

Abandonment: Loss of whole or part of a water right by intent to permanently discontinue use.

Absolute Water Right: A water right that has been placed to beneficial use. See also conditional water right.

Acre-Foot: The amount of water it would take to cover an acre of land to a depth of 1 foot, approximately 325,851 gallons.

Adjudication: A judicial decree dating and defining a water right.

Annual Growth Rate: The increase in a given area's population during a period of one year divided by the area's population at the start of that year. This figure is expressed as a percentage and reflects the number of births and deaths and the number of people moving to and from an area during the year.

Appropriation: The right to take water from a stream and put it to beneficial use. Considered property rights and may be bought, sold, leased, and exchanged. Appropriation establishes a water right by diversion, due diligence, and beneficial use.

Aquifer Storage and Recovery: Underground water storage in a suitable aquifer that is recovered when needed

Assessment Tool/Instrument: The questionnaire used in the Drought & Water Supply Assessment. See also "questionnaire."

Augmentation Plans: A way for junior appropriators to obtain water supplies through terms and conditions approved by a water court that protect senior water rights from the depletions caused by the new diversions. Typically involve storing junior water when in priority and releasing that water when a call comes, purchasing stored waters from federal entities or others to release when a river call comes, or purchasing senior irrigation water rights and changing the use of those rights to off-set the new users injury to the stream.

Beneficial Use: Defined statutorily as "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[.]" In Colorado, water must be diverted for a beneficial use, which is the use of a reasonable amount of water necessary to accomplish the purpose of the appropriation without waste.

Carry-over Storage: The amount of water carried over from season to season through both wet and dry cycles in storage facilities.

CATI (computer-aided telephone interviewing): Interviewer-administered telephone surveying using a computer-based questionnaire.

Closed-end Question: Questions that ask the respondent to choose from a limited number of pre-listed answers.

Cloud Seeding: A form of weather modification that involves deliberate treatment of clouds or cloud systems to affect their precipitation processes.

Colorado Drought Mitigation and Response Plan: A plan first developed in 1981 to provide an effective and systematic means for the State to reduce the impacts of water shortages over the short and long term.

Colorado Water Conservation Board (CWCB): A division of the Colorado Department of Natural Resources, the CWCB was created in 1937 for the purpose of aiding in the protection and development of the waters of the state. The Mission Statement of the CWCB is to conserve, develop, protect and manage Colorado's water for present and future generations.

Conditional Water Right: This water right allows an appropriator to secure a priority before water has been applied to beneficial use by showing that the "first step" towards the appropriation has been taken. The "first step" includes the intent to appropriate, plus a sufficient demonstration of that intent. Once the appropriator actually places the water to beneficial use, a final decree may be issued with a priority date relating back to the initiation of the appropriation.

Confidence Interval: The range around a survey result for which there is a high statistical probability that it contains the true population parameter. This is commonly referred to as the margin-of-error.

Confidence Level: The probability that a particular confidence interval will include the true population value.

Conjunctive Use: Combined use of surface and ground water in a coordinated manner.

Cooperative Agreements: Methods for sharing water resources in cases of scarcity, which include legal agreements such as, for example, dry year leasing, transfers, augmentation plans, water conservation easements, water banking and substitute water supply plans.

Cross-tabulation: Examination of the responses to one question relative to responses to one or more other questions.

Department of Local Affairs (DoLA): The Colorado Department of Local Affairs' mission is to strengthen Colorado communities, by improving communities' physical conditions, building partnerships, augmenting local leadership and governing capacities, and improving opportunities for all individuals residing in Colorado communities. Most of the department's assistance to Colorado is provided through technical and financial assistance.

Division Engineer: Head of staff for a water division, supervising a staff of water commissioners, whose primary job is to distribute the waters of the state by monitoring headgates, responding to water calls, issuing orders to reduce or cease diversions, and collecting data on diversions.

Division of Water Resources: A division of the Colorado Department of Natural Resources, the Division of Water Resources administers and enforces all surface and ground water rights throughout the State of Colorado, issues water well permits, approves construction and repair of dams, and enforces interstate compacts. It is also the agency responsible for implementing and enforcing the statutes of the Ground Water Management Act passed by the Legislature as well as implementing applicable rules and policies adopted by the Colorado Ground Water Commission and the State Board of Examiners of Water Well Construction and Pump Installation Contractors.

Drought: Defined as three separate terms, drought is:

Meteorological Drought: "A period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area." (Huschke, R.E., ed., 1959, *Glossary of meteorology*: Boston, American Meteorological Society, 638 p.)

Agricultural Drought: "A climatic excursion involving a shortage of precipitation sufficient to adversely affect crop production or range production." (Rosenberg, N.J., ed., 1979, *Drought in the Great Plains--Research on impacts and strategies: Proceedings of the Workshop on Research in Great Plains Drought Management Strategies*, University of Nebraska, Lincoln, March 26-28: Littleton, Colorado, Water Resources Publications, 225 p.)

Hydrologic Drought: "A period of below average water content in streams, reservoirs, ground-water aquifers, lakes and soils." (Yevjevich Vujica, Hall, W.A., and Salas, J.D, eds., 1977, *Drought research needs, in Proceedings of the Conference on Drought Research Needs*, December 12-15, 1977: Colorado State University, Fort Collins, Colorado, 276 p.)

Drought Management Plan: A document that indicates how an entity or set of entities will manage impacts of water shortages over the short or long term. It may contain information on coordinated drought monitoring, impact assessment, response to emergency drought problems, and mitigation of drought impacts.

Drought Mitigation: Actions taken before a drought that reduce the occurrence and severity of water supply shortfalls.

Drought Response: Actions taken during a drought to manage water supplies and water demand appropriately.

Drought Trigger: A typically quantitative threshold at which an entity declares that a drought has been entered. This may be reservoir levels, precipitation levels or other such measurements and are often set to indicate droughts of mild, moderate and severe levels.

Dry-Year Leasing: Negotiation of temporary water transfers for specific hydrologic and climatic conditions.

Evapotranspiration: Loss of water from plant transpiration and evaporation from soils and water bodies. Contributes to water losses from water systems.

Frequency: A measure of how often an event occurs; a count of the number of subjects falling in the different categories.

Futile Call Doctrine: Under this doctrine, junior water users are curtailed only if such curtailment makes water available at the time and place of injury to a senior. This allows juniors to continue diverting in times of scarcity, even if a senior is not receiving its whole entitlement, where curtailment of the junior would not allow any additional water to reach the senior.

GIS Mapping: The process by which a computer generates thematic maps that combine geographic information with demographic information and/or other relevant information.

Growth Rate: The total increase or decrease in a population during a given period divided by the average population in that period.

Impact Task Force (ITF): A set of governmental task forces that are activated to assess and respond to drought impacts under the Drought Mitigation and Response Plan. The task forces focus on the sectors of economic impacts, municipal water, wildfire protection, agricultural industry, tourism, wildlife, energy and health.

Instream Flow Rights: In Colorado, the CWCB is authorized to appropriate or acquire water rights, subject to the priority system, that contribute to minimum stream flows or natural surface water levels or volumes in lakes to preserve the natural environment to a reasonable degree.

Interagency Coordinating Group (ICG): This group is comprised of senior management representatives from lead drought response agencies and ensures the coordination of drought response activities in Colorado. It is intended to review unmet needs identified by task forces and lead agencies and identifies how to meet these needs. It is intended to coordinate with the Executive Branch and State Legislature and determines when to deactivate itself.

Internal Database: Database developed from data within the organization.

Interruptible Supply Agreements: Water rights transferred on a temporary basis for specific needs.

Interviewer or Researcher: The person responsible for recruiting participants for a focus group or the person administering a questionnaire.

Junior Water Right: A water right that follows other rights in priority; see priority.

Leak Detection: A systematic search for water loss in a delivery system or at an end users location. Considered a means of water conservation, repairing leaks found through leak detection controls the loss of water that water agencies have paid to obtain, treat, and pressurize and the loss of water consumers have purchased.

Likert Scale: A scale in which the respondent specifies a level of agreement or disagreement with statements that express a favorable or unfavorable attitude toward the concept under study.

MAPPING: Mathematical Analysis of Perception and Preference.

Margin of Error: The range around a survey result for which there is a high statistical probability that it contains the true population parameter. Also referred to as confidence interval.

Mean: The sum of the values for all observations of a variable divided by the number of observations.

Median: The numerical observation that divides the distribution of observations in half. Sometimes referred to as the second quartile.

Metering: The measurement of water use with a meter to generate data on actual customer use, which is often used for billing purposes. It has been found that billing customers based on actual water use contributes directly to water conservation and aids in detecting leaks throughout a water system. (adapted from <http://www.epa.gov/water/you/chap3.html>)

Methodology: The research procedures used; the section of the final report in which the researcher outlines the approach used in the research, including the method of recruiting participants, the types of questions used, and so on. Methodology can also mean the approach a moderator uses to conduct focus groups.

Metropolitan Statistical Area (MSA): An urban area determined by the U.S. Office of Management and Budget based on geographic and population characteristics as well as local input from state demographers.

Multiple Choice Questions: Questions that ask a respondent to choose from a list of more than two answers.

Multiple Regression Analysis: Statistical procedure that studies multiple independent variables simultaneously to identify a pattern or patterns.

Objectives: The information to be developed from a study to serve the project's purpose.

Open-ended Question: A question that has no prelisted answers which requires the respondent to answer in his or her own words. Also known as a subjective or verbatim question.

Operating Agreements: Arrangements among water right holders for changes in call priority.

Opinion Data: Information collected in the Drought & Water Supply Assessment of obtaining empirical evaluations of attitudes, behavior or performance. Designed to generate projectable numerical data about a topic that pertains to a water user's quantitative responses to water issues rating a particular matter.

Pearson's Correlation Coefficient: The most common measure of the strength of the association between variables.

Pilot Test: An initial test of a questionnaire conducted with a small number of participants prior to the final modification & commencement of the survey project.

Prior Appropriation Doctrine (or Doctrine of ...): Commonly described as "first in time first in right." Under this doctrine, rights to water are granted upon the appropriation of a certain quantity of water to a beneficial use, within a reasonable amount of time. The date of appropriation determines the priority of the water right, with the earliest appropriation establishing the most senior, or superior, right.

Priority: The ranking of a water right in regards to all other water rights on the stream system. It is determined by the year in which the application was filed for the water right. The date the appropriation was initiated determines the relative priority of water rights for which the applications were filed in the same year. Priority determines who may divert and use water in time of short water supply.

Project Component: The various individual actions or activities that can be performed to mitigate drought impacts.

Public Trust Doctrine: A common law doctrine that holds that it is the legal right of the public to use certain lands and waters and the responsibility of the state to preserve and protect the right of the public to the use of these lands and waters. Colorado does not have a public trust doctrine.

Quantitative Research: Research conducted for the purpose of obtaining empirical evaluations of attitudes, behavior or performance. Designed to generate projectable numerical data about a topic.

Questionnaire: A set of questions designed to generate data necessary for accomplishing the objectives of the research project.

Rank-order Scales (Ranking): Scales in which the respondent compares one item with another or a group of items against each other and ranks them.

Response Bias: Error that results from the tendency of people to answer a question falsely, through deliberate misrepresentation or unconscious falsification.

Review and Reporting Task Force (R&RTF): Comprised of directors from DNR and DoLA and chairpersons of the WATF and the IIFs to review reports from the WATF and IIFs, aggregate assessments and projections, evaluate overall conditions, develop recommendations for drought response and make reports to leadership, the media, the response agencies and others.

Ripple Effect: An indirect or secondary impact.

Risk Management: The process of evaluating risks that have the potential to adversely impact operations or conditions in an effort to either reduce risk to an acceptable level or avoid risk altogether.

Sample: A subset of the population of interest selected for a research study. It is a finite portion that is used to study the characteristics of concern in the population.

Sampling Error: The estimated inaccuracy of the results of a study when a population sample is used to explain behavior of the total population.

Segment: Portion selected on the basis of a special set of characteristics.

Segmentation: The process of dividing a total market into sub-groups (segments) who exhibit differing sensitivities to one or more marketing mix variables.

Senior Water Right: A water right that precedes others in priority; see priority.

Significant Difference: In mathematical terms, difference between tests of two or more variables. The significance difference varies with the confidence level desired.

Skip Pattern: Requirement to pass over questions in response to respondent's answer to a previous question.

State Engineer: The director of the Division of Water Resources (see definition).

State Engineers Office (also Office of the State Engineer): See Division of Water Resources

Sub-state Economic Area: A geographical unit based on economic criteria determined by The Colorado Demography Section, which describe the character and prospects of different parts (counties) of the state. There are three main economic sub-state areas. The three economic sub-state areas are: 1) the metropolitan Front Range, 2) the agricultural Eastern Plains and the San Luis Valley, and 3) areas known as the Western Slope and the Central Mountains.

Substitute Water Supply Planning: Planning for temporary transfers of water during periods of shortage or while looking for permanent sources.

Tests of Significance: Tests for determining whether observed differences in a sample are sufficiently large as to be caused by something other than mere chance.

Trans-basin Diversions: (also trans-mountain diversions and trans-basin water rights): The removal of water from its natural course to another basin such that none of the water returns to its basin of origin upon use.

Validation: The process of ascertaining and recontacting respondents to confirm that interviews were conducted correctly.

Validity: Whether what we tried to measure was actually measured.

Variable: Any characteristic that can be measured on each unit of the population.

Verbatim: A transcript of the actual comments participants made during an interview. See open-ended question.

Water Availability Task Force (WATF): This governmental task force is comprised of Colorado's water supply specialists from state, local and federal governments, as well as experts in climatology and weather forecasting. The WATF monitors snow pack, precipitation, reservoir storage, and stream flow and provides a forum for synthesizing and interpreting water availability information. When the WATF determines that drought conditions are reaching significant levels, it notifies the Governor and recommends activation of the Drought Mitigation and Response Plan.

Water Banking: Pooling of surplus water rights for rental to other water users.

Water Call: The request by an appropriator for water which the person is entitled to under his decree, such a call will force those users with junior decrees to cease or diminish their diversions and pass the requested amount of water to the downstream senior making the call.

Water Conservancy District: A special taxing district, created by a vote of the district's electors, that has authority to plan, develop and operate water supply and potable water projects. There are 47 conservancy districts in Colorado.

Water Conservation: A broad term that can encompass water use efficiency (e.g., low-flush toilets), wise water use (e.g., Xeriscape™), system efficiency (e.g., distribution system leak repair), and supply substitution (e.g., wastewater reclamation). While water use *restrictions* during a drought are often referred to as "water conservation," the objective of long-term water conservation is not to curtail water use. Rather it is to increase the productive use of the water supply in order to satisfy water needs without compromising desired water services.

Water Division: Colorado has seven water divisions determined by drainage patterns of major rivers in Colorado and established in the Water Right Determination and Administration Act of 1969. The Divisions are established as follows: 1) South Platte, 2) Arkansas, 3) Rio Grande, 4) Gunnison, 5) Colorado, 6) Yampa and White, and 7) San Juan and Dolores River Basins.

Water Exchanges: Water taken at a time and place when it would otherwise be out of priority but other water rights that would be injured are satisfied with replacement from another.

Water Reuse: Use of reclaimed water for a beneficial use constitutes water reuse. Direct water reuse involves treating wastewater and piping it directly into a water system without intervening dilution in natural water bodies. Indirect reuse involves an intermediate step between the generation of reclaimed water and reuse, which may be through discharge, retention, and mixing with another water supply.

Water Storage Rights: A right to store water for later application to beneficial use.

Water Supply Master Plan: A comprehensive plan in which a water management entity addresses all technical and political issues related to providing sufficient quantity and quality of water for the entities' clients.

Water Transfers: Reallocation of water from one use to another through sale or lease, which can be a permanent or temporary legal arrangement.

Water User Segment: For purposes of the Drought & Water Supply Assessment, water users were categorized into eight groups or segments: Power, federal agencies, state agencies, municipal entities, agricultural interests, water conservancy districts, industry and other. The segment "other" includes water user groups such as counties, tribes and farm bureaus.

Wildland: Undeveloped lands that are commonly referred to as part of an interface between urban (developed) and wildland (undeveloped) areas. (Definition in progress...)

Useful Resources that Assisted in Creation of the Glossary

Central Colorado Water Conservancy District and Groundwater Management Subdistrict at:
<http://www.ccwcd.org/terms.htm>

Colorado Department of Public Health and the Environment at:
<http://www.cdphe.state.co.us/op/wqcc/StateWaterAgencies.htm>

Colorado Division of Water Resources, Water Rights Terminology at:
<http://water.state.co.us/surfacewater/terms.asp>

The Colorado Water Conservation Board at: <http://cwcb.state.co.us/>

Colorado Trout Unlimited Basic Water Law Terms at:
http://www.cotrout.org/water_terms.htm

North American Weather Consultants, Inc. at: <http://www.nawcinc.com/wmfaq.html>

Public Utility District No. 1 of Whatcom County at:
http://www.pudwhatcom.org/web%20options/Option_WM2.3.html

U.S. EPA at: <http://www.epa.gov/water/you/chap3.html>

USGS Drought Watch at: <http://ny.usgs.gov/projects/duration/define.htm>

The World Bank Group Glossary at:
http://www.unesco.org/education/tlsf/theme_c/mod13/www.worldbank.org/depweb/english/modules/glossary.htm#pgr