Comparing nitrogen footprint tools for individuals, institutions, and watersheds

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Abstract

Nitrogen footprints provide an important link between the body of work concerning human alteration of the global nitrogen cycle and the actions that can be taken by individuals, institutions, and policy-makers. The nitrogen footprints calculated for institutions of higher education serve as a link between research, education, and management. The research component demonstrates which activities of the institution contribute most heavily to nitrogen pollution in the form of a data-intensive sustainability metric, which in turn is used to educate the community and promote management strategies that reduce the institution’s impact. Nitrogen footprints for individuals also serve as education and management tools, and can be applied in regions where nitrogen pollution has the most effect. A nitrogen footprint calculation tool for residents of the Chesapeake Bay watershed (USA) aims to teach users how their actions impact water quality in the bay and suggests actions that individuals can employ to reduce their impact. In both institutional and individual N footprints, the most important sector is food production. Broad changes in consumption patterns have the most potential for reduction. The Nitrogen Footprint Network addresses the needs of multiple communities at different scales, and data collected from novel footprint calculations for institutions and individuals informs how best to reduce their N pollution.

Key Words

nitrogen footprint, sustainability, management

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