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Leopold Center Statement on Climate Change

Leopold Center for Sustainable Agriculture

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Leopold Center Statement on Climate Change

Abstract

This position paper outlines the guiding principles that shape the Leopold Center's response to climate change, and how such a perspective influences its work in each of the four research initiatives: ecology, marketing and food systems, policy and cross-cutting.

Disciplines

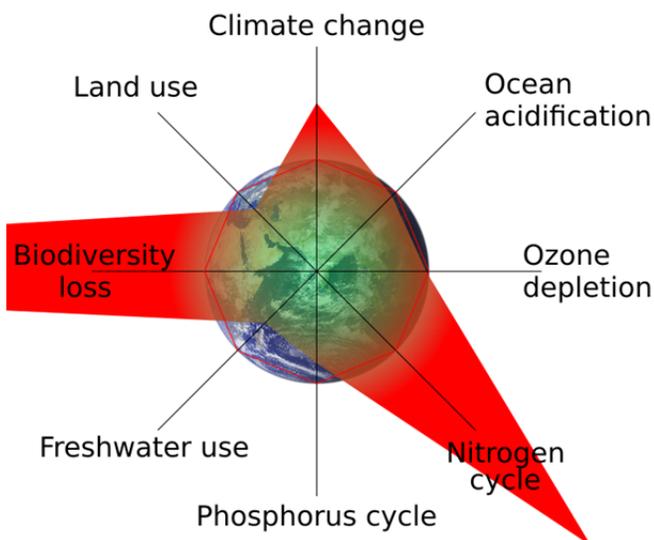
Climate | Environmental Indicators and Impact Assessment

Leopold Center Statement on Climate Change

October 2013

The Leopold Center views climate change not merely as “warming,” but as a worsening destabilization of the planet’s environmental systems. This condition triggers aggravated and unpredictable risk that will challenge the security of our agricultural and biological systems.

Ninety-seven percent of the world’s climate scientists attest that the heat-trapping gases released into the atmosphere through the burning of fossil fuels are already causing temperatures to increase. The scientific evidence is clear that the magnitude of the changes ahead are greater, the rate much faster, and duration of climatic destabilization will last far longer than once thought.



This figure is taken from the 2009 article, "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," by J. Rockström and W.L. Steffen W.L. et al, published in the journal *Ecology and Society* [14 (2):32]. As indicated by the graphic, by some calculations we already have crossed the threshold of the "safe operating space" for human development and risk triggering irreversible environmental changes to the planet’s biodiversity, nitrogen cycle and climate systems. You can access the publication from the Leopold Center’s Climate Change web page, www.leopold.iastate.edu/climate

Leopold Center programs

With our guiding principles in mind, here’s how the Leopold Center is applying a climate change perspective in its work.

- **Ecology Initiative** – By focusing on improving soil biological health, increasing biotic diversity and improving our understanding of how nitrogen and carbon cycle, we can design resilient food and agricultural systems in the face of climate instability.
- **Marketing and Food Systems Initiative** – Climate change impacts both the human and environmental systems supporting food production, influencing availability, access, consumption and farm stability. The Leopold Center focuses on development of regionally anchored marketing strategies and innovative food system business structures to promote crop and animal diversity within single food

Our Guiding Principles

It is clear that carbon, energy and human dynamics are inextricable. These are the guiding principles that shape the Leopold Center's response to climate change:

- **Food and agricultural systems need to reduce fossil fuel dependency and greenhouse gas footprints.**

From Aldo Leopold: *“A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”*

- **Food and agriculture systems need to positively address the health of the biotic community.**

From naturalist John Muir: *“When we try to pick out anything by itself, we find it hitched to everything else in the Universe.”*

- **Food and agriculture systems need to address many ‘global’ issues positively and simultaneously.**



production operations and across operations in different geographic areas. Support for varied production systems in different locations creates redundancy that strengthens food security. This strategy helps Iowans across the value chain better 'weather' supply chain shocks anticipated by climate instability.

- **Policy Initiative** – Policy Initiative research provides information and/or analysis, but not advocacy, to inform public, political responses to the food and agricultural challenges posed by climate change. This means helping public policy makers (both federal and state) assess the climate change responses within their control, such as risk management instruments, policies to limit the impact of extreme weather events on land and economic values, encouragement of **conservation practices to mitigate the effects of weather extremes, etc.**
- **Cross-Cutting Initiative** – Carbon, energy use and human dynamics are inextricably linked when we tackle global, non-political boundary challenges such as climate change. In the Cross-Cutting Initiative, we support research into practical examples of how food and agriculture systems could be redesigned with the lower carbon inputs and reduced energy use necessary for ensuring stable supplies of food, fuel and fiber in a climate unstable world.

The Center's overall research is organized in four initiatives: ecology, marketing and food systems, policy and cross-cutting, and projects are funded primarily through the Leopold Center's long-running competitive grants program. The Center also supports additional outreach and educational events.

Related resources

Iowa Climate Statement 2012: A Rising Challenge to Iowa Agriculture is signed by 155 science faculty and research staff from 36 Iowa colleges and universities, October 18, 2013. Among the signers are Leopold Center Director Mark Rasmussen, Leopold Center Distinguished Fellow Fred Kirschenmann and three members of the Leopold Center Advisory Board. Coordinated by the University of Iowa Center for Global and Regional Environmental Research (CGRER): <http://cgrer.uiowa.edu/>

Iowa Climate Statement: The Drought of 2012 is signed by 138 science faculty and research staff from 27 Iowa colleges and universities, November 19, 2012. This effort also was coordinated by CGRER: <http://iowaenvironmentalfocus.org/2012/11/19/iowa-climate-statement-the-drought-of-2012/>

The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. The IPCC's most recent report, *Climate Change 2013: The Physical Science Basis*, was released September 2013: <http://www.climatechange2013.org/>

Climate Change Impacts on Iowa is a final report prepared by the Iowa Climate Change Advisory Council and submitted to the Iowa General Assembly and Governor, January 11, 2011: <http://www.iowadnr.gov/Environment/ClimateChange/ClimateChangeAdvisoryCo.aspx>

Iowa State University's Climate Science Program [publications and resources page] <http://climate.engineering.iastate.edu/CSPPublications.html>

RealClimate is a resource for the public and journalists to interact with working scientists. <http://www.realclimate.org/index.php/archives/2004/12/about/>