

# Water Quality Trading

## 2011 Government Affairs Seminar

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# Water Quality Trading

- **Definition**
- **Background**
- **Trading Workgroup-key issues**
- **Moving forward**



# Definition

- **Market based approach to meeting water quality goals**
- **Source(s) with higher control costs fund reductions from other sources**
- **Equivalent or superior environmental results**

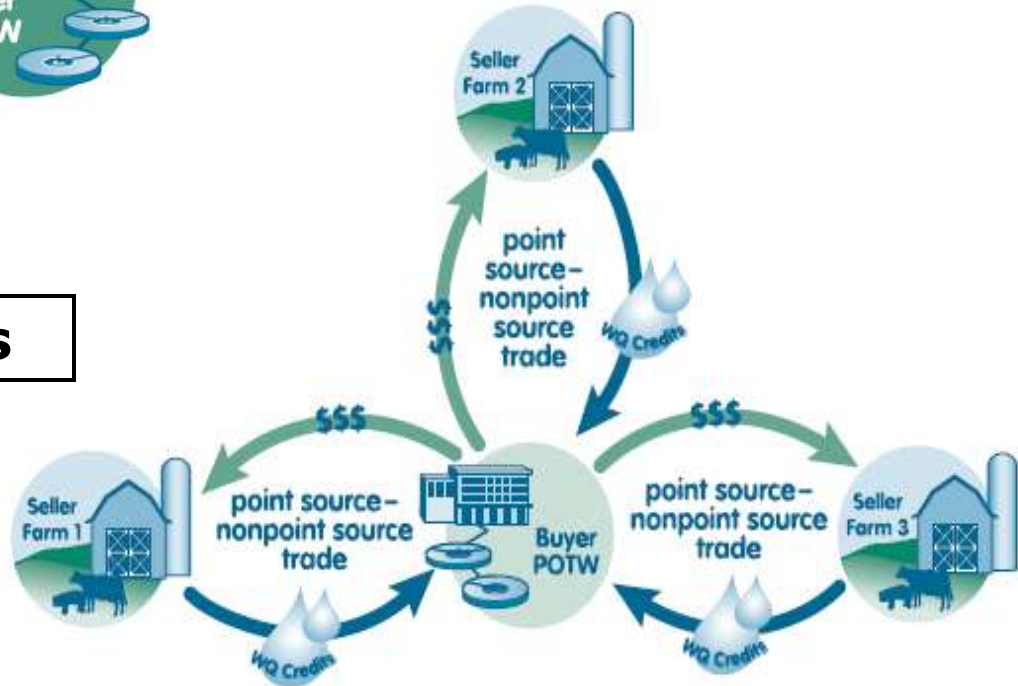


# Many Different Types of Trades



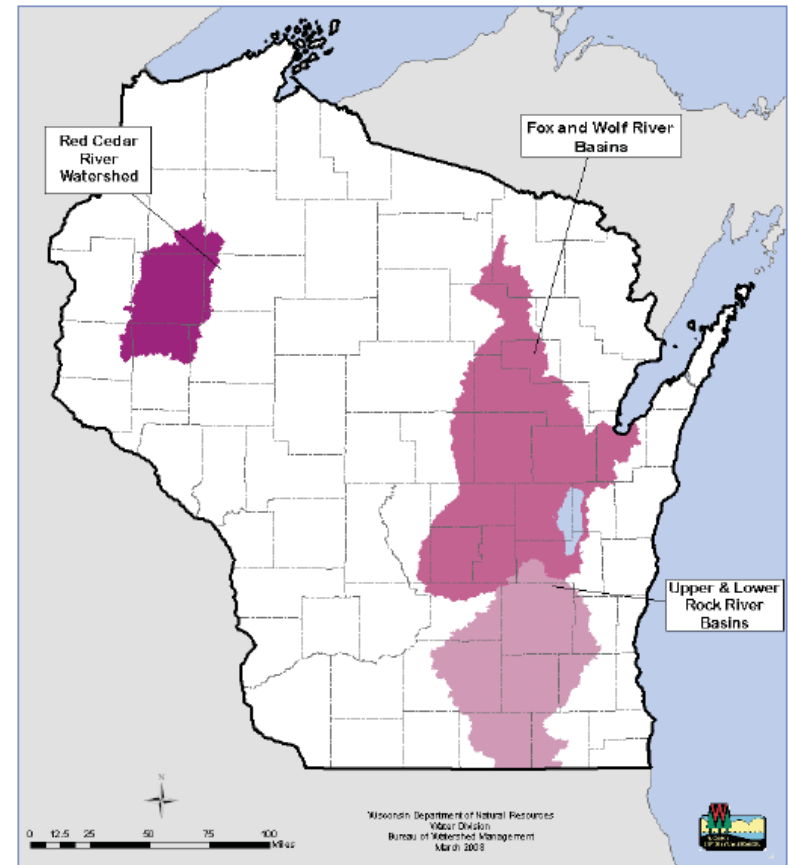
**Point to Point Trades**

## Point to Nonpoint Trades



# Wisconsin Background

- **1997 Statutory language**
- **Authorizes DNR to administer at least 1 pilot project**
- **3 Pilot Projects**
  - **Fox-Wolf**
  - **Red Cedar**
  - **Rock**
- **1 trade to date-Cumberland**





# Why Trades Did Not Occur

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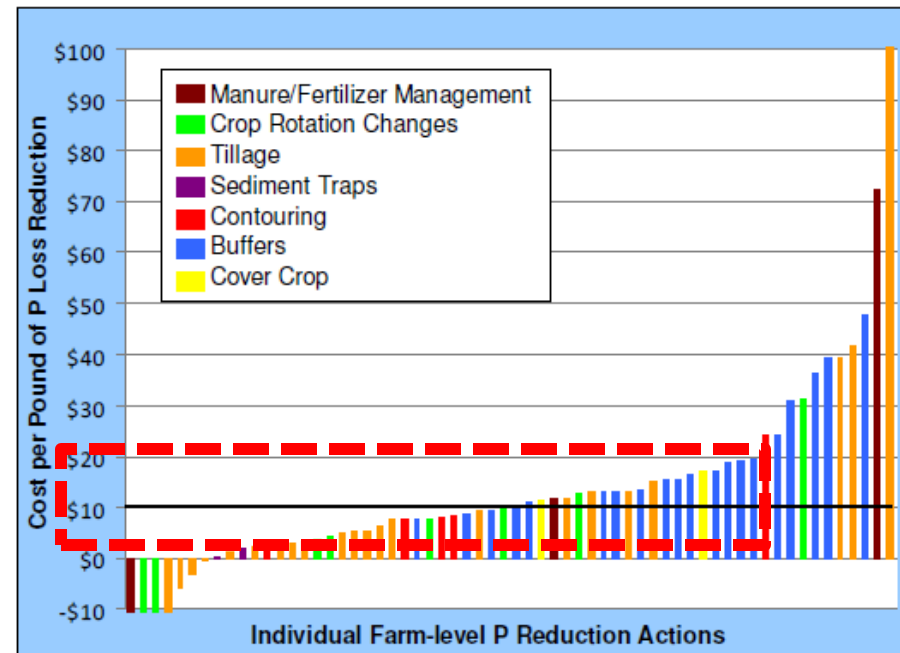
- **No financial driver**
- **No framework to support trading**
- **Unresolved complex issues**



# What's Changed?

- **New water quality criteria for TP**  
**(0.075 – 0.10 mg/l)**
- **Provides a potential economic driver**
- **MMSD TP costs**
  - **Current: \$2/lb**
  - **Future: \$170/lb**

Figure 1. Cost of Specific P Reduction Actions per lb. of P Loss Reduced on Iowa Farms



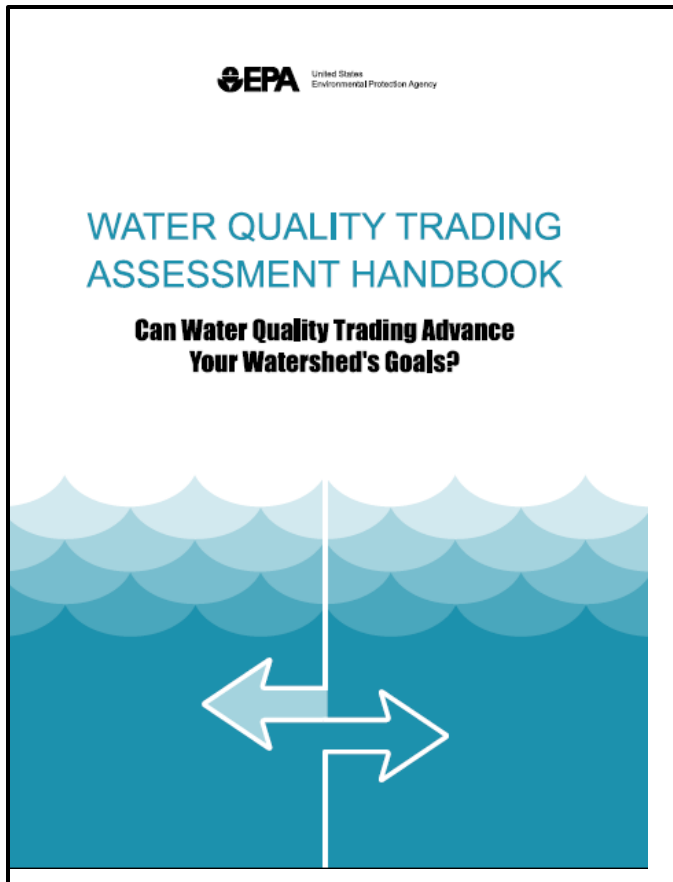
# Trading-Statewide Framework

- **June, 2010 NRB directive**
- **Form a stakeholder group**
- **Develop a framework to facilitate trading**
  - **Guidance**
  - **Administrative rules**
  - **Statutory changes**
- **Report back to NRB by July, 2011**





# EPA Guidance



# Many Other Information Sources

## Water Quality Pollutant Trading Guidance



Idaho Department of Environmental Quality  
July 2010



**WERF**  
Water Environment Research Foundation  
*Collaboration. Innovation. Results.*

Watersheds and Water Quality



**FINAL  
REPORT**



Water Quality Credit Trading:  
PowerPoint Workbook for a Detailed  
Assessment of Opportunities and Options



# WI Stakeholder Group Focus Areas

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- **Geographic scope**
- **Baseline**
- **Trade ratios**
- **Trade duration**
- **Compliance/enforcement**
- **Monitoring/quantifying**
- **Administration**
- **Legislation/legal issues/rules**



# Top 3 Issues

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- **Geographic scope**
- **Trade ratios**
- **Baseline**

**How much and is there enough?**





# Trade Ratios

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**Multiplier to base reduction that accounts for:**

- **Uncertainty**
- **Equivalency**
- **Delivery/location**
- **Other factors**
  
- **Generally > 1:1 for point to nonpoint trades**

# Uncertainty

Example Trade Ratio Table

Lower Ratio	2:1 Ratio	Higher Ratio
Companion Crops	Buffer with upland practices	Tillage Practices
	Fall cover crops	Buffer without supporting practices





# Equivalency

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- **Trades may involve different forms of the same pollutant (e.g. soluble vs. particulate P)**
- **Impacts may not be equal and need to be accounted for in the trade ratio**
- **For phosphorus-no adjustment because WQC are based on total phosphorus**

# Delivery/location

**Accounts for distance and impact that this can have on fate and transport of the pollutant.**

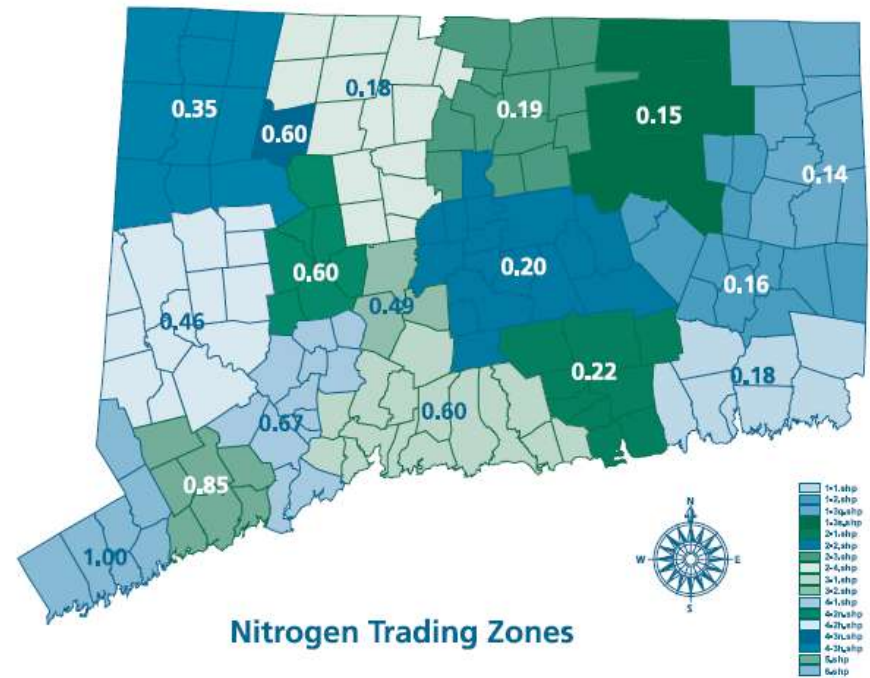


Figure 14. Long Island Sound, Connecticut, nitrogen planning zones.





# Delivery/Location

## TMDL

- **Consistent with TMDL assumptions**

## No TMDL

- **Limit geographic scope**
- **Default ratio**
- **Site specific option**

# How Much? (MMSD Example)

## TMDL Reductions (lbs/yr) @ Current Flow

**Base: 20,900**

**Adj: 31,400 (TR = 1.5)**

**41,800 (TR = 2.0)**

**52,300 (TR = 2.5)**





# Baseline

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- **Minimum performance expectations regardless of trade**
- **Could limit amount of phosphorus reduction credited in a trade**
- **NR 151 Phosphorus Index (PI) performance standard**
- **PI = 6 (contingent on cost share \$\$)**

# Baseline

**Initial PI: 10**

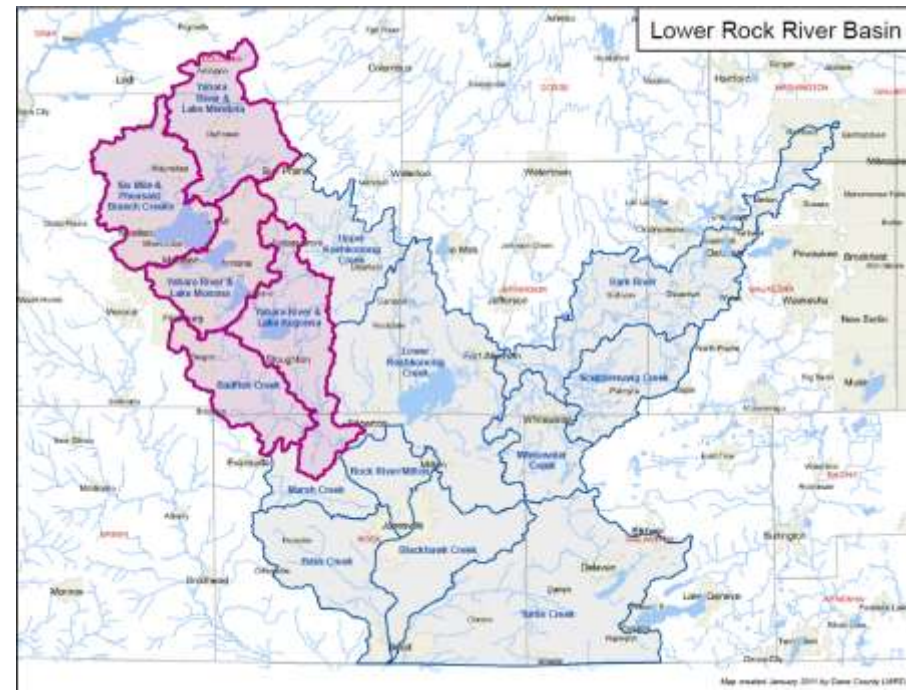
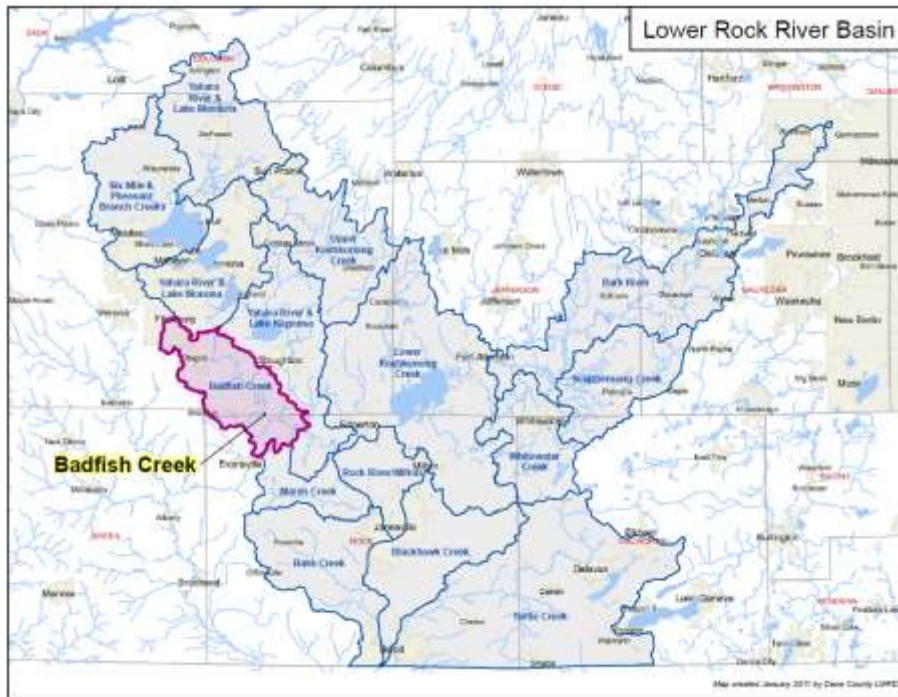
**Free ?**

**Baseline PI: 6**

**Final PI: 2**



# Geographic Scope (Area available for trading)





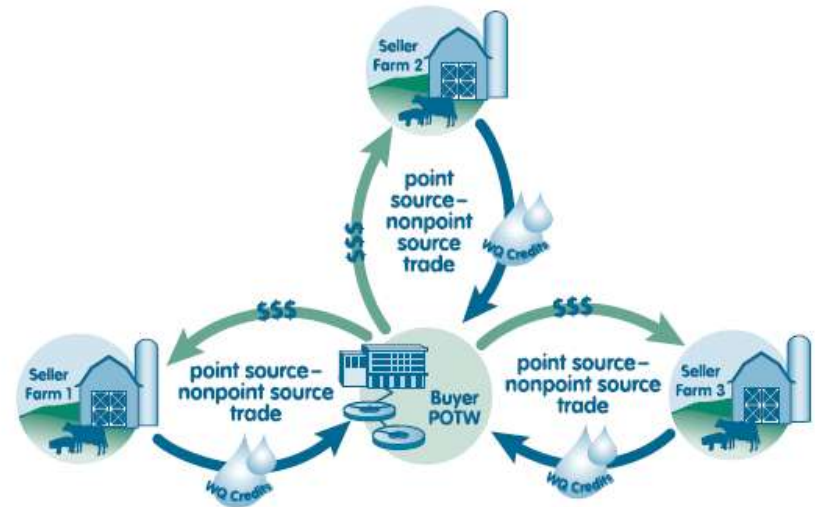
# Is there enough P to trade for?

Watershed	Total P	Non-Point P	Point-P
		-----lbs/year-----	
LR 06	46,900	42,700	4,200
<b>LR 07</b>	<b>87,400</b>	<b>20,100</b>	<b>7,300</b>
LR 08	37,000	37,000	-
LR 09	54,100	53,600	500
LR 10	56,600	56,000	600
Totals	282,000	209,400	72,600

**MMSD potential reduction = 20,900 lbs TP per year**

# Unfavorable conditions for trading

- **Narrow geographic scope**
- **High trading ratio**
- **Stringent definition or interpretation of baseline**





# Moving Forward

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- **Geographic scope**
- **Baseline**
- **Trade ratios**
- **Trade duration**
- **Compliance/enforcement**
- **Monitoring/quantifying**
- **Administration**
- **Legislation/legal issues/rules**





# Timing

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- **DNR stakeholder meetings continue**
  - **2-3 more meetings likely**
- **April/May-EPA review of draft framework**
- **Report back to NRB no later than July 1<sup>st</sup>**



<http://fyi.uwex.edu/wqtrading/resources/>