United States Environmental Protection Agency

SAFE AND SUSTAINABLE WATER RESOURCES RESEARCH PROGRAM

Nutrients & Harmful Algal Blooms Research

Office of Research and Development
FY19-22 StRAP

This research topic will comprehensively address nutrient issues and one of the primary impacts of excess nutrients in water bodies—HABs. HABs research will focus on detection, toxicity, and impacts to humans and biota, and tools to mitigate exposure. Nutrients research will address nutrient-related impacts in watersheds and water bodies and support water quality management goals.

Research Areas and Outputs

Research Area 1 — Assessment and Management of HABs

Provide stakeholders and decision-makers at the national, regional, state, and local levels with scientific information and tools to more effectively assess and manage HABs and associated toxicity events.

Research Outputs:

- Data and tools to assess human and environmental adverse health outcomes from exposure to HABs and associated toxins
- Information for preventing, treating and managing HABs and their impacts in water bodies, ambient water, and drinking water
- Tools for HAB risk characterization and assessment

Research Area 2 — Science to Support Nutrient-Related Water Quality Goals

Advance the science to inform decisions related to nutrient and co-pollutant water quality goals of program offices, regions, states, and tribes.

Research Outputs:

- Research for characterizing nutrient-related impacts across multiple spatial scales
- Trajectories of aquatic ecosystem responses to and recovery from nutrient pollution
- Scientific approaches for identifying which watersheds and water bodies may most efficiently attain water quality goals

Research Area 3 — Nutrient Reduction Strategies and Assessment

Support to plan, implement, and track the effectiveness of nutrient reduction strategies at multiple scales, including watersheds draining to receiving waters potentially affected by HABs or other nutrient-related water quality issues.

Research Outputs:

- Provide tools, technologies, and best practices to predict, monitor, and reduce nutrients in surface water and groundwater
- Information for assessing the effectiveness of restoration and conservation systems and practices
- Best practices for integrated nutrient management programs

Awarded Grant Research

2018 - 2020

Freshwater Harmful Algal Blooms

Through a Science to Achieve Results (STAR) grant, EPA awarded funding to two universities for innovative research on the prediction, prevention, control, and mitigation of freshwater HABs.

1. The Ohio State University
2. Iowa State University