

**Is the recent drought on the Colorado River “the new normal”? A Workshop on Understanding the causes of the historical changes in flow of the Colorado River.**

- September 24-25, 2018
- Location: NOAA Earth Systems Research Laboratory, Boulder, CO

Schedule: 1.75 days

“Drought Breaker” happy hour (TBD)

Monday September 24<sup>th</sup>: 8:30 AM – 5 PM;

Group Dinner

Tuesday September 25<sup>th</sup>: 8:30 AM – 3:00 PM;

**Purpose:** To document the state of knowledge on the historical changes in flow due to long-term climate change and internal variability in the Upper Colorado River Basin (UCRB, at and above Lees Ferry), including the changing nature of droughts and of predictability. To identify outstanding climate and hydrology questions, and the means to address these issues.

**Background:** In 2018, it will have been 4 years since the review article “Understanding Uncertainties in Future Colorado Streamflow” was published. Fundamentally the question addressed by this workshop is: What is our current understanding of the changing meteorology of the UCRB and the physical reasons for the hydrologic response to meteorological forcing? The timing of this workshop is critical. It is very likely WY 2018 will be in the bottom 15 percent of annual flows, further stressing an already stressed system. The Interim Guidelines specify that negotiations begin in the year 2020 on a successor agreement. Given the importance of management decisions on the River to the livelihoods of the seven Basin States, it is imperative that the current state of the science be clearly articulated as these negotiations begin.

**Scope:** The workshop will focus on the science of detection and attribution of historical hydroclimatological changes in the Upper Colorado River Basin (UCRB). The aim is to better integrate information from observational analyses, hydrological and land-surface modeling and climate modeling.

**Format: Short presentations (a few slides) with extensive discussion focused around themes.**

Discussion Themes/Schedule:

Monday AM1	Introductions
Monday AM2	Exploring the historical record for UCRB hydroclimate.
Monday PM1	Drivers of historical runoff production in the UCRB: Temperature
Monday PM2	Drivers of historical runoff production in the UCRB: Precipitation
Tuesday AM1	Other drivers--bit-players or lead actors? Greening; dust;...
Tuesday PM	Synthesis: Advancing detection and attribution science for the UCRB

**Outcome:** A possible “perspective-type” article that summarizes the state of the knowledge, including areas of agreement and disagreement, and identifies areas where the science might be improved.

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