Global warming is an undeniable reality, according to the latest (2007) report from the Intergovernmental Panel on Climate Change (IPCC), an international group of scientists convened by the United Nations. The evidence is clear and noticeable: a rising average global air temperature, widespread melting of glaciers and polar ice, and rising mean sea levels worldwide. The report sounds the alarm that the Earth is warming, and that major components of our climate system are already responding to that warming.

What will global warming mean for our region? The “Climate Change in the Great Lakes Region” seminar series provides a forum to begin this important discussion. Over the next several months, experts will speak at sites throughout Wisconsin to discuss what is known, what is predicted and what can be done to adapt. The series begins with a keynote presentation by Dr. Kevin Trenberth, a leading climate researcher from the National Center for Atmospheric Research and one of the authors of the current IPCC report. Subsequent talks will highlight how climate change could affect our property, water resources, fisheries, and public health.

2007 SEMINAR SERIES:

MARCH 13
THOMAS E. CROLEY II
Research Hydrologist, Great Lakes Environmental Research Laboratory

Great Lakes Climate Change Hydrologic Impact Assessment
Green Bay, Wisconsin

KEN POTTER
Professor of Civil and Environmental Engineering, UW-Madison

Adapting Stormwater Management to Climate Change
Green Bay, Wisconsin

APRIL 23
KEVIN TRENBERTH
Senior Scientist, National Center for Atmospheric Research

KEYNOTE PRESENTATION: Global Warming Is Unequivocal
Morgridge Auditorium, Grainger Hall Madison, Wisconsin

JUNE 7 & 11
JOHN MAGNUSON
Emeritus Professor of Zoology and Limnology, UW-Madison

Climate Change and the Waters of Wisconsin
Superior and Milwaukee, Wisconsin

AUGUST 8
TIM ASPLUND
Water Resources Specialist, Wisconsin Department of Natural Resources

Climate Change and Wisconsin’s Lakes and Groundwater
Ashland, Wisconsin

AUGUST 15
PHILIP KIELOR
Coastal Engineering Specialist (Retired)
UW-Madison Sea Grant Institute

How Climate Change May Affect Coastal Property Owners
Mequon, Wisconsin

SEPTEMBER 12
JONATHAN PATZ
Associate Professor of Environmental Studies and Population Health Sciences, UW-Madison

Climate Change and Public Health Concerns
Madison, Wisconsin

SEPTEMBER 24
BRIAN SHUTER
Research Scientist, Ontario Ministry of Natural Resources and Adjunct Professor of Zoology, University of Toronto

Climate Change and Fisheries
Cleveland, Wisconsin
Potential Impacts of Climate Change and Increasing Water Demands on Wisconsin’s Inland Lakes, Streams and Groundwater

Tim Asplund
Water Resources Management Specialist
Wisconsin Department of Natural Resources

Recent drought conditions in parts of Wisconsin, both in agricultural and forested regions, have caused some lakes and streams to reach historic low water levels. However, since 1970, there has been an upward trend in groundwater levels, stream baseflows, and lake levels across the state. Water level fluctuations are normal for certain types of lakes, depending upon local morphology, hydrology, climate, and geography. Indeed, water level fluctuations can be beneficial to healthy aquatic ecosystems; for example, encouraging emergent plant growth, compacting sediments, and deterring invasive species. However, global climate change and increasing human demands for water may be altering these normal cycles, with implications for water quality and ecosystem services.

Global climate models predict more rainfall and warmer temperatures for the Upper Midwest, which may produce contradictory effects for water levels and flows: some lakes may rise due to higher groundwater recharge rates in the winter, while others may fall due to higher evapotranspiration rates in the summer. Land use patterns and groundwater pumping also interfere with the water cycle, increasing surface runoff and lowering water tables, with subsequent impacts to lake levels and streamflows. This talk will explore what we know, don't know, and need to further study about potential impacts of climate change and human water demands on lakes, streams, wetlands, and groundwater. It will also address what additional studies are needed to make sound decisions about managing water resources and adapting to global climate change in Wisconsin and the Upper Midwest. Case studies from lakes in northwestern Wisconsin and the Central Sands will be used to illustrate the many factors involved.

Tim Asplund is a limnologist with the Wisconsin Department of Natural Resources Lakes and Wetlands Section, with lake management responsibilities statewide. He received master's degrees in Water Resources Management and Oceanography and Limnology in 1993 from the University of Wisconsin–Madison, where he first became interested in global climate change impacts on lakes. His thesis focused on the variability of oxygen depletion rates in lakes under the ice, examining the implications of a warmer climate. He has worked for the DNR for 14 years, both as a researcher and a water resources management specialist. His current areas of expertise include groundwater-lake interactions, shallow lake ecology, recreational impacts on lakes, and statewide lake assessment.