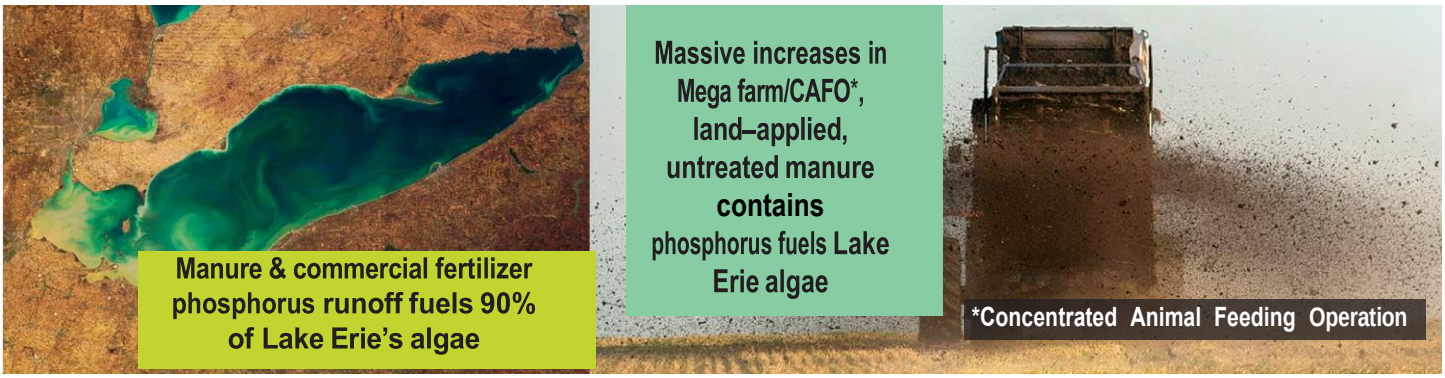
Western Lake Erie Algae ManureProblem:



Solutions:TREAT CAFO MANURE; LIMIT CAFO NUMBERS in impaired watersheds
Who can make it happen? Grass roots uprising; Local government action

Background: United States Department of Agriculture (USDA)
Natural Resources Defence Council(NRDC) All below from USDA NRCS Website

"The utilization and disposal of animal manure from animal feeding operations continues to be an important farm management challenge **if producers are to be successful in reducing water quality degradation related to land application of manure**. When nutrients are recycled on the land at rates that exceed the capacity of the land to utilize the nutrients, continued manure applications can lead to a buildup of nutrients in the soil. This increases the potential for nutrients to move from the field through leaching and runoff to pollute groundwater and surface water...

The structure of animal agriculture has changed dramatically over the last two decades. Small and medium-sized livestock operations have been replaced by large operations at a steady rate. **The total number of livestock has remained relatively unchanged, but more livestock are kept in confinement**. ... The number of animal units per acre of land available on the farm for manure application for the largest operations is often high, averaging more than eight confined animal units per acre for large poultry and fattened cattle operations. These changes in animal agriculture have resulted in increased problems associated with the utilization and disposal of animal waste. ..Off-farm export requirements are increasing. **In some counties the production of recoverable manure nutrients exceeds the assimilative capacity of all the cropland and pastureland available for manure application in the county. The number of these counties has significantly increased since 1982... as the structure of animal agriculture has shifted toward fewer, but larger livestock operations."**

Two changes turned Lake Erie green- Laundry detergents & CAFO manure

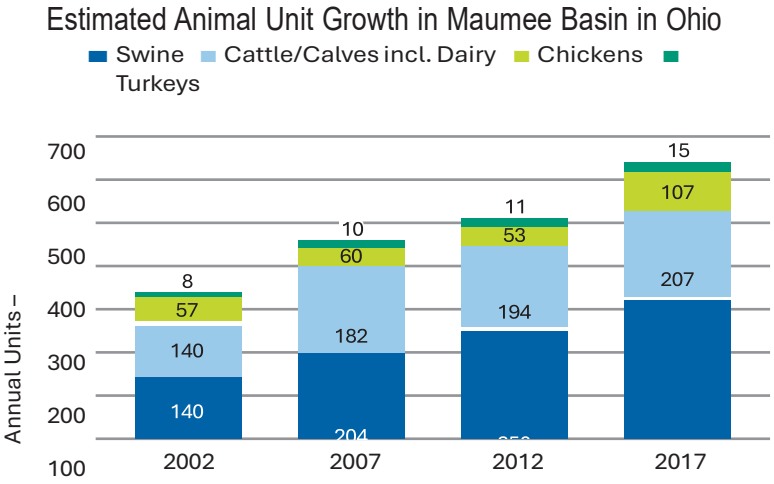
In the 1950s: Washing machine detergents loaded with high amounts of phosphorus began to be discharged into Lake Erie and turned the lake green with algae. 28 states eventually banned phosphorus from laundry detergent and the green went away. Proctor and Gamble fought bitterly.

In the 1990's – 2025 Too much manure Land Applied from Confined Animal Feeding Operations (CAFOs) in the U.S. including the Lake Erie watershed. In the U.S. Poultry manure and CAFOs started in the 1950s, Hog & dairy manure CAFOs started in the 1980s. Livestock animal units in western Lake Erie increased by 88% from 2002 to 2017 according to the Ohio Dept. Of Agriculture says there was an 88% increase in animal units(Livestock and poultry between 2002 and 2017. Western Lake Erie estimates in 2019 were:1.8 million hogs, 24 million chickens, and 400,000 cows.

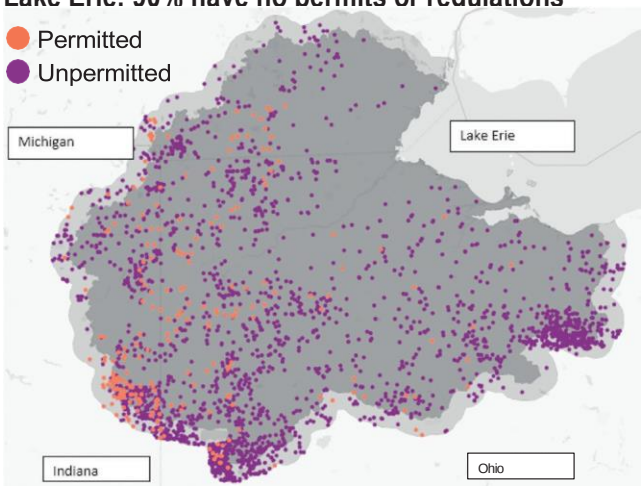
IN 2023 AN ESTIMATED 100,000 CATTLE LOCATED IN WILLIAMS COUNTY, OHIO & STEUBON COUNTY, INDIANA (NUMBERS IN HILLSDALE , MICHIGAN UNKNOWN)

Schmucker and JBS (World's largest beef producer) presented a business plan for a permit in Steubon County in early 2023 Indiana for 8000 calves. The permit was turned down but Schmucker told residents they were coming anyway. In April 2024 parcels were split to avoid permits, manure was piled high and manure runoff was visible. Complaints were filed in Ohio and Indiana. The Ohio Department of Agriculture and Ohio EPA issued Notices of Violation and required two permits to be submitted on two sites that exceeded 1,000 cattle. The State of Indiana issued no violations and required no permits. The manure runoff goes to the St. Joseph's River then to the Maumee and Lake Erie. Fish Creek is in the area and is the most pristine creek in the Maumee watershed with over 50 fish species and endangered mussels.

The Ohio Department of Agriculture estimates an 88% growth in animal units from 2002–2017



Locations of Mega farms/CAFOs in Western Lake Erie: 90% have no permits or regulations



$$$ Billions to reduce phosphorus in Lake Erie
NO ACCOUNTING FOR SOURCE REDUCTION
HARMFUL ALGAE YEARLY

MORE MANURE AND LESS COMMERCIAL FERTILIZER

- An estimated 40% reduction in commercial fertilizer phosphorus.
- **Reductions in commercial fertilizer offset by increases in manure phosphorus runoff.**

All sources of phosphorus are important to reduce:

ERIE SOURCES OF PHOSPHORUS

Over 90% Commercial Fertilizer and Manure

- Manure
- Commercial Fertilizer
- Wastewater treatment plants
- Failing septic systems
- Biolsolids
- Storm water

THERE IS AN ECONOMIC INCENTIVE
TO REDUCE COMMERCIAL PHOSPHORUS BUT OPPOSITE TRUE FOR MANURE

Commercial fertilizer is expensive – using less saves farmers money. Manure is just the opposite. The cheapest way to get rid of manure is to apply the manure as close to the operation as possible, Applying less manure means trucking and/or treating increasing costs.

To help USDA policies require commercial fertilizer phosphorus soil limits at about 35-40 ppm – the agronomic or crop need amount, but manure soil phosphorus is 75 – 150 ppm or more – far more than crops need and far more likely to run off. A recent project in Michigan had soil phosphorus at 10 ppm.

CHESAPEAKE TARGETS AREAS DISCHARGING LARGEST AMOUNTS OF NITROGEN & PHOSPHORUS

The study recommends treating only 12 percent of the cropland—those acres that can reduce the most pollutants at the least cost. In 2014 there was a daily inventory of roughly 2.0 billion pounds of poultry, dairy, swine, and feedlot beef, animal agriculture is a significant source of nutrient loadings to the Bay, contributing an estimated 17 percent of the nitrogen entering the Bay and 26 percent of the phosphorus. Animal operations produce roughly 99,400 tons of recoverable manure nitrogen and 44,200 tons of recoverable manure phosphorus annually, which is often more than can be safely used by crops grown on the land managed by the livestock operation. ***Note there is no targeting in Lake Erie and no tracking increases in manure quantity and runoff***.

ADDRESSING THE MANURE PROBLEM

Living Near Where CAFO manure is applied? Test the nitrate in your tap water (Lake Erie Waterkeeper has free kits)
Pass a local policy that limits phosphorus applications from all sources on over 50 acres to agronomic rate.
Inform local, state and federal officials of the over application of manure. Share this fact sheed.

LAKE ERIE WATERKEEPER www.lakeeriewaterkeeper.org Email sandylakeerie@aol.com Call 419-367-1691

The growing source is CAFO manure most without permits and regulations.

SCHMUCKER – JBS Boldly bring an estimated 100,000 Cattle and Manure to Lake Erie Watershed in 2023 – No Permits –

Schmucker JBS(World's largest Beef Producer based in Brazil began massive cattle operations in 2023 at the corner of Ohio/Indiana and Michigan – no permits. Manure piled high on many

- Ohio Department of Agriculture and Ohio EPA issued manure runoff and too many animal violations in spring of 2024. Schmucker moved manure from where there were violations to undisclosed locations.
- Schmucker has divided over 50 parcels to split parcels and have under 1000 cattle to avoid getting permits
- Neighbours have CAFO barns being built next to them with manure piles - no notice no recourse
- Manure pile height exceeds top of barn
- The Schmucker Ohio and Indiana cattle manure runoff goes to Fish Creek which is classified as most pristine in Maumee Watershed. Fish Creek has three endangered mussels. There was a fish kill in September 2024. A State of Indiana Report says dumped manure caused the fish kill. Nothing done.

Monitoring shows CAFOs add dissolved phosphorus

Raft University of Wisconsin and Meyer Marquette found:

Between 2010 and 2018, each new CAFO in the Maumee watershed adds 10–15% more dissolved phosphorus downstream

LAKE ERIE WATERKEEPER www.lakeeriewaterkeeper.org

Lake Erie is the victim. 90% of Mega farms/CAFOs in the Lake Erie watershed have no permits and no testing requirements *(EWG 2022)*

• U.S. requires no manure treatment; fails to control watershed livestock to reduce runoff into waterways
• It's estimated that U.S. livestock annually produces somewhere between 3–20 times more manure than humans produce in the U.S. – as much as 1.2–1.37 billion tons of waste (*EPA, 2005)*.
• Though sewage treatment plants are required for human waste, no such facility exists for livestock waste.
The agriculture sector, including CAFOs, is the leading contributor of pollutants into waterways.
• It's been found that states with high concentrations of CAFOs experience on average 20–30 serious water quality problems per year as a result of poor manure management *(EPA, 2001)*
• Nutrient over-enrichment causes algal blooms, or a rapid increase of algae growth in an aquatic environment. 20 years and billions of dollars to reduce Erie algae is not working. Why? More and more confined cow, pig and chicken operations are locating in the Erie watershed to land-apply
all their untreated manure.