

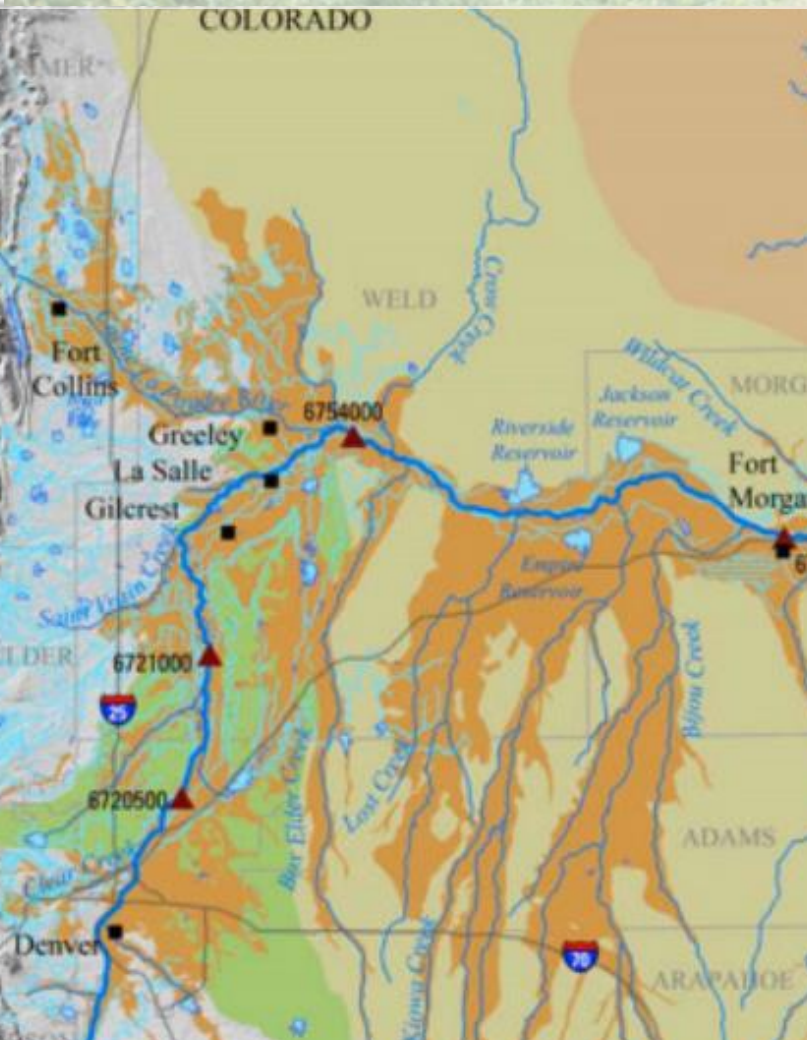
Runoff? You Mean Return Flows

According the U.S. Geological Survey, only 29% of the water diverted statewide for agriculture is consumed. What happens to the rest?



In the South Platte, the **alluvial aquifer** (orange area in the map) extends miles from the river and its tributaries to create a giant underground sponge that collects, stores, and slowly transports **return flows** downstream.

The runoff that flows off the end of a field of corn, or seeps down through the soil of a field of grass hay, are **return flows**. These flows are **recycled** and provide water supplies for many downstream users and are important in many river basins in the West.



Benefits and Negatives

Return flows recharge aquifers, reduce flood flows, and create wetlands. However, return flows are lower quality water than water left in the stream because they pick up salt, nutrients, and sediment. Return flows can also increase stream temperatures by reducing the volume of water below a point of diversion.

Are Return Flows Good or Bad?

The answer depends on the soil, runoff contaminants (if any) water temperatures, changes to the natural hydrograph, local geography, the location, and priorities of other diverters. **When return flows change, there are often winners and losers, including nature.**

Sources: Colorado Water Institute Completion Report No. 232 Part 5, Agricultural Water Conservation in the Colorado River Basin, 2017; Allen, Clemmens & Willardson, *Agro-Hydrogeology and Irrigation Efficiency*, 2005; Blevins, *Valuing the Non-Agricultural Benefits of Flood Irrigation in the Upper Green River Basin*, 2015; Huffaker, *Conservation Potential of Agricultural Water Conservation Subsidies*, 2008. U.S. Geological Survey, *Estimated Use of Water in the United States in 2015*; HB12-1278 Study of the South Platte River Alluvial Aquifer, 2013.