

FERTILIZER POLLUTION IN IOWA'S RECREATIONAL WATERS

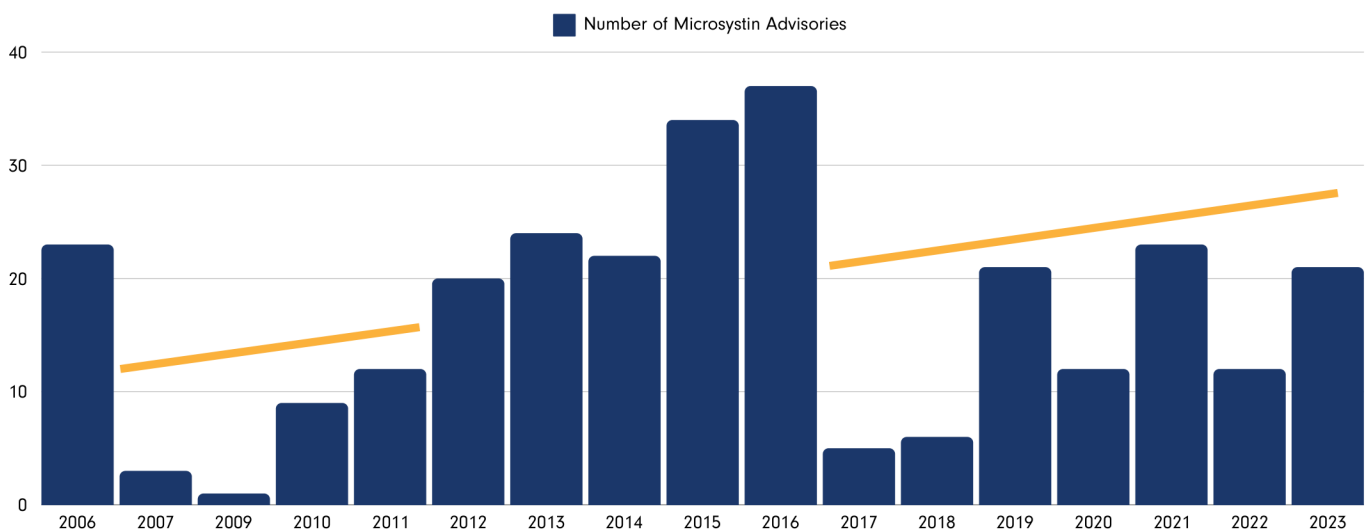
Nitrogen and phosphorus are essential nutrients for plant growth. Farmers supplement these naturally occurring nutrients in their soils with both chemical and animal fertilizer to increase crop production. When these nutrient levels exceed plant needs, water carries the nitrogen (as nitrate) and phosphorus away, leading to water pollution.

IOWA
WATER
WATCH



Iowa
Environmental
Council

MICROCYSTIN WARNINGS IN IOWA: 252 WARNINGS AT 39 DNR-MONITORED BEACHES²



*Start of 8 micrograms/L threshold
Note: 2008 omitted due to flooding

HEALTH EFFECTS

Nitrate pollution can lead to harmful algal blooms that release microcystin toxin.

Skin contact, ingestion, and inhalation of microcystin can cause:¹

- Breathing problems
- Stomach pain, nausea, vomiting, diarrhea
- Headaches, fever, runny eyes and nose, cough, sore throat, chest pain
- Rash, hives, blisters
- Liver damage

AFFECTS PETS,
LIVESTOCK, AND
WILD ANIMALS TOO.



37 RECREATIONAL LAKES ALSO SERVE AS A DRINKING WATER SOURCE

- Only 16 of those lakes are monitored by the DNR for microcystin
- 12 of the 16 monitored lakes had a total of 157 microcystin warnings from 2006-2021
- This constitutes 62% of all warnings for microcystin in recreational lakes in Iowa from 2006-2021



ECONOMIC IMPACT^{3,4}

- Total direct spending on lake visits annually in Iowa = \$1 billion
- Average direct spending per lake = \$7 million
- Even small lakes can generate \$2-3 million for rural Iowa communities
- Iowa lakes support over 12,000 Iowa jobs
- Water quality is the #1 factor considered when choosing a lake for recreation
- Estimated increase in recreational spending with improved water quality in Iowa = \$30 million



FERTILIZER POLLUTION IN IOWA'S RECREATIONAL WATERS

SOURCES

- ¹Iowa Department of Public Health. Frequently Asked Questions: Blue Green Algae (Cyanobacterial) and Microcystin Toxin. Accessed Jan. 11, 2019: https://www.idph.iowa.gov/Portals/1/Files/EHS/algae_faq.pdf
- ²Iowa Department of Natural Resources. State Park Beach Monitoring data. <https://www.iowadnr.gov/Environmental-Protection/Water-Quality/Water-Monitoring/Beaches>
- ³Jeon, Hocheol, et al. A Report to the Iowa Department of Natural Resources – The Iowa Lakes Valuation Project 2014: Summary and Findings. Center for Agricultural and Rural Development, Iowa State University. February 2016.
- ⁴Tang, Chuan, et al. Economic Benefits of Nitrogen Reductions in Iowa. Center for Agricultural and Rural Development, Iowa State University. February 2018.