

*Law re Exposure to and Key  
Sources of Harmful Algal  
Blooms and Microcystin*

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# Drinking Water Limits for Microcystin

- 0.3 ppb for pre-school children
- 1.6 ppb for older children & adults

USEPA Drinking Water Health Advisory (June 2015)

Ohio Admin. Code 3745-90-01 to -07 (issued 2016), requires public water system to issue “do not drink” advisory if samples of treated water exceed these action levels

# Recreational Waters Exposure Limits for Microcystin

- 8 ppb

USEPA Recommendation, 84 Fed. Reg. 26413  
(June 6, 2019)

Ohio Harmful Algal Bloom Response Strategy  
for Recreational Waters (August 2020)

# Harmful Algal Blooms in Lake Erie

- HABs can produce microcystin
- HABs form primarily due to excess phosphorus entering lake from Western Lake Erie Basin, especially Maumee River watershed
- About 90% of phosphorus loading from Maumee River watershed is from nonpoint sources, primarily agricultural runoff
- Key to solving HABs crisis in Lake Erie is reducing phosphorus loading from WLEB/Maumee River watershed by 40%

# Ohio Senate Bill 1 of 2015

- Specific prohibitions on application of manure and fertilizer in WLEB (with limited exceptions)
  - No surface application on snow-covered or frozen soil, when top 2 inches of soil are saturated, or when precipitation is likely in next 12 hours (fertilizer) or 24 hours (manure)
- Codified at Ohio Rev. Code § 905.326 (fertilizer), § 939.08 (manure)

# Animal Feeding Operations

- Concentrated Animal Feeding Operations (CAFOs) – federal Clean Water Act
- Concentrated Animal Feeding Facilities (CAFFs) – Ohio Rev. Code ch. 903
- Other AFOs – Ohio Rev. Code ch. 939
  - “Distressed watershed” rules kick in once watershed is designated “in distress”, Ohio Admin. Code 901:13-1-11, -19, -20

# Total Maximum Daily Load

- State must develop TMDL for each surface water listed as “impaired,” per federal Clean Water Act
- TMDL is maximum amount of pollutant that can enter a water without exceeding water quality standard
  - Wasteload allocation, for point sources
  - Load allocation, for nonpoint sources
  - Plus margin of safety



# Lake Erie TMDL

- Ohio EPA listed Lake Erie as impaired in 2018 due to HABs
- Multi-stage process for developing TMDL in Ohio
  - Preliminary Modeling Results completed this summer for Maumee Watershed Nutrient TMDL
  - Draft TMDL anticipated Dec. 31, 2022 (triggers 60-day public comment period)

## Table of Authorities

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Photo: Dr. Jeff Reutter, Lake Erie near Stone Laboratory, 2013.

#### EXPOSURE

Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j.

USEPA, Drinking Water Health Advisory for the Cyanobacterial Microcystin Toxins, EPA-820R15100 (June 2015).

Ohio Admin. Code 3745-90-01 to -07 (harmful algal blooms regulations for public water systems).

Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystin and Cylindrospermopsin, 84 Fed. Reg. 26,413 (June 6, 2019).

Ohio Department of Health et al, Ohio Harmful Algal Bloom Response Strategy for Recreational Waters (August 2020).

#### KEY SOURCES

Ohio EPA, Ohio Lake Erie Phosphorus Task Force Final Report (2010).

Ohio EPA, Ohio Lake Erie Phosphorus Task Force II Final Report (2013).

International Joint Commission, A Balanced Diet for Lake Erie (2014).

USEPA, U.S. Action Plan for Lake Erie (2018).

Ohio Lake Erie Commission et al, Ohio Domestic Action Plan 2020 to Address Nutrients.

Ohio EPA, Nutrient Mass Balance Study for Ohio's Major Rivers (2020).

Clean Water Act, 33 U.S.C §§ 1251 to 1388.

Ohio Rev. Code ch. 6111 (water pollution control).

Act of April 2, 2015, Sub. S.B. 1

Codified in part at Ohio Rev. Code §§ 905.326-.327 (fertilizer), 939.08-.09 (manure).

Concentrated Animal Feeding Operations (CAFOs)

33 U.S.C. § 1362(14) (definition of “point source” includes CAFOs).

40 C.F.R. §§ 122.23, 122.42(e).

Concentrated Animal Feeding Facilities (CAFFs)

Ohio Rev. Code ch. 903.

Ohio Admin. Code 901:10-1-01 to -06.

Other Animal Feeding Operations (Agricultural Pollution Abatement Program)

Ohio Rev. Code ch. 939.

Ohio Admin. Code 901:13-1-01 et seq.

Ohio Admin. Code 901:13-1-11, -19, -20 (distressed watershed rules).

Total Maximum Daily Load

Clean Water Act, 33 U.S.C § 1313(d)(1).

40 C.F.R. §§ 130.2(i), 130.7.

Ohio Rev. Code §§ 6111.561 to .564 (procedures for TMDLs).

Ohio Admin. Code 3745-1-04(E) (“free from ... nuisance growths of ... algae”  
water quality standard).

Ohio EPA, Ohio 2018 Integrated Water Quality Monitoring and Assessment Report  
(Lake Erie listed as impaired).

Ohio EPA, Preliminary Monitoring Results for the Maumee Watershed Nutrient TMDL  
Development (June 2022).