



Ohio River Basin Trading Project

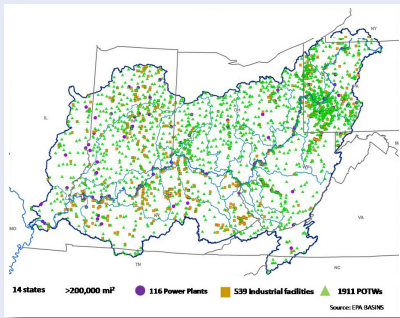
Winter 2010

Quarterly Update

Manager Message

The end of 2009 and beginning of 2010 brought some exciting updates to this project. One of these activities included launching the National Credit Stacking Survey. We have received a great response to this effort which will allow our analysis to inform the national debate on credit stacking. We also have begun work under both the USDA Conservation Innovation Grant and the EPA Targeted Watershed Grant including beginning to form stakeholder groups and vetting a detailed approach to establishing the WQT program.

This quarter we are very happy to highlight a key project collaborator, American Electric Power (AEP), who has been involved in this effort since its conceptualization. AEP has brought creative innovation, thoughtful analysis, and critical funding to this effort. I'm happy to take this brief moment to extend appreciation to them for their contributions. The complementary EPRI project highlighted this quarter is Adam Diamant's work to develop an approach for farmers to create greenhouse



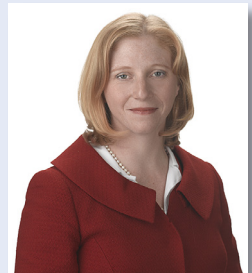
gas emissions offsets associated with changes in farming practices.

As part of the WQT project, we will be evaluating options for “stacking” greenhouse gas offset credits associated with reduced nitrous oxide emissions, with water quality trading credits for nitrogen.

Sincerely,

Jessica Fox

Jessica Fox is a Research Scientist in the Environmental Services area of the Environment Sector. Her research activities focus on market-based approaches for natural resource protection, particularly water quality trading and endangered species conservation banking. Ms. Fox received a BS degree in biological sciences from the University of California, Davis and an MS degree in biological sciences from Stanford University. She is certified as an Associate Ecologist by the Ecological Society of America.



Jessica Fox

Project Overview

Water quality trading is a market-based approach to achieving water quality standards through programs that allow emitters to purchase pollution reductions from another source. EPRI's Ohio River Basin Trading Project will be a first-of-its-kind regional multi-credit trading program and includes portions of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia. The successful implementation of this project will allow power companies, farmers, and other industrial dischargers to work together to improve water quality, minimizing costs to the public and stakeholders. The program will also benefit receiving water bodies that are now threatened by nitrogen and phosphorus pollution.

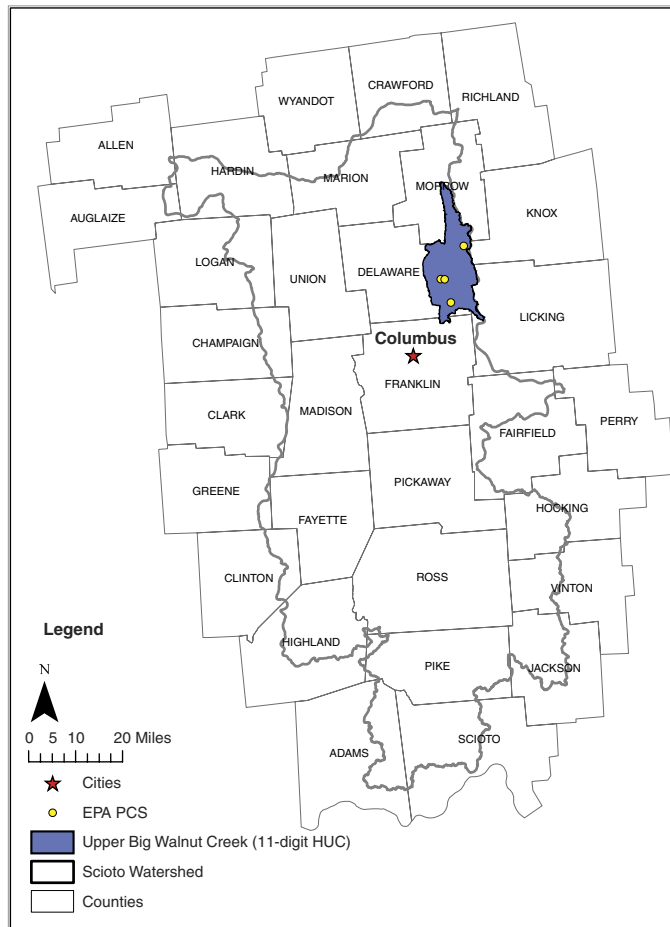
Project Updates

Coordination with other Targeted Watershed Grant Recipients

Facilitated by ORSANCO, regular conference calls have begun between the recipients of EPA's Targeted Watershed Grant for the Upper Mississippi and Ohio River Basins. These groups include EPRI, Miami Conservancy District, Ohio State University, World Resources Institute, West Virginia University, and Conservation Technology Information Center. The first call was held on Friday, February 5th, during which we shared project information and began to identify areas of possible collaboration.

Modeling the Ohio River Basin – Edge of Field to Entire Watersheds

Under a USDA Conservation Innovation Grant, we have continued to evaluate the possible linking of the edge-of-field credit estimation tool, NRCS Nutrient Trading Tool, to the broader watershed model, Watershed Analysis Risk Management Framework (WARMF). For the pilot



Upper Big Walnut Creek

run of linking the models, we have defined the area of focus to be a portion of the Scioto subwatershed called the Upper Big Walnut Creek. In addition to the scientific modeling, we will also be holding “listening sessions” with farmers in Upper Big Walnut Creek to capture their input and guidance on the model interface. Our project collaborator, American Farmland Trust is leading the effort to reach out to farmers. Dr. Ali Saleh, Texas Institute of Environment, is leading the work to calibrate the Nutrient Trading Tool, and Dr. Arturo Keller at U.C. Santa Barbara is leading the WARMF model calibration. Kieser and Associates is advising the team as an expert in WQT and helping to avoid implementation issues.

Forming Stakeholder Groups

We intend to form stakeholder groups for this project, in order to capture concerns, input, and suggestions from the individuals who will ultimately be participating in the trading program. The initial stakeholder groups are Power Companies, Wastewater Treatment Plants, Farmers, and the Public. EPRI already has the Power Company group formed. American Farmland Trust is leading the effort to set up the Farmers group and is

scheduling meetings with farmers. ORSANCO will be the point organization for the Wastewater Treatment Plants. We are still defining the “Public” group, as well as vetting any additional groups that will be critical for the initial phases of this program.

Interstate MOU to Reach Consensus on Trading

As mentioned on our previous webcast, we plan to propose an interstate MOU for the eight states in the project area: Indiana, Kentucky, Ohio, Illinois, West Virginia, Virginia. The MOU will commit resources of each state to engaging in discussions regarding the Ohio River Basin Trading Program, eventually leading to consensus on the rules of the program. While we may not get engagement from all the invited states, we expect enough states to sign the MOU to make this a useful effort.

Credit Stacking Survey

EPRI formed a collaborative team with World Resources Institute, Stetson University College of Law, and the University of Kentucky to develop an electronic survey that was distributed to key contacts in the mitigation credit field throughout the United States. The growing markets in carbon sequestration, water quality trading, and wetland and species banking have brought attention to the need for understanding protocols, case studies, and opinions for how credits can be stacked among these different markets. EPRI initiated its credit stacking project in 2009, with funding through the Ohio River Basin Water Quality and Greenhouse Gas Trading Supplemental project (See Supplemental Project Opportunity below).

The motivation for this research is to fully vet opportunities for multiple credit types in the Ohio River Basin, initially focusing on water quality and carbon with possible expansion to other ecosystem markets. To inform the effort in the Ohio River Basin, EPRI is conducting broader research into credit stacking activities and approaches across the United States. This project will uncover the current involvement in credit stacking by credit sellers and purchasers, exchanges and brokers, researchers and academic institutions, and regulatory agencies. The resulting analysis and its associated case studies will lay the foundation for developing a peer-reviewed publication summarizing the current state and viable opportunities for credit stacking in the United States. <http://www.survey-monkey.com/s/JGGQVM7>

This survey was launched on January 12, 2010 via email to thousands of market practitioners and regulators nationwide. In the first two weeks since its launch, we have received over 300 responses to the survey.

Complementary EPRI Projects

Developing GHG Emissions Offsets by Reducing Nitrous Oxide (N₂O) Emissions in Agricultural Crop Production: Phase 2

N₂O is a powerful GHG. Each ton of N₂O emitted into the atmosphere equals 296 tons of CO₂ in terms of its global warming potential. Offset projects that reduce N₂O emissions have a proportionately larger effect on reducing radiative forcing associated with climate change than similar reductions in CO₂ emissions.

In 2007 EPRI collaborated with Michigan State University (MSU) to launch Phase 1 of a supplemental project to develop GHG emissions offsets by reducing nitrous oxide (N₂O) emissions in agricultural crop production. The two year effort investigated an innovative approach to creating large-scale, cost-effective GHG offsets in the agricultural sector by reducing the amount of nitrogen fertilizer applied to crops (EPRI 1013128). As part of Phase 1 the EPRI-MSU team demonstrated that reducing the amount of nitrogen fertilizer applied to row crops like corn can significantly reduce N₂O emissions with little or no impact on crop yields. The EPRI-MSU team developed a draft N₂O GHG offsets “protocol” and accounting methodology that could be used to credit future N₂O emissions reductions in evolving regulatory programs to reduce GHG emissions regionally and nationally.



Adam Diamant
EPRI Senior Project Manager

Phase I also demonstrated the scientific efficacy of this approach. The quantitative results, biogeochemical models, N₂O measurement tools, data and other information developed in Phase 1 form the foundation for Phase 2.

Phase 2 of the supplemental project, launched in October of 2009, will help electric companies and others develop and access large-scale, cost-effective GHG offsets by reducing N₂O emissions from agricultural crop production across broad domestic and international geographic areas. This project will facilitate development of greenhouse gas (GHG) emis-

sions offsets in the agricultural sector in a time frame consistent with the implementation of potential future regulations to reduce U.S. GHG emissions. Specifically, this project will validate a draft GHG emissions offset methodology developed by EPRI and Michigan State University (MSU) in Phase 1 of this project. This will make it possible for electric companies and others to develop and access GHG emissions offsets derived from projects that avoid nitrous oxide (N₂O) emissions by reducing the amount of nitrogen fertilizer applied to crops.

The EPRI-MSU team also plans to develop and implement a pilot N₂O offsets project on a working farm to demonstrate how an avoided N₂O emission offset project can be implemented and credited with GHG offsets. In the future, these kinds of GHG offsets may be used by electric companies and others to satisfy future compliance obligations under evolving regional and federal CO₂ cap-and-trade regulatory programs.

More information about this project can be found here: <http://mydocs.epri.com/docs/public/00000000001020331.pdf>

Past and Future Quarterly Updates

For more information about these quarterly project updates, and to download the newsletters or webcast materials please visit the project website.

Winter and Spring 2009

- Public Webcast: August 19, 2009
- With a summary of relevant EPRI reports, and comments from project collaborator Ohio River Valley Water Sanitation Commission (ORSANCO).

Fall 2009

- Public Webcast: November 18, 2009, 10 a.m. PST
- Project Collaborator: American Farmland Trust.

Winter 2010

- Public Webcast: February 17, 2010, 10 a.m. PST
- Project Collaborator: American Electric Power.

Spring 2010

- Public Webcast: May 19, 2010, 10 a.m. PST

Summer 2010

- Public Webcast: August 18, 2010, 10 a.m. PST

Fall 2010

- Public Webcast: November 17, 2010, 10 a.m. PST

Project Collaborator's Spotlight

American Electric Power (AEP) ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined.



“Participation in this EPRI project has allowed AEP to work collaboratively with major Ohio River stakeholders to help improve water quality in the watershed. As a major user of water in the Ohio River Basin, AEP supports this effort to develop more cost effective ways to protect this resource.”

– Tim Lohner, AEP

Supplemental Project Opportunity

EPRI's Supplement Project is a subset of the scope of work that will be needed to develop the Ohio River Trading Project. It creates a funding mechanism for interested organizations to directly engage in the development of the trading program. By funding the supplemental project, your organization will have access to all the reports and deliverables generated out of this project and will have a seat at the table during project discussions and program development.

The full description of the Supplemental project can be found on www.epri.com/ohiorivertrading

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EPRI intends to support a collaborative process for the development of this project. The project website was designed to facilitate communication of important project materials, and to solicit questions, comments, and feedback from the many interested stakeholders. Please visit the project website for more information and to download meeting materials, related EPRI reports, Frequently Asked Questions, and additional project resources.

Electric Power Research Institute

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