



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

Jared Polis, Governor

Dan Gibbs, DNR Executive Director

Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Robert Viehl, Water Resource Specialist
Stream and Lake Protection Section

DATE: September 18-19, 2019

AGENDA ITEM: 11. Abrams Creek Project Update

Background:

Abrams Creek is located approximately seven miles southwest of the City of Eagle. The creek is home to a core conservation population of green-lineage Colorado River cutthroat trout that is the only known aboriginal cutthroat population in the Eagle River watershed. The JPO No 2 Ditch diverts water from Abrams Creek and delivers it to the Alkali Creek drainage, where the irrigated lands are located. To improve the resiliency of this important native cutthroat trout population, Trout Unlimited (TU) and Colorado Parks and Wildlife (CPW) engaged with Buckhorn Valley Metropolitan District No. 1 (The District), the owner of the JPO No 2 Ditch, to explore potential means to improve Abrams Creek flows. TU and the District entered into an agreement on June 28, 2016 to partner on a project designed to improve flows in Abrams Creek for the benefit of the native fishery while preserving the District's ability to fully utilize its decreed water rights. This efficiency project included the construction of a pipeline to deliver JPO No 2 Ditch water to the District and, in exchange, the District agreed to leave 40% of Abrams Creek flows in the stream and to forego all JPO No 2 Ditch diversions if flows are at or below 1.25 cfs. To facilitate this project, the CWCB provided the District with a \$550,000 Fish and Wildlife Resources Fund grant and TU with a \$364,711 Water Supply Reserve Fund grant. The construction of this project is now complete and CWCB staff is working to finalize the installation of a permanent stream gage. This gage will provide near real-time monitoring of both flows in Abrams Creek and the JPO No 2 Ditch diversion rate to assist in administration of this agreement.

To protect these flows, the CWCB took final action on September 20, 2018 to appropriate an instream flow (ISF) water right on a segment of Abrams Creek from its headwaters to the Mrs. Paye Ditch headgate. This ISF appropriation is an increase to the instream flow water right decreed to the CWCB on Abrams Creek in Case No. 80CW0118 from its headwaters to a diversion structure, for 0.5 cfs (1/1-12/31) with an appropriation date of 3/17/1980. The total flow rate for both ISF water rights will now protect 1.25 cfs through the reach. Mely Whiting of Trout Unlimited and John Hill of the Buckhorn Valley Metropolitan District No. 1 will give a presentation to the Board on this project.

Staff recommendation

This is an informational item with no Board action required.

Attachment: Project Summary, Mely Whiting Trout Unlimited



Abrams Creek Project



Abrams Creek supports a Core Conservation population of Green-Lineage cutthroat trout (*Oncorhynchus clarkii pleuriticus*) that is the only known aboriginal cutthroat population in the Eagle River watershed. One of a few remnant indigenous populations left in the Upper Colorado River, the Abrams Creek Green-Lineage cutthroat trout population was not only found to be genetically pure, it also possesses a unique Haplotype that is genetically more distinct than other populations – making a significant contribution to the genetic diversity of cutthroat trout species and the local lineage. Furthermore, Abrams Creek cutthroat are distinctive because they reside in a relatively low elevation drainage, giving them probable adaptations to warmer temperatures and drought conditions that may benefit reintroduction efforts in the face of climate change.

State and BLM biologists have determined that low flows are a limiting factor for the Abrams Creek cutthroat trout population. The JPO Ditch, an irrigation ditch that diverts water in the middle of the territory occupied by the trout population, significantly reduces Abrams Creek flows, sometimes completely drying up the stream. In the spring, diversions reduce flows needed to flush sediment, scour pools, and maintain the riparian corridor. In the summer, low flows reduce wetted habitat, affect habitat connectivity and availability and result in increased stream temperatures. Increasing peak flows would help flush fine sediments through the system, therefore improving and possibly increasing spawning habitat, as well as pool depths which provide refuge in warm summers and cold winters. Increased flows would allow for riparian area widening, increase canopy cover, and enhance habitat for

terrestrial insects, an important food resource for resident cutthroat. Ultimately, the goal for increasing available flows is to boost the resiliency of the existing cutthroat trout population and protect the future of expansion efforts for the aboriginal cutthroat trout within the Eagle River watershed.

Grant funds were used to pipe portions of the JPO Ditch. The ditch, decreed to divert up to 3 cfs, was estimated to leak about 40% of water diverted before reaching the irrigated lands. Because the ditch takes Abrams Creek water to a different drainage, none of the water lost to leakage returns to Abrams Creek. Piping portions of the ditch has increased delivery efficiency by approximately 40%, thus reducing the amount of water removed to irrigate the lands served by the ditch. In exchange for the improved delivery efficiency, Buckhorn District, the owner of the JPO Ditch, will leave 40% of the flows physically available to the ditch in Abrams Creek and will curtail all diversions if flows in the creek fall below 1.5 cfs. This arrangement is a covenant running with the land and will be effective in perpetuity – even if the desired 40% delivery efficiency is not reached. The added flows are protected by an instream flow water right decreed to the CWCB this year. The flows will also be protected by virtue of the fact that the reach of Abrams Creek occupied by the trout population is entirely within USFS and BLM lands.

To further protect the Abrams Creek cutthroat trout, a fish screen was installed at the JPO Diversion and a measuring flume that impeded fish passage was removed and replaced by staff gages equipped with telemetry to enable remote monitoring of flows.

Other funds for this effort, were provided by the U.S. Bureau of Reclamation, BLM, the U.S. Fish and Wildlife Service, the Town of Gypsum, the Eagle Valley Chapter of TU, and two local businesses: Alpine Bank and NAI. Thank you to the CWCB for your generous donation!