Scientists conduct drought study in 6 western states

By Keith Ridler, AP

BOISE, Idaho — Federal scientists are conducting a low-flow stream study in six western states in an attempt to gain insights that could help resource managers better allocate scarce water supplies during future droughts.

U.S. Geological Survey workers are measuring flows and temperatures through September in nearly 500 streams mostly in upper tributaries in Idaho, California, Nevada, Oregon, Utah and Washington.

The report could ultimately be used for everything from deciding how much water to release from dams, how many cattle to allow on grazing allotments, how much water will be available for farmers in irrigation districts and decisions about rivers that contain fish protected under the Endangered Species Act.

“If water managers can understand which streams are most vulnerable it helps them target efforts for drought relief,” said Chris Konrad, a research hydrologist with the federal agency and the study’s project chief.

The spring snowpack in the West in 2015 was much lower than long-term averages, and many rivers in the region are now at historically low flows.

What is especially unusual about the low snowpack, Konrad said, is that many areas received average amounts of precipitation. However, it came down as rain rather than snow, meaning it immediately ran through basins rather than forming a high-elevation snowpack that functions as a kind of reservoir slowly melting through the summer to replenish

streams.

“This is pretty extreme by historical standards,” Konrad said. “I don’t know that we can expect this kind of year frequently. But at the same time, we also know climate models are telling us we should expect warmer winters and in some years less snowpack. If we see one year like this, it’s likely that we’ll see more years like this.”

One of the key goals of the $465,000 study is to determine which basins are most vulnerable to a low snowpack and which basins have the kind of geology that can mitigate a lack of snow with groundwater.

About 160 of the streams are in Idaho.

“Groundwater can act kind of like a buffer,” said Dave Evetts, data chief at the Geological Survey’s Idaho Water Science Center. “They’re going to know based on snowpack and precipitation amounts which areas may be impacted more severely by that kind of drought situation.”

That kind of information could be used by the U.S. Bureau of Land Management when it comes to grazing allotments or setting stream flows where fish are present in water rights agreements, agency spokeswoman Jessica Gardetto said.

“We use a lot of USGS products and studies,” she said. “We incorporate a lot of their data into our NEPA (National Environmental Policy Act) reports.”

Brian Sauer, water operations manager for the Middle Snake River field office with the Bureau of Reclamation, said the additional information could be helpful in knowing how much water to expect in the spring when managers are trying to fill reservoirs but also leave space to protect against downstream flooding. It could be especially helpful following a winter like 2015.

“It’s possible that more rain than snow could make us operate slightly differently,” Sauer said.
Joel Fenolio, senior water manager for the Upper Columbia with the U.S. Army Corps of Engineers, said one year won’t change how the agency operates dams. But he said the agency would be interested in the USGS report for 2015.

“It was a challenging winter to figure out total water supply,” he said. “There was a lot of precipitation, but it didn’t build as snow like is usually does. It just kept running off.”
Another key component of the study is tracking water temperature. Many species of fish, some with federal protections, can’t survive in warm water.

Geological Survey officials say the report will be published in 2016.