# POLLUTANT LOAD ANALYSIS

## LAKE WENTWORTH & CRESCENT LAKE

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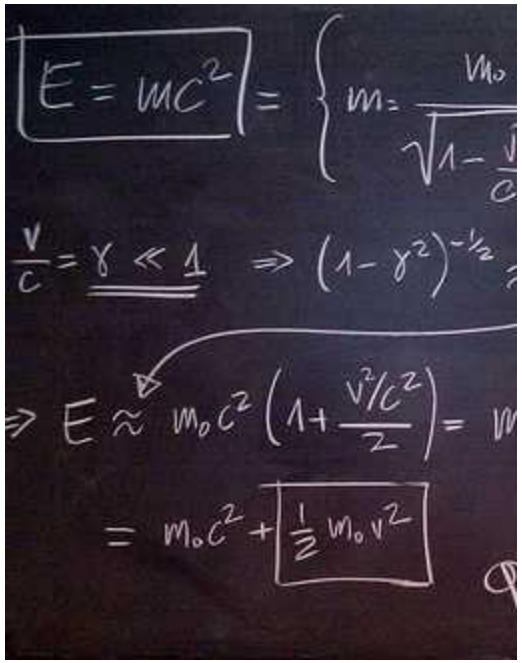
# What is Modeling?

Mathematically traces water and phosphorus through the lake

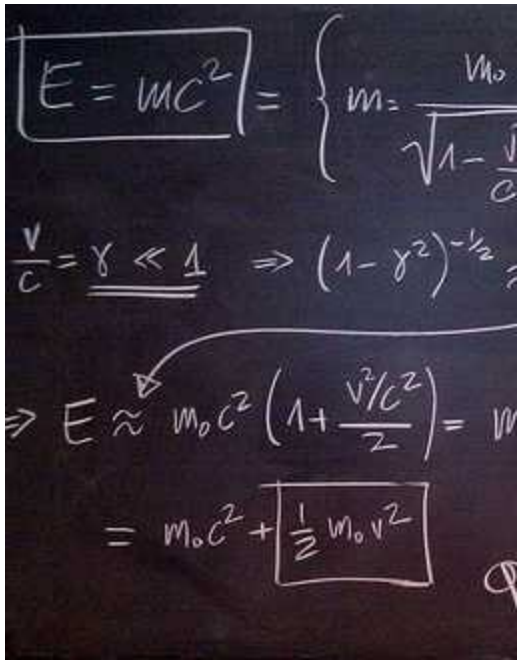
Uses inputs like:

- Rainfall
- Watershed boundary
- Land use maps
- Septic system survey
- Local expertise
- Established lake science



# Why Use a Model?

- When you can't measure something directly, because…
  - It happened in the past
  - It will happen in the future
  - Impractical to experiment with
  - Risky to experiment with



# Lake Loading Response Model

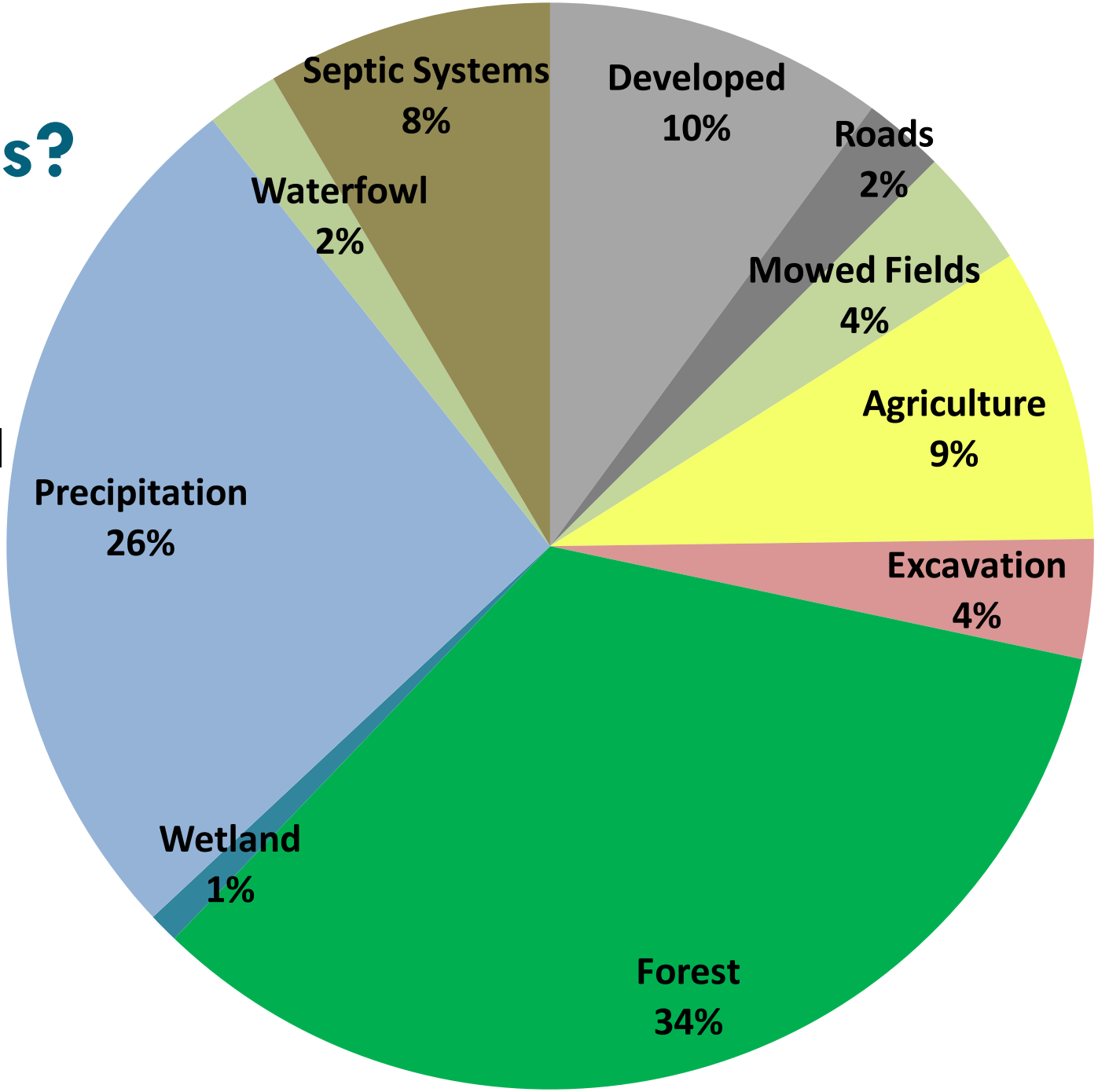
- Started as a university-level teaching tool
- Evolved over many years
- Used on over 30 lakes in NH
- Consists of large Excel spreadsheet
- Maps used to create many input numbers
- Strong local support

# Possible Sources of Phosphorus

- Atmosphere, *from industry and exhaust*
- Septic Systems
- Waterfowl
- Land Use
  - Row crops, pasture, urban areas *very high*
  - Forest and wetlands *very low*
- Internal loading from sediments

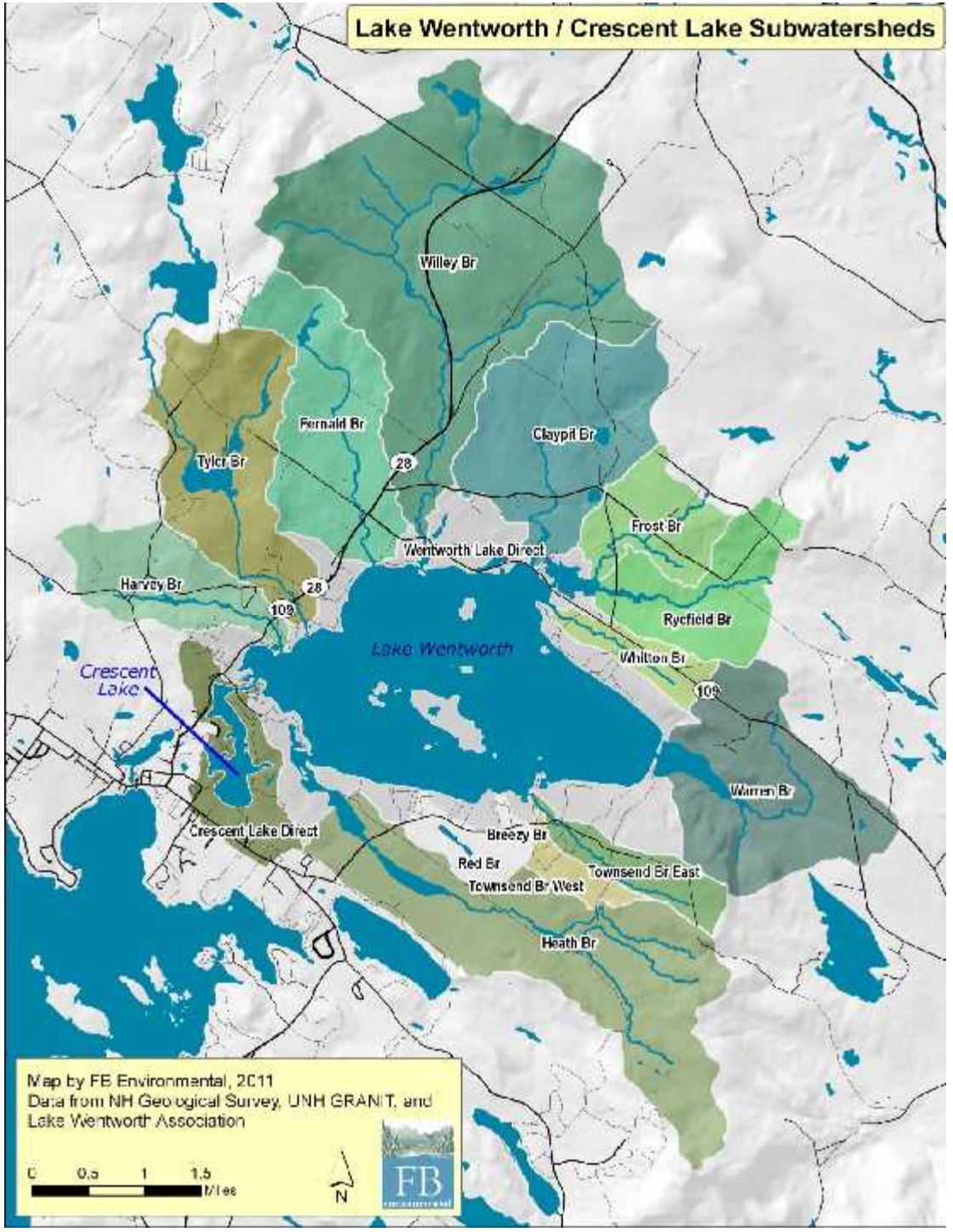
# Sources of Phosphorus?

- 1/3 from forest
- 1/4 is rainfall
- About 1/3 can be managed



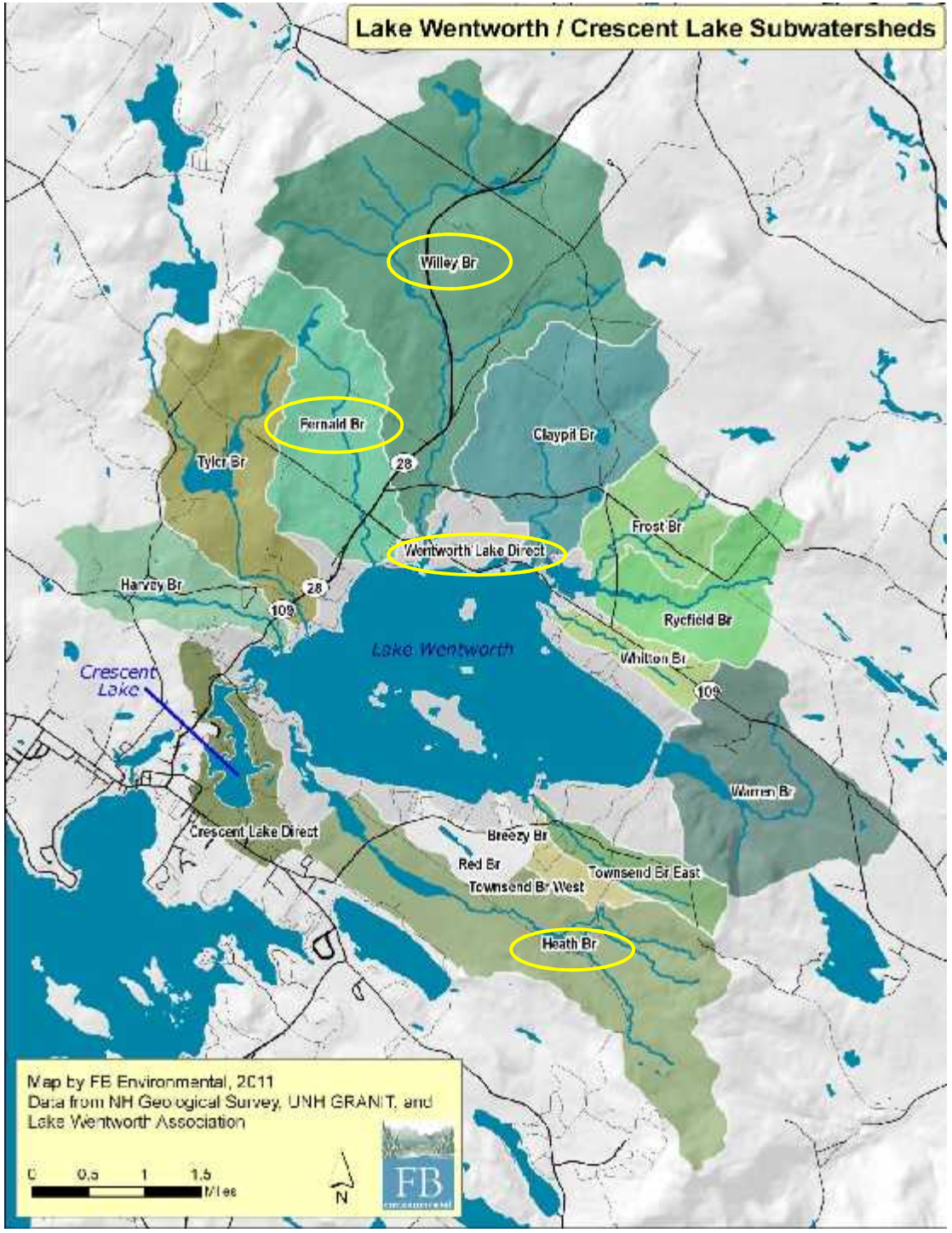
# Where is the Phosphorus?

- Crescent Lake is mostly Lake Wentworth, in terms of water
- 96% of water
- ~70% of phosphorus



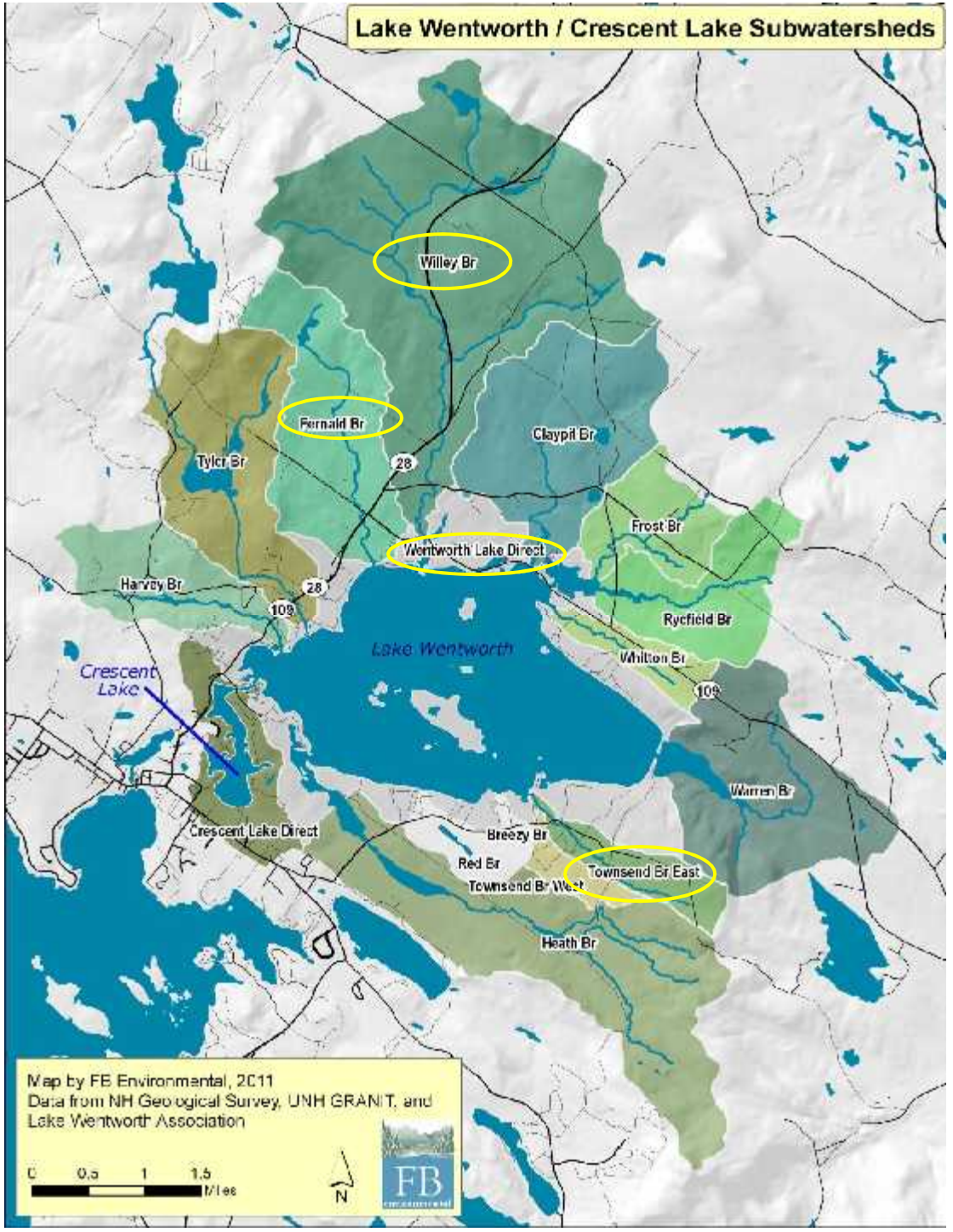
# Where is the Phosphorus?

- *Largest watersheds generate most P*
- Willey Br.
- Shoreland & Islands
- Heath Brook
- Fernald Brook



# Where is the Phosphorus?

- *But considering concentrations:*
- Townsend Brook East
- Shoreland & Islands
- Fernald Brook
- Willey Brook



# Limitations:
# The model can't see the difference