

## 7.0 Acronyms, abbreviations, and glossary

ACEC	Area of Critical Environmental Concern
ACOE	Army Corps of Engineers
AF	acre-feet
AF/Ac/Yr	acre-feet per acre per year
AFY	acre-feet per year
AGCI	Aspen Global Change Institute
ATV	all-terrain vehicle
AVLT	Aspen Valley Land Trust
AWUDS	USGS Aggregate Water-Use Data System
BLM	Bureau of Land Management
BOR	U.S. Bureau of Reclamation
BWCD	Basalt Water Conservancy District
CAC	Conservation Area of Concern
CAP	Conservation Action Plan
C-BT	Colorado Big Thompson Project
CDNR	Colorado Department of Natural Resources
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CDPOR	Colorado Department of Parks and Outdoor Recreation
CDSS	Colorado Decision Support System
CDWR	Colorado Division of Water Resources
cfs	cubic feet per second
CGS	Colorado Geological Survey
CNHP	Colorado Natural Heritage Program
Collaborative	Roaring Fork Watershed Collaborative Water Group
Conservancy	Roaring Fork Conservancy
CPR	Conserve, Protect, Restore
CRCT	Colorado River cutthroat trout
CRWCD	Colorado River Water Conservation District
CU	consumptive use
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
CWT	Colorado Water Trust
DOLA	Colorado Department of Local Affairs
DRMS	Division of Reclamation, Mining, and Safety
EA	Environmental Assessment
EIS	Environmental Impact Statement
ELOHA	Ecological Limits of Hydrologic Alteration
EPA	U.S. Environmental Protection Agency
EQR	Equivalent Residential Unit
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute, Inc.
ESWM	Ecologically Sustainable Water Management
FEMA	Federal Emergency Management Agency

FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
Forest Plan	2002 White River Land and Resource Management Plan
Fry-Ark	Fryingpan-Arkansas Project
GHG	greenhouse gas
GIS	Geographic Information System
gpcd	gallons per capita per day
gpd	gallons per day
GSFO	Glenwood Springs Field Office (BLM)
HB-1177	Colorado for the 21 <sup>st</sup> Century Act
HUP	Historic Users Pool
IBCC	Intrabasin Compact Committee
IHA	Indicators of Hydrologic Alteration
IPCC	Intergovernmental Panel on Climate Change
IPTDS	Independence Pass Trans-mountain Diversion System
ISF	Colorado Water Conservation Board (CWCB) Instream Flow
Program appropriations	
IWR	irrigation water requirement
maf	million acre-feet
mgd	million gallons per day
Multi-Objective Study Project	Roaring Fork and Fryingpan Rivers Multi-Objective Planning
M&I	municipal and industrial
NDIS	Natural Diversity Information Source
NEPA	National Environmental Policy Act
NHD	National Hydrography Data
NRCS	National Resource Conservation Service
NWCCOG	Northwest Colorado Council of Governments
NOAA	National Oceanic and Atmospheric Administration
PBO	Programmatic Biological Opinion
PCA	Potential Conservation Area
PSOP	Preferred Storage Options Plan
River District	Colorado River Water Conservation District
RICD	Recreational In-channel Diversion
RWAPA	Ruedi Water and Power Authority
RMP	Resource Management Plan
SCCC	Snowmass/Capitol Creek Caucus
SEO	State Engineer's Office
SHI	Stream Health Initiative
SNOWTEL	Snowpack Telemetry
SRES	Special Report on Emissions Scenarios
SSI	self-supplied industrial
StatMod	Stream Simulation Model
Southeastern	Southeastern Colorado Water Conservancy District
SWE	snow water equivalent
SWSI	Statewide Water Supply Initiative

TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TRT	Technical Roundtable
TVS	Table Value Standards
Twin Lakes	Twin Lakes Reservoir and Canal Company
UCRB	Upper Colorado River Basin
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
West Divide	West Divide Water Conservancy District
WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division
WRCC	Western Regional Climate Center
WSA	Wilderness Study Area
WSL	water supply limited
WSR	Wild and Scenic River
WWTP	wastewater treatment plant

## ***Glossary***

**Aggradation** – the process by which material is deposited within a channel as a result of sediment overloading

**Allochthonous** – Organic matter which arises by photosynthesis from outside the stream ecosystem, but becomes an input to the stream.

**Anion** – A negatively charged ion, which has more electrons than it has protons.

**Autochthonous** – Organic matter input which arises by photosynthesis from within a stream ecosystem.

**Backwater pools** – Pools which are found along the stream edge and are caused by eddies behind large obstructions such as roots, boulders and root wads.

**Bedload** – That portion of the total sediment load whose immersed weight is carried by the solid stream bed.

**Bedrock-controlled channels** – Channels that are fixed in bedrock conferring long-term channel stability.

**Benthic** – of, relating to, or occurring at the bottom of a body of water.

**Biome** – A major biotic community characterized by the dominant forms of plant life and the prevailing climate

**Braided stream channel** – Channel which is characterized by multiple channels that divide and rejoin and is indicative of an unstable stream ecosystem.

**Call** – Demand for administration of water rights, In times of water shortages, the owner of a decreed water right will make a “call” for water. The call results in shut down orders against decreed water uses and decreed junior water rights as necessary to fill the beneficial use needs of the decreed senior calling rights.

**Carr** – Shrubland community composed of species such as willow, alder and birch growing in wet soil.

**Cation** – A positively charged ion, which has fewer electrons than protons.

**Censored Value** – When a water quality constituent is reported as less than the method reporting limit, this constituent value is called a “censored value.”

**Channel alteration** – A measure of anthropogenic changes to the shape of the stream channel; includes channelization, clearing and snagging, selective snagging, riprapping, bank stabilization, realignment, lining, and dredge and fill activities. Channel alteration is present when artificial embankments, riprap, and other forms of artificial bank stabilization or structures are present; when the stream is very straight for significant distances; when dams and bridges are present; and when other such changes have occurred.

**Channelization** – Artificial straightening, stabilizing, or diverting of channels, resulting in a straighter and deeper channel.

**Chitrid Fungus** – A fungus (*Batrachochytrium dendrobatidis*) that causes chytridiomycosis a highly infectious disease of amphibians.

**Colluvium** – deposits that collect at the foot of a steep slope or cliff.

**Confined channel** – A channel which is in continuous or repeated contact with the outside of major meander bends.

**Conservation population** – Reference to Colorado River Cutthroat Trout. If a population is greater than 90% genetically pure, it is considered a “Conservation Population” according to the Colorado River Cutthroat Trout Conservation Team.

**Consumptive use** – The part of water withdrawn that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment.

**Critical habitat** – According to U.S. Federal law, the ecosystem upon which endangered and threatened species depend.

**Cut bank** – The concave (outer) bank located on the outside of meander bends.

Developed – and add pre-developed as well if decide to add

**Drought** – A period of abnormally dry weather sufficiently long enough to cause a serious hydrological imbalance

**Duration** – The length of time that a specific flow condition lasts such as the duration of extremely low flow conditions

**Ecosystem** – The biotic community and its abiotic environment functioning as a system.

**Effluent** – An outward movement of water, as a stream from a lake or waste water from a treatment plant.

**Embeddedness** – Refers to the extent to which rocks (gravel, cobble, and boulders) and snags are covered or sunken into the silt, sand, or mud of the stream bottom. Generally, as rocks become embedded, the surface area available to macroinvertebrates and fish (shelter, spawning, and egg incubation) is decreased.

**Entrenched channel** – A channel in which the stream bank is in continuous contact with the valley walls or terraces.

**Epifauna** – Animals that live upon the surface of sediments.

**Eutrophic** – Having waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which deplete oxygen content and often causes the extinction of other organisms

**Floodplain** – Lowlands bordering a stream which are subject to recurrent flooding. Flood plains are composed of sediments carried by rivers and deposited on land during flooding.

**Flow status** – The degree to which the channel is filled with water.

**Frequency** – How often a particular condition, such as high pulse or flood, has occurred

**Frost Heave** – Upthrust of ground or pavement caused by the freezing of moist soil

**Gradient** – The degree of inclination, ascent or descent.

**Groundwater** – That portion of the water below the ground surface that is under greater pressure than atmospheric pressure; that part of the subsurface that is in the zone of saturation.

**Groundwater recharge** – The movement, usually downward, of surface water or precipitation into the groundwater system.

**Grus** – An accumulation of angular, coarse-grained fragments resulting from the granular disintegration of crystalline rocks.

**Guzzling** - As used here refers to the effect that downstream channelization has on the previous upstream reach. Downstream reach channelization impacts the previous upstream reach by increasing stream velocity which results in changes to the upstream channel such as excessive bank erosion, downcutting and channel widening.

**Histogram** – a histogram is a graphical display of tabulated frequencies showing what proportion of cases fall into each of several categories.

**Hydric soil** – Soil that is saturated or flooded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.

**Hydrology** – The properties, distribution, and circulation of water.

**Hydrologic alteration of flow alteration** – change in stream flow

**Hydrologic modification or Hydromodification** – Direct modifications to stream channels that alter stream gradient, sinuosity, shape, and/or channel structure.

**Hypolimnetic** – The layer of water in a thermally stratified lake that lies below the thermocline, is non-circulating, and remains perpetually cold.

**Hypoxia** – A deficiency of oxygen reaching bodily tissues resulting in an impairment of cellular respiration

**Interstitial space**– Area between the rocks in the bottom of a stream channel

**Krummholz**-At the tree line, tree growth is often very stunted, with the last trees forming low, densely matted bushes. If it is caused by wind, it is known as krummholz formation, from the German for 'twisted wood'.

**Left Bank** – Facing downstream (SHI DATA)

**Lithological** – Referring to the physical character of rock or rock formations

**Macroinvertebrates** - An animal lacking a backbone and generally visible to the unaided eye or generally larger than 0.5 mm at its greatest dimension.

**Magnitude** – The amount of water passing a fixed point in the river at a specific point in time (e.g. how big is the high flow pulse or flood?)

**Meander** – A stream reach that includes one complete bend, curve, or loop.

**Mesic** – Adapted or pertaining to an environment with a balanced supply of moisture

**Municipal and Industrial** – SWSI definition-all publicly-supplied and self-supplied residential, commercial, institutional, and industrial water uses

**Neotropical migrant** – Bird species that nest and reproduce in North America and then migrate to Mexico, Central or South America to overwinter.

**Node** – a physical location where developed and pre-developed flows were simulated. The Upper Colorado River Basin Water Resource Planning Model dataset (2007), was developed by the CWCW and CDWR under the Colorado Decision Support System (CDSS).

**Non-Conservation population** – Reference to Colorado River Cutthroat Trout

**Nonpoint source pollution (NPS)** – Pollution that is not discharged through pipes or a point source but rather originates from a multitude of sources over a large area. Common sources of non-point pollution include failing septic systems, improper animal-keeping practices, forest practices and urban and rural runoff.

**Overbanking** – Refers to streamflow that moves out of the channel and onto the floodplain or into the riparian habitat.

**Periphyton** – A large assortment of unicellular and filamentous algae that are sessile and attach to cobble, gravel, submerged logs, large plants and other substrates.

**Phreatophytes** – a deep-rooted plant that obtains its water from the water table or the layer of soil just above it.

**Pocket water** – Pockets of calmer water created where fast current rushes around boulders and other obstructions.

**Point bar** – Sediment deposited along the inside margin of bends or meanders in streams and rivers caused by the reduced velocity along the inner radius.

**Point source** – A pipe, channel, conduit or other discrete conveyance from which pollutants are discharged.

**Potential** - As used here, the term refers to the highest ecologically stable state possible for a stream reach, without significant human interference. Potential is influenced by the natural interactions of hydrology, soils, and climate affecting the reach.

**R2Cross** – a method to determine streamflow requirements for habitat protection. R2Cross is used by the CWCB in the development of instream flow recommendations for Colorado's Instream Flow Program.

**Rate of change** – How quickly the flow changes, as flows rise or fall from day-to day

**Redd** – A trout redd is the nest that trout use to both reproduce and incubate the young.

**Return flow** – water that reaches a ground-water or surfacewater source after release from the point of use and thus becomes available for further use.

**Right Bank** – facing downstream (SHI DATA)

**Riffle** – Shallow water area with rapid current and with flow broken by a substrate of gravel or rubble.

**Riparian Areas** – Ecosystems that occur along watercourses and water bodies. These areas have high water table and support plants that require saturated soils during all or part of the year. Riparian areas include both wetland and upland zones.

**Riparian Vegetation** – Any extra-aquatic vegetation that directly or indirectly influences the stream environment.

**Ripraping** – The placement of irregular permanent material such as rock or boulders in critical areas along the stream to protect streambanks against excessive erosive forces.

**Run** – A relatively deep stretch of water which is fast flowing with an unbroken surface.

**Salmonid** – Belonging to the family Salmonidae, which includes salmon, trout, and whitefish

**Stability rating** – As used here refers to vegetation with deep, binding root masses that are capable of stabilizing streambank soils to prevent excessive erosion. 1=least stability rating, 10=greatest stability rating

**Sediment** – Fragmented material that originates from weathering and erosion of rocks or unconsolidated deposits and is transported by, suspended in, or deposited by water. Certain contaminants, including bacteria, tend to collect on and adhere to sediment particles.

**Sediment deposition** - Measures the amount of sediment that has accumulated in pools and the changes that have occurred to the stream bottom as a result of deposition. High levels of sediment deposition are symptoms of an unstable and continually changing environment that becomes unsuitable for many organisms.

**Self-supplied Industrial Use** – SWSI definition includes snowmaking facilities and identified facilities with significant water use.

**Self-supplied water use** – water withdrawn from a groundwater or surface-water source by a user rather than being obtained from a public supply.

**Sinuosity** – The ratio of the length of the channel in a given curve to the wavelength at the curve.

**Snow Water Equivalent (SWE)** – depth of liquid water that would result from melting snow. SWE is the product of snow depth and density.

**Stenothermal** – Capable of living or growing only within a limited range of temperature

**Stormwater runoff** – Rainfall or snowmelt that runs off over the land surface, potentially carrying pollutants to streams, lakes, or reservoirs.

**Stream** – All sizes of flowing water channels, longitudinally linked drainage systems extending from the most meager headwater beginnings to an arbitrarily identified end, mouth or estuary.

**Stream order** – A system of stream classification where a first-order stream has no tributaries, a second-order stream is formed by the confluence of two first-order streams and so on.

**Substrate** – The physical properties components and particles of materials within the channel.

**Superfund** – Superfund is the common name for the United States environmental policy officially known as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. § 9601–9675), enacted by the United States Congress on December 11, 1980. The Superfund law was created to protect people, families, communities and others from heavily contaminated toxic waste sites that have been abandoned. Superfund provides broad federal authority to clean up releases or threatened releases of hazardous substances that may endanger public health or the environment.

**Timing** – The time of year at which particular flow events occur, such as the timing of annual floods or low flow conditions

**Thermocline** – A layer in a large body of water, such as a lake, that sharply separates regions differing in temperature, so that the temperature gradient across the layer is abrupt.

**Table Value Standards** – Numerical water quality standards based on general scientific research, rather than on site-specific conditions.

**Tuff** – volcanic ash

**Turbidity** – A measure of the amount of material suspended in the water. High levels of turbidity over extended periods are harmful to aquatic life.

**Water quality** – The biological, chemical and physical conditions of a water body; a measure of a water body's ability to support life.

**Water year** – The water year deals with the surface-water supply for a 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2006, is called the "2006 water year." The water year is used as a basis for processing streamflow and other hydrologic data and selected to begin and end during a relatively dry season.

**Watershed** – The geographic region within which water drains into a particular river, stream or body of water. A watershed includes hills, lowlands, and the body of water into which the land drains.