



ADVANCING THE LEGACY

8833 Ralston Road

Arvada, CO 80002

303.431.6422

info@coloradocattle.org

www.coloradocattle.org



## Ag Water NetWORK

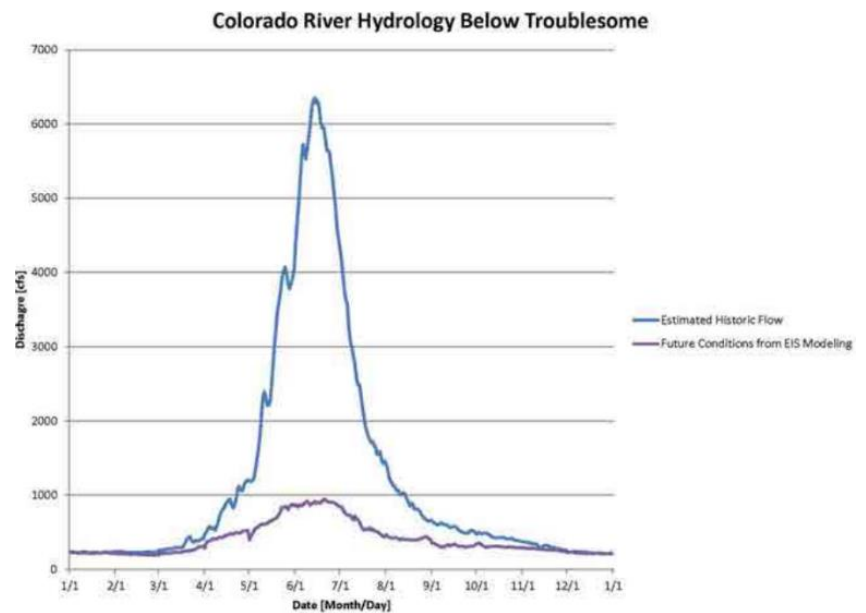
### WEBINAR #9 Highlights – Restoration Work on the Upper Colorado near Kremmling; Ag and Stream Benefits

Recorded April 7, 2020

**Presenter:** Paul Bruchez, Rancher and ILVK Project Coordinator

#### History:

- Withdrawals from the Upper Colorado River and Fraser River began with Senate Document 80 in 1937 and created reservoirs and transmountain diversions for the Colorado-Big Thompson (C-BT) Project which eliminated high spring flows and flattened the seasonal hydrograph.
- The impact of Lake Granby and Windy Gap dams have reduced peak flows from 6,000 cubic feet per second (cfs) to less than 200 cfs and severed fish passage.
- The absence of flushing flows has led to sedimentation of cobble beds – smothering macroinvertebrate and fish spawning habitat. Lower flows have increased stream temperatures, and trout populations have declined substantially.
- A 2012 study – *Irrigation and Restoration Assessment Phase 1* – found the river was heavily impacted by hydrologic modification and the removal of a 1 ¼ mile meander, which contributed to river incising and back-cutting.
- Wells were installed near the river by the Bureau of Reclamation (BoR) to provide ranchers with water for irrigation to make up for the lower river flows caused by the C-BT project.
- The drought and low flows of the early 2000's left some irrigation well pump intakes sucking air and solidified recognition that river flow and functional problems had to be addressed.



### **First Project:**

- First riffle installed in 2015 created artificial rock riffles that raised the river surface 22 inches and improved irrigation diversion.
- Elevating the river level raised the groundwater table which enabled riparian vegetation to flourish and re-stabilize embankments.
- The riffles were designed using Colorado Parks and Wildlife data on natural highly productive riffles on the Colorado River.
- Within a year after the first riffle was installed, it had one of the best golden stonefly populations on the river.
- Beneficial scouring at the tail below riffles helps create nice holes for larger fish.

### **Regional Conservation Partnership Program (RCPP) Colorado River Headwaters Project is comprised of 3 projects: ~\$7.9M awarded in 2017**

1. Windy Gap Reservoir Bypass (Connectivity) Channel
2. Habitat Restoration Project; downstream habitat restoration below Windy Gap Reservoir through the state wildlife area; overseen by Colorado Parks and Wildlife
3. ILVK Project – channel and irrigation improvements and aquatic habitat restoration on 12 river miles (~\$2M) through lands owned by ILVK ranching families.

### **ILVK (Irrigators in the Lands of Kremmling) Project:**

- 13 landowners
- 12 miles of river + 1.5 miles on the Blue River
- Approximately \$500K was spent to install a series of 5 riffles over 5 miles.
- Macroinvertebrate populations have rebounded quickly based on 3 different counts done by the 'Learning by Doing' group.
- Every large rock in every new riffle has a GPS location and is monitored. Adaptive management methods promote continual learning and improvement.
- Elevating the water table has triggered regrowth of riverbank vegetation and made some planned embankment stabilization work unnecessary.

### **Lessons Learned:**

- Time, patience and trust-building are necessary to create lasting collaborative partnerships between disparate groups (ranchers, water providers, government agencies, and environmental groups).
- "If you build it, they will come." Installing artificial riffles and bank stabilization practices have brought back macroinvertebrates, fish and river otters.