

# Nature Strikes Back!

**The recent severe weather patterns aren't a coincidence, but the accumulated effect of 300 years of industrial civilization.**

Jack Straw

1994

Talking about the weather just isn't what it used to be. These days it is no longer a diversion. A January cold wave of historical dimensions resulted in all-time record lows in places such as Pittsburgh, Louisville and Indianapolis, records of all sorts over much of the eastern two-thirds of the U.S., and a seemingly endless series of snowstorms.

Meanwhile, storms of historical proportions hit Europe and Japan. This followed a year of global weather which was so unusually extreme that even mainstream scientists started talking about major changes possibly taking place. But why is all this happening, and why now?

## The Weather System

Climate is essentially the result of energy absorption and distribution. The atmosphere receives solar energy from the sun in the form of radiation. Some of it bounces back into space, while the rest is absorbed by the atmosphere, the oceans and the ground, which also radiate energy back. The major results are the evaporation of water, and the uneven heating of the various components of the eco-sphere.

These effects are inherently uneven due to the earth's tilt, to seasonal changes, and to the absorption by some areas of more heat than others. The clouds which result from the evaporation lead to differentiated absorption of energy, and also act to redistribute that energy throughout the globe.

Water and land differ in the way they absorb or reflect energy (the albedo factor), as do various forms of ground cover such as forests (high absorption) and ice sheets (high reflection). The number of factors involved is enormous, as is the amount of feedback which occurs, making weather prediction difficult even with modern computers and even in the short-range. Regardless of human intervention, the climate is always subject to large-scale fluctuation like variations in the amount of energy emitted by the sun.

## What Have We Done?

Many animals modify their environment locally, for example, beavers and their dams. For most of our history, the effects of human activity have similarly been local. The level of intervention has risen markedly in the last several thousand years, through such activities as large-scale irrigation, deforestation, and urbanization, which change terrain albedo and water flow patterns. The fact of population growth has also had its effects. With the Industrial Revolution and the emission of vast quantities of particulates, industrial gases and water vapor into the atmosphere, the changes have become global.

Carbon dioxide tends to prevent seepage of radiation back into space, thereby resulting in atmospheric warming (the greenhouse effect). Its emission via combustion in all forms has increased the atmosphere's carbon dioxide content, thus intensifying the warming. Other emissions, such as methane from cattle shit and gases used in the production of silicon chips exacerbate this warming effect as well as play havoc with the ozone layer, effecting the radiation coming in as well as leaving the planet. Vast urban developments create "heat islands," noticeably warmer than outlying districts, and can also change wind patterns.

Deforestation, especially in the tropics, not only affects the gas composition of the atmosphere (trees and plants remove carbon dioxide from the air), but also affects the surface albedo and global circulation patterns. The same with the drainage of swamplands (which change the ability of a region to absorb rainfall), the mega-scale damming of rivers, and "desertification" which follows the overuse of agricultural or pastoral land. Auto emissions and other gaseous effluents lead to acid rain which kills forests and alters the ability of soil to remove methane from the air.

Then there are the effects of recent wars, the most dramatic example being the massive oil fires at the end of the Persian Gulf War. Soot particles from them were spotted by scientists in Hawaii and later over Europe (meaning they circled the globe). The U.S. government, evidently concerned about the image of "Desert Storm," attempted to suppress the story entirely, and basically succeeded in denying it much media coverage (see *Scientific American*, May 1991).

Many locales in the region reported drastically lower temperatures soon after the fires started; oily rain and snow fell in places as far away as Siberia. Flooding rains in China were linked by that nation's meteorologists to the soot. Observers in the U.S. reported strange sky colors in Florida. In California, which was in the middle of a drought, heavy rains began within days and lasted a month. The weather has rarely been "normal" since.

## Future Scenarios

Drastic warming has been the most widely predicted effect of the increased industrial-age emissions, due to a runaway build-up of carbon dioxide and similarly-acting agents in the atmosphere. A warming trend is expected which would result in the melting of polar caps and lead to yet more water vapor, a greenhouse gas, thus accelerating the process. Most models predict a 5 to 10 degrees warming by early in the 21<sup>st</sup> century, creating massive weather pattern disruptions, higher sea levels resulting in coastal flooding and drastic floral/faunal changes.

The only problem is that the evidence for warming appears elusive at this point. Average yearly global temperatures did set records in the 1980s and 1990s. Yet a 1989 National Oceanic and Atmospheric Administration (NOAA) study found U.S. temperatures increased from 1850 to 1920, but then dropped until the '80s, even though carbon dioxide levels rose throughout the period for a total 25% increase.

Some scientists question the whole methodology of "average temperature," which neglects extremes and collapses widely varying regions into unified cells whose measurements are averaged. Others also point out the predominance of urban stations in the data, noting urban areas often form "heat islands."

Along with hot summers we've also experienced record-cold winters in recent years, with snowfall in the U.S. occurring later and later and in unusual places such as Florida. U.S. winter temperatures, in fact, cooled by 7 degrees F. between 1920 and 1984. Polar regions were supposed to experience the greatest warming according to "greenhouse" predictions, but they actually have experienced major cooling, especially during winter (also in contrast to predictions).

The global warming predictions fail to account for some counteracting effects. Heating causes increased evaporation, and even those expecting global warming predict a 20% increase in water vapor. However, their computer models discount the effect of increased clouds. In general, more clouds, which bring increased precipitation, would reflect back more incoming solar energy, resulting in cooling. Some scientists have pointed out that even with considerable warming, polar temperatures could still stay below freezing, and the predicted increased precipitation in these regions could result in a snowpack buildup and glacial expansion, possibly causing even further cooling.

Some observers, including many conservatives who see the global warming model as an enviro-leftist plot to limit production, have used the ambiguity of the data to argue there is no global warming crisis. They predict the

global weather system will balance itself out, and humans can go on with “business” as usual. Others have used the information to argue that while the nature of the problem has changed, it is still a harbinger of possible catastrophe.

A build-up of ice and snow due to possible increased precipitation in northern latitudes, they say, could actually bring on an ice age (open land absorbs 90% of incoming radiation, while snow absorbs only 20%). They point to such evidence as increased rain and snowfall over the last 50 years in middle and high latitudes, especially during winter, and increased wind velocities in those same regions as tropical heating causes increased global imbalances. Again, the evidence is mixed.

Many in the established scientific community have a stake in the public acceptance of the warming scenario, in which they have invested lots of time and money. Some of them are probably also convinced they are looking out for the general good of humanity, and see dissident viewpoints as impeding progress towards changes in public policy which would be necessary to avert or mitigate the disastrous effects of warming. Plus, if there is no warming, they may lose lucrative research grants.

The “ice age” advocates have their own material interests, and are quite possibly just as scared of any data which question their conclusions. Above all this we have a government which controls much of the data gathering and dissemination system, and is determined to keep us in the dark about the effects of the existing production system on the environment; if we knew the truth, we might rebel. Knowledge can be power.

Neither “global warming” nor “new ice age” theories adequately describes the full complexity of current climatic processes. I suggest we are actually witnessing a Broken Thermostat Effect. Effects contrary to the warming trend are indeed happening, but rather than ice sheets in Florida, or the shift of the entire globe to tropical or desert-like conditions, I foresee rapid fluctuations between extremes, a scenario which portends a disaster as big as those brought on by global warming or another ice age.

One of the more interesting things I’ve noticed while tracking weather data since the Gulf War has been the way record low temperatures seem to see-saw with record highs, and similarly unusually severe dry spells alternate with unrelenting downpours. This seems to coincide with a recent study published in the July 1993 British journal *Nature* which concludes the climate has always been subject to instability, and that fast changes, such as a drop in average temperatures of 20 degrees in a one-to-ten year period are very possible.

Sudden turns to cold weather, which then lasted decades, occurred during the last period between ice ages, which was warmer than the present. Build-ups of greenhouse gases, though at rates slower than today’s, have apparently played a role during previous times in causing rapid oscillations. Even if averages were to remain unchanged, rapid fluctuations would still bring havoc to human and nonhuman habitats. This is what I think we are witnessing. Quite a few professional meteorologists are coming to similar conclusions.

Only five years ago, the Midwest lay parched under a scorching sun, with commentators proclaiming this to be the definite onset of global warming. This past July, a widely-publicized satellite photo contrasted “then and now,” as the region was starting to resemble another Great Lake from flooding. Also, five years ago, the East Coast suffered through an interminably hot and smoggy summer, but Summer 1992 was one of the coldest on record.

In recent years, San Francisco Bay Area rainfall totals were beginning to resemble those of the Mojave Desert. In early 1993, however, the Mojave (as well as the Sonora in Arizona) were flooded after deluges, as was the Bay Area. San Diego received more than its normal yearly rainfall total just in the month of January.

In fact, the last several years have been highly unusual. The magnitude of what’s happening may not dawn on people till they see the cumulative results over a lengthy period.

## **So, What’s The Point?**

From the looks of it, the weather process has already been disrupted by human activity. Plus, we may be experiencing natural fluctuations, as well as natural phenomena such as volcanic activity, which results in increased atmospheric particulates blocking incoming sunlight and providing nucleation for moisture. This does not mean, however, that we can’t make matters worse.

Every minute the global work machine continues to crank in its mindless, inexorable drive to accumulate capital more wrenches are thrown into the climatic process. And, this is one form of monkey-wrenching we cannot

afford. Increasingly extreme conditions may make it very difficult to continue living the way we have, in particular disrupting agriculture, but possibly even our population distribution patterns as well. The climate is likely to become more inhospitable than at any time since the last ice age, and the changes could happen faster than we can imagine. If this isn't the making of a global disaster, I don't know what is.

Some of the sick minds in the ruling apparatus visualize special clothing or space-age domes to protect city inhabitants, or at least the rich elite, from the effects of what they have done. Others propose just moving on to other planets, or leaving our bodies behind and moving our brains into machines. Those of us who still have our priorities straight realize a techno-fix will solve nothing. However, we will need to repair the damage caused by the last 200 (indeed, five to ten thousand) years of human intervention even if we bring the monster down today, and that's a serious consideration within the continuing debate on the relation between technology and social transformation.

The more we wait, the deeper the hole we will find ourselves in.

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Fifth Estate #344, Summer, 1994

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