



Reducing the Health Impacts of the Nitrogen Problem

Catherine L. Kling
Tisch University Professor, Dyson School of Applied Economics and Management



Elena Austin
U. Washington



Jerry Hatfield
USDA-ARS (retired)



Jim Galloway
U. Virginia



Jennifer McPartland
EDF



Robyn Wilson
Ohio State



Raj Khosla
Kansas State

Planning Committee

NAS Staff: Kara Laney, Senior Program Officer, Board on Agriculture and Natural Resources
Jenell Walsh-Thomas, ,cProgram Officer, Board on Environmental Change and Society
Sarah Harper, Senior Program Assistant, Board on Chemical Sciences and Technology

Opportunities in U.S. agriculture to reduce public health risks of nitrogen in water.

Workshop Goals:

1. Information exchange. Bring together experts to provide high level understanding of the state of scientific knowledge (natural, physical, and social) and current policies addressing agricultural sources of nitrogen in water.
2. Informed discussion. From that foundation, provide a platform to consider possible actions to address these problems (including producers, consumers, NGOs, state and federal government policies).
3. Accelerate progress. New technology, changes in policy, behavioral change, etc.

Webinar Schedule

Reducing the Health Impacts of the Nitrogen Problem

Session I. What is the Nitrogen Problem Jan. 28, 2021

Session II. What Farm-Level Actions Could be Taken to Address the Nitrogen Problem? Feb. 4, 2021

Session III. What Landscape-Level Actions and Innovative Technologies Could be Used to Address the Nitrogen Problem? Feb. 11, 2021

Session IV. What Policies and Markets Could be Created to Address the Nitrogen Problem? Feb. 18, 2021

Session V. Reflection and Synthesis Feb. 25, 2021

What is the Nitrogen Problem? Jan. 28, 2021

Cathy Kling, Clean Water Act (1972) regulates water pollution from industry, but not most of agriculture (about 45% of US land); Safe Drinking Water Act (1974) regulates drinking water quality from public water providers but does not cover 43 million people on private wells.

Mary Ward, The strongest evidence for a relationship between drinking water nitrate ingestion and adverse health outcomes (besides methemoglobinemia) is for colorectal cancer, thyroid disease, and neural tube defects. Future studies of these and other health outcomes should include improved exposure assessment especially for the highly exposed population using private wells.

Craig Cox, Contamination of drinking water has been observed at levels now understood to threaten human health. However, lack of a concerted effort to monitor has left us unaware of the full extent of the issue.

What is the Nitrogen Problem? Jan. 28, 2021

Ken Cassman, Nitrogen fertilizer is a critical input to the productivity of food, fiber, and fuel production from agriculture. A national research agenda is needed to better understand how to balance production and environmental quality.

Matt Helmers, Nitrogen loss is prevalent throughout the US and is exacerbated by the use of annual crops and tile drained landscapes that have fundamentally altered the hydrology of millions of acres.

Eric Davidson, Nitrogen leaks out to the environment in many places along the continuum of our food system and knowledge of where those leaks and inefficiencies exist can help us design more targeted and effective mitigation strategies.

Scale of the Agricultural Footprint

