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How can climate change communication research improve communication about nutrient pollution?

Nutrients, such as nitrogen and phosphorus, are needed in moderation for ecosystems to function. Major human sources of nutrients include septic systems and agriculture. When occurring in excess, these nutrients can cause water pollution. A recent paper published by EPA scientists in *Frontiers of Environmental Science* found that while sources, impacts, and approaches to management are increasingly understood by scientists, there are challenges in communicating broadly about excess nutrients and how to manage them.

The open access paper, titled <u>Messaging on Slow Impacts: Applying Lessons Learned from Climate Change</u> <u>Communication to Catalyze and Improve Marine Nutrient Communication</u>, provides information about how findings from research about climate change communications can be applied to improving communications about nutrient management. The paper is available online at <u>www.frontiersin.org/articles/10.3389/fenvs.2021.619606/full</u>.

Nutrient Pollution

- Watershed-scale drivers and impacts
- Functional recovery is a realistic goal
- Controversial, but not political
- Incremental risk to society
- Little to no "science of nutrient communication"

- Temporal disconnect of inputs/impact
- Spatial disconnect
 of inputs/impact
- Combination of point and non-point
- source inputsShifting baselines

Climate Change

- Global scale drivers, both local and global impacts
- Goat of action is mitigation, adaptation, resilience (not recovery)
- Politicized, especially in the United States
- Great societal risk of a failure to act
- Body of climate change communication science and recommended practices

The similarities make climate change communication a valuable resource to learn from for nutrient communication.

Transferable lessons from climate change communication

Research on climate change communication helps us understand the way people use scientific information. How can we communicate better about long-term, global and relatively abstract challenges like nutrient pollution? The practices below are the top recommendations from the scientific literature review summarized in the paper.

Prioritize two-way communication between publics and communicators

Relate to human experience rather than abstract analysis Define and activate social norms around the problem and urgency of action

Emphasize local impacts and immediate actions to be taken Build interdisciplinary collaborations to address science communication training and reward gaps