

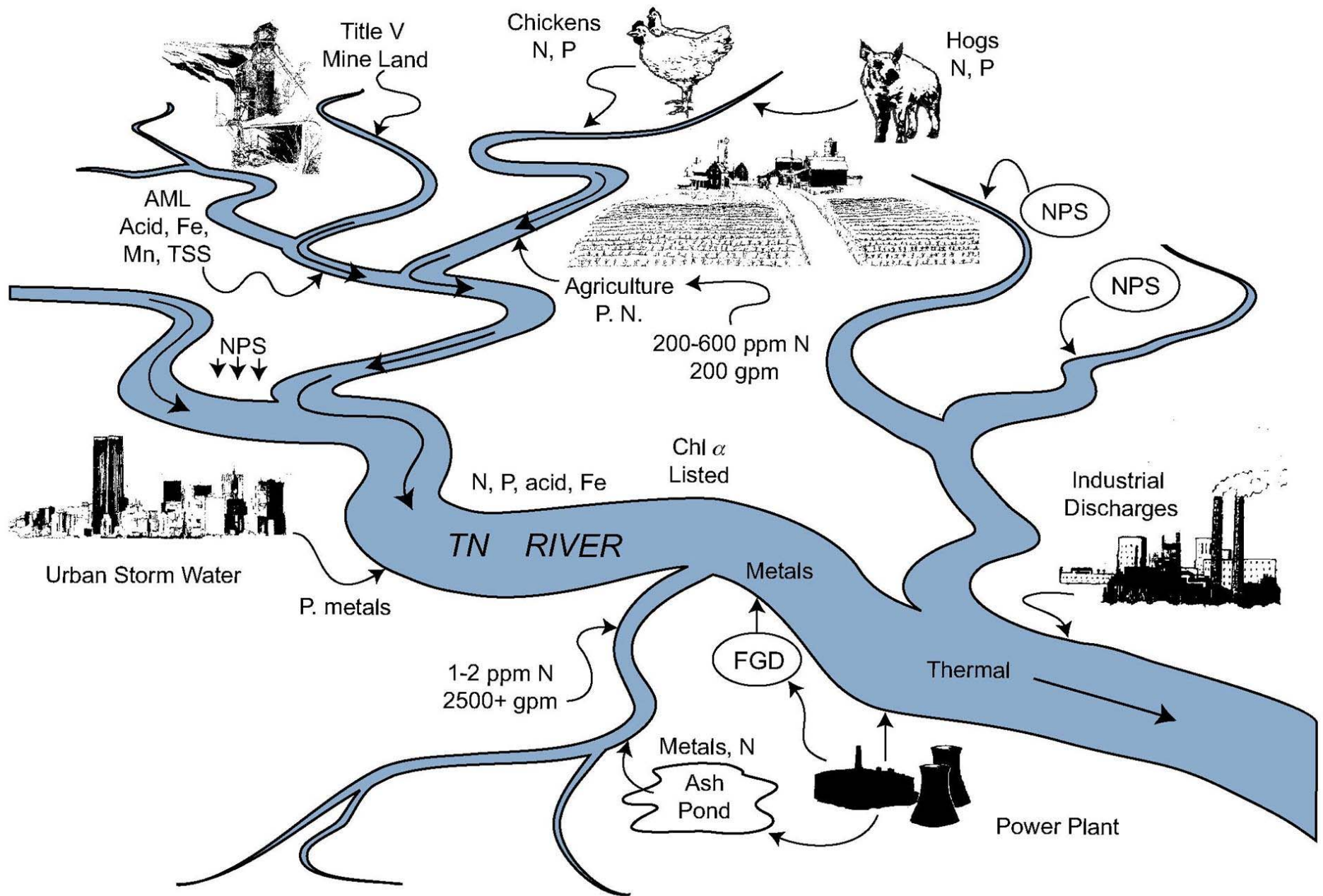


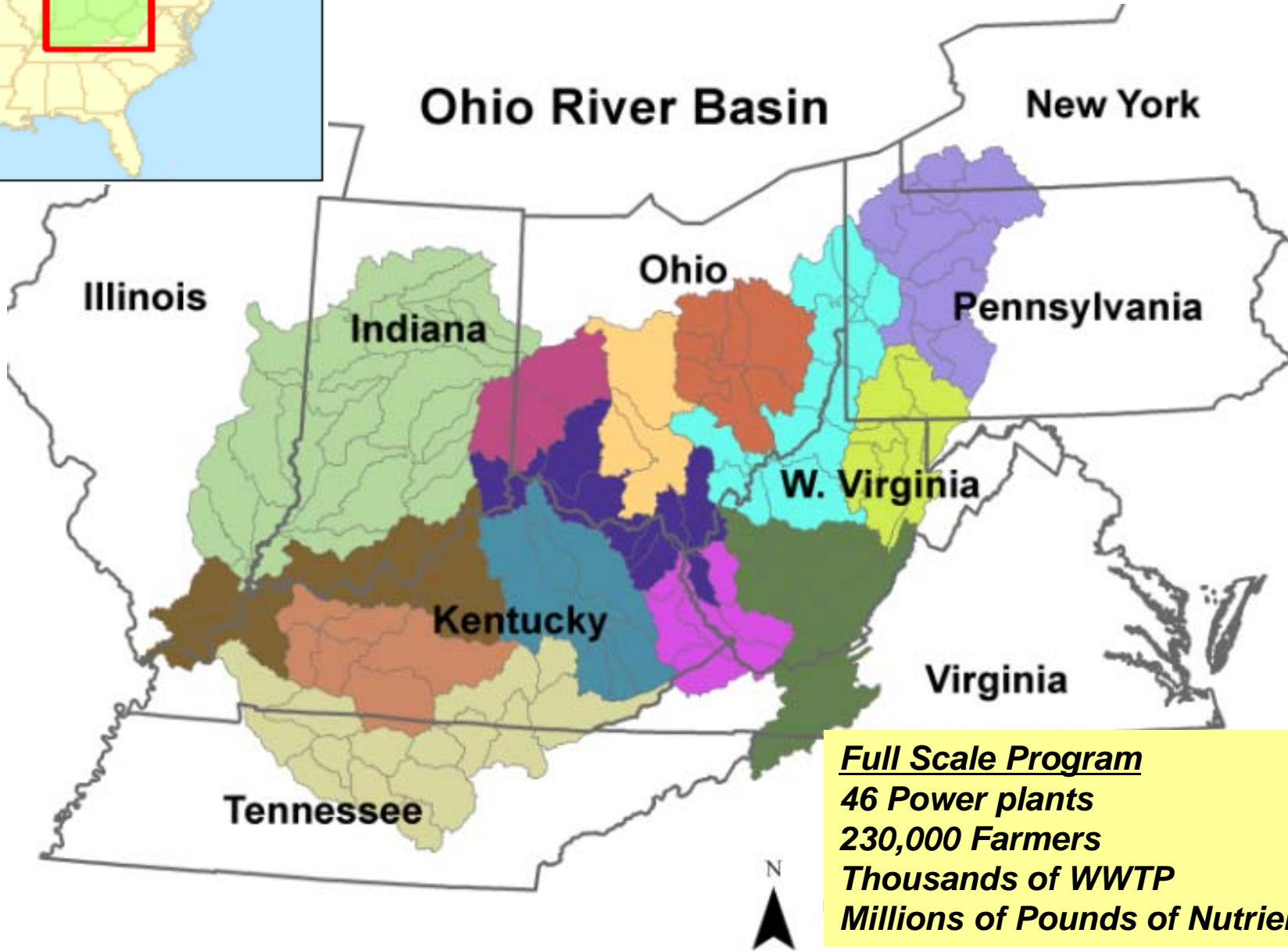
## Ohio River Water Quality Trading Program Overview

December 2014

Brian Brandt  
Director – Ag Conservation  
Innovations  
American Farmland Trust

# Sources of Nutrients





# What is WQT Trading?

Farm installs best management practice to generate credit



Permitted source buys credit to meet regulatory requirement



## Nutrient Reduction at Lower Cost

## Ancillary Benefits

- Improved Soils
- Carbon Sequestration
- Pollinators
- Biodiversity
- Corporate Stewardship
- Private money to farmers
- Support local communities



# Stakeholder Engagement



## Collaborators:

**Electric Power Research Institute**

**American Farmland Trust**

**Ohio Farm Bureau Federation**

**ORSANCO**

**Tennessee Valley Authority**

**American Electric Power**

**Hoosier Energy**

**Duke Energy**

**Exelon**

**UC Santa Barbara**

## Agencies:

**USEPA**

**USDA**

## States:

**Ohio**

**Indiana**

**Kentucky**

## Steering Committees:

**WWTP**

**Agriculture**

**Power Plants**

**Environmental Groups**

# Steering Committee - Agriculture

- IN State Department of Agriculture, KY Division of Conservation and OH Department of Natural Resources
- USDA ARS and NRCS
- Kentucky, Ohio, and Indiana Farm Bureaus
- Illinois and Indiana State Conservationists
- Kentucky Corn Growers Association
- Land Stewards, LLC.
- National Pork Producers
- National Milk Producers Federation
- Agricultural Retailers Association

## Other Steering Committees

- **WWTP** – National Association of Clean Water Agencies (NACWA) host EPRI via their WQT working group
- **Power Companies** – Duke, AEP, TVA, Hoosier, Exelon
- **Environmental Groups:**
  - The Nature Conservancy OH
  - Sierra Club OH & IN
  - OH Environmental Council
  - Environmental Law and Policy Center
  - MN Center for Env't Advocacy
  - KY Waterways Alliance
  - Kentucky Resources Council
  - Environmental Defense Fund



# OH, IN, and KY Sign Trading Plan!

August 9<sup>th</sup>, 2012 in Cincinnati Ohio



**The  
Economist**

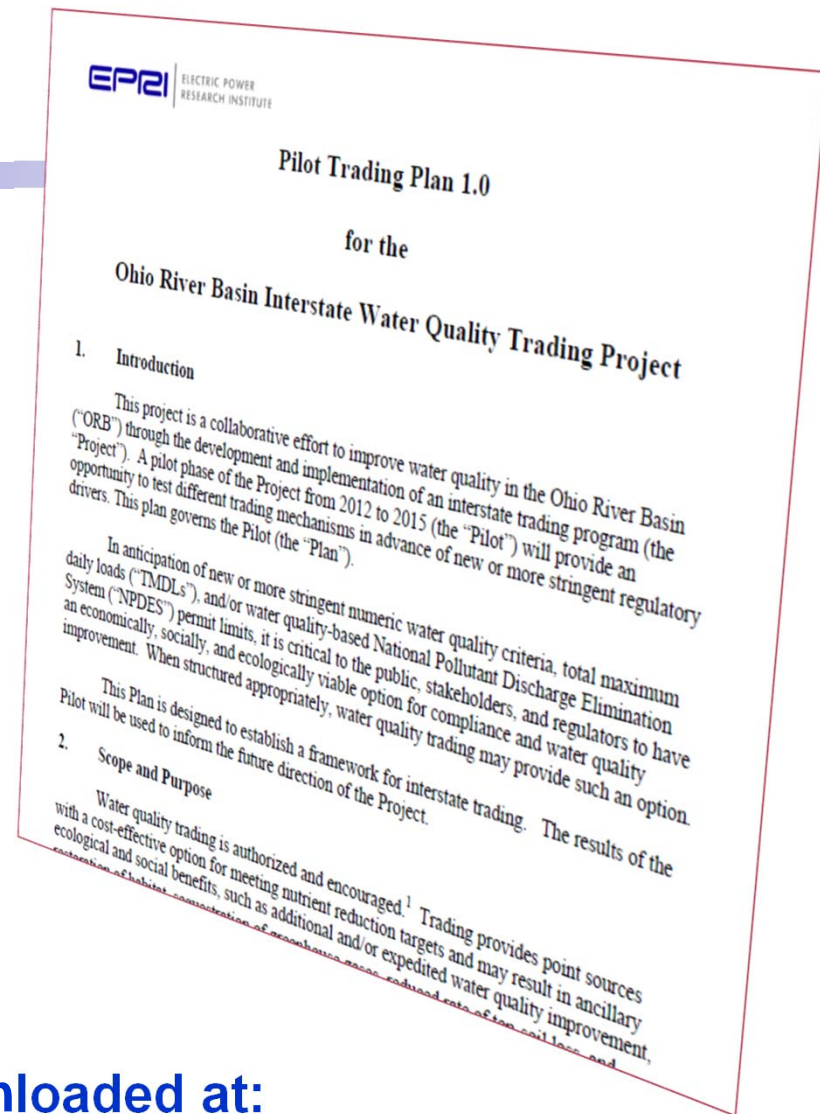
June 22, 2012: A [nutrient pollution article](#) in The Economist mentions EPRI's Water Quality Trading Program.

# Details of Pilot Program

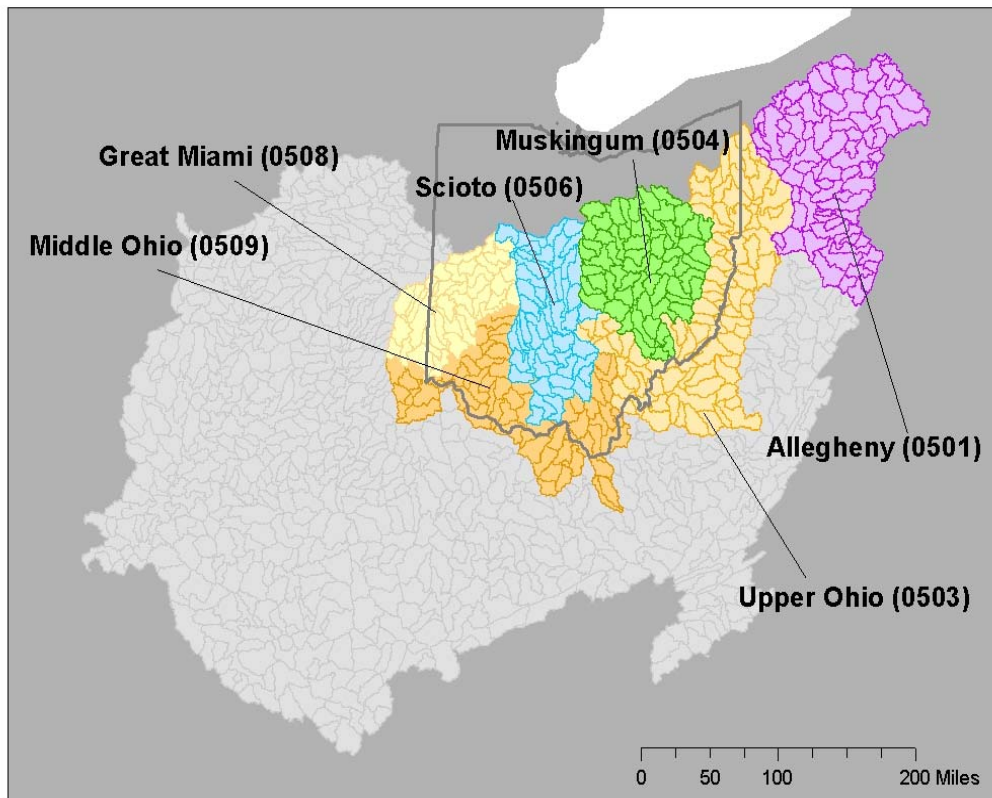
- Consistency & Rigor
- Watershed Model
- Agricultural Baselines
- Reserve/Insurance Pool
- Incentives for Early Buyers
- Adaptive Management
- Verification & Monitoring

Pilot Program Plan can be downloaded at:

<http://wqt.epri.com>



# Uses Watershed Modeling (WARMF)



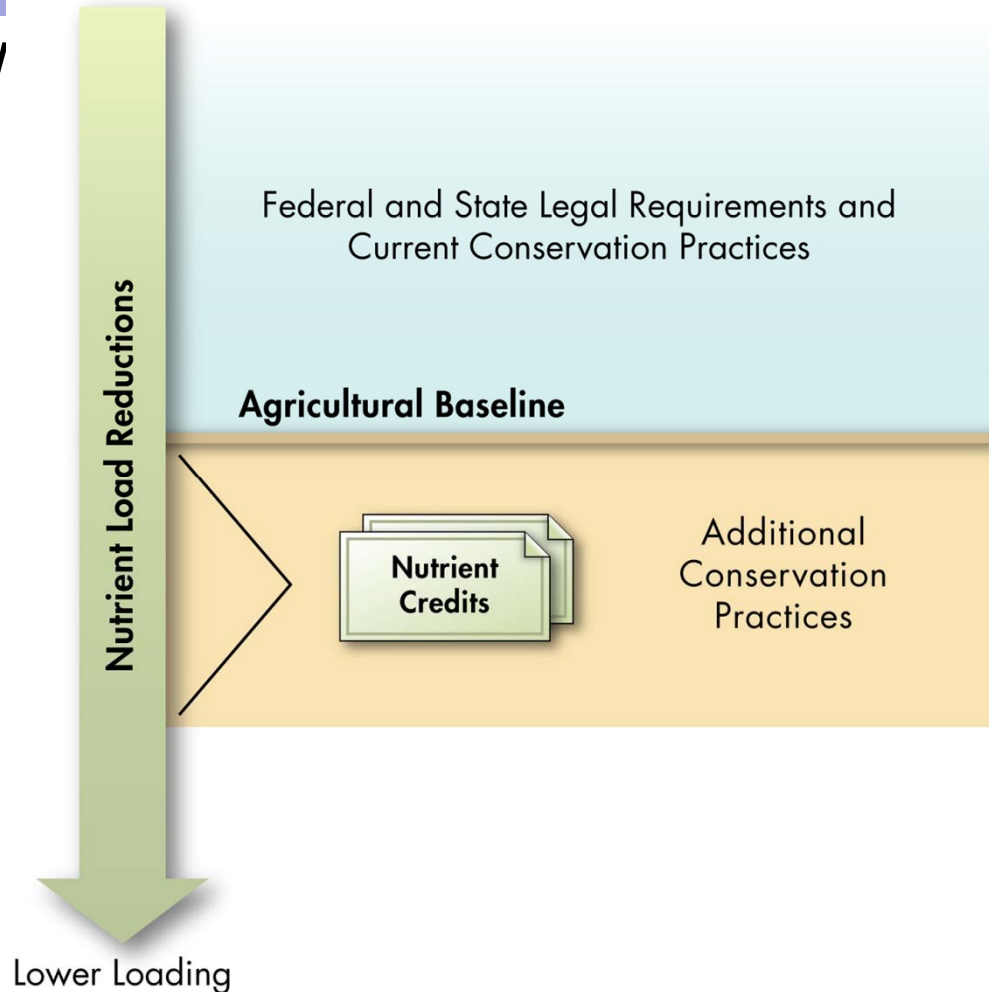
Model Provides Scientific Foundation for Project:

- Agriculture Best Management Practices
- Trading Ratios
- WQ Hot Spots
- Nutrient Attenuation
- Future land use scenarios
- Adaptive Management

# Opportunities for Conservation

- All projects must be NEW o( **“Additional”**)
- BMP Examples:
  - Cattle Exclusion Fencing
  - Nutrient Management
  - Cover Crops
  - Buffer Strips
  - Heavy Use Pads,
  - Manure Pits

Higher Loading



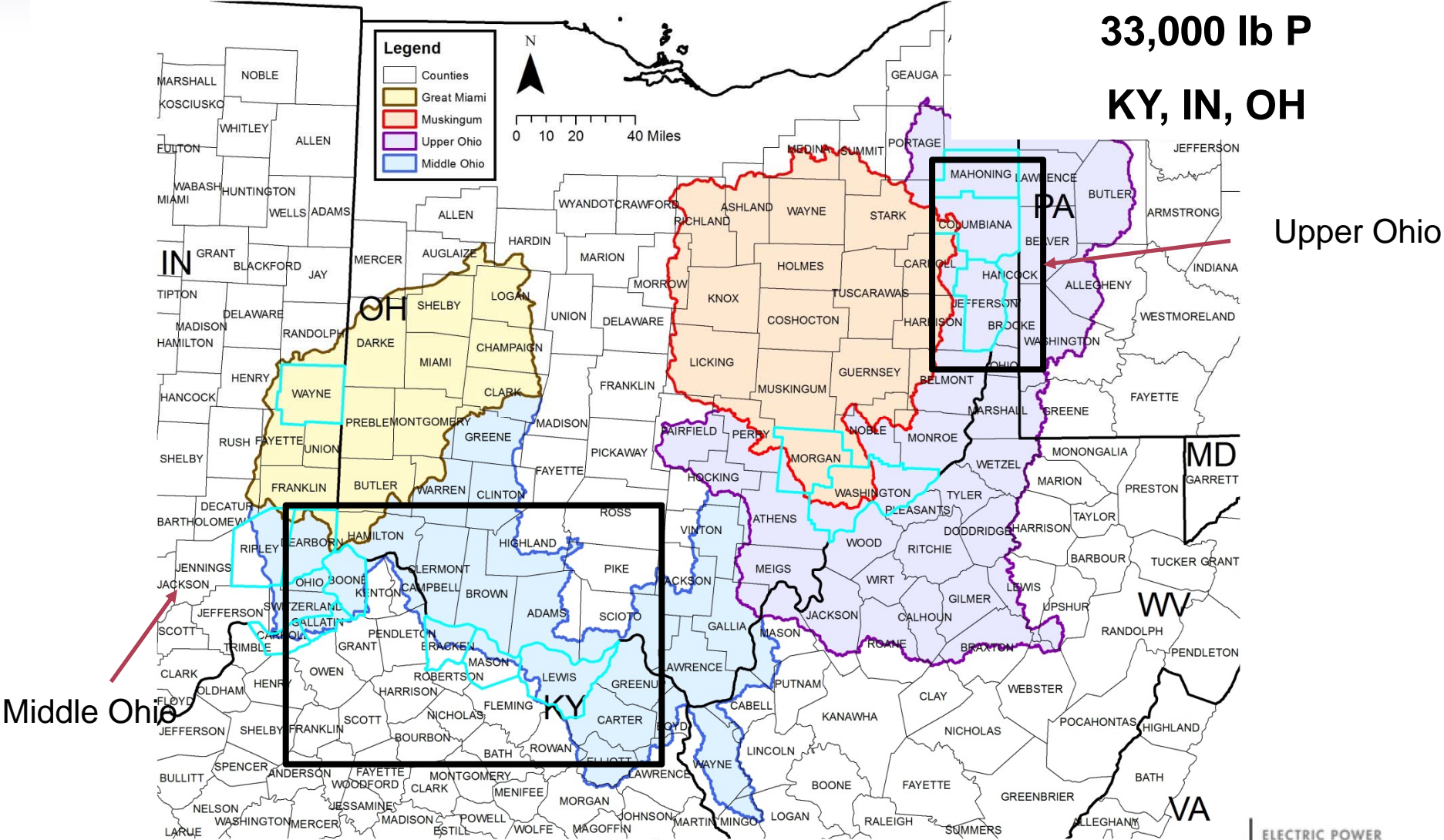
# Pilot Trade Locations

30+ farmer contracts

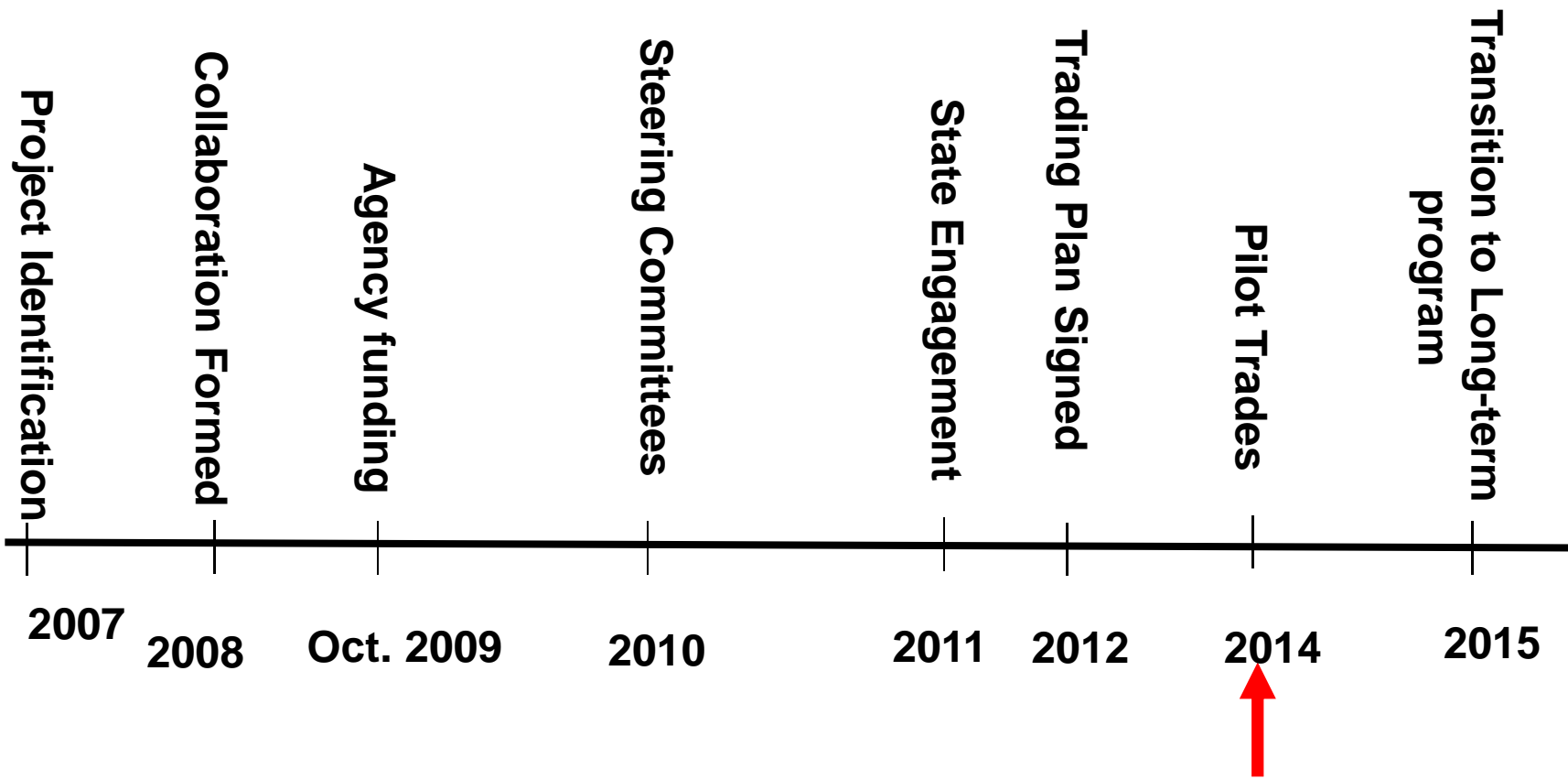
66,000 lbs N

33,000 lb P

KY, IN, OH



# Project Schedule



# Our First Stewardship Credit Transactions

March 11, 2014 in Cincinnati Ohio



# Counties and BMPs

## Counties:

- Kentucky: Boone, Bracken, Mason, Greenup, Carter, Elliott
- Ohio: Jefferson, Columbiana, Mahoning, Holmes
- Indiana: Ripley, Dearborn, Wayne, Ohio, Switzerland

## BMPs:

- Cattle Exclusion Fencing, Nutrient Management, Cover Crops, Buffer Strips, Grass Waterways, Heavy Use Pads, Manure Pits
- Enhance ecosystem services: carbon sequestration, native plants, habitat, etc.



# Projects: By the Numbers

- Indiana
  - 5 counties, 11 contracts (5 year contracts)
  - HUA, cover crops, hay conversion
  - 28,170 pound TN and 9,525 pounds TP
- Ohio
  - 3 counties, 7 contracts (5 and 10 year contracts)
  - Milkhouse waste systems, feedlot runoff controls/HUA, exclusion fence, cover crops
  - 20,646 pounds TN and 7,507 pounds TP
- Kentucky
  - 5 counties, 10 contracts (10 year contracts)
  - Gravel and concrete HUA
  - 36,840 pounds TN, 9,740 pounds TP

# EPRI Funded Project – Heavy Use Area Protection (HUAP)



← Before

Runoff, erosion,  
sedimentation.

After →

Reduced erosion &  
sedimentation, easier manure  
management, proud farmer.



# Evaluation Criteria

- Primary
  - Cost per pound of N (estimated range is \$2-8 per lb of N)
- Additional
  - A range of practices to gain max knowledge
  - SWCD and state priority concerns are addressed
  - Ancillary benefits addressed
  - Outreach potential

# Project Documentation

## Credit Creation

SWCD Installation Certification  
BMP Verification Report  
Credit Certification Report

## Credit Transactions

Credit Release Letter  
Credit Suspension Notice  
Credit Cancellation notice

### Guiding Principles:

- Enforce Trade Plan
- Legally Robust
- Appropriately Simple
- Protective of Program Integrity

**Credit Release Letter**

Project ID: \_\_\_\_\_  
(Applicant Last Name-County FIPS-yy-BMP #)

This notice states that the following Released Credits associated with the above named Project have been verified in accordance with the Trading Plan, Appendix E, Section 8 and have received all necessary agency certifications in accordance with the Trading Plan, Appendix E, Section 9 and are, accordingly, released for immediate registration and sale on the [ORB Program Online Registry]. The Released Credits will be allocated to the credit reserve in accordance with the Trading Plan, Section 13.

**Credit Release Checklist:**

<input type="checkbox"/> Project Application	<input type="checkbox"/> Signed Producer Contract
<input type="checkbox"/> Credit Calculation Report	<input type="checkbox"/> Verification Report
<input type="checkbox"/> SWCD Installation Certification	<input type="checkbox"/> Credit Certification Report

**Credit Release Summary:**

BMP Practice(s)	Year	Calculated Annual Nitrogen and Phosphorus Load Reduction	Total Annual Credits	Released Credits	Reserve Credits
	TN	TP		Total: [Serial No.]	Total: [Serial No.]
	TN	TP		Total: [Serial No.]	Total: [Serial No.]
	TN	TP		Total: [Serial No.]	Total: [Serial No.]

ORB Program Administrator \_\_\_\_\_ DATE \_\_\_\_\_

# Credit Trading Registry

Store Registry BOAT Dividends Source CDS & Bonds RED Loan Pricing Indices 3

Welcome, Ufe Test1 | Logout | Support

## markit environmental registry

Home **All Units** Projects/Issuances RFI Bids/Offers User Admin Activity Log

Transfer List Refresh Discard Export to Excel Export to PDF New Search by serial no.

Project	Account	Vintage	Origin	Holdings	Measurement	Status
Angel Mounds	American Farmland Trust Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001275-01102012-30092013-2051-2060-MER-0-P	2012 - 2013	United States	10 lbs/year		RFI Listed
Angel Mounds	American Farmland Trust Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001275-01102012-30092013-2061-2310-MER-0-P	2012 - 2013	United States	250 lbs/year		RFI Listed
Angel Mounds	American Farmland Trust Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001275-01012012-31122012-4101-4134-MER-0-P	2012	United States	34 lbs/year		Active
Angel Mounds	American Farmland Trust Sub-Account Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001275-01102012-30092013-2556-2650-MER-0-P	2012 - 2013	United States	95 lbs/year		Active
Lexington Plain	American Farmland Trust Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001276-01102012-30092013-3301-4100-MER-0-P	2012 - 2013	United States	800 lbs/year		Active
Lexington Plain	American Farmland Trust Ohio River Basin Interstate Trading Program - Phosphorus reduction/removal ORB-BAW-US-100000000001276-01102012-30092013-3052-3250-MER-0-P	2012 - 2013	United States	199 lbs/year		Active
Lexington Plain	American Farmland Trust Ohio River Basin Interstate Trading Program - Phosphorus reduction/removal ORB-BAW-US-100000000001276-01102012-30092013-2951-2951-MER-0-P	2012 - 2013	United States	1 lbs/year		RFI Listed
Lexington Plain	American Farmland Trust Ohio River Basin Interstate Trading Program - Phosphorus reduction/removal ORB-BAW-US-100000000001276-01102012-30092013-2952-3051-MER-0-P	2012 - 2013	United States	100 lbs/year		Retired
Lexington Plain	American Farmland Trust Ohio River Basin Interstate Trading Program - Nitrogen reduction/removal ORB-BAW-US-100000000001276-01102012-30092013-3251-3300-MER-0-P	2012 - 2013	United States	50 lbs/year		Active

Standard Project Type Unit Measurement Unit Class Unit State

Page 1 of 1 Less Details

Displaying 1 - 9 of 9

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# Website

**EPRI** | ELECTRIC POWER RESEARCH INSTITUTE

EPRI.com | Contact Us

## Ohio River Basin Trading Project

Home | About the Project | **EPRI Research** | Reference Shelf

- Pilot Trades
- Credit Stacking
- Watershed Model
- Ratios and Uncertainty
- Credit Registry
- Agreements & Letters

### Overview

Water quality trading is an innovative market-based approach to achieving water quality goals for nutrients such as phosphorus and nitrogen through programs that allow one source to purchase nutrient reductions from another source. Control costs for any one nutrient can vary significantly from another, and water quality trading provides an option for meeting discharge requirements in a cost-effective manner.

Since 2007, the Electric Power Research Institute and a strong collaboration of power companies, wastewater utilities, farmers, state and federal agencies and environmental interests have been working to develop a regional interstate water quality trading framework in the Ohio River Basin. As environmental impacts come from many sources, our project is facilitating broad non-traditional collaborations to achieve a common goal of protecting and improving watersheds at lower overall costs. Properly designed and deployed, the proposed trading program in the Ohio River Basin will allow exchanges of water quality credits for nitrogen and phosphorus.



<http://wqt.epri.com/>

## Discussion

Questions or comments?

<http://wqt.epri.com/>

**Brian Brandt**

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**(614) 430-8130**