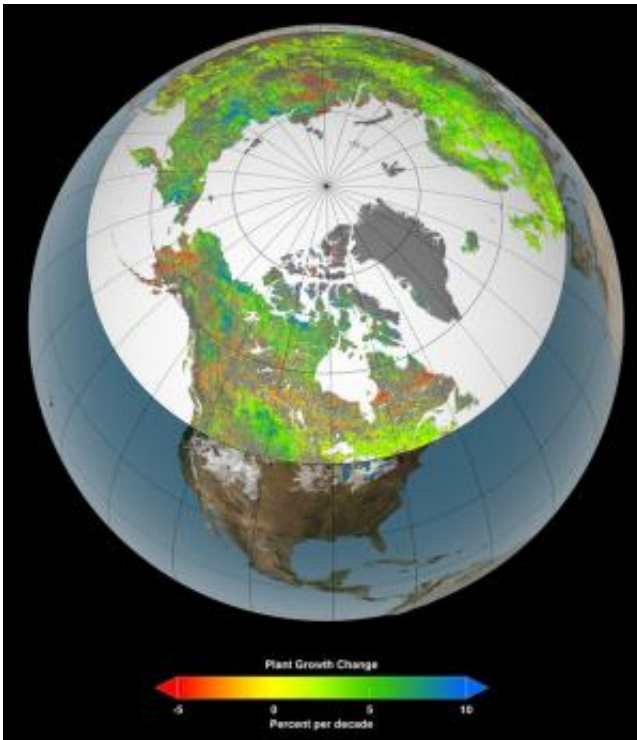


Warmer climate boosts northern crops but the bad soon outweighs the good

March 14 2013, by Sunanda Creagh



The study showed increased plant growth over a 30 year period in northern areas of the Earth. Credit: NASA's Goddard Space Flight Center Scientific Visualization Studio

Climate change is creating warmer growing conditions in parts of the Earth's northern regions, a new study has found, but experts warn that drought and heat will soon cancel out the agricultural benefits.

The international study, published in the journal [Nature Climate Change](#), analysed NASA satellite data and 30 years of [land surface temperature](#) records for 26 million square kilometres between the Arctic Ocean and 45 degrees north latitude.

"Higher northern latitudes are getting warmer, [Arctic sea ice](#) and the duration of snow cover are diminishing, the growing season is getting longer and plants are growing more," Ranga Myneni of Boston University's Department of Earth and Environment, said in a [media release](#) on the NASA website.

"In the north's Arctic and boreal areas, the characteristics of the seasons are changing, leading to great disruptions for plants and related ecosystems."

Of the area studied, up to 41% had experienced increased plant growth since 1982.

While warming climate may boost crop conditions in some regions, it also increases the risk of drought, [heatwaves](#) and pest outbreaks, the study found.

Dr Daniel Rodriguez, Senior Research Fellow at the University of Queensland's Centre for Plant Science said the results of the study accord with what climate change scientists have been saying for some time.

"The good news is that this study provides clear evidence on modelled results present in previous reports," he said adding that the warmer conditions had boosted Denmark's commercial [wine industry](#) and doubled grain yields in Finland.

"The bad news is that this confirms that climate change is happening

very quickly, as expected, and that even though some regions are going to have increases in productivity (though nothing is said here about changes in variability), in other places we expect these changes to be highly detrimental to food production," said Dr Rodriguez.

"In the same issue of *Nature Climate Change* other authors indicate that for North America's maize production, strong negative yield responses to the accumulation of temperatures over 30 degrees Celsius could also be expected as a consequence of increased air dryness."

Dr Andrew Ash, Director of the CSIRO's Climate Adaptation Flagship, said the early stages of climate change could also lead to increased crop productivity in some parts of Australia.

"But then a combination of declining rainfall projected for the mid-latitudes of Australia and increasing temperatures will negatively impact crop growth. You can initially get some good news but ultimately it's a negative," he said.

Within a couple of decades, the benefits of warmer growing conditions and increased carbon dioxide concentrations would be quickly outweighed by declining rainfall and heat stress on grain quality, he said.

"The big unknown in all of this is other factors like pests, disease and fire. There are still a great many uncertainties around the effects of [climate change](#) but very few of the likely scenarios are positive for agriculture," he said.

This story is published courtesy of [The Conversation](#) (under Creative Commons-Attribution/No derivatives).

Source: The Conversation

Citation: Warmer climate boosts northern crops but the bad soon outweighs the good (2013, March 14) retrieved 13 July 2024 from <https://phys.org/news/2013-03-warmer-climate-boosts-northern-crops.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.