BIOLOGY

Biology professor examines river ecology on global scale

Associate Professor of Biology, Scott Tiegs, Ph.D., led a study involving 153 researchers from 40 countries. The study's findings are published in the latest issue of the journal Science Advances.

Oakland University professor Scott Tiegs is the lead author of "Global Patterns and D
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Oakland University ecologist Scott Tiegs is the lead author of a new scientific paper examining carbon-cycling rates of river-based ecosystems around the world.

Published in the journal *Science Advances*, the paper is based on the work of 153 researchers in 40 countries. The study found that climatic factors, such as temperature and moisture, influenced carbon-cycling rates of river-based ecosystems. Carbon cycli is critical for the functioning of systems across a range of spatial scales, from local food webs to the global climate.

“River ecosystems play significant roles in the global carbon cycle by regulating rates o decomposition and transporting organic matter to the oceans, but we have only a rudimentary understanding of how decomposition rates vary from river to river,” Tiegs s

Unlike most previous studies on carbon cycling in streams and rivers, the methodology in this study was identical across all field sites.

With support from the Office of the Provost, the Research Office, the College of Arts and Sciences and the Department of Biological Sciences at Oakland University, Tiegs helped develop a standardized, easy-to-use bioassay, which enabled a large number of researchers to participate in the study.

Scott Tiegs, shown here doing field research in Iceland, is lead author on a newly published paper examining carbon cycling rates of river-based ecosystems around the world.

“As a result, we were able to quantify decomposition rates in over 500 rivers across the globe, including every continent,” Tiegs said.

The paper noted that the climatic factors that govern decomposition rates are increasir impacted by human activities. These findings will help researchers establish baselines t quantify environmental impacts to the functioning of ecosystems on a global scale.

“In addition to providing fundamental information on how river ecosystems function, ou results provide baseline data that will enable future researchers to evaluate large-scale ecological responses to warming and other dimensions of global climate change,” said Tiegs.

The research was sponsored by the Ecuadorian Science Foundation. Additionally, OU professors David Szlag (Environmental Chemistry), Mark Isken (Management Informatic Systems) and recent OU graduate Diana Ethaiya (Biology) participated in the research a are co-authors on the article.

To view the article, “Global Patterns and Drivers of Ecosystem Functioning in Rivers an Riparian Zones,” click here.