Majestic bull elk in spring velvet.

Water flowing in Colorado's rivers and streams sustains a diversity of life–from the fish that live directly in the water, to birds and mammals that rely on streams for habitat and food supplies.

Water and the Environment

Healthy, flowing rivers are among Colorado's most vital natural resources—nurturing the environment, supporting communities, powering the economy, and drawing residents and visitors alike to this state's world-famous natural areas. Maintaining a high quality of life in Colorado demands that we preserve the state's waterways.

Water flowing in Colorado's rivers and streams sustains a diversity of life—from fish, invertebrates, and a host of other species that live directly in the water, to birds and large mammals that rely on streams for habitat and food supplies. In the West, 65% of the species rely on the riparian and aquatic environment, which makes up less than 5% of the land area. Flowing rivers and streams also provide clean drinking water supplies, dilute water pollution, and support greenways in many communities, thus contributing to quality of life and Colorado's attractiveness to residents and businesses.

Healthy waterways are also key to Colorado's outdoor recreation and tourism industries, which inject billions of dollars into the state's economy. For example, whitewater parks in Breckenridge, Golden, Steamboat Springs, and Vail produced nearly $13 million dollars per year for these small communities in the early 2000s.[5] The total value of rafting on the Colorado River and its tributaries within the state of Colorado has been calculated to be $114.5 million per year.[6] And the total economic expenditures for fishing in Colorado were nearly $543 million dollars in 2006.[7] While recreational participation and expenditure data do not fully capture the value of instream flows, the contribution of these activities to the state's economy is undeniable.

Yet today, many of Colorado's rivers and streams suffer from severely diminished stream flows. Long-standing agricultural water uses and growing water demands for municipal and industrial purposes place heavy demands on Colorado's limited water supply and its natural waterways. Across the state, river and stream flows are often insufficient to support healthy fisheries, environments, and recreational economies.

Developing additional water supplies to provide for a growing population threatens to make the problem worse. For example, serving future Front Range demands through transbasin diversion projects that take additional water from the Western Slope, even with good-faith mitigation, will

still further deplete waterways already stressed by diversion projects and undermine Western Slope economies and quality of life. It is incumbent upon all of us to be stewards of Colorado's rivers and natural attributes. Water planning must quantify and meet instream flow needs with the same level of energy, enthusiasm, and financial resources applied to developing new supplies.

Instream Flow Needs

Instream flow rights protect water flowing in rivers for environmental purposes. While the CWCB's instream flow program is an important tool for protecting environmental values, instream flow rights are latecomers to Colorado's water allocation system. Thus, most instream rights are "junior" to water rights for out-of-stream agricultural, industrial, and municipal water uses; instream flow rights often are left with little water after "senior" consumptive use water rights are met. Additionally, the majority of these instream flow rights are for minimum flows, in high elevation streams, and many streams have no instream rights or protections at all, leaving them vulnerable.

As our understanding of instream values has increased, there is a growing recognition that more must be done to identify, protect, and enhance non-consumptive needs. Colorado's basin roundtables have completed Phase I of their Non-Consumptive Needs Assessment (NCNA), identifying stream reaches or watersheds that support important non-consumptive values. The CWCB is now working with basin roundtables, local watershed groups, and others on Phase II of the NCNA to identify existing and planned projects that will meet or protect the non-consumptive needs identified by the roundtables. Next steps will include an evaluation of whether the existing or planned projects are sufficient to meet the non-consumptive needs.

> "We're seeing what Windy Gap (diversions) have done to us in the last 25 years. There's less fish, there's less bugs, there's less water, there's less everything—and now they're wanting more. We better stop and look at this and make sure we don't have a huge disaster."

—Wes Palmer,
Manager, Skylark Ranch

Future Water Planning

Instream non-consumptive water needs must become wholly integrated into water planning efforts. No longer can rivers and streams be an afterthought, bearing the adverse impacts of water development projects. Fortunately, the CWCB and other organizations are developing new methods of quantifying non-consumptive flow needs over large geographic areas and in specific reaches. Water providers should use these tools to inform water supply project siting and design. As we plan for a sustainable water future, instream non-consumptive needs must play a much larger role than they have in the past.

Upper Colorado – a River on the Brink

The Upper Colorado River system is famous for its gold-medal trout waters and recreation opportunities, but our state's namesake river system is in trouble. The Colorado-Big Thompson Project, the Windy Gap Project, and the Moffat Collection System Project divert water out of the Upper Colorado River across the Continental Divide for use on the Front Range. At present, an annual average of about 65% of the native flows of the Upper Colorado River Basin are diverted to the Front Range. Impacts on the ecological health of the river system are profound and include:

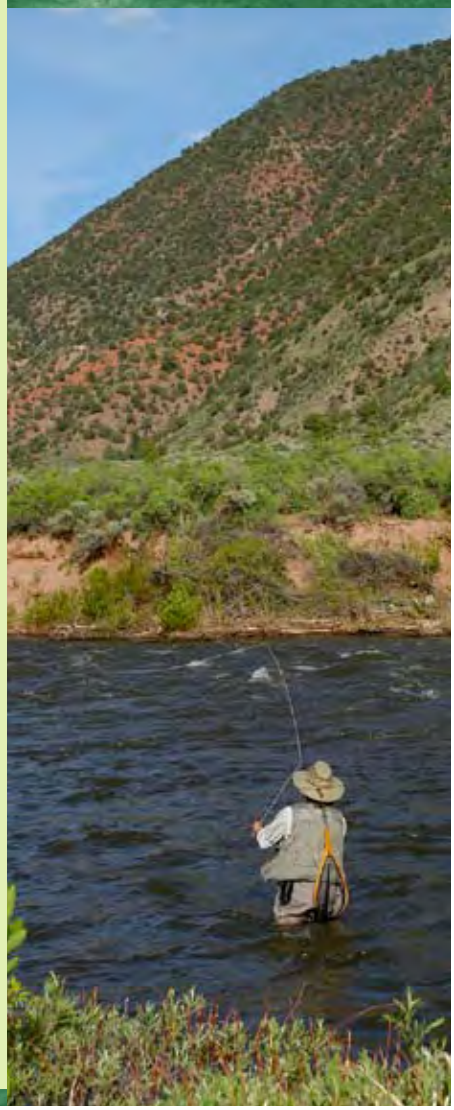
- Stream reaches that at times are almost completely dry.
- A loss of biological diversity, most notably a dramatic decrease in stoneflies, sculpin, and other healthy habitat indicator species, as well as dramatic decreases in trout biomass. A recent Colorado Division of Wildlife report warned that "increased future water diversions may exacerbate these trends."
- A spike in water temperatures in late summer, which violate state temperature standards and cause severe stress upon coldwater trout populations.
- The absence of high-water spring flushing flows and a corresponding increase in silt, weeds, and algae blooms.
- A marked decline in water quality and clarity in Grand Lake due to degraded Windy Gap water pumped through the lake.

Plans to expand transmountain diversions through the Windy Gap Firming Project and the Moffat Collection System Project could increase the portion of native Upper Colorado water diverted to the Front Range to an annual average of 85%, pushing the Colorado and Fraser Rivers and many of their tributaries to the brink of ecological collapse.

Front Range water providers must take steps to protect this priceless resource. Designing measures to protect these resources is becoming more and more difficult as streams become so dewatered that biological responses become non-linear and difficult to predict. Monitoring and adaptive management that keep project proponents accountable, and require them to adjust their operations to respond to unpredicted negative responses, is essential if these projects are to move forward – even if it means less certainty about the project's future yield. Any future water diversions from the Upper Colorado must not endanger the health of the Colorado and Fraser Rivers and their tributaries. Diversion projects must be designed and operated to leave adequate flow in the rivers under all circumstances, even if water supplies in the Upper Colorado Basin diminish in the future as a result of climate change, as many scientists project. Moreover, state leaders must work to quantify and meet the instream flow needs of all of our state's rivers and streams.

Diversion dam on Jim Creek, a tributary of the Fraser River. Photo: Mark Conlin.

For more information, see the Trout Unlimited video "Tapped out: The Upper Colorado on the brink," at www.defendthecolorado.org.



Woman fly-fishing on the Colorado River.