

SPLASH Video Transcript

Text: The Colorado River Basin is an integral water source for 40 million people, spanning several states and Tribal Nations.

Text: There is an expected 10-50% decrease in mountain runoff by the mid-century, threatening water availability for those dependent on the Basin's resources.

Allen White: Well climate change, drought, and overuse are the primary stresses (NOAA researcher) on the river. Earlier this year there was the first-ever water shortage declared on the Colorado River Basin, this means that some states and Mexico will receive less water in 2022. And with respect to climate change for example, the USGS has determined that for every one degree Celsius warming, there's a 9.3% reduction in flow in the Colorado River.

Text: This uncertainty, coupled with the need for improved weather and mountain runoff prediction motivated a new study called SPLASH.

Text: SPLASH: The Study of Precipitation, the Lower Atmosphere and Surface for Hydrometeorology

Rob Cifelli: We're looking at everything that's happening in the sky, so (NOAA researcher) precipitation in the form of rain and snow. We're also looking at how much moisture is in the lower part of the atmosphere. Then we're also looking at things right on the surface and all of this affects runoff, which in the entire western United States, you know we kind of live and die by how much water we get in the snowpack and runoff, so we're measuring a lot of things in SPLASH.

Text: SPLASH is coordinated by NOAA and research partners, taking place from fall 2021 through summer 2023.

Text: A network of observation technology has been placed in key areas around a remote, headwater region of the Colorado Rocky Mountains.

Gijs de Boer: For SPLASH we're deploying a wide variety of different types of (NOAA/CIRES researcher) instruments. This includes some basic sensors that we have sitting at the surface of the Earth, making measurements of temperature, and

pressure, and winds, and humidity - things like that. We also have some advanced sensing systems that are set up to measure clouds, things like radars, lidars, and radiation instrumentation. We have sensors in the ground then we're also deploying sensors in the air both on research aircraft, and uncrewed aircraft systems. And all these pieces together provide good spatial coverage of what is going on in the East River watershed.

Text: As the data flows in, a look at real-time conditions is available online.

Text: The data collected by this network will aid in improving weather and water models, understanding mountainous weather patterns in Colorado, and subsequently around the world.

Allen White: Well, researchers will use the SPLASH data for years to come, to further our understanding of hydrometeorological processes in this basin that can be applied to perhaps other basins in Colorado and elsewhere.

Mimi Hughes: So ultimately the sort of end user of all this is the public right? So I think these forecasts and the models that we're going to be improving, they serve basically a big variety of stakeholders all the way from, you know, other federal agencies all the way down to individual people.

Credits: Special thanks to Allen White, Rob Cifelli, Gijs de Boer (CIRES), and Mimi Hughes of NOAA's Physical Sciences Laboratory.

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SPLASH Partners: NOAA, University of Colorado Boulder, CIRES, Colorado State University, CIRA, NCAR, Berkeley Lab, Black Swift Technologies, Rocky Mountain Biological Laboratory.

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