

# Nutrient Permitting In Michigan

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# The Great Lakes State

- Surrounded by freshwater
- 99.9% of our waters drain to the Great Lakes
- Efforts to reduce nutrient enrichment in MI began early





# History of Nutrient Issues in Michigan



*“Nutrients originating from industrial, municipal, or domestic animal sources shall be limited to the extent necessary to prevent adverse effects on water treatment processes or the stimulation of growths of algae, weeds and slimes which are or may become injurious to the designated use. “*





# History of Nutrient Issues in Michigan

## You can clean without phosphates.

**No phosphate products**  
Here are seven Amway products that contain absolutely no phosphate. Seven detergent and laundry products that will clean everything in your house, around your house, in your garage... including laundry... without putting one ounce of phosphate down your drain. Your independent Amway Distributor will show you how to use Amway's famous organic liquid detergent, L.O.C., along with Anti-SOIL, Fabric Softener and Liquid drifab for your laundry, Dish Drops for your kitchen, and Car Wash for your garage. With no-phosphate products, clothes may not remain as white and bright as you're used to... but these Amway products will get your clothes truly clean and soft... make them water and soil resistant... even remove stubborn stains... without using one speck of phosphate.

**Very low phosphate products**  
And there are three more heavy duty Amway cleaners that contain such small amounts of phosphate as to be insignificant in ecology. Industroclean and Zoom (less than 14%) make short work of cleaning toughest grease and grime on walls, floors, tile, machinery. Redu (under 3%) bleaches out stubborn stains from clothes and fixtures. (\*phosphate expressed as P<sub>2</sub>O<sub>5</sub>)

**Low phosphate yield concentrates**  
And when you use automatic laundry and dishwashing machines and need the high performance cleaning capability that ordinary cleaners, and put less phosphate in the water. Compare these Amway grams of phosphate per washload figures of Amway's current production with other brands of the same type of product:

Amway	Phosphate per washload (P <sub>2</sub> O <sub>5</sub> )	grams	ounces	phosphate's
5-4-4 Laundry Detergent — in top loaders	1.12	1.12	1.12	25%
5-4-4 Laundry Detergent — in side loaders	1.54	1.54	1.54	23%
7-3-2 Laundry Pre-soak	2.0	2.0	2.0	20%
Dry Chlorine Bleach — in top loaders	7	7	7	14%
Dry Chlorine Bleach — in side loaders	2.12	2.12	2.12	18.2%
Dishwashing White Pre-rinse Softener	20.17	20.17	20.17	14.6%
Dishwasher Compound for Washers	3.23	3.23	3.23	24.7%

Remember — it's not "phosphate in the box" or "phosphate on the shelf" that counts... it's phosphate "down the drain" that you are concerned about.

Amway's heavy duty formulas are so concentrated and so high in cleaning power that you need only small amounts to do the work. Of course, Amway uses only biodegradable surfactants in all of its detergent products. But whenever possible Amway also uses phosphate substitutes in its formulas to the extent they are available in the world market. So whether you feel you should use no phosphate, or very little phosphate, or low yield phosphate products... your independent Amway Distributor can serve you, right in your home, with the best products to do every cleaning and laundry job.

**In the forefront for clean water.**

**Amway Corporation**  
ADA, BETHLEHEM, PA

**Amway of Canada Ltd.**  
ONTARIO, CANADA



# History of Nutrient Issues in Michigan

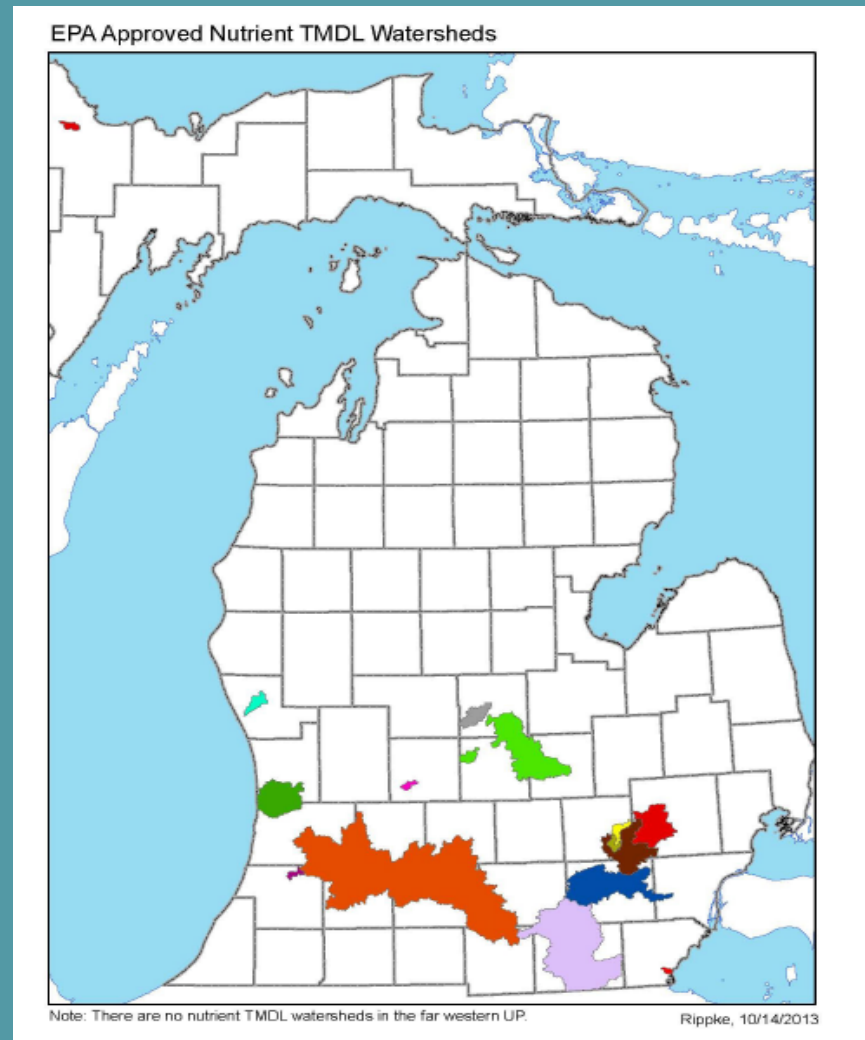
- WWTP upgrades in '83
- 1986 - Implementation of 1 mg/l effluents standard (Rule 60)
  - Rule 323.1060 Plant Nutrients.

Rule 60. (1) Consistent with Great Lakes protection, phosphorus which is or may readily become available as a plant nutrient shall be controlled from point source discharges to achieve 1 milligram per liter of total phosphorus as a maximum monthly average effluent concentration unless other limits, either higher or lower, are deemed necessary and appropriate by the department.

(2) In addition to the protection provided under subrule (1) of this rule, nutrients shall be limited to the extent necessary to prevent stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the surface waters of the state.



# History of Nutrient Issues in Michigan





# History of Nutrient Issues in Michigan

## A Water Body-specific Nutrient Criteria Approach

1. Model current Total Phosphorus (TP)



2. Predict 'expected condition' (TP)



3. Identify thresholds in biological responses to TP



4. Use an algorithm to develop WB-specific criteria

*≈ Reference condition*

## History of Nutrient Issues in Michigan

- We got really far....
- We were really excited....
- And then .....
- We lost our authority to promulgate Water Quality Rules on December 31, 2006.



# History of Nutrient Issues in Michigan

- So we continued our work where we could.....

## **Phosphorus Policy Advisory Committee**

### *Final Report*

March 15, 2007



United States Environmental Protection Agency

## **Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions**

## SO, WHERE ARE WE TODAY?

- Ambient monitoring programs
- Nonpoint Source Program
- Conservation Reserve Enhancement Program (CREP)
- Michigan Agriculture Environmental Assurance Program
- Phosphorus banned in turf grass fertilizers and dishwasher detergent
- Education and outreach programs, and working with stakeholders to develop Watershed Management Plans to minimize nutrient inputs.
- Measures of Success
- We haven't adopted numeric nutrient criteria but we continue to work on it.



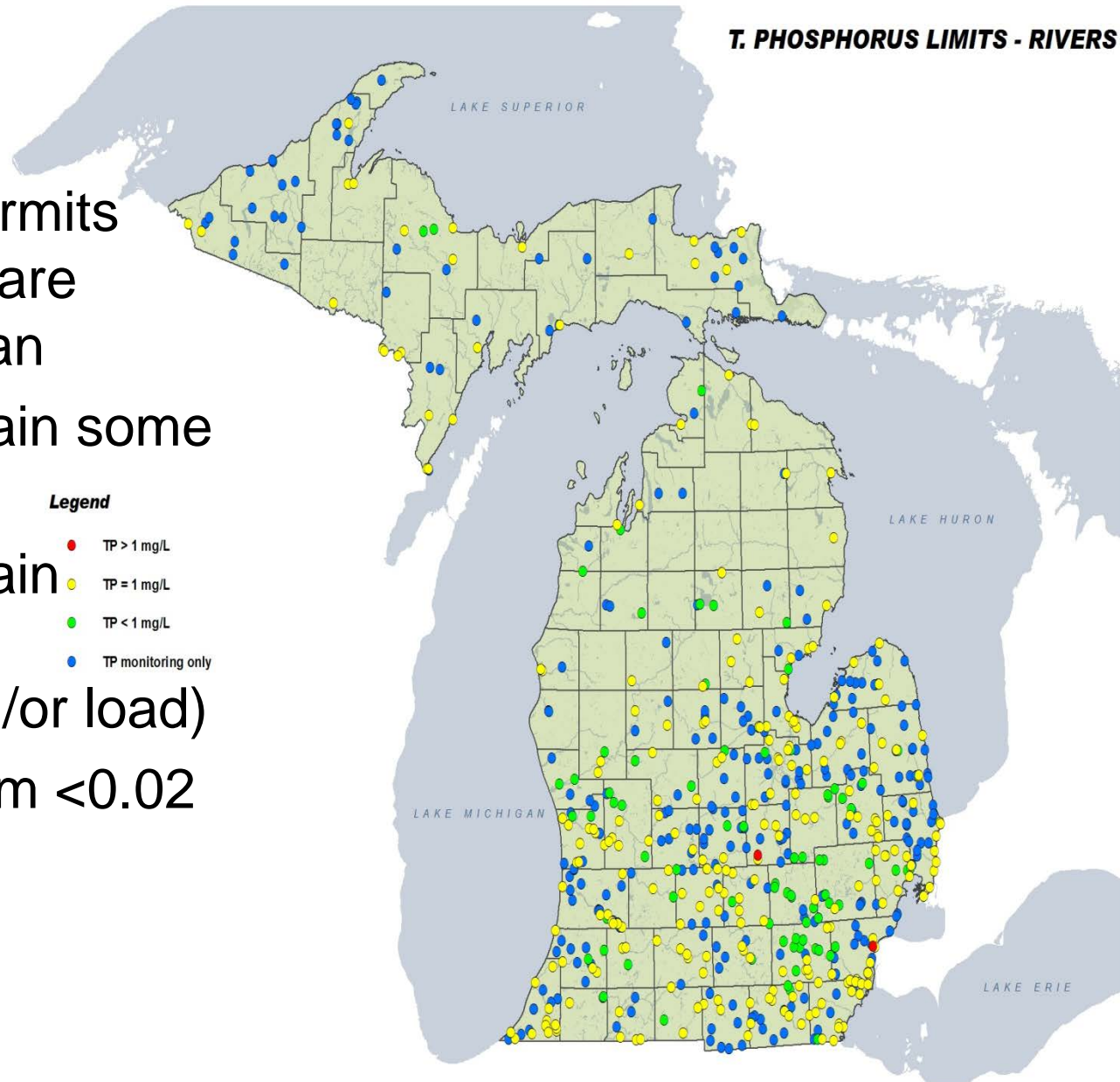
# SO, WHERE ARE WE TODAY?

## ***T. PHOSPHORUS LIMITS - RIVERS***

- ~ 1500 NPDES permits (non-storm water) are effective in Michigan
- ~670 permits contain some type of TP control
- ~350 permits contain numeric TP Limits (concentration and/or load)
- TP limits range from <0.02 mg/l to 1.0 mg/l.

### ***Legend***

- TP > 1 mg/L
- TP = 1 mg/L
- TP < 1 mg/L
- TP monitoring only







# GLWA WRRF





## Lake Erie...



# Questions??

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