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The Climate Change Imperative

By Chris Nelder | Wednesday, February 4th, 2009

[Part 1 of a two-part article; Part 2 will be published next Wednesday.]
With all due sympathy for my readers in the Midwest and the East Coast, who have been suffering through relentless snow and extremely cold weather, here in California we've had just the opposite problem. Since the start of the rain year July 1, the state's rainfall has been only 56% of average.

Marin County, where I live, had the third-driest January on record with just .58 inches of rain. At the Shasta Dam to the north, it was the driest ever, with just 4% of normal rainfall.

This is shaping up to be the third consecutive dry winter for the Golden State. Water levels in reservoirs and snowpack are so low that officials are predicting the worst drought in California history, and calling for cuts of 30% to 50% in water consumption, including immediate conservation measures and rationing.

High temperature records fell like dominoes across the state for weeks on end, with many locales besting the past highs by seven to 18 degrees. By all accounts, it has been a most unusual January.

As beautiful as it was, I found it a bit hard to enjoy the warm weather because I have an inkling of its implications. I was reminded of a piece I wrote at the end of another hot January two years ago ("[Hot Fun in the Wintertime](#)") when, like this year, I was worried about the trees budding ahead of schedule and the impact it might have on fruit production.

This year, they're even earlier. The acacia have been in full bloom for two weeks already. My plum tree has already budded and bloomed. Various insects are showing up earlier than they should, and others are not showing up soon enough to catch up with the warmer weather. It just ain't right. Not right at all.

California vineyard owners are particularly concerned, as their vines are budding a month too early, leaving them vulnerable to frost. Vineyards normally combat frost by spraying the vines with water, but this year their water supply is too low to do that without depleting their wells, which may not get refilled later in the season. Growers with over 30 years in the field say they've never seen such a dismal winter rainfall. This is on top of a tough 2008, where a late spring freeze, wildly fluctuating temperatures, low rainfall and high winds conspired to cut into the harvest.

The lack of water is seriously threatening the survival of many of the state's species of fish as well. Requirements to maintain sufficient water in streams and rivers to keep them from extinction are quickly coming up against the needs of farmers, who are concerned about having enough water to maintain their crops.

Extreme Is The New Normal

California is hardly alone in its extreme weather this winter. New York state had the 16th-coldest January on record, and cities from the Midwest to the East Coast received double their normal amounts of snow for the month.

The worst snow in 18 years brought London to a halt this week, paralyzing transportation in what was classified as an "extreme weather event" by the Met Office. Record low temperatures were recorded across Britain, marking the coldest winter in 13 years and raising the chances of 2009 being the coldest winter on record. This follows record rainfall in Britain in September, after a month's rain fell in 24 hours, causing widespread flooding.

Meanwhile, Australia is suffering through its worst heatwave on record.

Temperatures over 110 F were recorded for three days in a row. The nation has been in drought for a decade, making the worst drought on record.

Drought is the key concern in China right now as well. Last week, a drought "red alert" was issued for Henan province, the nation's major grain producer and home to some 100 million people (that's one-third the population of the United States). The drought is the worst since 1951, according to the provincial meteorological bureau. Droughts in northern China have reportedly affected 10 million hectares of crops, leaving livestock and millions of people with insufficient drinking water.

At this time last year, you may recall that China was groaning under record-breaking snows which later melted and became catastrophic floods.

In fact, extreme weather has become the norm worldwide, and it's getting more extreme. Temperature and rainfall records, both high and low, are being broken year after consecutive year.

According to the World Meteorological Organization (WMO), the top 11 warmest years on record have all been in the last 13 years. The past decade was the warmest on record, but the next decade is expected to be warmer still.

Don't Call It "Global Warming"

I can hear some of you now: "So if there is global warming, why am I shivering in the snow?"

The "global warming" label, while accurate enough for scientists who study average global temperatures, doesn't really communicate to the average person what's truly happening, which is *climate change*.

Every time I hear somebody say that global warming must be a hoax because "it's cold out" I cringe, because they have completely misunderstood the concept.

The threat of climate change is not only that melting ice caps will lead to inundated coasts, but that weather will become more unpredictable, and more chaotic. The sort of wicked weather the world is experiencing now, be it hot or cold, is precisely what we should expect from global warming.

In turn, changing weather will have enormous implications on food production, species survival, and the very landscape of Earth.

Now, I know I said just [last week](#) that peak oil, peak gas, and peak coal should be our main focus, not climate change, and that by transitioning to an all-electric infrastructure powered by renewable energy, the CO2 problem will take care of itself. I still believe that is true.

However, there remains the possibility that we will respond to peak oil and natural gas not by taking the "powerdown" and renewable energy route, but by pulling out all the stops to extract the remaining hydrocarbon sources like coal and tar sands. If we do so without capturing their CO2 emissions, which are much higher per BTU than oil and gas, it could be disastrous.

In Part 2 of this article, I'll demonstrate how incredibly sensitive crops and ecosystems are to even minor changes in temperature, and argue that scientific uncertainty about anthropogenic global warming should be our reason for action, not an excuse for inaction.

Until next time,

A handwritten signature in cursive script that reads "Chris Nelder".