

WINTER: Nobody predicted the scope of storms

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5 when two inches of snow fell overnight. Four days later the snow depth measured six inches as modified arctic air from northern British Columbia filtered into the region. A reinforcing shot of arctic air arrived on December 13 just ahead of a moist low-pressure system that took dead aim on Central

Oregon.

By December 15 many of the town's citizens awoke to approximately two feet of snow.

Temperatures moderated slightly during the final four days of 2016, but beginning on January 3, 2017, an additional 15 inches of snow fell on Sisters over a two-day period. This was followed by the coldest temperatures of the season so far when a potent arctic air mass moved in from north of the Yukon. The official low temperature in Sisters on the morning of

January 6 was -20 degrees Fahrenheit. Some thermometers measured well below that.

At this point, a fair question to ask is whether any of this was foretold by weather experts last fall. Let's take a look back to search for clues:

In October many meteorologists and climatologists were trying to figure out what the El Niño Southern Oscillation (ENSO) signal was going to look like after registering one of the strongest El Niños in 65 years during the previous winter. Though El Niño was weakening, many scientists believed that autumn would bask in its afterglow. So the call was for warmer-than-normal temperatures for the three-month period October through December.

Early last fall the ENSO was predicted to fade to neutral through the winter, but by late October and early November the signal was declining faster than expected. As a result, a revised forecast was issued to expect a weak La Niña to develop this winter.

Now let's take a look at what actually happened:

October came in only one degree cooler than average, while the rainfall was almost an inch above normal. But November was a scorcher and

dry as a bone. The temperature averaged five degrees above normal and only 0.29 inches of precipitation was recorded, making it the driest November in more than 58 years. Maybe effects of El Niño would hang around awhile...

But December was a game-changer. No one should be surprised to learn that the month was downright cold, as temperatures averaged nine degrees below normal. Precipitation registered slightly above normal but produced a lot of relatively dry snow. For the period October through December, temperatures averaged five degrees below normal. This aspect of the forecast has to be considered a bust.

And what of the ENSO signal? The current Oceanic Niño Index, which only looks at sea-surface temperatures, has a value of -0.8 putting it the weak La Niña category. The Multivariate ENSO Index (MEI) combines ocean temperature with five other atmospheric measurements. That number is -0.21, implying that the ENSO is in a neutral state. Climate scientists seem to have gotten this one right.

What does all this mean for us? The real answer is nobody is sure. Neutral ENSOs, and to some extent



PHOTO BY JIM CORNELIUS

Chillin' in Sisters...

weak La Niñas, do tend to introduce a bit more uncertainty to seasonal forecasting. But this signal of the ENSO and the occurrence of extreme weather events seem to enjoy a higher degree of correlation than do other values of ENSO.

Does this mean we are likely to endure more extreme weather this winter? Again, nobody knows. So buckle up, sit back and enjoy the ride.

The outlook for January, issued by the Climate Prediction Center on December 31, is calling for temperatures to be much below normal with precipitation amounts slightly above average.



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