

Climate researchers: Russian heat wave was natural

March 9 2011, By RANDOLPH E. SCHMID , AP Science Writer

(AP) -- Global warming isn't directly to blame for last summer's deadly - and extraordinary - heat wave in Russia, researchers said in a report Wednesday that came with a climate warning.

"We may be on the cusp of a period in which the probability of such events increases rapidly, due primarily to the influence of projected increases in greenhouse gas concentrations," said the team led by Randall Dole and Martin Hoerling of the U.S. National Oceanic and Atmospheric Administration.

It was the warmest July since at least 1880 in western Russia. The heat wave led to an increase in deaths in the region, as well as drought, widespread fires, increased [air pollution](#) and severe crop damage. Also affected by the warming were Belarus, Ukraine and the Baltic nations.

The extreme heat raised questions about links to [global warming](#) - the rising temperatures worldwide that most atmospheric scientists attribute to [greenhouse gases](#) being pumped into the air by industrial and other processes over the last century or so.

The intense heat wave in Russia "was mainly due to natural internal atmospheric variability," the scientists reported in a paper to be published in [Geophysical Research Letters](#).

The cause in this case, they said, was a strong and long-lived blocking pattern that prevented movement of weather systems. Blocking patterns

occur when the high-level jet stream directing the movement of weather develops a sharp wave pattern. This forces storms to move around an area while conditions there stagnate.

"Similar atmospheric patterns have occurred with prior heat waves in this region," although those have been less severe, Dole and Hoerling said.

There are indications the blocking pattern forcing storms to move also affected subsequent flooding in Pakistan, they said.

"To be sure, it was a rare event. But rare events happen and rarity alone doesn't imply cause," Dole said at a briefing.

It's important to study the causes of events such as this heat wave because they have global economic impacts, Hoerling said. The [heat wave](#) reduced Russian grain yields about 40 percent, resulting in a decline in the world's grain supply.

Hoerling said researchers were surprised to find that the region hadn't experienced the rising temperatures that have impacted much of the planet.

"While the globe as a whole, on an annual basis, is warming, there can be important regional differences," Hoerling said. The 1930s remain the warmest decade on record for western Russia, unlike the planet as a whole, for which the past 10 years have been the warmest on record, he said.

The U.N.'s Intergovernmental Panel on Climate Change found evidence that global warming contributed to heat waves in other areas and probably is to cause stronger and more frequent heat waves in future.

Hoerling heads the climate attribution team at NOAA's Earth System Research Laboratory and Dole is deputy director of the physical sciences division of the lab.

More information: NOAA: <http://www.noaa.gov>

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