

# Assessing Outcomes of Water Quality Trading Programs

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# Water Quality Trading Programs Overview

- Many Programs, Many Differences
  - Nearly 20 Years Experience
  - Renewed Interest
  - Still Learning
  - Specific Conditions
    - Heterogeneity of Environment
    - Heterogeneity of Issues
    - Heterogeneity of Institutions

# Water Quality Trading Programs Overview

- Varying Degrees of "Success"
  - Number of Trades
  - Cost Savings
  - Stakeholder Support

# Water Quality Trading Programs Evaluation

- Newness of Water Quality Trading Implies We Should:
  - Incorporate Evaluation Into Program Structure
  - Provide Flexibility in Programs to Adjust to Learning

# Water Quality Trading Programs Evaluation

- Goals
- Outcomes
- Actions
- Constraints

# Water Quality Trading Programs Primary Goals

- Water Quality Improvements
  - Location/Proximity
  - Timeliness
- Cost Effectiveness
- Future Urban Growth



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# Water Quality Trading Programs

## Secondary Goals

- Reduce Future Uncertainty
- Complimentary Benefits
- Decision Making Flexibility
  - Management Innovations
  - Technological Innovations

# Water Quality Trading Programs Actions

- Elements of Program Can Advance Goals
- Elements of Program Can Impede Goals

# Water Quality Trading Programs Choices in Policy Design

- Point Source / Nonpoint Source Trades
- Pollution Equivalence Ratio
- Uncertainty Ratio
- Pre-Existing BMPs
  - With or Without Maintenance
  - With or Without Cost Share



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# Water Quality Trading Programs Choices of Institutional Elements

- State Nonpoint Source Banks
- Broker / Clearinghouse
- New BMPs
  - With or Without Cost Share
  - With or Without Targeting

Elements of Program	Primary Goals			
	Water Quality Improvements		Cost Effectiveness	Future Urban Growth
	Location/Proximity	Timeliness		
PS/NPS Trades	+/-	+/-	+	+
Pollution Equivalence Ratio	+	+	+	0
Uncertainty Ratio	+/0	+/0	-	-
Pre-Existing BMPs	-	-	-	+
State NPS Bank	+/-	+/-	-	+/0
Broker/Clearing House	+	+	+	+
New BMPs with Cost Share, with Targeting	+	+	+	+
New BMPs with Cost Share, without Targeting	-	-	-	+



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Elements of Program	Secondary Goals		
	Reduce Future Uncertainty	Decision Making Flexibility	Complimentary Benefits
PS/NPS Trades	+	+	+
Pollution Equivalence Ratio	0	0	+/-
Uncertainty Ratio	0	-	+/-
Pre-Existing BMPs	0	0	-
State NPS Bank	+	+/-	+/-
Broker/Clearing House	+	+/-	+/-
New BMPs with Cost Share, with Targeting	+	+	+
New BMPs with Cost Share, without Targeting	0	0	0



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# Water Quality Trading Programs Conclusions



Constraints



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