

DRAFT 20Nov22 AM

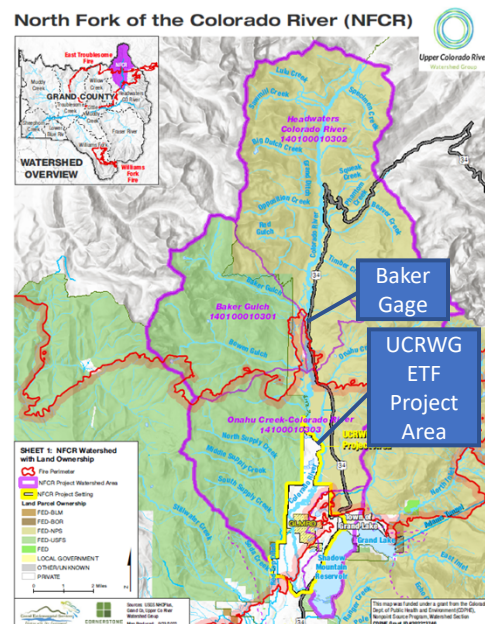
# Supporting Document 4-1 Brief Review of Water Flows and Quality at USGS Gage 09010500 Colorado River Below Baker Gulch CDPHE#2022-3746

Brief prepared for the Upper Colorado River Watershed Group  
November 2022

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## USGS Baker Gage in Rocky Mountain National Park

- USGS Gage 09010500 *Colorado River Below Baker Gulch* is at the northern (upstream) border of the East Troublesome Fire
- This “Baker Gage” offers long-term baseline insight on water flows and quality flowing into the UCRWG ETF Project Area
- This supporting document is funded by:
  - ❖ (CDPHE) Nonpoint Source Program, Watershed Section Grant ID#2022\*3746
  - ❖ Fire on the Mountain Foundation 2022



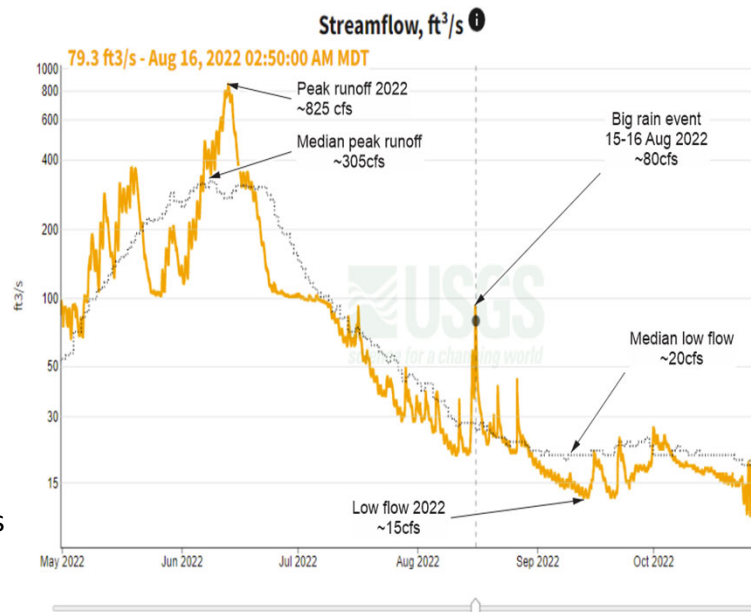
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## Colorado River Flow Hydrograph at the Baker Gage, 2022 Runoff Year

- The early, climbing limb of the hydrograph was above then below median flows in May then peaked at more than 2.5X median peaks in early
- The receding limb of the hydrograph was generally below medians with several additional pronounced peaks associated with rainy summer-fall weather



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## Colorado River Gage Height at the Baker Gage, 2022 Runoff Year

- Early season flows climbed ~3 ft from ice off to the peak in mid-June, then dropped ~3.5ft to low flows in early September
- Rains 15-16 August raised the river elevation by ~3/4ft before quickly dropping down to base flow



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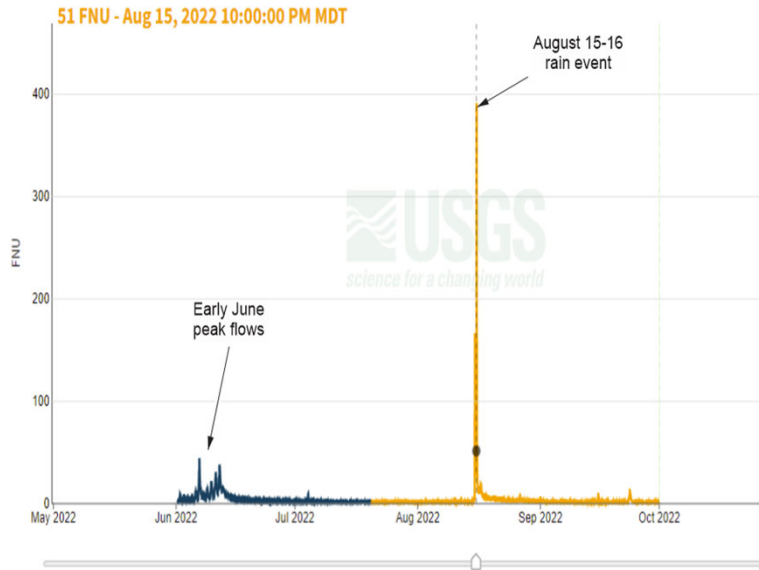
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## Colorado River Gage Turbidity at the Baker Gage, 2022 Runoff Year

- After modest increase during peak runoff, turbidity was generally low throughout the runoff year except for a significant peak during the August 15-16 rain event

Turbidity, water, unfiltered, monochrome near infra-red LED light, 780-900 nm, detection angle  $90 \pm 2.5^\circ$ , formazin nephelometric units (FNU) ⓘ

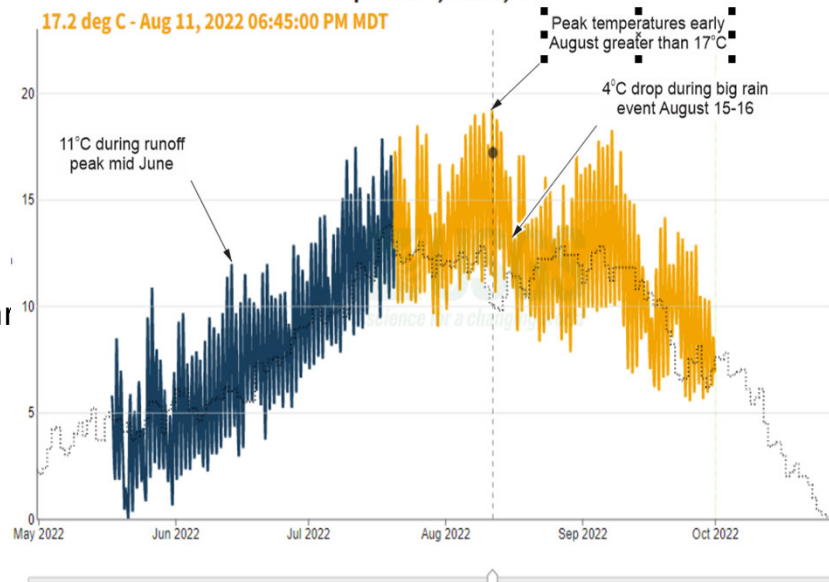


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## Colorado River Temperatures at the Baker Gage, 2022 Runoff Year

- Water temperatures range from near 0°C to 17°C during the measured runoff year
- Note peak temperatures approach 18.3°C, a recognized limit for coldwater fisheries (link ZOTERO)

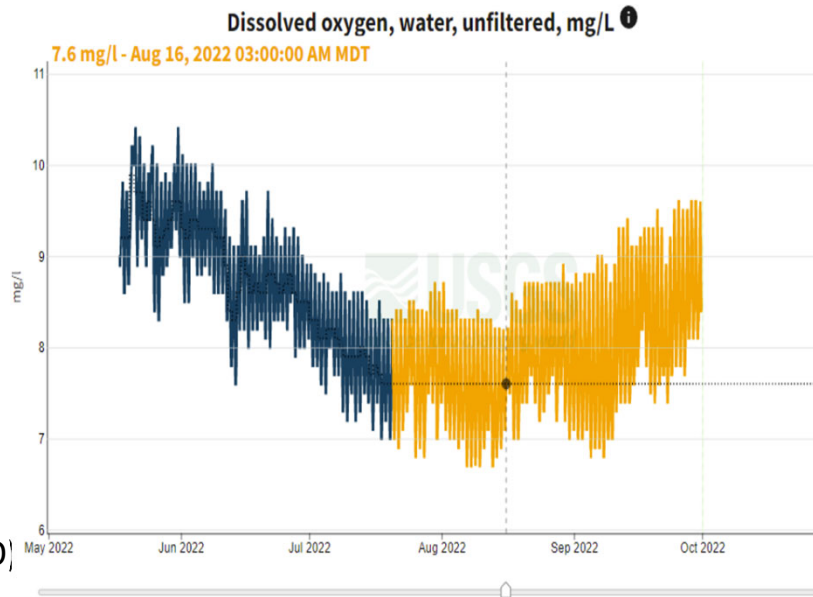
Temperature, water, °C ⓘ



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## Colorado River Dissolved Oxygen at the Baker Gage, 2022 Runoff Year

- Dissolved Oxygen follows an inverse pattern with temperatures above, ranging from 10 to 7 mg/l (ppm)
- Note ... a recognized limit for coldwater fisheries (link ZOTERO)



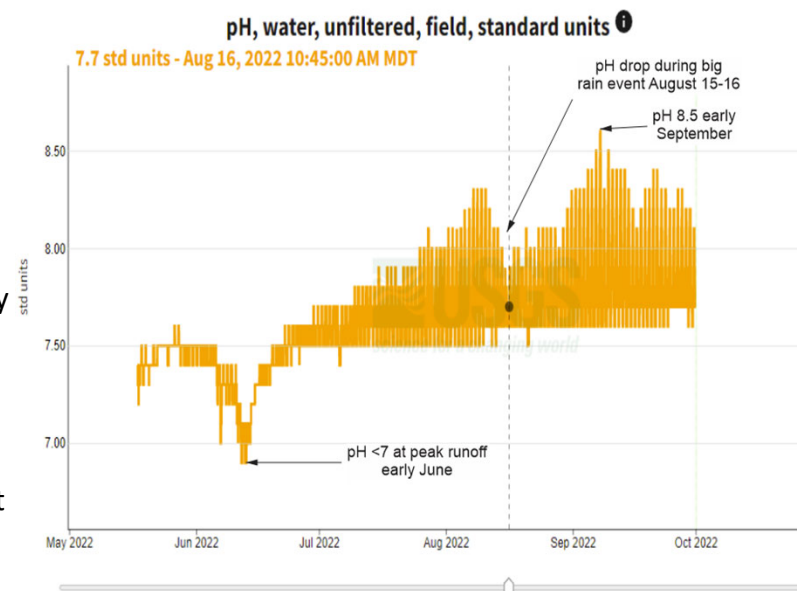
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## Colorado River pH at the Baker Gage, 2022 Runoff Year

- pH dropped from 7.5 to slightly below neutral during the rising limb of the hydrograph (mid-May to mid-June, then climbs past 8.5 during summer with the notable downward excursion coinciding with the big rain event mid-August
- Note ... a recognized limit for coldwater fisheries (link ZOTERO)



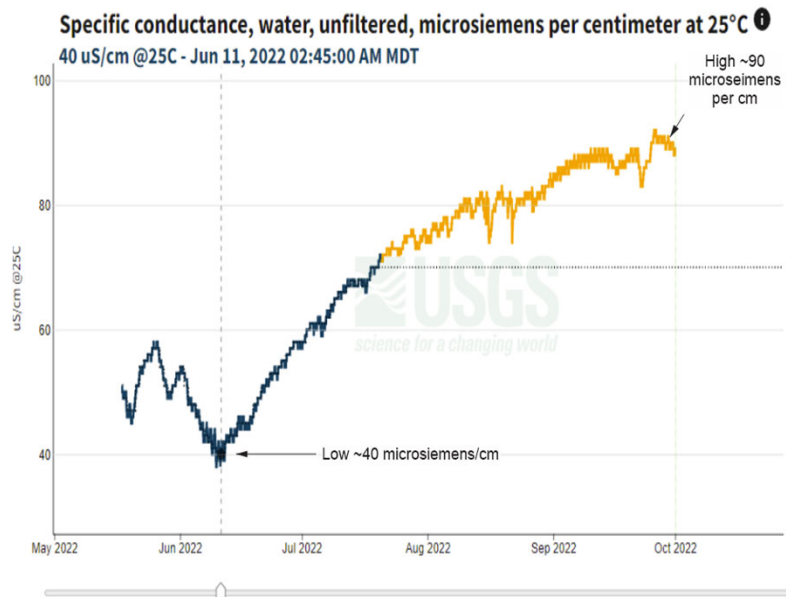
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## Colorado River Specific Conductance at the Baker Gage, 2022 Runoff Year

- Specific conductance dropped to a minimum coinciding with peak runoff, then climbed through summer and fall
- Note ... a recognized limit for coldwater fisheries (link ZOTERO)



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Thank You, Happy to Answer Questions  
or Schedule Field Trip

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NEED PHOTO

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## Links and References

- Should we have references cited section here?