Researchers document global connections between El Nino events and drought

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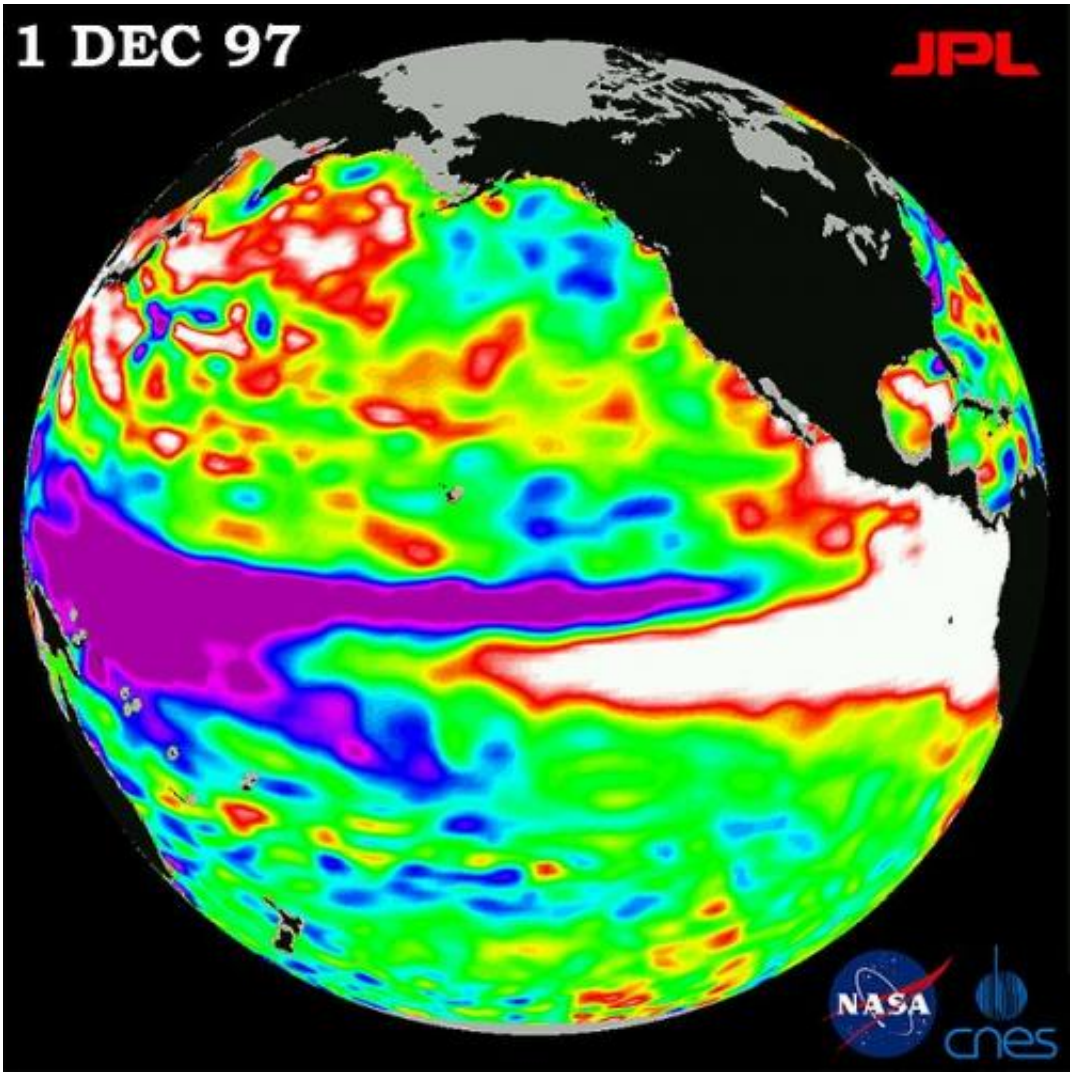

The 1997 El Nino seen by TOPEX/Poseidon. Credit: NASA

A team of researchers recently discovered that global climate change is causing general increases in both plant growth and potential drought risk.

University of Montana Professor John Kimball is among the team of researchers who published an article on Oct. 30 about their study on *Scientific Reports* magazine's website titled "Vegetation Greening and Climate Change Promote Multidecadal Rises of Global Land Evapotranspiration."

Their research shows that during the past 32 years there have been widespread increases in both plant growth and evaporation due to recent global climate trends. The apparent rise in evapotranspiration - the process by which water is transferred from the land to the atmosphere by evaporation from plants and soil - is increasing potential drought risk with rising temperature trends, especially during periodic drought cycles that have been linked with strong El Nino events. El Nino is a disruption of the ocean-atmosphere system in the tropical Pacific with important consequences for weather around the globe.

The researchers produced a long-term global satellite record of land evapotranspiration using remote sensing satellite data. They investigated multi-decadal changes looking at trends between 1982 and 2013. In addition to global evapotranspiration trends, they examined vegetation greenness and general climate data including temperature, precipitation and cloudiness. Collectively, these data show general increasing trends in both plant growth and evaporation with recent climate change mainly driven by vegetation greening and rising atmosphere moisture deficits.

The study predicts that a continuation of these trends will likely exacerbate regional drought-induced disturbances, especially during regional dry climate phases associated with strong El Nino events.

More information: Ke Zhang et al. Vegetation Greening and Climate

Change Promote Multidecadal Rises of Global Land Evapotranspiration, *Scientific Reports* (2015). DOI: 10.1038/srep15956