

La Niña's back – so brace for possible deluge

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By Matt Weiser, staff writer

Most people know El Niño as the weather monster that brings record rain, floods and highway-closing snowdrifts to California.

But the weather phenomenon's nasty little sister, La Niña, has been the bigger troublemaker in the Sacramento area. And she's visiting again this winter.

Forecasters say La Niña will bring a greater chance of heavy rain in Northern California through February.

In past La Niña years, California got weeks of flooding, bracketed by odd periods of utterly dry weather.

La Niña is the opposite of El Niño because it is triggered by a cooling of waters in the equatorial Pacific Ocean. It usually shifts the jet stream farther north, bringing drought to Southern California and extra-wet conditions in the Pacific Northwest.

For areas in between – like Sacramento – the impact is less predictable and sometimes unwelcome.

This winter's La Niña should be mild to moderate, according to the National Weather Service. But there are signs of it strengthening.

"It definitely seems to be getting stronger," said Bill Patzert, climatologist at NASA's Jet Propulsion Laboratory and often a contrarian in such predictions. "Right now, I'm saying the dice are loaded."

The historical record for the Sacramento River shows that some of the biggest floods – and craziest mixes of rain and dry stretches – came in La Niña years.

"It's kind of an interesting paradox about La Niña," said Kelly Redmond, deputy director at the National Weather Service's Western Region Climate Center in Reno. "A case in point was the 1996-97 floods. We had a flood at the start of January, then another in the third week of January. Then we had one of the driest periods in history for the next four months."

There were epic floods in 1950, 1955, 1965, 1986 and 1997 – all La Niña years, or years with borderline La Niña conditions.

This season has been wet already, with about 1 inch of rain in Sacramento for October so far – about a half-inch more than normal, said Steve Goldstein, a weather service forecaster. Rain is expected tonight through Friday night, followed by a clear and warm weekend.

El Niño is named after the Spanish term for "Christ child" because it usually emerges in the Pacific around Christmas. It is marked by a warming of equatorial waters, which pushes the jet stream south, bringing more rain to Southern California and less to the Pacific Northwest.

La Niña, or "girl child," usually brings drought to Southern California, and sometimes flooding in the Central Valley.

Redmond studied the La Niña connection on the American River between 1933 and 2000. He found that La Niña caused water flows in the American River that were, on average, 60 percent greater than in El Niño years.

La Niña, in other words, is more likely to cause record peak flows that threaten devastation.

La Niña is more likely to create prime conditions for the dreaded "Pineapple Express" storms, Redmond said. These slow-moving weather systems stretch all the way across the Pacific, creating a fire hose that begins in the Asian subtropics and points directly at Central California.

Also called "atmospheric rivers," their rain can overwhelm reservoirs. This may force reservoir operators to release more water than downstream levees can handle. These storms also tend to be warm, causing snowmelt in the Sierra Nevada, with more land surface contributing to river flows.

All this doesn't mean disaster is ahead this winter. But "it certainly means the water managers and forecasters will have plenty of reason to watch this all winter long," Redmond said.

Forecasting has improved since the flood of 1997, which caused more than 30 levee breaks in the Central Valley, nine deaths, \$2 billion in damage and the biggest evacuation effort in California history.

Back then, said National Weather Service hydrologist Rob Hartman, forecasters could offer flood predictions only two days out – and only on the Sacramento River. On the Mokelumne River, predictions stretched out only 18 hours.

Today, thanks to more field monitoring and better computer modeling, five-day forecasts are the norm.

The American River is now one of the most heavily monitored river systems in the nation. The weather service, in fact, added more monitors to the watershed this year as part of an ongoing effort to better understand that Pineapple Express effect.

Early rain this season also helps, Hartman said, by saturating the ground ahead of major storms. This improves the ability of researchers to forecast runoff when it really matters.

"We're glad to get the moisture," he said. "We just hope it keeps coming because we really don't want another dry year like last year, or we'll be in a pickle for water resources." #

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