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UWM Professor Helped Produce Global Warming Report



Mark D. Schwartz

Photo by Mario Lopez

MILWAUKEE – A professor at the University of Wisconsin-Milwaukee (UWM) was part of a 14-member team of scientists who have issued a report this month that says the pace of global warming is increasing in the Northeastern region of the United States and will dramatically change the climate if left unchecked.

Mark D. Schwartz, a climatologist and professor of geography, helped draft the report, "Climate Change in the U.S. Northeast," released by the Union of Concerned Scientists and a group of independent scientists from across the U.S. The report predicts longer, hotter summers for the Northeast, less snow and more drought conditions in the coming years unless carbon dioxide emissions are reduced by 3 percent a year.

According to the report, the average temperatures in the Northeast could rise between 6.5 degrees and 12.5 degrees by the end of the century. But moving to cleaner, renewable energy sources in favor of those that emit greenhouse gases like coal and oil, would cut the temperature increase in half. The report's findings have wide implications, according to Katherine Hayhoe, an associate professor of geosciences at Texas Tech University and co-lead author of the study. The northeastern U.S. is the world's seventh largest source of carbon dioxide emissions and the report is the most detailed regional study on the issue.

Schwartz's own research is on plant phenology, the study of how plants respond to seasonal and climatic changes to their environment. His work employs a data-driven model based on the first leafing of lilacs and honeysuckles over the last 40 years that indicates spring is now arriving five to six days earlier in the U.S. than it did before 1960.

He was invited to join the team after co-authoring a related paper last year with another scientist on

the "Climate Change in the U.S. Northeast" report team, David Wolfe of Cornell University.

Schwartz is quick to point out that while his research does show that spring is coming earlier, it doesn't address the causes. Instead his model turns climate data into a general indicator of the onset of spring plant growth.

"I'm taking the climate information and processing it," he says. "I produce an interpretation of what that kind of warming would do to the plants' responses."

But the authors of the report came from various disciplines, from hydrology and meteorology to ecology and geography. Putting the scientific pieces together gives a clear picture of how consistent and comprehensive these changes are, Schwartz says.

"As a climatologist, I personally think what we're seeing is a manifestation of human impacts," he says. "In this case, ideas already exist on what the causal mechanisms are, so it's not a fishing expedition. It's easier to conclude these changes are part of a cause-and-effect mechanism."

Schwartz also is co-organizer of the developing USA National Phenology Network (USA-NPN), envisioned as an army of professional scientists, current weather observers, "citizen scientists" and school children at locations across the country, who will record when lilacs and selected native plants reach first leaf and bloom each spring.

With planning funded in part by the National Science Foundation, USA-NPN, which gets under way in 2007, will provide new data for scientists as they track the arrival of spring, compare it to historical information, and use it to better understand related environmental events.

The network is being formed as a partnership among several universities and federal agencies nationwide.

The full 52-page report is available online at <http://www.climatechoices.org/ne/>.

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