The Growing Importance of Stream Flow Forecasting
First-ever Colorado River water shortage is now almost certain, new projections show

By Pedram Javaheri and Drew Kann, CNN
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Colorado

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Laramie and North Platte

Yampa and White
64

Upper Colorado Headwaters
65

Gunnison
35

Arkansas
49

San Miguel, Dolores, Animas and San Juan
21

Upper Rio Grande
29

South Platte
83

Legend:
- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >=150%

* Data unavailable at time of posting or measurement is not representative at this time of year.

Provisional Data Subject to Revision

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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Jan 05, 2018
Upper Rio Grande Basin Snowfall Measurement and Streamflow (RIO-SNO-FLOW) Forecasting Improvement Project

January 22, 2016
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January 22, 2016
The Graphic Below – the State of Colorado is outlined in White – Shows that Vast Majority of Western Colorado has Poor to No Radar Coverage

Figure 2. The RQI shows red as good radar coverage and black as no or poor radar coverage. 80% of Colorado’s snowpack and water comes from the mountains that are poorly covered by existing NWS radars.
Red – Actual from Gauge  
Black – Predicted via Radar
7. Conclusions and Recommendations

As a team that worked on this from all levels from water users, water administrators, water planners, research and development agencies, forecasters, and consultants, the following are our recommendations:

- Accurate determination of snowfall liquid water, snowpack and associated runoff remains a significant challenge in the local, state and federal water communities and only through collaborations and sponsorships as fulfilled in the project would fundamental progress be realized.

- Gap-filling, watershed-based radars would provide great benefit to Colorado for land, water, and weather management. Local, state, and federal coalitions should be built to purchase and maintain permanent and mobile radars to provide a more complete depiction of precipitation for use in hydrologic models such as WRF-Hydro and for flash flood prediction.
Furthering the Organizational Goals of our Founding Member, the Colorado Wildlife Foundation, by using innovation, Public Private Partnerships and non-traditional funding sources to address unresolved legacy water and weather related issues within Colorado and the Western US.
Western States Water Partnership is designed to fill the “Mission, Timing and Funding Gaps” that exist within local, county, state and federal agencies and that impede their ability to effectively address legacy water issues critical to Colorado and other Western States.
ARC was founded in 2006 by the UCAR Foundation to commercialize a new generation of advanced weather radars (hardware, software and customized products). These systems are simple to maintain, calibrate and operate while maintaining accuracy and reliability.
Upper Gunnison Water Conservation District
Colorado River Water Conservation District
Gunnison County
US DOE – Surface Atmosphere Integrated Field Laboratory (SAIL)
USGS – Next Generation Water Observing System (NGWOS)
WHAT OUR RADAR CAN DO

Radar Data Enhance by Advanced Forecasting Software Products

Streamflow Forecasting {Spring thru Fall}
Forecasting Roadway Weather – From Rain to Freezing Drizzle to Snow
Forecasting Severe Weather Events – 30 to 60 minutes in advance
Flash Flood Forecasting
Precipitation (Rain / Snow) Accumulation daily / monthly
Windshear Detection and Warning at Regional Airport
Providing hyper-local wind speeds & directions to assist local fire fighting efforts
Better Data + Better Forecasting Tools = Better Asset Management