



**An adaptive approach to gaining stakeholder
confidence in WPP development:
Lessons from the Plum Creek Watershed**

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Texas Bacteria TMDL Task Force

- Assembled by state water quality agencies
- Look at approaches adopted by other states
- Make recommendations on development of effective and efficient TMDLs and I-Plans.
- Key focus on integration of stakeholder approach with multiple levels of science



Tiered Approach

- Tier 1:
 - stakeholder group formation
 - comprehensive watershed GIS
 - load duration curve development
- Tier 2:
 - qualitative bacterial source tracking
 - mass balance or spatially explicit models
- Tier 3:
 - targeted monitoring
 - quantitative bacterial source tracking
 - develop detailed hydrologic/water quality model



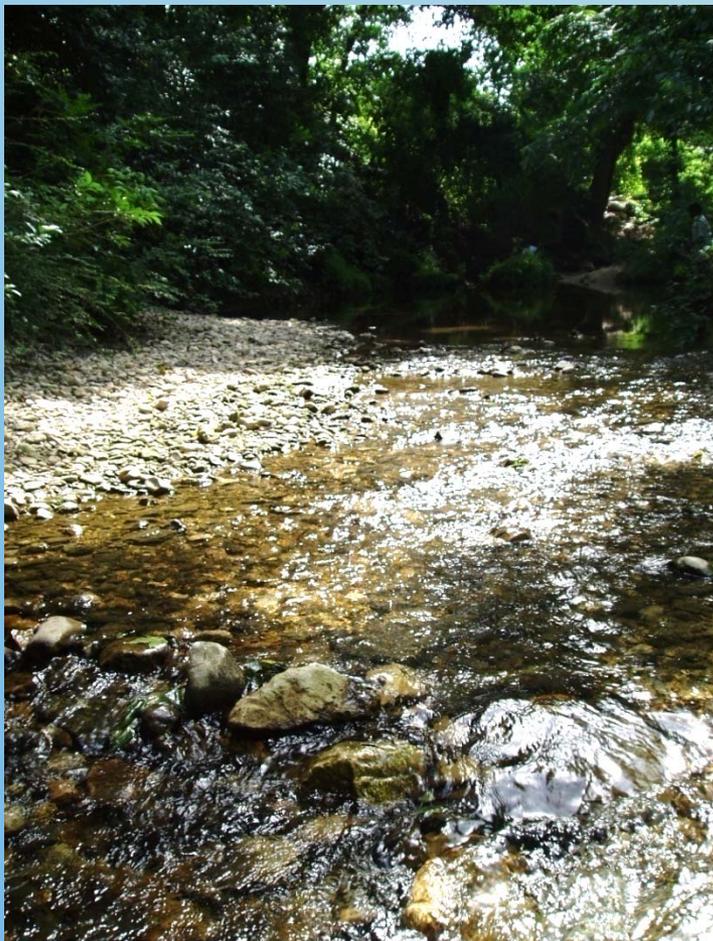
Plum Creek Watershed Partnership



- Priority interagency project
- ~ 400 mile² watershed
- South of Austin, Texas metropolitan area
- Urban-agricultural interface
- Bacteria impairment, nutrient concerns
- A pilot project in many ways



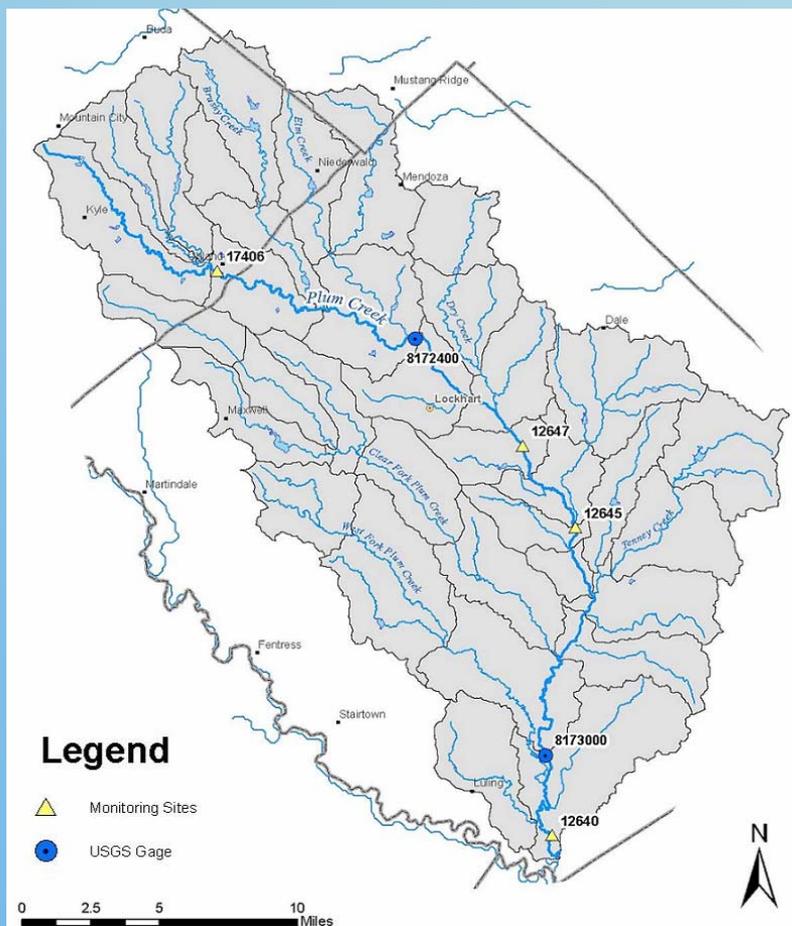
Plum Creek Watershed Partnership



- Facilitated stakeholder group in acquiring and interpreting information
- Directed by group in level of detail and certainty necessary to move forward
- Delivered a variety of approaches with more to come



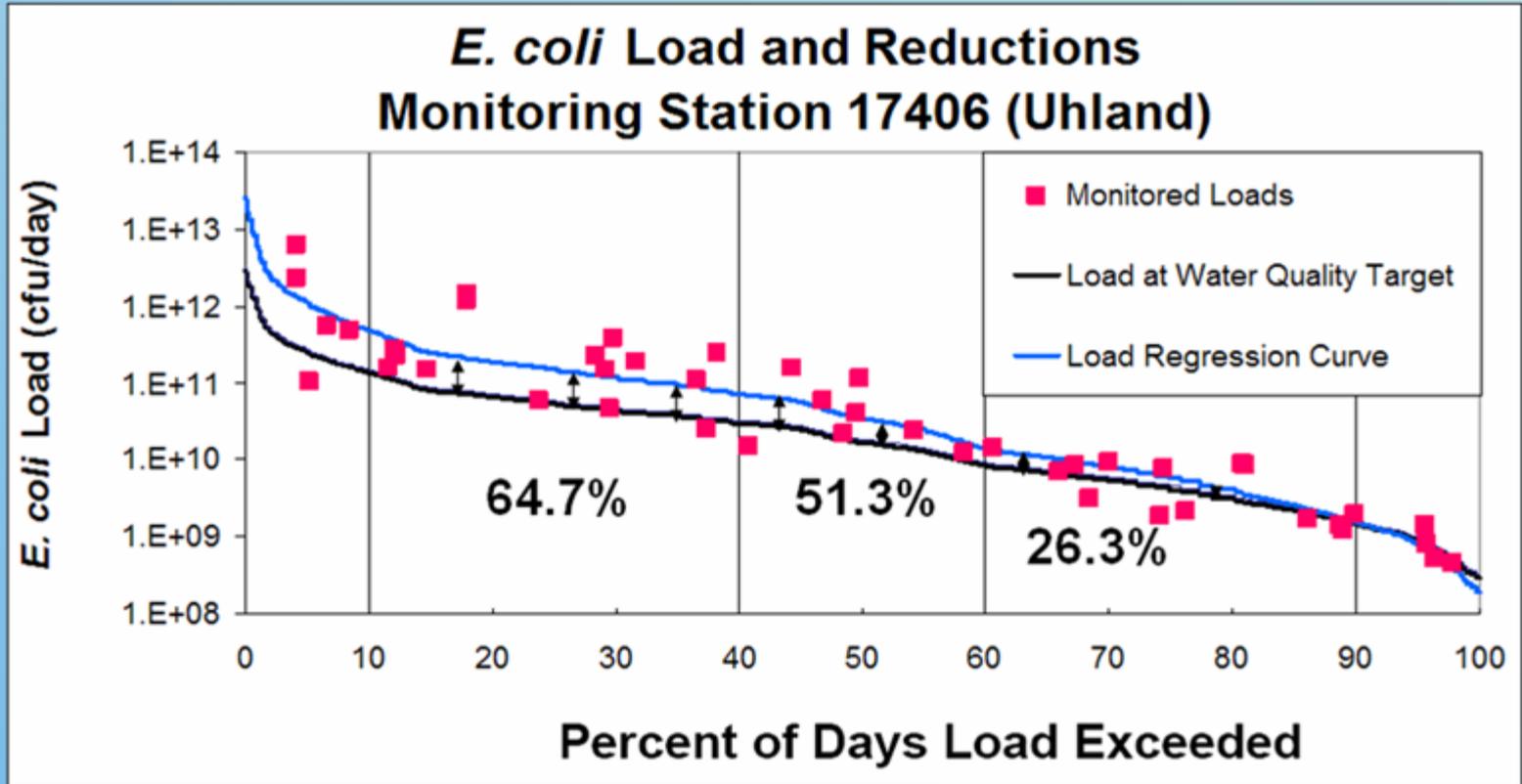
Routine Water Quality Monitoring



- 3 Monitoring Sites
 - Upper
 - Middle
 - Lower (near confluence)
- 2 sampled monthly
- 1 sampled quarterly



Load Duration Curves

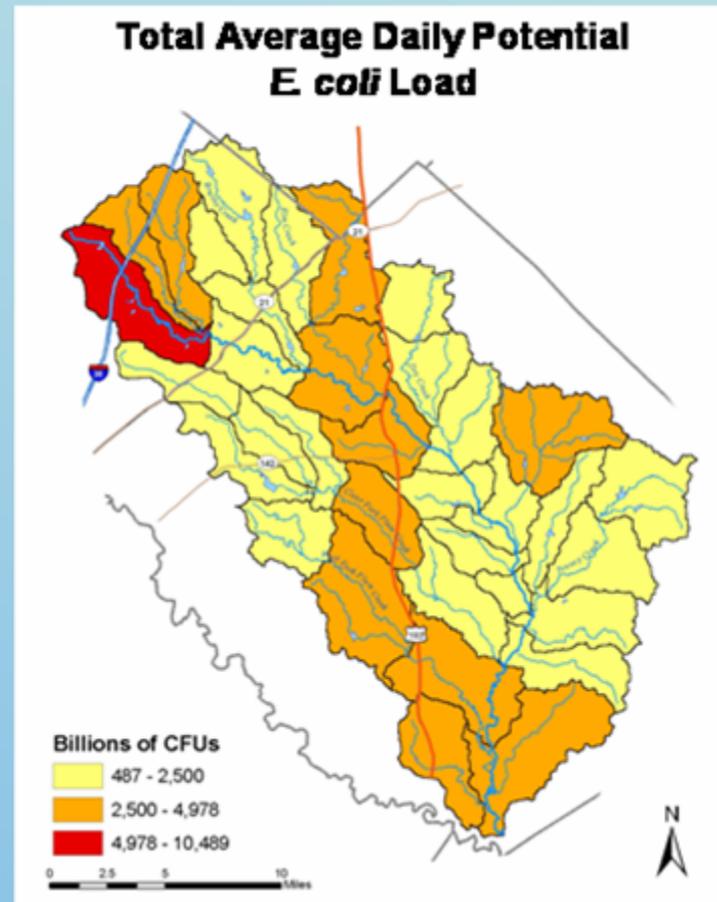
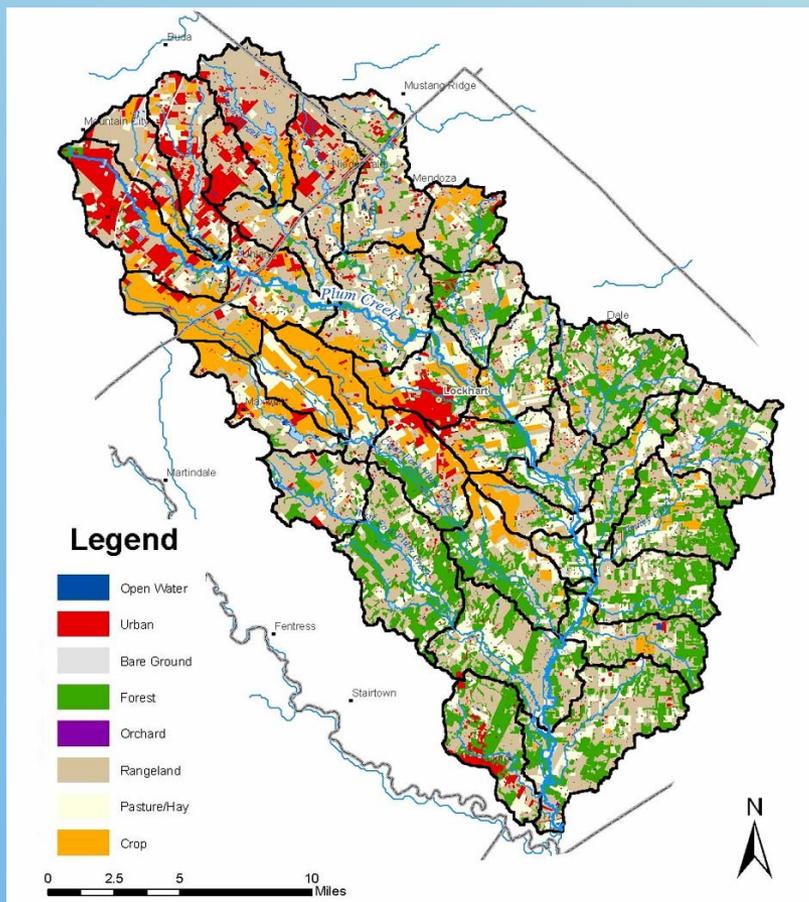


Stakeholder Response

- Indicates water quality trends over flow conditions
- BUT no information on location, identity of pollutant sources



GIS/SELECT Analysis



Stakeholder Response

- Indicates spatial distribution of *potential* sources
- BUT no *actual* specific quantification
- AND no ability to account for changes over time

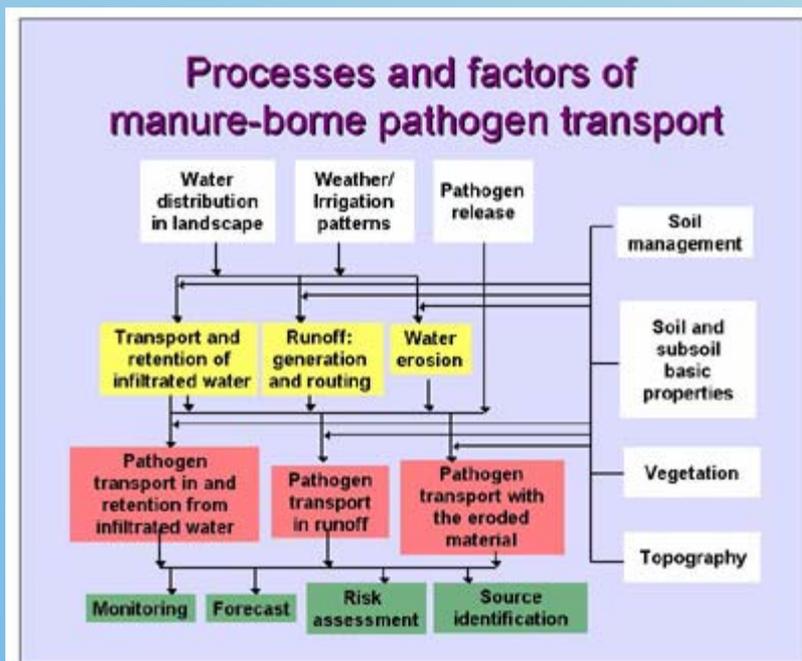


Stakeholder Response

- Indicates actual areas of pollutant loading
- AND timing/patterns of loads
- BUT still no specific identification



Soil & Water Assessment Tool (SWAT)



- Models hydrology
- Models fate and transport of bacteria, nutrients, and other pollutants
- Allows analysis of management practice effectiveness



Stakeholder Response

- Offers spatial and temporal analysis
- BUT general discontent with **MODELS** among stakeholders



Bacterial Source Tracking (?)



So What Does It All Mean?

- Stakeholders require a sense of directing project progress –
let the *steering committee drive*
- Building confidence is an iterative process
- Each approach provides a piece of the puzzle
- As watershed coordinators, we must provide a toolbox for decision-making



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Thank You

Questions?

