La Niña Anomaly Could Affect Winter Weather in Colorado

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(PhysOrg.com) -- A strong La Niña that developed early last winter, only to disappear this summer, is showing signs of life again and could affect our winter weather, said University of Colorado at Boulder and NOAA atmospheric scientist Klaus Wolter.

"It is actually trying to make a comeback," said Wolter. "It's still very weak but it has been drifting towards a more defined weak to moderate La Niña again."

According to Wolter, during La Niña winters the central and northern Colorado Mountains tend to receive normal to above normal moisture. But the southern part of the state and the desert Southwest tends to get less than average moisture during the winter.

"Mid-winter, from December to February, it tends to be a stormy period in the mountains with a lot of storms coming in from the west and it tends to be wetter to the north than the south," said Wolter. "But once we get south of the northern San Juan's in Colorado and into New Mexico and Arizona, those regions typically don't do very well moisturewise."

La Niña is an ocean-atmosphere phenomenon that is roughly opposite to its better-known sibling, El Niño. During a La Niña event, the sea-surface temperatures across the east central equatorial Pacific Ocean are colder than normal, while an El Niño event brings warmer than normal ocean temperatures to the region. Typically an El Niño event means a wetter than normal winter across the southern tier of the United States

while La Niña means drier conditions for this region.

While winters often end up being close to normal temperature and moisture wise for the season along the Front Range, a less than pleasant offshoot to La Niña winters, said Wolter, is that we can expect many windy days.

"That's the nasty part. On the Eastern slope you often get a lot of wind and it tends to be pretty dry," he said. "Some of the windstorms are what we call the ‘Bora,' which are essentially cold but dry and then, of course, we get the ‘Chinooks,' which can be uncomfortable but warm."

On the flip side, La Niña winters also can bring extremely cold weather to the region, said Wolter. He cautions, though, that this aspect of La Niña is hard to predict and doesn't happen with each event, but some of Colorado's most extreme cold snaps have occurred during this period. He said this is directly related to cold air coming down from Alaska or the Yukon Territory -- regions that tend to be colder during a La Niña event.

"And that's an interesting little detail. Later in the season when you have a cold snap in Alaska or the Yukon Territory quite often that cold air get's dislodged and comes down the eastern slope of the Rockies and we can get a big arctic cold wave two to four weeks after it peaks up north," said Wolter. It doesn't happen every time but when it happens you can almost always trace it back to either Alaska or the Yukon."

Wolter says the last time that happened was in 2006, when the temperature dipped to -14 on Feb. 18. That happened just a few weeks after a cold snap peaked in Alaska and the temperature plummeted to -51 in Fairbanks.

Provided by University of Colorado