

Phosphorus....Stringent Limits Ahead



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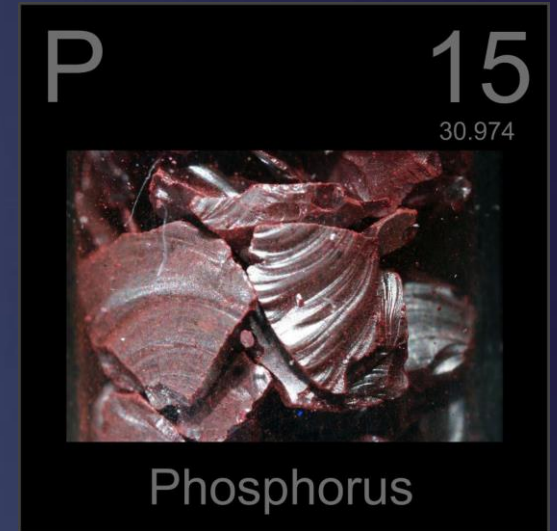
TODAY'S AGENDA

1. Phosphorus facts
2. Why are phosphates a problem?
3. Current EPA restrictions
4. What changes will I see?
5. When will it change?
6. What can I do to lower phosphorus in my discharge?
7. What can I do to prepare?



Phosphorus Facts:

- ▶ It is essential to all life with the average human body containing 26.5 ounces
- ▶ P.O.T.W.s only remove 40% of phosphorus sent to them with the remaining 60% going into the environment
- ▶ 1 pound of phosphorus can feed 300-500 lbs of algae



Why are phosphates a problem?

June rainfall sends near-record phosphorus levels into Lake Erie; toxic algae bloom prospects worsen

CLEVELAND, Ohio – One of the **wettest Junes on record** has dumped some of the largest loads of phosphorus ever recorded into the Maumee River, raising the prospect of another **huge toxic algae bloom** this summer in Lake Erie's western basin.



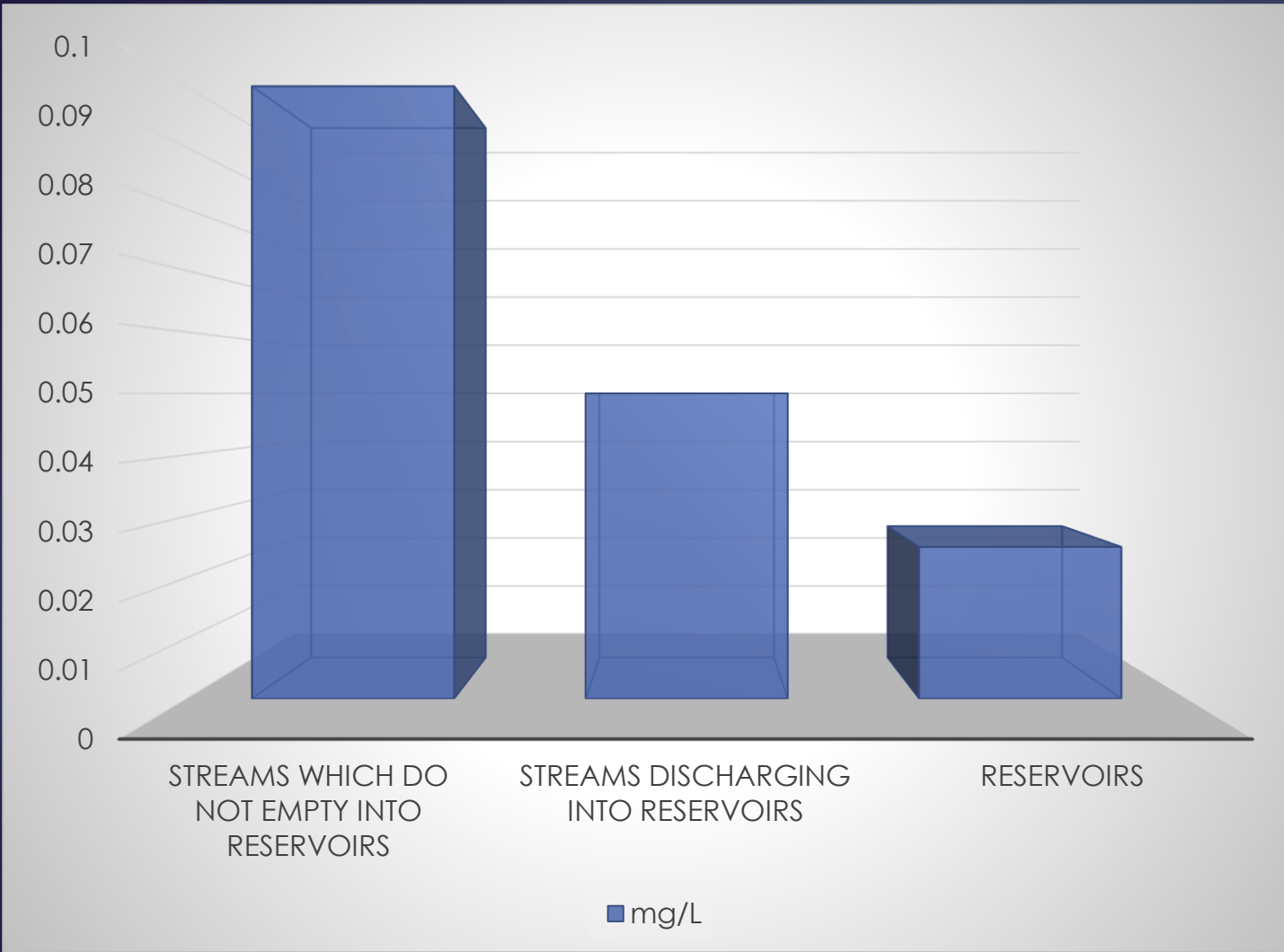
Researchers are monitoring satellite photos of Lake Erie to predict the size and location of toxic algae blooms expected later in the summer.

Eutrophication Definition

- ▶ The process by which a body of water acquires a high concentration of nutrients, especially phosphates and nitrates.



Criteria recommended by EPA -(1986)



WHY ?

- ▶ 0.01-0.03 mg/L- levels found in uncontaminated lakes
- ▶ 0.025-0.1 mg/L- levels at which plant growth is stimulated
- ▶ 0.1 mg/L- maximum acceptable concentration to avoid accelerated eutrophication
- ▶ >0.1 mg/L- accelerated growth and consequent problems

11 states ban phosphorus fertilizer use or sale



16 states ban phosphate laden dishwashing soap



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All 50 states ban phosphorus from laundry



Current EPA Restrictions

- 11 states ban phosphorus fertilizer use or sale
 - 16 states ban phosphate laden dishwashing soap
 - All 50 states ban phosphorus in laundry detergent

EPA

YOU



Home Owners - Retailers - Municipalities - Manufacturing

What changes will I see?

- ▶ All N.P.D.E.S permits up for renewal will be required to monitor for phosphorus
- ▶ Phosphate monitoring for the several years
- ▶ Limits will be imposed on next permit renewal

A magnifying glass is positioned over a table of numbers, which appear to be data points from a permit or monitoring report. The numbers are arranged in a grid and are slightly blurred, suggesting they are being examined closely.

0.01	7.96	31.97
6.25	0.00	10.64
4.00	43.37	10.76
21.85	1.63	30.30
1.12	-2.61	2.08
1.73	2.98	4.05
5.04	1.00	6.74
46	0.82	5.89
	-3.37	0.00

What can I do to lower phosphorus in my discharge?



1. Chemical precipitation
2. Biological removal
3. Ultra filtration
4. Change production process

What can I do to prepare?

- ▶ Recommend sampling final effluent to determine current phosphorus levels
- ▶ Send sample to WWT experts for proposed treatment options
- ▶ Talk to your chemical supply vendors for phosphate free products cleaners /coatings

Questions?



END



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