to water rights, and was used to invalidate water rights held by the City of Los Angeles when it was discovered that depletions of water were destroying the unique habitat at Mono Lake. National Audubon Society v. Superior Court of Alpine County, 33 Cal. 3d 419, 189 Cal. Rptr. 346, 658 P. 2d 709 (1983). In Montana, the doctrine has been used to assure stream access to the public. Montana Coalition for Stream Access v. Curran, 682 P.2d 163 (Mt. 1984).

**Reserved water rights** – Water rights deemed to be established in conjunction with the reservation of land by the federal government. For example, National Parks, Forests, and other reservations will be deemed to have such water reserved as is necessary to meet their primary purposes.

[**Winters Doctrine** The US Supreme Court, in *Winters v. United States*, gave the federal government the power to reserve the waters of the US and exempt them from an appropriation under state law. The Court held that the federal government may do this on all federally reserved lands (e.g. National Parks, National Monuments, Indian Reservations, etc.).]

**Return flows** – Water that returns to a stream after it has been used for a beneficial purpose. This includes water which is returned directly from irrigation systems wastewater treatment facilities and also water which gradually seeps back into the ground over time.

**Reuse** – A term that often applies to the use of transbasin water, non-tributary water, or transmountain water, where the owners have the right of successive use as long as they maintain identification and control of their water.

**Riparian** – This refers to land, along or on the bank of a natural water body or water course. It may also refer to the body of water law prevailing in the eastern U.S. which premises the existence of water rights on the ownership of riparian land.

**Salvaged water** – This is water that is saved by adopting water conservation practices. Many western states do not recognize water rights in salvaged water and consequently provide no incentives to conserve.

**Second-foot** – A measure of flow equal to a cubic foot of water per second. The labels “c.f.s.” and “second-feet” are equivalent.

**Special district** – Special units of government created by western states with the authority to issue bonds, levy taxes, and use the money to build water projects. They go by various names such as Natural Resource Districts, Irrigation Districts, Water and Sanitation Districts and Conservancy Districts.

**State engineer** – The official in Colorado who administers all water rights in the state.

**Substitution** – Water that is added at a downstream location by a junior appropriator in order to fulfill a senior priority. The junior then can use the upstream water that is no longer needed by the senior.

**Surface water** – Water which is found in rivers, lakes, streams, and wetlands, and which is distinguished from groundwater. They are appropriated waters, not owned.

**Tranbasin diversion** – Removal of water from its natural course to another basin. The water so removed is totally gone from the basin of origin. None returns to the stream in the basin from which it was taken. Diversion from the headwaters typically takes the highest quality water from a basin and consequently diminishes the water quality downstream.

**Unappropriated water** – This is water flowing in a stream which has not been appropriated or claimed by any person.

**U.S. Bureau of Reclamation (USBR or Bureau)** – Established in 1902 under the federal Newlands Reclamation Act, and is the organization in charge of large scale water development projects in both agrarian and municipal centers. The Bureau oversees the Colorado Big Thompson, Ruedi and Frying Pan Arkansas Projects.

**U.S. Army Corps of Engineers** – Agency that issues Section 404 permits, which are required of virtually every water diversion or storage project in the U.S.

**Usufructuary right** – A right to use something, like water, despite the fact that one does not own the thing or resource. All water rights in Colorado are deemed usufructuary because no one owns the actual molecules of water, but only the right to use the water for a time before it is returned to the system.

**Virgin Flow** – The natural flow of a stream which would occur if man had not affected or used water from the stream.

**Water court** – In Colorado, an individual must go to water court and receive a decree in order to obtain a new water right, or to effect a change in use or point of diversion. This process is unique to Colorado, as most other western states have established administrative processes for the issuance of water rights.

**Water right** – This is a right to use water and is usufructuary in nature. Water rights are fully transferable property rights.

**Watershed** – This is an area that, because of topographic slope, contributes water to a specified surface water drainage system, such as a stream or river. Under eastern riparian water law, water must be used within the watershed. In contrast, western water law generally allows for use outside the watershed. Watershed can be large, (the Colorado River watershed stretching from Colorado to Mexico), or small, (the Fraser River watershed from Berthoud pass to the confluence with the Colorado River).

**1041** – Colorado House Bill 1041 was enacted in 1974. It allows local governments to regulate a wide variety of development activities with guidance from the state. (See page 23 for more information)

**208** – Section 208 of the Clean Water Act, allows for regional approach to water quality management. (See page 15 for further information)

**404** – Section 404 of the Clean Water Act, requires approvals for discharges of dredged or fill material into any waters located in the U.S. (See page 15 for further information)

**401** – Section 401 of the Clean Water Act, State Water Quality Certification Program, requires states to certify that federal permits or licenses will comply with the state water quality laws. (See page 15 for further information)

**402** – The National Pollution Discharge Elimination System (NPDES) is the regulatory program created under the Clean Water Act to issue permits to those discharging from point sources. (See page 15 for further information)

**10825** – East Slope and West Slope water providers in the Upper Colorado Basin have committed to permanently supply 10,825 acre-feet of water per year (10825 Water) to assist with the recovery of four warm water endangered fish that inhabit the lower reaches of the Colorado River watershed in western Colorado. This water is supplied to the “15-Mile Reach” of the Colorado River near Grand Junction, most commonly during the July through October period. During this time of year the stream flow of the Colorado River within the 15-Mile Reach is substantially impacted by upstream water diversions, and the supplemental 10825 water is beneficial for

endangered fish.

**1177** – Colorado House Bill 1177 was enacted in 2005. The “Colorado Water for the 21st Century Act” sets up a framework that provides a permanent forum for broad-based water discussions.