

Total Maximum Daily Loads TMDLs

February 24, 2011
Wisconsin Government Affairs Seminar

Kevin Kirsch, P.E.

Wisconsin Department of Natural
Resources



Impaired Waters Process Overview

1. Evaluate Waterbodies



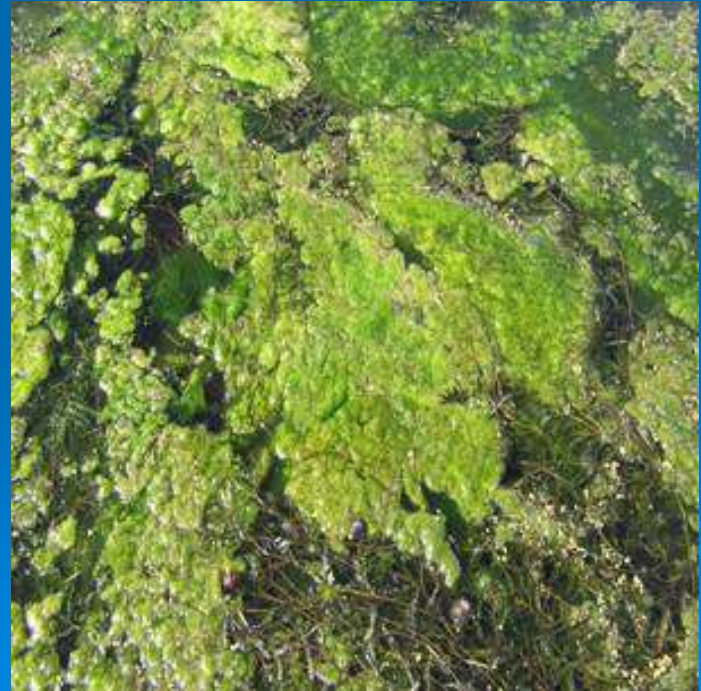
2. Establish Maximum Allowable Pollutant Load (TMDL)

3. Develop & Implement Plan

★ Public input at each stage of process

What is an Impaired Water?

- Waters that do not meet designated uses
- Waters that do not meet water quality criteria



Monitoring

➤ **Monitor** waters & **flag** potential problems

- Compile available data from DNR & partners (i.e. citizen monitoring, county data)
- Data must follow accepted methods

➤ **Verify** the condition of the waterbody

- Conduct additional detailed monitoring (By WDNR, USGS, other sources)



➤ **Compare** results to thresholds

Excellent → Outstanding/Exceptional Resource Water Candidate

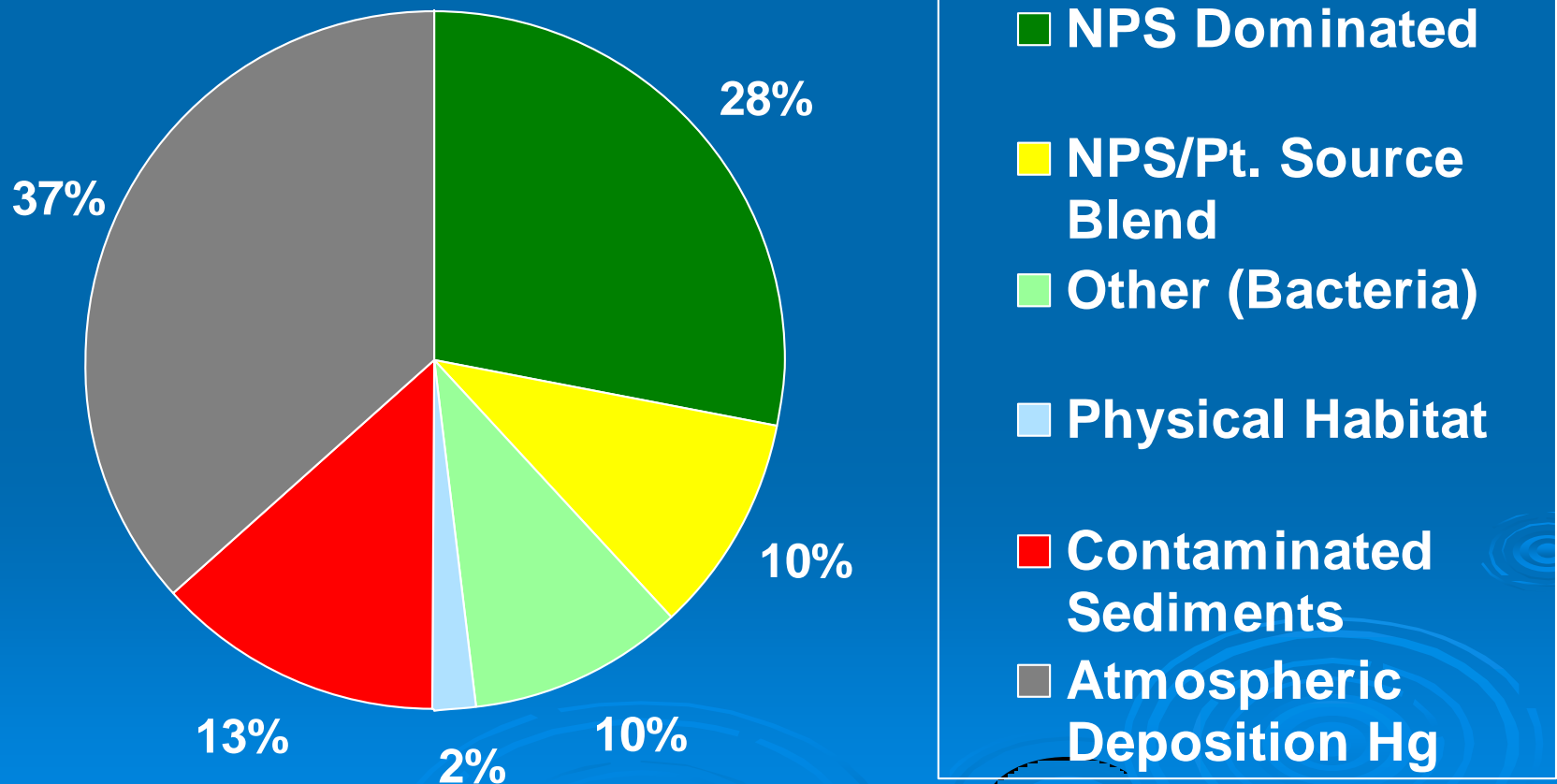
Poor → Impaired Waters Candidate

Evaluating Waters

- Clean Water Act - “Fishable and Swimmable”
- Water Quality Standards
 - Use Designations
 - Fish and Aquatic Life
 - Public Health
 - Recreation
 - Criteria for water quality standards such as: dissolved oxygen, temperature, pH, bacteria, phosphorus, taste and odor, etc.

Causes of Degraded Condition

2006 Impaired Waters List



Listing an Impaired Water

- Impaired Waters List is updated every 2 years
 - 30-day public comment period on draft List
 - Public information sessions
 - Comments incorporated as appropriate
 - Submit List to EPA for approval
 - Notify public of EPA-approved list
 - Post on WDNR website
 - Update online mapping tools
 - Issue press release

For More Information on Wisconsin's Impaired Waters...

- See DNR's Impaired Waters website for:
 - List of impaired waters
 - Methods for listing waters in past years
 - Online mapping tools
(Surface Water Data Viewer)

<http://dnr.wi.gov/org/water/wm/wqs/303d/303d.html>

What are TMDLs?

- Evaluates how much of a pollutant will exceed water quality standards
- Determines and allocates maximum loads for nonpoint sources and point sources
- Serves as a guide for implementation actions to meet water quality standards

Setting the Maximum Pollutant Load

$$\text{TMDL} = \text{LA} + \text{WLA} + \text{MOS}$$

Divide the total maximum pollutant load into allocations for point and nonpoint sources:

LA = Load Allocation (nonpoint sources)

WLA = Waste Load Allocation (point sources)

MOS = Margin of Safety

- Expressed as a daily maximum amount

WLA and LA

Waste Load Allocation

- Waste Water Treatment Plants (WWTPs) / Publicly Owned Treatment Works (POTWs)
- Municipal Separate Storm Sewer Systems (MS4s)
- Concentrated Animal Feeding Operations (CAFOs)
- General permits
 - Industries
 - Non-Metallic Mines
 - Construction Sites

Load Allocation

- Background
- Agriculture
- Non-permitted urban (no MS4 permit)

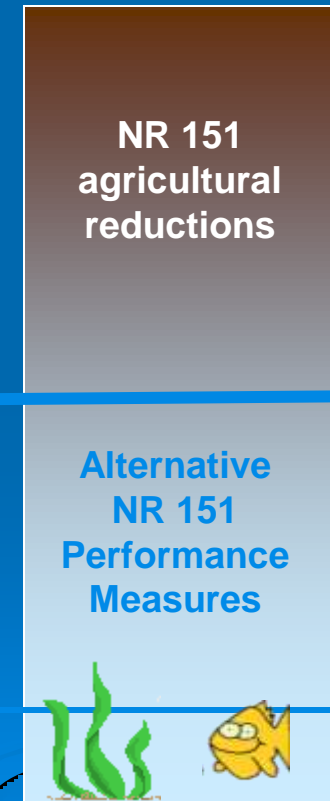
Load Reduction Approach

Pollutant Levels ↓

WPDES Permitted Point Sources



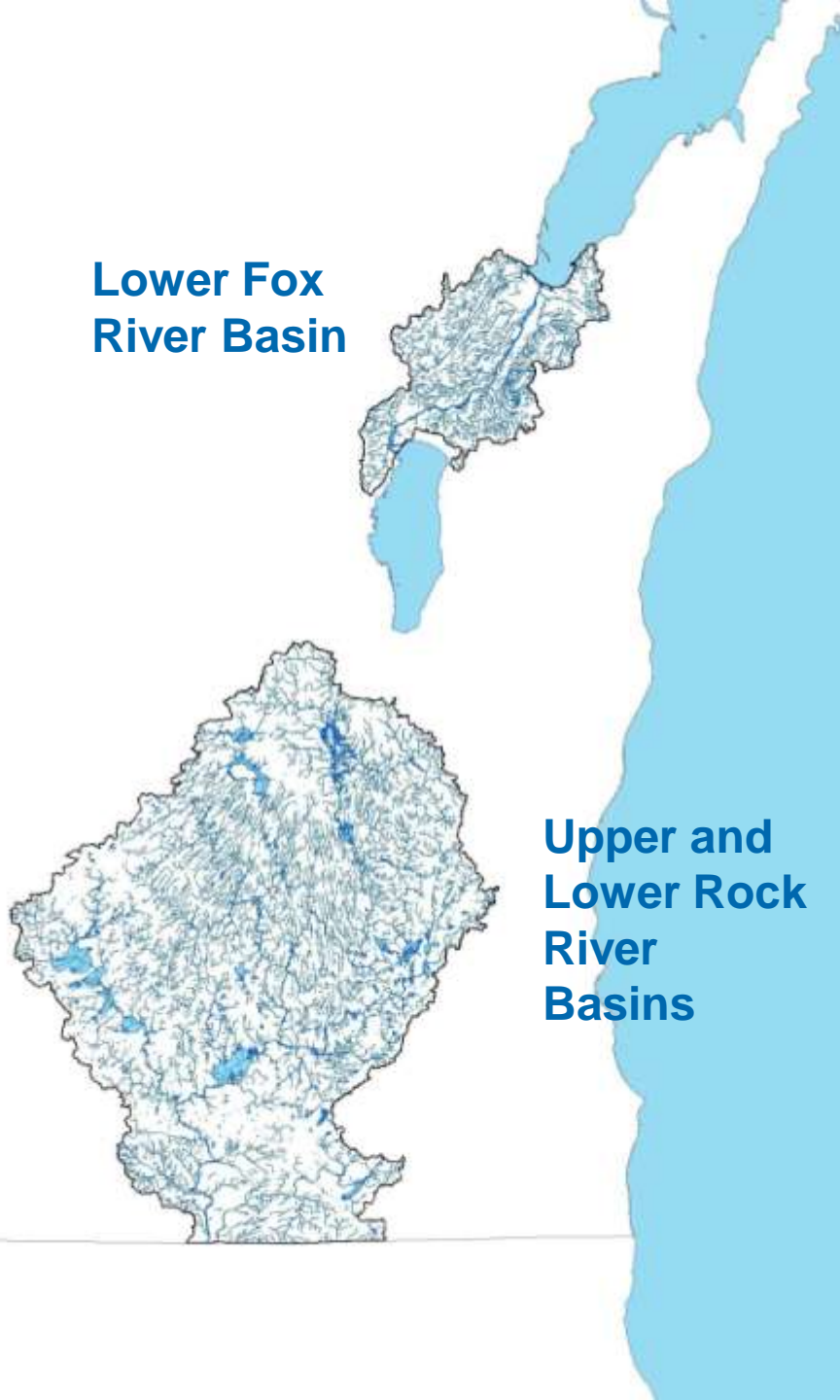
Nonpoint Sources



Statewide Requirements

Implementation of TMDL Allocations

Target Values for Water Quality

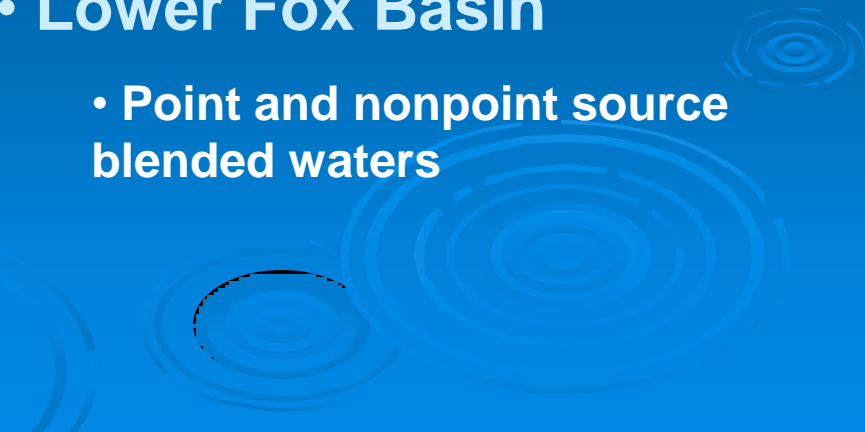


**Lower Fox
River Basin**

**Upper and
Lower Rock
River
Basins**

Current TMDLs

- **Rock River Basin**
 - Point and nonpoint source blended waters
 - Sediment and phosphorus are pollutants
 - Low dissolved oxygen, degraded habitat and excessive turbidity are impairments
- **Lower Fox Basin**
 - Point and nonpoint source blended waters



Implementation Tools

- **Point sources:** Wisconsin Pollutant Discharge Elimination System (WPDES) permits
- **Nonpoint sources:** NR 151 Agricultural & Non-Agricultural Performance Standards
- **Others:** Local construction site erosion control ordinances, manure storage ordinances, shoreland zoning, etc.



Post-Implementation Monitoring

- Back to Step 1: Evaluate Waterbodies
- **Verify** the condition of the waterbody through water quality monitoring
- **Compare** results to thresholds
 - Not meeting water quality standards - Not ready to delist
 - Adaptive management: Making adjustments to restoration strategy and/or TMDL
 - Meeting water quality standards - Ready to delist

Delisting Restored Waters

- Revise Impaired Waters List every two years to remove restored waterbodies



Impaired Waters Program

To learn more, visit the DNR web site at:
<http://dnr.wi.gov/org/water/wm/wqs/>

