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April snow an anomaly in global climate trend

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The beauty of the snow that fell on a Sunday in late April was quickly forgotten when my wife and I realized our fruit trees might be at risk. It snowed a lot this year. Should we stop worrying about global warming?

No. Don't confuse short-term and long-term patterns.

Weather describes daily, weekly and yearly fluctuations in rainfall, temperatures and such. Some years are colder and wetter than others.

Global warming, in contrast, describes patterns observed over many decades. A few months or years of cooler weather do not mean warming has ended. Decades-long patterns clearly show rising temperatures.

One reason this seems confusing is that global temperatures are measured as averages. But an average is the middle point between highs and lows. This winter, we experienced cooler temperatures and higher snowpack. In other years, we have the opposite. Only after the averages of both the highs and the lows are calculated and placed into the context of decade-long patterns do the long-term climatic trends become clear.

Another reason for confusion between cooler weather and global warming is that warming is not felt uniformly in all locations all the time. The National Oceanic and Atmospheric Administration, for example, recently found that the average global land temperature in March was the warmest on record — 3.3 degrees Fahrenheit above the 20th century mean of 40.8 degrees — even though it was cold here in Oregon.

The record heat was caused in part by temperatures that were more than 8 degrees above average throughout much of Asia. The unusually warm temperatures melted a record-high January snowpack, leaving Asia with the lowest amount of snow on record in March.

NOAA also found that ocean surface temperatures in March were the 13th warmest on record. Combining the land and the ocean temperatures, overall global temperatures were the second warmest for the month of March since temperature recordings began in 1880 — 1.28 degrees above the 20th century mean of 54.9. The warmest March on record occurred in 2002.

Here in the Northwest, the winter weather was shaped by a typical La Niña event. La Niñas and El Niños are the names given to major shifts in ocean circulation that occur

every three to seven years and affect global and regional weather patterns.

As expected, the La Niña produced cool, wet conditions here. In contrast, El Niños tend to bring drier winter weather to our region.

Despite the above-average snowpack in the Northwest, NOAA found that the total Northern Hemisphere snow cover was the fourth lowest on record for March. This continues the pattern seen over the past two decades, during which higher temperatures contributed to low snow cover.

Still another reason people may wonder if cooler snowy local weather means the end of global warming is that the factors that produce warming do not unfold at a steady linear pace. Complex feedback processes cause them to rise and fall in fits and starts.

After nearly 10 years of relative stability, for example, NOAA found that the release of methane, which is the second most powerful atmospheric greenhouse gas, rose sharply by 0.5 percent between 2006 and 2007.

Ocean temperatures also fluctuate, sometimes cooling and sometimes warming, with the long-term pattern showing rising warmth. An article in the May edition of the journal Nature, for example, predicts a slight cooling of Europe and North America for the next few years, probably due to shifting ocean conditions.

Yet the study's authors point out that this is only a temporary change in long-term warming trends. These fluctuations actually can amplify future warming. Other top climate scientists immediately disputed the study, with one taking the unusual step of betting 5,000 euros that the cooling predicted in the article is wrong.

No one wants to see human-induced global warming. When disconcerting information emerges, it's normal to search for anything that can discount it. However, don't fall into the trap of thinking that the lack of uniform, steady temperature increases mean that global warming is abating.

NOAA found that last year, atmospheric carbon dioxide levels rose by 2.4 parts per million, a significantly higher rate than the average of 1.65 ppm seen over the last 30 years. Concentrations now stand at 385 ppm compared to the 260 ppm to 280 ppm seen for millions of years before the start of the industrial revolution.

For more than 100 years, scientists have known that more carbon dioxide in the atmosphere raises temperatures. More warming, in turn, alters the Earth's energy balance and changes its climatic patterns. A 38 percent or more — and rising — increase in atmospheric CO2 levels compared to preindustrial times is a recipe for disaster.

As the Intergovernmental Panel on Climate Change said in November 2007, global warming is "unequivocal," and humans are the primary cause. Let's kick efforts to solve the problem into high gear.

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