Tales from a
Sisters Naturalist

By Jim Anderson & Ron Thorkildson

Climate change: Weather we like it or not

Our climate is changing. It always has and it always will. Earth doesn't exist in a static environment. Beyond the fact that the sun heats the earth unevenly, both daily and seasonally, it also goes through cycles of approximately 11 years when it shines slightly brighter, then dimmer.

Increased volcanic activity is also known to alter the global climate, the Crater Lake eruption being a local example.

Finally, over periods of thousands to millions of years, the tilt of the earth's axis of rotation and shape of its orbit change somewhat, further impacting the state of the atmosphere.

We understand these are natural cycles that alter climate over which man has no control. However, the real question is: has human activity played a significant role in global climate change in the last, say, hundred years? The answer is probably yes, but quantifying it is no easy task.

According to a NASA study, carbon-dioxide levels in the atmosphere are higher than they have been any time in the past 400,000 years, most of it from coal-burning power plants. It is very likely that this is a major piece of the puzzle. And that's without mention of how much methane there is along with it, or what the impact is of motor vehicles squirting their exhaust in our faces. Then to top all that off, has anyone really taken a look at what the loss of the Earth's rainforest means to the climate change?

Brazil tells everyone, on no uncertain terms, "You can't tell us we can't cut our rainforest and bring our standard of living up to yours!" But perhaps we should really be looking at what Brazil needs to compensate for NOT cutting their rain forests. Arborists have told us for years that trees are the Earth's heat sink, and the rainforests, perched on the Equator, where heat from the sun is the greatest, work the way they're supposed to.

When Shevlin-Hixon and Brooks-Scanlon timber companies moved to Bend in the early 1900s, they had cut all the white pine that covered Minnesota. I doubt if anyone in those days even thought that all those white pine that once covered the northern latitudes from Maine to the Rockies would be all gone — but they are.

In the remarkable book "American Canopy. Trees, Forests, and the Making of a Nation," author Eric Rutkow reveals the extent of the American forests from the time the Pilgrims arrived in 1620 right up to today. It is astounding to learn that millions of acres of trees no longer shade the Earth, not only in the northern latitudes but the south as well.

To further complicate everything, at this moment, thousands of square miles of warm water — The Blob — is perched between Mexico and Alaska, impacting our weather in such a degree that climatologists of today are telling us our snowpacks may be a thing of the past.

Without snow in the Cascades lasting into summer, there will be no water with which to irrigate, even though a local hydrologist said if it stopped snowing tomorrow there'd be 40 years of water stored in the Cascades.

The Blob was first detected in the autumn of 2013 and the early months of 2014 by Nicholas Bond and his colleagues of the University of Washington. They noted a large circular body of seawater did not cool as expected and remained much warmer than the average normal temperatures for that location and season.

In February 2014, the temperature of The Blob was around (4.5 degrees F) warmer than what was usual for the time of year, and according to predictions, it's expected to last (at least) until the end of 2015.

Surely The Blob must be man-caused, right?

Not so fast, says Clifford Mass, professor of atmospheric science at the University of Washington. He thinks the warmth is predominantly the result of natural variability.

"Here is a thought to keep in mind: the more extreme the weather anomaly, the less likely it is to be caused by human-induced global warming," says Mass.

He further explains that anthropogenic warming due to increased greenhouse gases should warm the earth in a progressive, slow way and not in huge jumps.

"The warming influencing in our region is localized and does not have the characteristics of the global warming signal seen in climate models," he said.

The event causing The Blob still isn't well-known. However, some experts consider that the wedge of warm water portends a cyclical change with the surface waters of the mid-latitude Pacific, flipping from a cold phase to a warm phase in a cycle known as the Pacific Decadal Oscillation, or PDO,

PHOTO BY JIM ANDERSON

Looking at climate change is a very cloudy situation.

This poorly understood change happens at irregular intervals of years or even decades. During a warm phase, the western Pacific becomes cooler and part of the eastern ocean warms; during the cool phase, these changes reverse. Scientists believe a cold phase started in the late 1990s, and the arrival of The Blob may be the start of the next warm phase. The PDO phases may also be related to the likelihood of El Niño events.

Then there's the volcanic vents pouring lava on the sea bottom some 300-plus miles out from the Oregon coast. Could that be having an impact on the ocean temperatures?

To further confuse things, NASA climatologist William Patzert predicts that if the PDO is at work here, there will be widespread climatological consequences and Southern California and the American South may be in for a period of high precipitation, with an increase in the rate of global warming.

However, Matt Newman, a climatologist with the University of Colorado, thinks the PDO isn't at work on The Blob. His theory is it's the persistent area of high pressure over the northeastern Pacific that's driving it, and to cause even more confusion, Dan Cayan of Scripps isn't sure any of the theories fit.

What is occurring — and there are no questions about it — is water is becoming scarce, and without a snowpack a lot of wells are going to run dry next summer. We've seen it happen before.

Understanding the phenomenon as best we can will become — as it already has in California — necessary to sustain our current way of life.