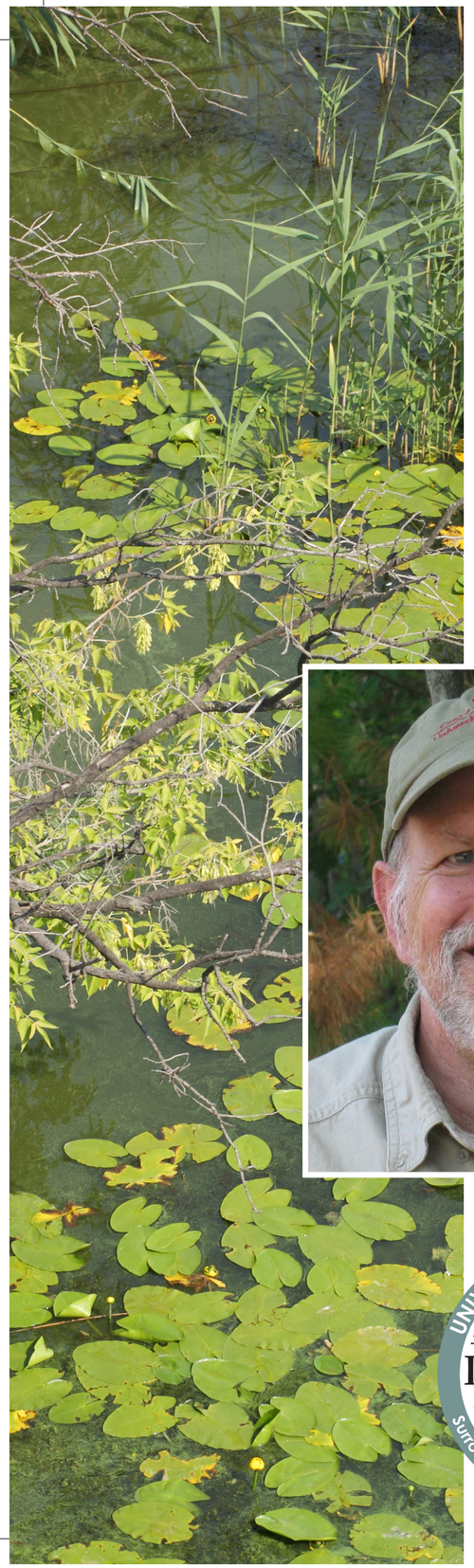
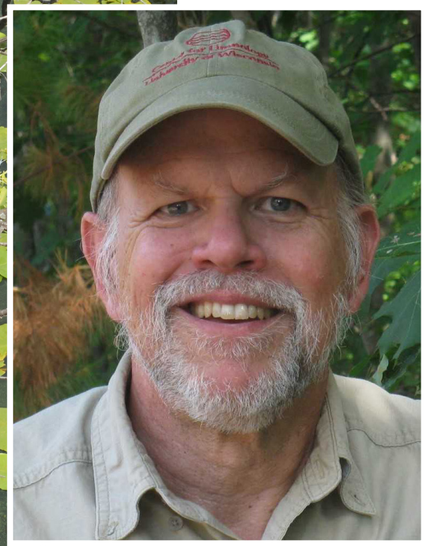


UNIVERSITY OF WISCONSIN-LA CROSSE

Distinguished Speaker in the *Life Sciences*

October 26-27, 2017



Stephen R. Carpenter, Ph.D.

Alfred Forbes Professor Emeritus

Director Emeritus, Center for Limnology

University of Wisconsin-Madison

Carpenter is a leader of whole-ecosystem experiments and adaptive ecosystem management focused on freshwaters. His research interests include trophic cascades and their effects on production and nutrient cycling, contaminant cycles, freshwater fisheries, eutrophication, nonpoint pollution, ecological economics of freshwater, and resilience of ecosystems and social-ecological systems.

He is a member of the U.S. National Academy of Sciences, a Fellow of the American Academy of Arts and Sciences, and a foreign member of the Royal Swedish Academy of Sciences. Carpenter is the 2011 laureate of the Stockholm Water Prize. Other notable awards include a Pew Fellowship in Conservation and Environment, the G. Evelyn Hutchinson Medal of the American Society of Limnology and Oceanography, the Robert H. MacArthur Award from the Ecological Society of America, the Excellence in Ecology Prize from the Ecology Institute, and the Naumann-Thienemann medal of the International Society for Limnology.

Sponsored by UWL College of Science and Health

For disability accommodations:
Susan Hall, 3002 Cowley Hall, 608.785.6960, shall@uwlax.edu

Thursday, Oct. 26 - 6:30 p.m.

PUBLIC TALK

Affeldt Auditorium
Room 1309 Centennial Hall

The Phosphorus Paradox: Global Change in Freshwaters

Phosphorus is an essential nutrient for agricultural production and human sustainability, yet eutrophication caused by excess phosphorus pollution is a serious problem for freshwater resources, human health, and sustainability. The phosphorus cycle has been altered by human action more than any global elemental cycle, yet there is great heterogeneity in phosphorus supply around the planet. Some agricultural soils are phosphorus deficient, and some freshwaters are seriously polluted by phosphorus. Conservation and recycling in phosphorus-rich areas can help resolve the imbalance.

Friday, Oct. 27 - 5:30 p.m.

SCIENTIFIC TALK

Skogen Auditorium
Room 1400 Centennial Hall

Measuring Resilience: Whole Ecosystem Experiments

Massive changes in ecosystems, or regime shifts, can have significant consequences for natural resources but are difficult to predict in advance. Resilience indicators based on statistical changes in time series or spatial maps have been proposed to anticipate impending changes. We have conducted whole-lake experiments to test resilience indicators. Generally the resilience indicators have performed as expected from theory. However more sophisticated empirical models, such as time-varying autoregressions, may be more useful than resilience indicators for identifying critical transitions in ecosystems. Despite these promising results with resilience indicators, the best way to avoid unwanted ecological regime shifts is to increase the resilience of ecosystems through appropriate management.