

# Climate change to profoundly alter Great Lakes region, summary report says

June 25 2014, by Jim Erickson

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(Phys.org) —Intense rainstorms, floods and heat waves will become more common in the Great Lakes region due to climate change in the coming decades, and ice-cover declines will lengthen the commercial navigation season on the lakes, according to a new summary report released today at the start of a three-day climate-adaptation conference at the University of Michigan.

In the next few decades, longer growing seasons and rising carbon dioxide levels will increase some crop yields in the region, but those benefits will be progressively offset by extreme weather events, according to the report prepared by the Great Lakes Integrated Sciences and Assessments Center (GLISA), a federally funded collaboration between the University of Michigan and Michigan State University.

GLISA's 13-page "synthesis report" summarizes the key Great Lakes-region impacts of [climate change](#) detailed in the latest U.S. National Climate Assessment, which was released last month by the federal government. The 840-page national assessment is widely regarded as the most comprehensive evaluation of current and future impacts of climate change on the United States.

"Climate impacts how we live, work and play. The mission of GLISA is to provide people in the Great Lakes region with useful and useable information on how our climate is changing and what that means for our way of life," said Elizabeth Gibbons, GLISA program manager.

"Our hope is that this report will demonstrate that there is an urgent need for all of us to begin building resilience into our communities, natural systems and water management planning practices. The impacts of climate change are already being felt and will only increase in the years and decades to come."

GLISA is one of the sponsors of the three-day "Adaptation in the Great Lakes Region" conference at U-M. The meeting—which is free and open to the public today but is for registered conference participants afterward—will examine the process behind the National Climate Assessment, the expected impacts of climate change on the region, as well as the climate-adaptation efforts that will be needed to address those changes.

The GLISA summary report, "Synthesis of the Third National Climate Assessment for the Great Lakes Region," states that:

- Increased heat wave intensity and frequency, increased humidity, degraded air quality and changes in mosquito- and tick-borne disease patterns in the region will increase [public health](#) risks.
- Extreme rainfall events and flooding have increased in the region during the last century and are expected to continue. Those trends could lead to increased erosion, declining water quality and negative impacts on transportation, agriculture, human health and infrastructure.
- Climate change will exacerbate a range of risks to the Great Lakes, including changes in the range and distribution of certain fish species, increased invasive species, more frequent harmful algae blooms and declining beach health.
- The composition of forests in the Great Lakes region is changing as the climate warms. Many tree species are shifting northward, with more southerly varieties replacing them.

The GLISA summary report is largely a synthesis of information contained in the Midwest and Northeast chapters of the latest National Climate Assessment. U-M's Don Scavia, director of the Graham Sustainability Institute, was a lead convening author of the Midwest chapter.

Dan Brown of the School of Natural Resources and Environment was a lead convening author of the NCA chapter on changes in land use and land cover. Rosina Bierbaum of SNRE and the School of Public Health was a lead convening author of the chapter on climate change adaptation. Missy Stults, a doctoral student at the Taubman College of Architecture and Urban Planning, was a contributing author on the adaptation chapter.

In addition, Bierbaum and Marie O'Neill of the School of Public Health

served on the 60-person advisory committee that oversaw development of the report, which was the work of more than 250 scientists, engineers, government officials and other experts.

**More information:** Full agenda for the Great Lakes climate change conference: [graham.umich.edu/glaac/capstone2014](http://graham.umich.edu/glaac/capstone2014).

A live webcast of Tuesday's opening session will be available via a link on the conference home page. Pre-registration for the webcast is required: [mconnex.adobeconnect.com/adapt...vent/event\\_info.html](http://mconnex.adobeconnect.com/adapt...vent/event_info.html)

The National Climate Assessment: [www.globalchange.gov](http://www.globalchange.gov)

The GLISA synthesis report: [glisa.umich.edu/resources/nca](http://glisa.umich.edu/resources/nca)

Provided by University of Michigan

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