

GLOSSARY

Acre-foot: The volume of water required to cover an acre of land to a depth of one foot; the equivalent of 325,851 gallons or 1,233 cubic meters. Often described as enough water to support two urban households for one year.

Appropriation Doctrine: The system for allocating water to private individuals used in most western states. The doctrine of Prior Appropriation was in common use throughout the arid west as early settlers and miners began to develop the land. The prior appropriation doctrine is based on the concept of “first in time, first in right.” The first person to take a quantity of water and put it to Beneficial Use has a higher priority of right than a subsequent user. Under drought conditions, higher priority users are satisfied before junior users receive water. Appropriative rights can be lost through nonuse; they can also be sold or transferred apart from the land.

Appropriative rights: Water rights unrelated to riparian land ownership based on the principle of “first in time, first in right.” These rights are also based on physical control of water, and since 1914, require a state-issued permit or license.

Aqueduct: A pipe, conduit, or channel designed to transport water from a remote source, usually by gravity.

Aquifer: A geologic formation(s) that is water bearing. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people's uses.

Aquifer (confined): Soil or rock below the land surface that is saturated with water. There are layers of impermeable material both above and below it and it is under pressure so that when the aquifer is penetrated by a well, the water will rise above the top of the aquifer.

Aquifer (unconfined): An aquifer whose upper water surface (water table) is at atmospheric pressure, and thus is able to rise and fall.

Area of origin statutes: Statutes designed to protect counties and watersheds where the water originates, in the form of rain or snow, from the export of water outside the regions.

Beneficial use: Includes irrigation, municipal, domestic, industrial, recreational use, and protection of fish, wildlife and their habitat, and aesthetic enjoyment. (Article X, Section 2 of the state Constitution requires that all water resources must be put to beneficial use, without waste or unreasonable use.)

Cfs: Cubic feet per second. One “cfs” is equal to 7.48 gallons of water flowing each second, and is used to describe a rate of the flow in streams and rivers. It is equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second.

Consumptive use: That part of water withdrawn that is evaporated, transpired by plants, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment. Also referred to as water consumed.

Conveyance loss: Water that is lost in transit from a pipe, canal, or ditch by leakage or evaporation. Generally, the water is not available for further use; however, leakage from an irrigation ditch, for example, may percolate to a groundwater source and be available for further use.

Discharge: The volume of water that passes a given location within a given period of time. Usually measured in cfs.

Drainage basin: Land area where precipitation runs off into streams, rivers, lakes, and reservoirs. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge. Also called a “watershed.”

Evaporation: The process of liquid water becoming water vapor, including vaporization from water surfaces, land surfaces, and snowfields, but not from leaf surfaces.

Evapotranspiration: The sum of evaporation and transpiration, which is the process by which water that is absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface, such as leaf pores.



Fallowing: Allowing cultivated land to lie idle during the growing season.

Foreign water: Water imported into a river or stream from another hydrologic basin.

Gauging station: A site on a stream, lake, reservoir, or other body of water where observations and hydrologic data are obtained. The U.S. Geological Survey measures stream discharge at gauging stations.

Groundwater: (1) Water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper surface of the saturate zone is called the water table. (2) Water stored underground in rock crevices and in the pores of geologic materials that make up the earth's crust.

Groundwater (confined): Water under pressure significantly greater than atmospheric, with its upper limit the bottom of a bed with hydraulic conductivity distinctly lower than that of the material in which the confined water occurs.

Groundwater recharge: Inflow of water to a groundwater reservoir from the surface. Infiltration of precipitation and its movement to the water table is one form of natural recharge. Also, the volume of water added by this process.

Groundwater (unconfined): Water in an aquifer that has a water table that is exposed to the atmosphere.

Infiltration: Flow of water from the land surface into the subsurface.

New water: Transferable water that was not previously available, which when accessed, creates new supply that can be allocated to another use.

Paper water: Water proposed for transfer that exceeds what the user can rightfully sell (e.g., sale of water by a user entitled to the water under contract, but the right has not been historically exercised).

Percolation: (1) The movement of water through the openings in rock or soil. (2) The entrance of a portion of the streamflow into the channel materials to contribute to groundwater replenishment.

Prior Appropriation Doctrine: The system for allocating water to private individuals used in most western states. The doctrine of Prior Appropriation

was in common use throughout the arid West as early settlers and miners began to develop the land. The prior appropriation doctrine is based on the concept of "first in time, first in right." The first person to take a quantity of water and put it to beneficial use has a higher priority of right than a subsequent user. The rights can be lost through nonuse; they can also be sold or transferred apart from the land.

Public trust: The public's rights to many natural resources, including running water, the sea, and the shore. The Public Trust Doctrine traditionally applied to commerce and fishing in navigable waters and has been expanded to include fish, wildlife, habitat, and recreation, and the preservation of natural resources and ecosystems.

Real water: Water proposed for transfer that is not derived at the expense of any other lawful user (e.g., water made available from fallowing).

Reasonable use: Reasonableness is reliant upon the circumstances of the case, which may change over time. The requirement that waters of the state be put to reasonable use contemplates an analysis of the reasonableness of a particular use vis-à-vis other water users in the system. Thus, although a particular use of water may be beneficial as defined by statute and/or case law (see definition of beneficial use), the overall amount of water put to that use may not be reasonable vis-à-vis other users in the system. The courts have traditionally focused on utilitarian considerations, such as the current economic and social demands on the state's water resources, in determining the reasonableness of use. Currently, courts have included environmental considerations in that determination. (Article X, Section 2 of the state Constitution requires that all water resources must be put to beneficial use, without waste or unreasonable use.)

Return flow: (1) That part of a diverted flow that is not consumptively used and returned to its original source or another body of water. (2) (Irrigation) Drainage water from irrigated farmlands that re-enters the water system to be used further downstream.

Riparian rights: The rights of an owner whose land abuts water. They differ from state to state and often depend on whether the water is a river, lake, or ocean. The doctrine of riparian rights is an old one, having its origins in English common law. Specifically, persons who own land adjacent to a stream have the right to make reasonable use of the stream. Riparian users of a stream



share the streamflow among themselves, and the concept of priority of use (Prior Appropriation Doctrine) is not applicable. Riparian rights cannot be sold or transferred for use on nonriparian land.

Stream: A general term for a body of flowing water; natural watercourse containing water at least part of the year. In hydrology, it is generally applied to the water flowing in a natural channel as distinct from a canal.

Streamflow: The water discharge that occurs in a natural channel. A more general term than runoff, streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Surface water hydrology: A natural science that deals with the transport and distribution of water, in the liquid, gas, and solid stages, in the atmosphere, and on and beneath the earth's surface.

Third-party impacts: The direct and indirect economic, social, or environmental effects of water transfers on parties other than the buyer and/or seller.

Usufructuary: A right to use, rather than own, property (i.e., the state's water).

Watershed: Land area where precipitation runs off into streams, rivers, lakes, and reservoirs. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge. Also called a "drainage basin."

Water table: The top of the water surface in the saturated part of an aquifer.

Wheeling: The conveyance of water, as the result of contracts and other arrangements, in canals and other facilities belonging to someone other than the transferring parties.

