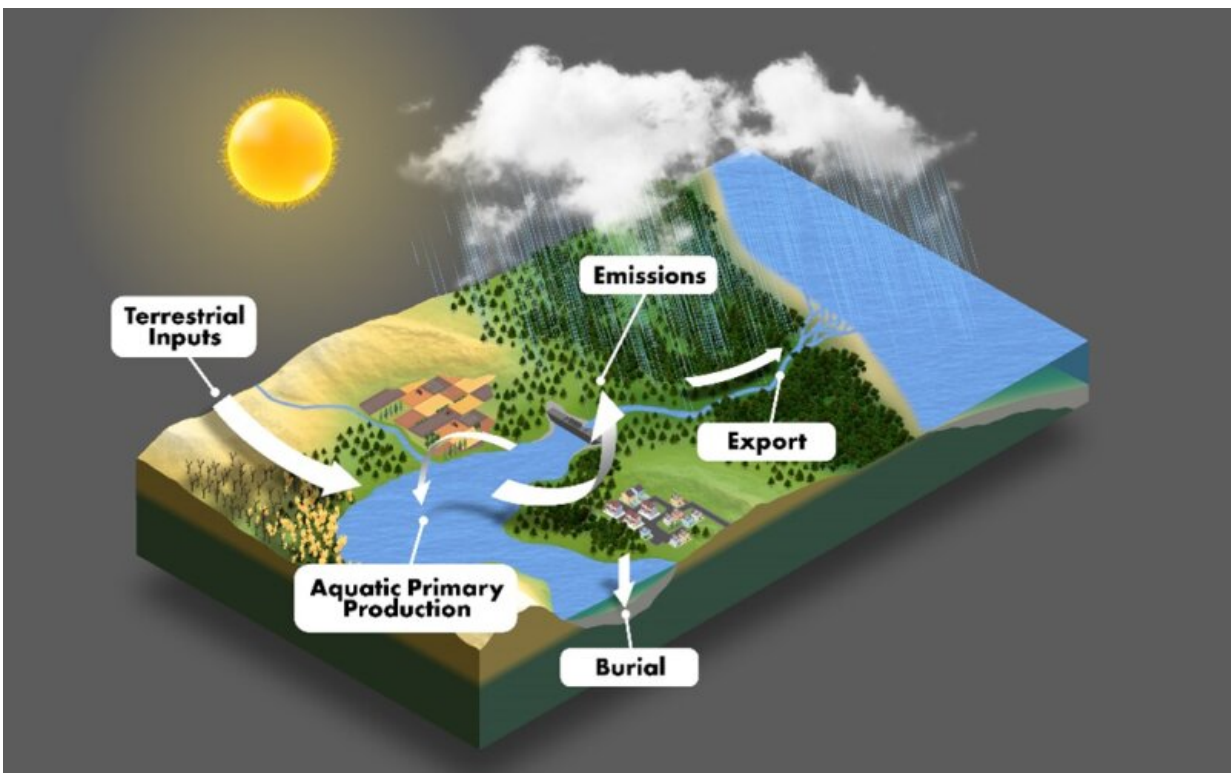


# Study finds inland water carbon emissions are being undercounted

September 6 2022, by Stephanie Seay

---



ORNL scientists synthesizing research on the complex biogeochemical processes at play in inland waters found that carbon emissions are about 13% higher than previously estimated. Credit: Adam Malin/ORNL, U.S. Dept. of Energy

Global carbon emissions from inland waters such as lakes, rivers, streams and ponds are being undercounted by about 13% and will likely

continue to rise given climate events and land use changes, Oak Ridge National Laboratory scientists have found.

In their study published in *Global Change Biology*, the researchers estimate that [inland waters](#) pump out 4.4 billion metric tons of carbon to the atmosphere annually, based on new modeling of previous estimates and improved sampling and data from more types of bodies of water, including those that have dried or are shrinking. About 73% of this carbon is emitted as carbon dioxide or methane.

Earth system modelers are paying increased attention to the complex biogeochemical processes at play in inland waters.

"About 70% to 80% of [carbon](#) entering inland waters from land doesn't make it to the ocean; it's processed inland first," said ORNL's Rachel Pilla. "This is a missing piece of the puzzle for Earth system models to better predict and prepare us for the future."

**More information:** Rachel M. Pilla et al, Anthropogenically driven climate and landscape change effects on inland water carbon dynamics: What have we learned and where are we going?, *Global Change Biology* (2022). [DOI: 10.1111/gcb.16324](https://doi.org/10.1111/gcb.16324)

Provided by Oak Ridge National Laboratory

Citation: Study finds inland water carbon emissions are being undercounted (2022, September 6) retrieved 9 May 2024 from <https://phys.org/news/2022-09-inland-carbon-emissions-undercounted.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.