

CLIMATE NEWS

From Sheldon Whitehouse, Barbara Boxer, and Jeff Merkley
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As Climate Warms, Labor Capacity Expected to Drop



A new NOAA study projects that heat-stress related labor capacity losses will double globally by 2050 with a warming climate. The research, published in *Nature Climate Change*, uses existing occupational health and safety thresholds to establish a new metric to quantify a healthy, acclimated individual's capacity to safely perform sustained labor under environmental heat stress. Heat stress can result in heat stroke, heat exhaustion, heat cramps, and can also increase the risk of injuries. Peak summer months of heat stress currently reduce labor capacity to about 90% of full potential, but by 2050, labor capacity is predicted to drop to 80% in peak months. The study found that even with reductions of greenhouse gas emissions, heat stress would still lead to a doubling of labor capacity losses by the middle of this century, with more severe reductions under continued highest emissions scenarios out to 2200. This will mostly affect those who work outside or in hot environments, such as firefighters, bakery workers, farmers, construction and factory workers, and others who will be forced to slow down due to increases in heat and humidity. It will be particularly apparent in the mid-latitude and tropical regions of South and East Asia, North America, and Australia. (NOAA/nclimate1827)

Study of Ice Age Bolsters Carbon and Warming Link

A new study of Antarctic ice suggests that the sharp increase in warming that ended the last ice age occurred in lock step with increases of atmospheric carbon dioxide (CO₂). This is the latest of many indications that the gas is a powerful influence on the earth's climate. Previous research suggested that as the last ice age was ending about 20,000 years ago, Antarctic warming preceded global CO₂ changes by roughly 800 years. However, a wave of research in the last few years has raised the likelihood that the gap was actually much smaller, or even nonexistent. The most recent study, published in *Science*, reconstructed the exact timing of the events that ended the ice age. Instead of the 800-year lag between temperature and CO₂ increases found in some previous research, their work suggests that if there was a gap at the end of the ice age, it was less than 200 years. "Before, because of these wrong results of CO₂ lagging temperature, people were interpreting it as a weak role for CO₂ in the climate variation of the past," said lead author Dr. Frédéric Parrenin. (*NY Times/science.1226368*)

The Arab Spring and Climate Change

In recent years, security experts have called climate change a "threat multiplier" that increases the likelihood already vulnerable countries will spill over into violence or instability. A new report from the Center for American Progress, the Stimson Center, and the Center for Climate and Security explores how climatic factors played into the series of events leading up to and following the revolutions that have rocked the Arab world over the past two years. One such example is the once-in-a-century winter drought in China that contributed to global wheat shortages, sending bread prices skyrocketing in Egypt in 2010 and 2011. Of the countries that import the most wheat per capita, the top nine are in the Middle East; seven had political protests in 2011 that resulted in civilian deaths. And in Syria, as much as 60% of the country's land experienced long-term drought between 2006 and 2011. The preface states that although none of these individual facts might be cause for alarm, when taken together, they create a complex web of conditions and interactions that help us understand the larger context for the Arab Awakening. (*E&E*)

Why You Should Sweat Climate Change

In certain parts of the U.S., more children are getting asthma and allergies, and more seniors are suffering heat strokes. These and other public health problems are expected to worsen as the climate changes. The draft of the Third National Climate Assessment reports that rising demand for cooling will outpace diminished demand for heating, and sweltering summers will contribute to more additional deaths than would be prevented by milder winters. Americans can adapt to some climate change, and indeed already are, but a continuing rise in global carbon emissions will make adaptation increasingly costly and difficult—especially in densely developed coastal areas. Laurence Kalkstein, a University of Miami professor who studies the effect of heat on health, says "It's the silent killer." He says if climate change brings hotter—but still variable—weather, more heat-related deaths are likely. Dr. Kalkstein says heat can cause fatalities among even the fittest, though he points out that the elderly and those with physical and mental ailments are most vulnerable. (*USA Today*)

A handwritten signature in blue ink, appearing to read "Sheldon Whitehouse".