

Lake Pocotopaug

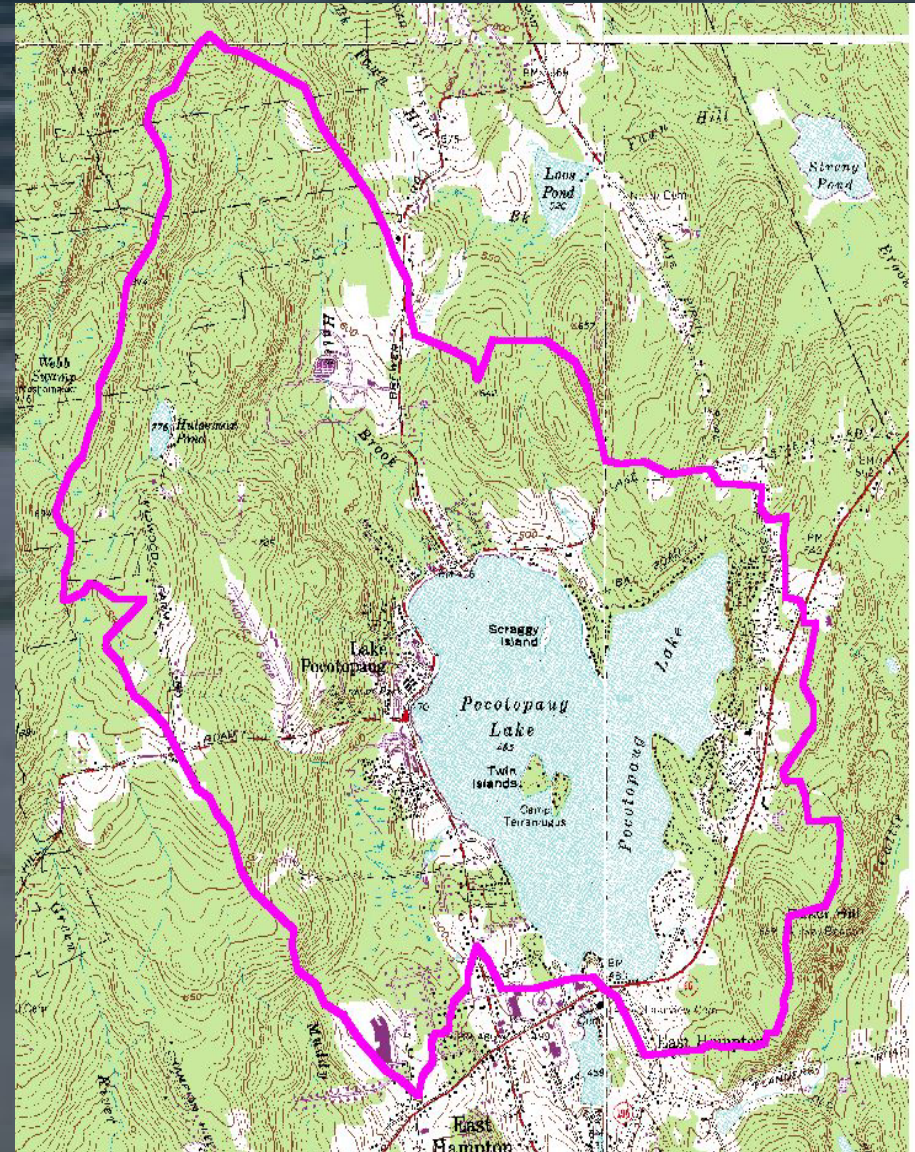
A scenic view of Lake Pocotopaug. In the foreground, a wooden dock extends from the left side into the water. A small sailboat with a red cover is on the water. The background shows a line of trees and a blue sky with some clouds. The scene is framed by tree branches at the top and bottom.

**In-lake and Watershed
Restoration and Protection**

**Protect Our Waters, Environment, and
Resources**

Background

- 511.7 acre lake in East Hampton, CT
- Mean depth = 3.4 m
- Max = 11.6 m
- Relatively small watershed (<5:1)
- Mostly forested
- History of algal blooms
- D/F study 1993
 - Determined phosphorus limiting nutrient



Where does P come from?

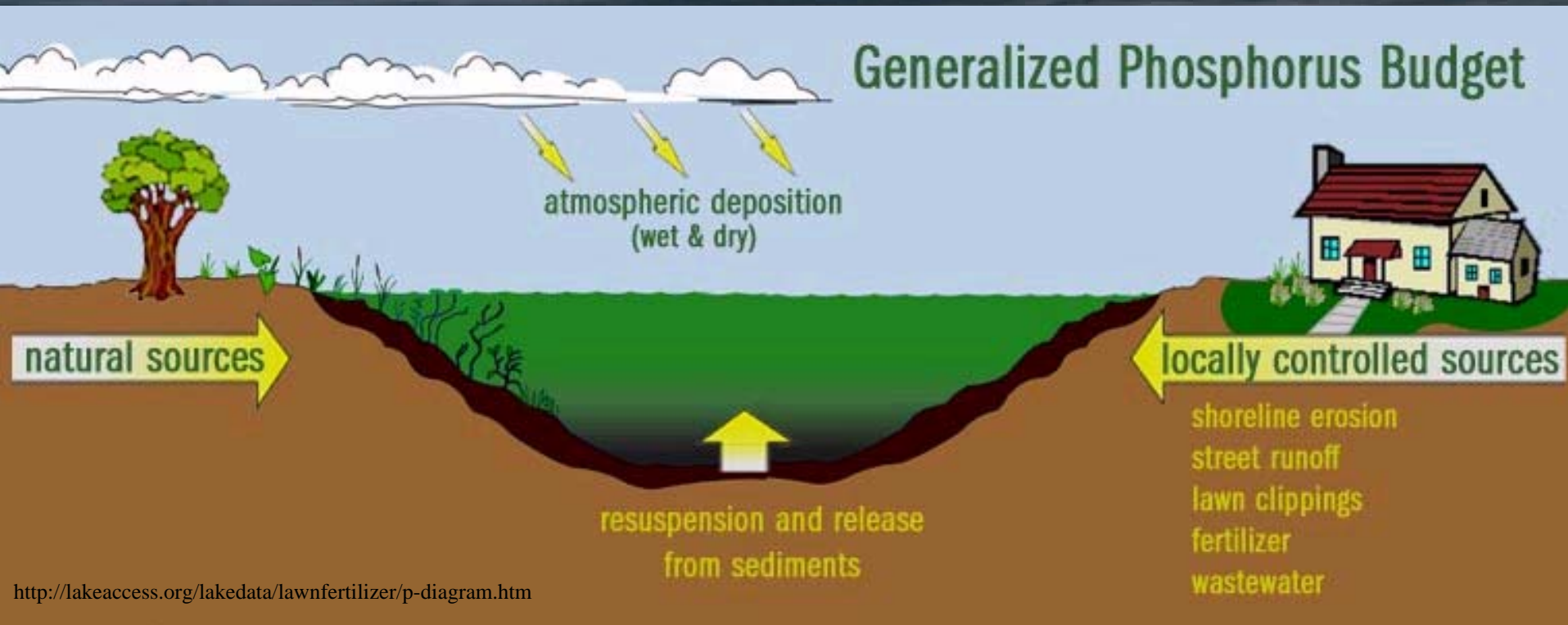
External - Watershed

Point and non-point sources



Where does P come from?

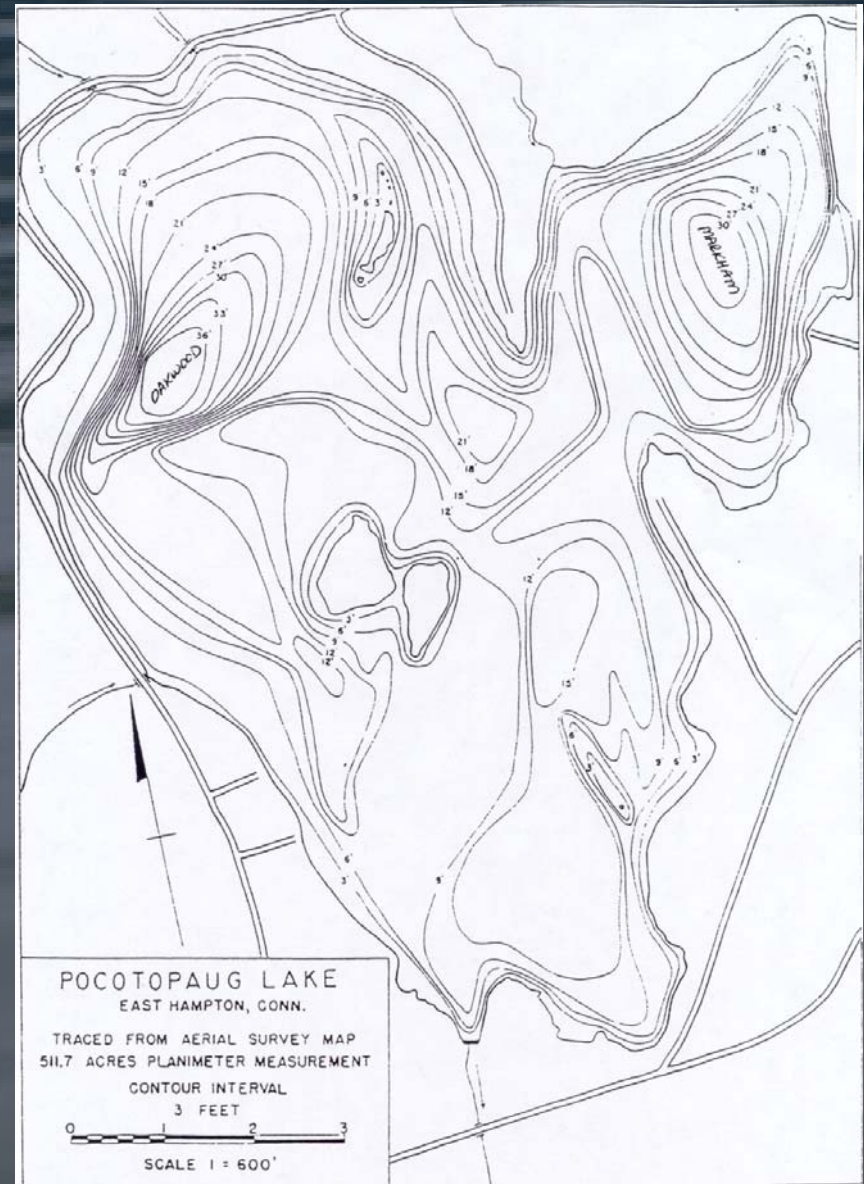
Internal - Recycling



In the absence of oxygen (anoxic conditions)

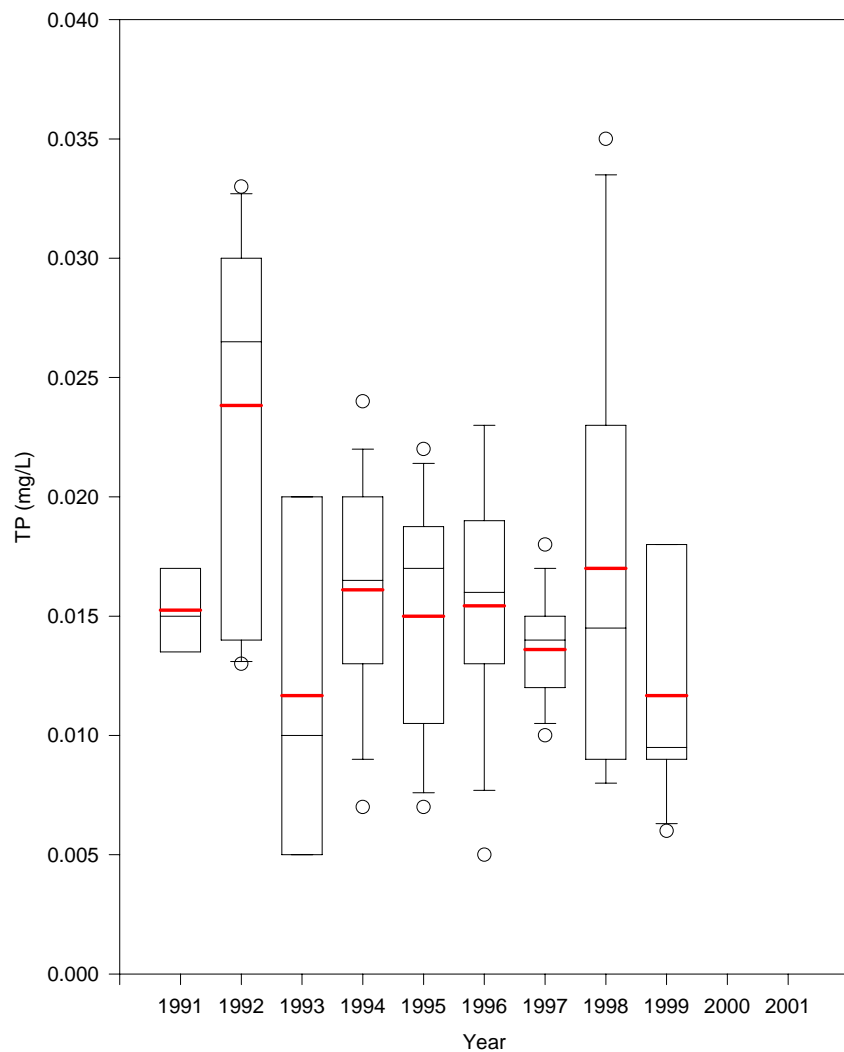
1993 Diagnostic Feasibility Study

- Estimated internal TP load at 47%
- Spring weather pattern determines summer conditions
- Recommended aeration, phosphorus inactivation & watershed management

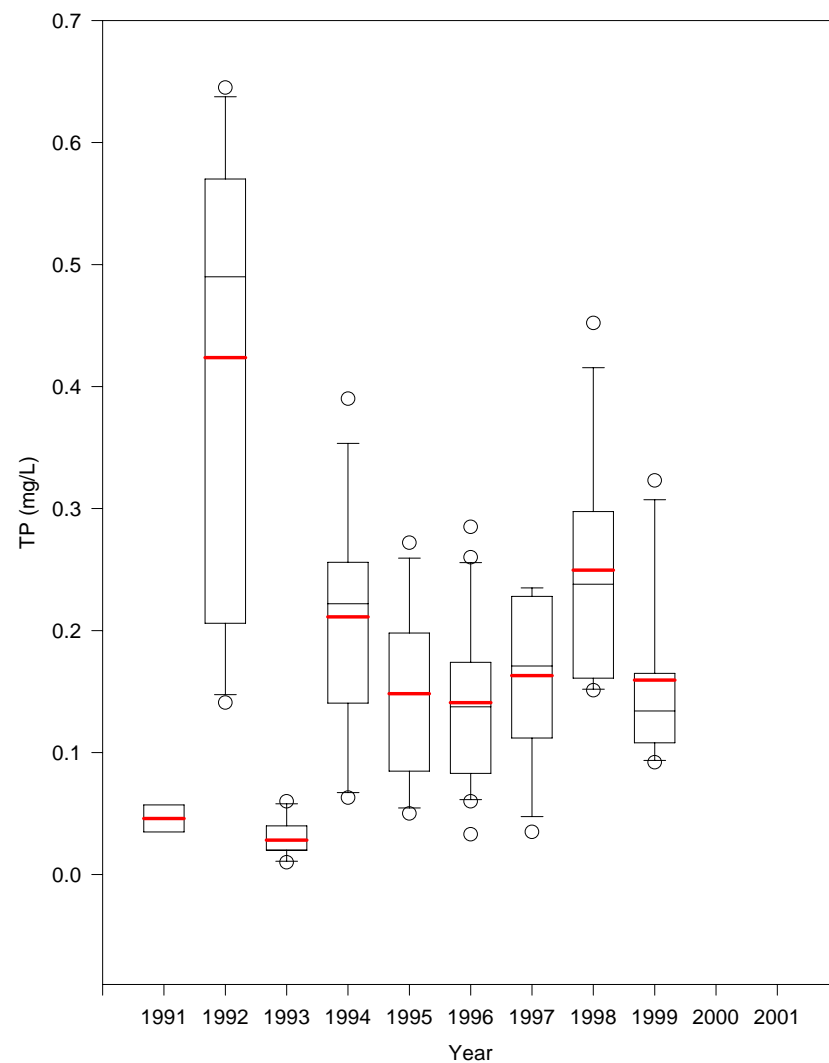


Summer Total Phosphorus Values

Summer Surface Total Phosphorus



Summer Bottom Total Phosphorus



June 2000 Alum Treatment

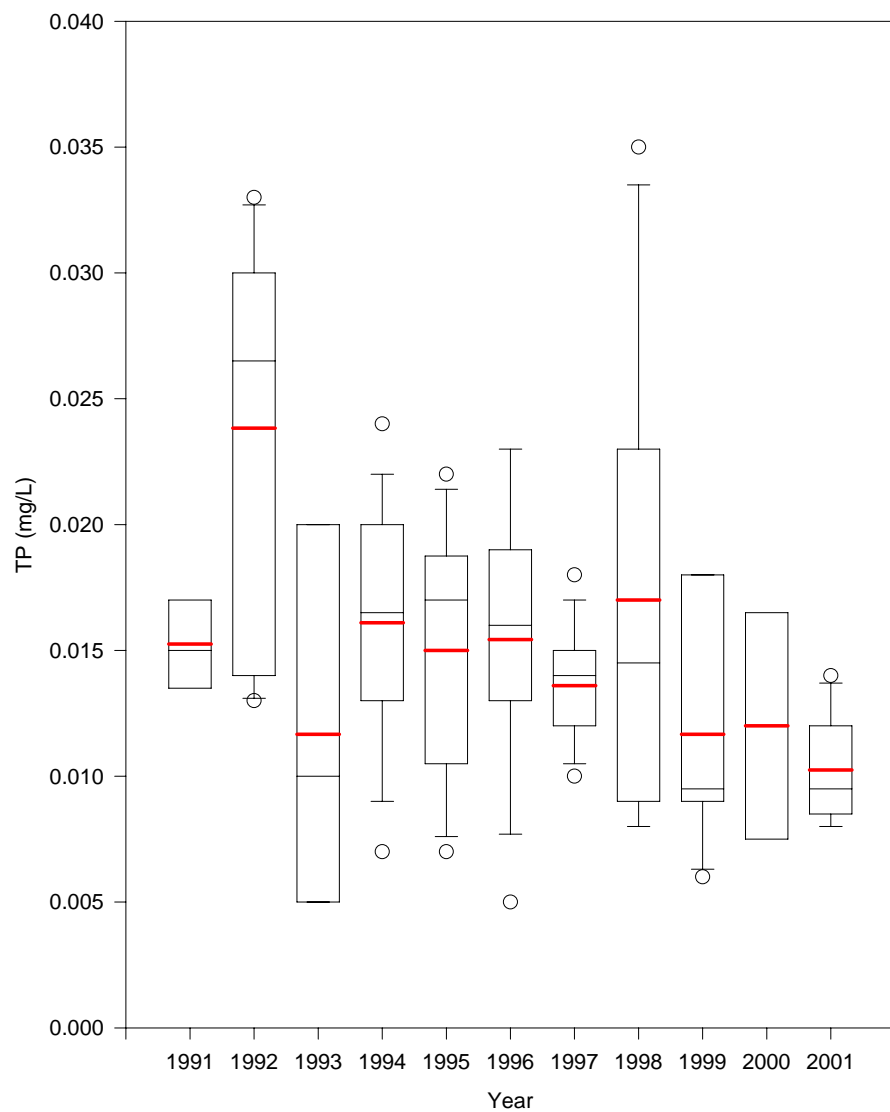


- Hypolimnetic phosphorus concentrations decreased

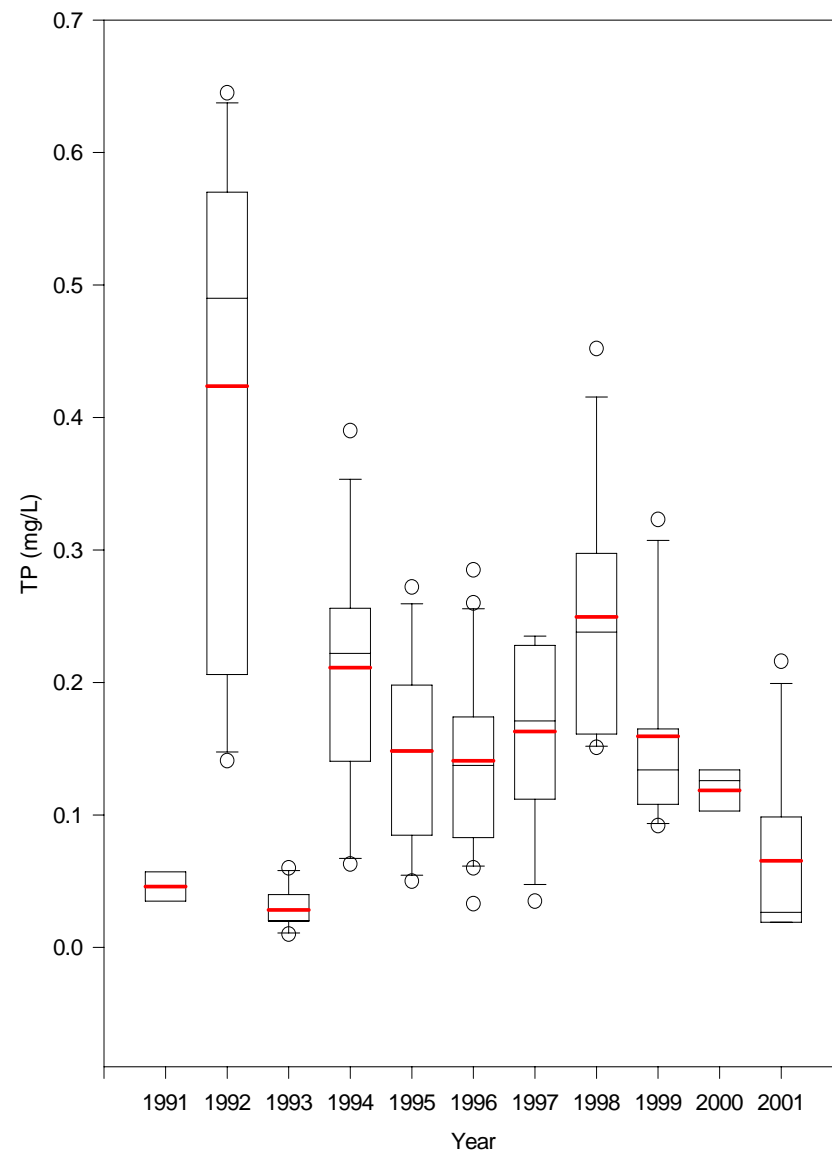
- However, LP experienced a late summer algal bloom



Summer Surface Total Phosphorus



Summer Bottom Total Phosphorus



Assume Treatment Successful

Why still blooming?

- Watershed phosphorus?
 - Dry summer



In-lake nutrient loading
from shallow zone?

In-situ nutrient analyzer

Assume Treatment Successful

Why still blooming?

- Luxury uptake TP in sediments prior to surfacing?
 - Algal assay

Anabaena



Copper Treatment?



In-lake Management is not the Whole Story

- Many in-lake techniques treat symptoms not the source
- Reducing source more effective for long term protection
- Watershed loading is highly variable and is likely to contribute more than half the total phosphorus load in any given year

**When you fertilize the lawn,
Remember
you're not *just* fertilizing the lawn.**

