

Abstract Submitted
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Increasing Hurricanes, Draughts, & Wildfires PAUL CARR, AF Research Laboratory Emeritus — The last 12 months were the warmest on record: hurricanes, draughts, and wildfires continue to increase. **HURRICANES:** MIT Prof. Kerry Emanuel has correlated the rise in sea temperatures since 1995 with increasing hurricane destruction. Hurricane physics is that of a Carnot cycle. The heat source, the high- temperature sea surface, $T = 300\text{K}$ (27C), transfers wind energy to the hurricane. The heat sink is the cooler upper atmosphere, $T = 200\text{K}$ (-73C). Hurricane Katrina in 2005 is an example. It caused over \$100 billion dollars of damage to New Orleans. **DRAUGHTS:** This year's draught in our Midwest, the worst since the dustbowl, is raising corn prices to the highest level in history. **WILDFIRES:** The effects of global warming on temperature, precipitation levels, soil moisture, and Western Pine beetles are turning many of our forests into kindling for more wildfires. Western Pine beetles can now survive the warmer winters. The number of extreme weather events, whose average since 1980 has been 3 to 4 per year, has increased to 9 in 2008 and 13 in 2011, according to the NOAA article in the March 2012 issue of "Physics Today." Draughts, heat waves, and heavy precipitation increase from global warming according to the UN IPCC Special Report of November 2011, titled "Managing the Risks of Extreme Events and Disasters."

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