

Assessing the impact of human-associated release of nitrogen into the environment

July 9 2020, by Bob Yirka



Credit: CC0 Public Domain

An international team of researchers that includes the Food and Agriculture Organization of the United Nations has conducted an impact assessment of the huge amounts of human-associated nitrogen that are released into the environment every year. In their paper published in the

journal *Nature Food*, the group describes attempting to measure the amounts of human-associated nitrogen that is released into the environment and the impact it has.

As the researchers note, the amount of human-associated [nitrogen](#) that is released into the [environment](#) has been growing steadily over the past several decades. They further note that prior research has shown that nitrogen amounts are on the "planetary boundary" list where too much of an atmospheric constituent, in this case nitrogen, could jeopardize humanity's ability to survive. In this new effort, the researchers attempted to measure the amount of nitrogen released into the environment by one key emission stream to find out how close we are coming to the planetary boundary. Too much nitrogen can be harmful because some of it is emitted as nitrates, a form of water pollution. Some of it is also emitted in the form of ammonia, which is a greenhouse gas. And nitrogen that makes its way into the [water table](#) can produce [algae blooms](#) that choke out all the other creatures that live in that area.

Humans emit nitrogen from a variety of sources, including [lawn fertilizer](#), the sewage that makes its way into treatment plants, [power plants](#) and other industrial sources. But the biggest is the livestock chain. Humans pour massive amounts of nitrogen-containing fertilizer onto croplands to grow food that is used to feed livestock, and massive amounts of nitrogen is released from their manure. In their work, the researchers focused their efforts on the livestock chain alone. After studying data from around the globe, they calculated that the livestock chain emits 65 trillion grams of nitrogen into the environment every year—a number that exceeds the number calculated to represent the planetary boundary. They also found that the livestock chain makes up approximately one-third of all human-associated nitrogen released into the environment. They suggest that nitrogen emissions need to be reduced if we are to prevent disaster in the future.

More information: Aimable Uwizeye et al. Nitrogen emissions along global livestock supply chains, *Nature Food* (2020). [DOI: 10.1038/s43016-020-0113-y](https://doi.org/10.1038/s43016-020-0113-y)

© 2020 Science X Network

Citation: Assessing the impact of human-associated release of nitrogen into the environment (2020, July 9) retrieved 28 April 2024 from <https://phys.org/news/2020-07-impact-human-associated-nitrogen-environment.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.