



Source: National Oceanic and Atmospheric Administration (NOAA)

# La Niña Strengthening for Winter 2011

*Cold and wet forecast for Northern Plains; South will stay warm and dry.*

by Kindra Gordon

The Pacific Northwest and Northern Plains should brace for a colder and wetter than average winter, while most of the South and Southeast will be warmer and drier through February 2011, according to the winter outlook released by the Climate Prediction Center (CPC).

A moderate to strong La Niña is influencing weather across most of the U.S. this winter. “La Niña is in place and will strengthen and persist through the winter months, giving us a better understanding of what to expect between December and February,” explains Mike Halpert, CPC deputy director.

Specifically, cities from Fargo and Minneapolis to Green Bay will receive above-normal winter snowfall. Other cities predicted to receive above-normal winter snowfall include Chicago, Omaha, Detroit, Cleveland, Seattle and Portland.

La Niña is associated with cooler than normal water temperatures in the Pacific Ocean, unlike El Niño, which is associated with warmer than normal water temperatures. The current La Niña developed this past spring and summer.

Iowa state climatologist Harry Hillaker is also betting on La Niña to produce a cold and snowier than normal winter for Iowa and the Upper Midwest from January through March.

He explains that during a La Niña, there is usually a warm, dry fall as a run-up to winter but that changes dramatically for the Northern Plains as we get further into winter.

Both La Niña and El Niño, which typically occur every two to five years, influence weather

patterns throughout the world and often lead to extreme weather events. Last winter’s El Niño contributed to record-breaking rain and snowfall leading to severe flooding in some parts of the country with record heat and drought in other parts of the country. Although La Niña is the opposite of El Niño, it also has the potential to bring weather extremes to parts of the nation.

Here’s what the CPC is anticipating for the regions for early 2011 and into the spring as La Niña conditions persist:

- **Pacific Northwest:** colder and wetter than average. La Niña often brings lower than average temperatures and increased mountain snow to the Pacific Northwest and western Montana during the winter months.
- **Southwest, Southern Plains and Southeast:** warmer and drier than average. This could exacerbate drought conditions — particularly in southern California — and wildfire concerns in all of these areas.
- **Northern Plains:** colder and wetter than average. This area is likely to see increased storminess and flooding.
- **Ohio and Tennessee Valleys:** warmer and wetter than average. They are likely to see increased storminess and flooding.
- **Northeast and Mid-Atlantic:** equal chances for above-, near- or below-normal temperatures and precipitation. Winter weather for these regions is often driven not by La Niña but

by weather patterns over the northern Atlantic Ocean and Arctic. These are often more short-term and are generally predictable only a week or so in advance.

- **Central U.S.:** equal chances of above-, near- or below-normal temperatures and precipitation.
- **Florida:** warmer-than-normal temperatures all winter long. The best weather this winter is expected to be in Florida and warmer weather is expected all along the Gulf Coast.

The CPC emphasizes that its seasonal outlook for winter does not predict where and when snowstorms may hit or total seasonal snowfall accumulations. Halpert explains that snow forecasts are dependent upon winter storms, which are generally not predictable more than several days in advance.

## What to expect for spring?

What about the growing season for 2011? If the current La Niña is still in place in April or early May in 2011, “Iowa and Upper Midwestern states could expect to have a rather dry spring,” explains Elwynn Taylor, Iowa State University Extension climatologist.

He goes on to say that since we have been in a La Niña for a while, the 2011 growing season could be similar to what happened in 1974. He reports that the current pattern of weather is much like 1973 going into 1974. Taylor says, “It doesn’t mean we will have a dry weather pattern in 2011. This is not a forecast. But looking at how things are shaping

up, the possibility of drought bothers us a little bit. Also the strength of the current La Niña event is like it was in 1955 going into 1956 and 1973 going into 1974. The years 1956 and 1974 were not desirable years for corn production in Iowa and the U.S. Corn Belt.”

Taylor says it will be important to watch the Southern Oscillation Index (SOI) to determine if La Niña is strengthening or weakening this winter. The National Weather Service puts out an update every two weeks on what’s going on with the SOI.

Taylor further explains that the Benner drought cycle, based on more than 100 hundred years of crop yields and weather in the U.S. Corn Belt, shows droughts of major proportions coming every 18.6 years on average. “Tree ring studies over the last 800 years also tell us that the cycle of 18.6 years holds true,” says Taylor. What it shows is that there is an average of approximately 18.6 years of relatively good growing weather in between the times when a major widespread drought will occur in the Corn Belt.

2011 is at the end of the period in that cycle when drought is likely to occur. Taylor has studied the tree ring history of the past 800 years, and he reports that 23 years is the longest time we’ve gone without a major drought in the Midwest. “And right now we are at 22 years,” says Taylor.

He concludes, “So if we can make it through the year 2011 without a major drought occurring in the Corn Belt, we are going to break an old record — an 800-year-old record. This is one record I’d especially like to see set.” **HW**