

USDA Conservation Innovation Grant Project

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**Environmental
Trading Network**

Contents

INTRODUCTION.....	1
Water Quality Credit Trading	1
Workshop Overview.....	2
PILOT WORKSHOP: TROY, OHIO	3
Workshop Participation and Results.....	3
Evaluation and Feedback	5
Workshop Evaluation Summary	5
Water Quality Credit Trading Workshop.....	5
August 19-20, 2008	5
Troy-Hayner Cultural Center, Troy, Ohio.....	5
WORKSHOP 1: WYE MILLS, MARYLAND	9
Workshop Participation and Results.....	9
Evaluation and Feedback	11
WORKSHOP 2: SHERRODSVILLE, OHIO	16
Workshop Participation and Results.....	16
Evaluation and Feedback	18
Workshop Evaluation Summary	18
Water Quality Credit Trading Workshop.....	18
July 8-9, 2009	18
Sherrodsville, OH.....	18
WORKSHOP 3: INDIANAPOLIS, INDIANA.....	20
Workshop Participation and Results.....	21
Evaluation and Feedback	22
CONCLUSIONS.....	24
Workshop Benefits and Transferability of Results.....	24
Future Training Needs	25
ATTACHMENT A.....	26
ATTACHMENT B	28
ATTACHMENT C.....	31
ATTACHMENT D.....	33
ATTACHMENT E.....	36
ATTACHMENT F.....	38
ATTACHMENT G	41
ATTACHMENT H.....	43
ATTACHMENT I.....	46

ATTACHMENT J.....	48
ATTACHMENT K.....	57

INTRODUCTION

In an effort to advance implementation of market-based environmental trading programs, the Conservation Technology Information Center (CTIC) partnered with the Environmental Trading Network (ETN), the International Certified Crop Advisors, and the Water Environment Federation to develop and deliver customized training on water quality credit trading (WQCT). Funding for the training project was provided through a Conservation Innovation Grant from the United State Department of Agriculture's Natural Resources Conservation Service (NRCS). This training was comprised of several two-day workshops held to increase awareness and understanding of WQCT programs among agricultural producers, municipal wastewater facility operators, and potential aggregator groups.

The purpose of this project was to engage potential trading partners in states where WQCT is developing. The workshops helped initiate communication and collaboration among trading partners and equip them with the appropriate tools and motivation to begin developing or participating in WQCT in Ohio, Indiana, and Maryland. This summary report provides details of the workshop components, participant interactions and feedback, and general workshop results and benefits. (All workshop presentations can be downloaded at www.ctic.org.)

Water Quality Credit Trading

Many market-based environmental trading programs are being developed around the country. WQCT is a market-based approach to improve water quality in a cost-effective, flexible manner. It provides watershed managers and regulators with a voluntary tool that connects regulated point sources with nonpoint sources, such as agricultural producers, to economically achieve water quality improvements. Over the past few years, both the United States Department of Agriculture (USDA) and Environmental Protection Agency (EPA) have confirmed their commitment to WQCT through various grant opportunities for market-based approaches, educational and guidance materials, and partnership agreements between NRCS and EPA.

As part of CTIC's efforts to better educate agricultural producers and wastewater treatment operators to the process and benefits of WQCT, customized trainings were held in Ohio, Maryland, and Indiana. All of these states have current or developing trading opportunities for participants. Ohio has already promulgated statewide water quality trading rules, which were used as a framework for WQCT at the pilot workshop and subsequent workshop in Sherrodsville, Ohio. In Maryland, CTIC collaborated with Maryland's Department of Environment (MDE) and Department of Agriculture (MDA) to deliver a workshop that introduced the state's draft trading rules. In Indiana, no statewide rules currently exist, but the feasibility of WQCT is now being tested in the Wabash River watershed through an EPA Targeted Watershed Grant through CTIC.

Workshop Overview

Initial workshop elements were developed through conference calls between project partners prior to the pilot in August of 2008. The project team determined that a two-day workshop would be effective and encourage the greatest amount of participation. The workshop agenda and presentation topics were developed by ETN with input from CTIC. Workshop location, registration, promotion and coordination was led by CTIC. Speaker and content coordination was provided by ETN. Other project partners contributed through workshop promotion.

The morning of the first day of the workshop consisted mainly of presentations. The presentation topics focused on introducing basic market concepts, WQCT background, and program examples. Presentations were delivered by federal and state regulators, local organizations and individuals engaged in WQCT, and national examples from professionals experienced in WQCT.

The afternoon presentations for each of the workshops consisted of breakout sessions that provided specific information from experts in the field of environmental markets for agriculture, wastewater treatment facilities, and potential aggregators. The topics covered by each breakout session (listed in Attachment A) generally included specific information that each trading partner would need to consider before successfully completing a trade. The breakout sessions provided ample time for discussion between the experts and participants. After these sessions, the entire group reconvened to a panel discussion on trading. The question, “*Are you ready to trade?*” was presented to the group. This question provided a lead-in to day two of the workshop.

Day two started with an introduction to regional water quality issues within the Ohio River Basin (or the Chesapeake Bay Watershed, in the case of the Maryland workshop). Speakers at each of the workshops represented a variety of disciplines, including private consulting groups, industry, non-governmental organizations and universities. The second day of the workshop also allowed for a more “hands on” experience in WQCT by allowing participants to role play as different trading stakeholders than they would normally be in real life. The role playing exercise provided a trading scenario that prompted discussions within each stakeholder group. The key trading questions presented at the pilot workshop were:

- What is your preferred trading market structure?
- What structure would you not use?
- At what price would you consider buying (WWTP) or selling (farmers/aggregators)?
- Who do you want to negotiate your trade?
- What do you see as barriers or critical steps to pursue trading opportunities?

Small groups at each workshop convened for several sessions to answer the questions posed in the trading scenario. Each group had two facilitators to record group answers and keep the discussion on track. After each group answered the questions, facilitators reported the answers to the entire group.

The groups were ultimately asked to decide, “Are you ready to trade?”

PILOT WORKSHOP: TROY, OHIO

The first workshop took place in Troy, Ohio on August 19-20, 2008. This training served as a pilot that was evaluated by the participants in order to inform the three remaining workshops. Presentations were led by trading experts from the U.S. and Canada. The 2-day workshop’s interactive “role playing” exercise that asked participants to become stakeholders in the trading process different from their actual roles was very successful based on participant feedback in workshop evaluations. Information from this workshop was summarized in a preliminary report and used to modify future workshops.

Workshop Participation and Results

The pilot workshop had approximately 50 participants and 15 speakers or project partners in attendance. Participants came from several states across the country and were well distributed among agricultural organizations/producers, municipal/industrial point sources, and potential aggregator groups. The agenda for the pilot workshop is presented in Attachment B and includes the speaker names and affiliations.

During the role playing exercise, participants were asked to answer a series of questions regarding preferences in a WQCT framework (trading exercise materials included as Attachment C). Results from the pilot workshop are as follows:

Farmers:

- The aggregator/broker model is the most preferred market structure for trading due to certain constraints in the farmers’ lives, for example, limited time to “figure out” WQCT and the ability of a farmer to put trust in one person/entity.
- The group preferred to use an aggregator with strong agricultural roots and/or someone they personally knew well.
- Price was an issue for the group. Some preferred only to make a profit, while others assumed that a certain level of environmental ethic or pride of one’s land would compel a farmer to lower the price for a credit. The final answer was a range of between \$2.50 - \$12 per credit.
- Barriers to trading that the group discussed were liability for failed practices, time commitment, too few aggregators or brokers, inhibition to government evaluating property, change of commodity prices, land use trends/development driven prices, desired money up front (before BMP is installed), lack of information/education for farmers, need to keep WQT simple for busy farmers.

- At first the group decided they were not ready to trade until they were more comfortable with contract terms and had some guarantee to pricing, but by the end of the exercise decided they would rely on a trusted broker/aggregator and were ready to trade.

Aggregators:

- The aggregator structure with a municipal broker was the preferred market structure for trading since the direct trading between NPSs and PSs appeared to have too many barriers and transaction costs for both parties.
- The group did not decide on a specific price per unit of credit, but decided that the market should ultimately determine the price. For an aggregator, the price would have to be high enough to cover costs and be in the best interest of the public/tax payer.
- The group decided a champion role is necessary in each broker position in the trading structure chosen.
- Another need for trading to work is communication and education for parties involved and an entity to organize the initial market transactions, certification, verification, etc.
- Two major issues to trading are 1) having the appropriate drivers in place to encourage trading, and 2) assessing the risk involved in aggregating and selling credits.
- After establishing they would be able to perform an assessment of risk as an aggregator and that water quality standards would serve as a driver, the group decided they were ready to trade.

Wastewater:

- The aggregator/broker was the preferred market structure for trading and the group preferred to have the aggregator or broker contract trades with all farmers so that the WWTP did not have to take on this time-consuming task.
- The price of a credit would depend on supply, but the group agreed they would purchase the lowest cost credits they could get. In the short-term, the WWTP might purchase credits that are slightly higher in cost than it would be to upgrade the plant, but in the long-term, the WWTP would only participate in trading if there was a cost savings.
- The group wanted to see a performance guarantee to minimize liability due to BMP failure.
- Another important issue in trading for this group was the ability for individual WWTPs to organize together, forming a larger organization that would represent the individual plants and coordinate trading for the best price, lowest overhead, etc.
- A major objective of all WWTPs is compliance with NPDES permits, so the group wanted to review certain aspects of the trade in-house and then seek outside council to be certain the trade will meet the WWTPs' needs. Additionally, the WWTPs needed verification that the

credits are being generated and certification that credits will apply toward their permit limits.

- After speaking to the entire group, the WWTP group decided they were ready to trade because the state trading rules and program requirements would assure that credits were verified.

Evaluation and Feedback

After evaluating the initial pilot workshop, two changes were made. First, the group breakout sessions in the afternoon of day one were shortened to just two hours, instead of the three-hour allotment used in the pilot workshop. Only the WWTP group used the majority of the three-hour time period and speaker feedback indicated that shortening this session to two hours would provide ample time. Secondly, the five key trading questions were shortened to just three questions for the subsequent workshop. For the Maryland workshop, the questions were changed as follows:

- At what price would you consider buying (WWTP) or selling (farmers/aggregators) credits?
- Who do you want to negotiate your trade?
- What do you see as barriers or critical steps to pursuing trading opportunities?

Workshop Evaluation Summary

Water Quality Credit Trading Workshop

August 19-20, 2008

Troy-Hayner Cultural Center, Troy, Ohio

1. Please indicate your Registration Type: Business 10 Federal Govt. 1
 State Govt. 8 Nonprofit 4 University 4 Other 10 (please explain)
 - Provincial Government (Ontario, Canada)
 - Ontario Government
 - Interstate Agency
 - Municipal
 - Local Government (2)
 - Watershed Conservancy District
 - Local Government-POTW operator
 - Local Government- Watershed
 - Water Surveyor
 - Contract operator for municipal & industrial wastewater treatment plants
2. How are you involved with Water Quality Trading? (General Interest, Planning, Buyer / Seller, Regulator, Technical / Engineering, etc.)
 - Buyer/Seller potentially
 - Current study underway
 - Planning for future regulations

- Voluntary participant
- General Interest (9)
- Developing Ohio River Basin Wide and State Wide Trading programs
- Broker
- Buyer(4)
- Policy/Legislation
- TMDL Development- associated linkages & possibilities
- Regulator (4)
- Planning (5)
- General Engineering Interest
- Seller (4)
- Research
- Technical (7)
- Watershed coordinator
- CCA
- Engineering (5)
- Potential State aggregator
- Market carbon credits/consider P&N

3. How did you first learn about this conference? Mailing 0 Email 18

Colleague 20 Searching Internet 0 Other 2 (please explain)

- Boss
- Forwarded by EPA regional personnel

4. Did this conference meet your expectations? *(please rate on the scale below)*

Fell Short -----Exceeded

1 0 2 1 3 2 4 27 5 6

5. Were you satisfied with the structure/format of this workshop? Yes 35 No 1

If not, what suggestions do you have for the future?

- Room too small
- More time spent on basic concept (too much info too fast)
- Breakout session was too long. Had an hour before the 4pm break
- Too much cheerleading for reverse auction & regional scale option
- The hard copy slides weren't in order or were missing. Would have liked to hear from the Ag & Aggregator Speakers to get a complete understanding
- More Ag groups involved
- Would like to see a hands on workshop
- Dominated discussion in break outs a bit too much

6. What would you like to see addressed at a future training workshop?

- The demand side where is the demand
- Selling opportunities
- Have farmers/producers present who have "trading" BMPs on their land

- Starting with one specific hands on project and have lectures and workshops throughout
- Location was ok, but confusion about parking locations, also the seating arrangement left ½ looking over their shoulders.
- Environmental group perspective on WQ trading
- More state watershed specific with stakeholders needed to initiate WQ trading on a Huc8 Scale
- I really liked the group discussion. Because we got to look at different slides. I never knew aggregators were so on the scene.
- How can an engineering firm help
- Specific examples of a farmer trade to a WWT or power plant
- Establishing baseline
- Latest rule making pertaining to NTP and modules
- Simulated trading scenario with computer program that tracks trades
- Field tour- BMPs implemented
- Monitoring verification methods, analysis of BMP performance

7. Please rate the following:

- | | | | | | |
|----------------------------|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------|---------------------------------|
| a. Overall Speaker Quality | <input type="checkbox"/> Excellent 14 | <input type="checkbox"/> Very Good 22 | <input type="checkbox"/> Good 1 | <input type="checkbox"/> Fair 0 | <input type="checkbox"/> Poor 0 |
| b. Use of time | <input type="checkbox"/> Excellent 11 | <input type="checkbox"/> Very Good 22 | <input type="checkbox"/> Good 4 | <input type="checkbox"/> Fair 0 | <input type="checkbox"/> Poor 0 |
| c. Meeting Facility | <input type="checkbox"/> Excellent 7 | <input type="checkbox"/> Very Good 12 | <input type="checkbox"/> Good 10 | <input type="checkbox"/> Fair 7 | <input type="checkbox"/> Poor 1 |
| d. Hotel Accommodations | <input type="checkbox"/> Excellent 5 | <input type="checkbox"/> Very Good 11 | <input type="checkbox"/> Good 12 | <input type="checkbox"/> Fair 1 | <input type="checkbox"/> Poor 0 |
| e. Food | <input type="checkbox"/> Excellent 6 | <input type="checkbox"/> Very Good 15 | <input type="checkbox"/> Good 15 | <input type="checkbox"/> Fair 1 | <input type="checkbox"/> Poor 0 |
| f. Registration Process | <input type="checkbox"/> Excellent 13 | <input type="checkbox"/> Very Good 21 | <input type="checkbox"/> Good 3 | <input type="checkbox"/> Fair 0 | <input type="checkbox"/> Poor 0 |
| g. Value of Workshop (\$) | <input type="checkbox"/> Excellent 19 | <input type="checkbox"/> Very Good 17 | <input type="checkbox"/> Good 1 | <input type="checkbox"/> Fair 0 | <input type="checkbox"/> Poor 0 |

8. Did the conference provide sufficient information on...?

- | | | | | | |
|---------------------------------|--|-----------------------------------|---------------------------------------|-----------------------------------|---------------------------------------|
| a. Fundamentals of trading | <input type="checkbox"/> Exceedingly 7 | <input type="checkbox"/> Fully 24 | <input type="checkbox"/> Partially 5 | <input type="checkbox"/> Barely 1 | <input type="checkbox"/> Not at all 0 |
| b. Trading program examples | <input type="checkbox"/> Exceedingly 6 | <input type="checkbox"/> Fully 23 | <input type="checkbox"/> Partially 7 | <input type="checkbox"/> Barely 1 | <input type="checkbox"/> Not at all 0 |
| c. Case study details/materials | <input type="checkbox"/> Exceedingly 6 | <input type="checkbox"/> Fully 22 | <input type="checkbox"/> Partially 6 | <input type="checkbox"/> Barely 1 | <input type="checkbox"/> Not at all 0 |
| d. Developing WQT programs | <input type="checkbox"/> Exceedingly 5 | <input type="checkbox"/> Fully 16 | <input type="checkbox"/> Partially 15 | <input type="checkbox"/> Barely 0 | <input type="checkbox"/> Not at all 0 |
| e. Different roles in WQT | <input type="checkbox"/> Exceedingly 8 | <input type="checkbox"/> Fully 19 | <input type="checkbox"/> Partially 10 | <input type="checkbox"/> Barely 0 | <input type="checkbox"/> Not at all 0 |

9. Additional Comments:

- State examples were great
- Good conference
- Interesting workshop
- Hand out more materials- or “freebies”. I know they are cheesy but, but they work
- Keep evaluation form short
- Keep work shop to one day
- Too long of evaluation form
- Need coffee ready when people arrive
- A lot of info to absorb in two days
- A lot of repeated info in the presentations
- Better coffee! (I’m reaching for things to improve on.) Strength of the workshop is having players from all sectors present
- I don’t think detailed speaker evaluations are necessary or useful

- Too many unexplained acronyms
- Would have liked a full scenario acted by three people to understand the transitions between parties
- I would have really liked to hear & understand how the aggregator works. The room where most of the conf. was held was a bit difficult. People walking around the room was loud & made it hard to hear the speakers
- A chance for participants to attend all the different breakout sessions
- Many ways to structure could not cover all in detail
- Examples & case studies were good
- The partially part from 8 could be addressed with a more Huc8 focused meeting

Retention Survey: April 28, 2009

Retention surveys were conducted for the pilot workshop and two of the subsequent workshops. The surveys were meant to evaluate the potential impact of the workshops and measure the practicability of lessons learned.

Water Quality Credit Trading, Troy

Did participation in the Troy, OH Water Quality Credit Trading workshop (Aug. 19-20, 2008) improve your understanding and knowledge of water quality credit trading benefits, processes, and technical issues?

Answer Options	Response Percent	Response Count
Not at all	0.0%	0
Somewhat	47.6%	10
Very much so	52.4%	11



<i>answered question</i>	21
<i>skipped question</i>	0

Did you share the information you gained from the workshop with others?

Answer Options	Response Percent	Response Count
Yes	85.7%	18
No	14.3%	3
<i>answered question</i>		21
<i>skipped question</i>		0

Have you taken steps to develop a water quality credit trading program or participate in water quality credit trading?

Answer Options	Response Percent	Response Count
Yes	42.9%	9
No	57.1%	12
<i>answered question</i>		21
<i>skipped question</i>		0

WORKSHOP 1: WYE MILLS, MARYLAND

The second workshop took place in Wye Mills, Maryland, on March 4-5, 2009. This training served as a platform for vetting draft water quality guidance for the MDE and MDA. The draft guidance was evaluated by the participants. Trading experts from the around the country and several State of Maryland representatives presented to the group.

Workshop Participation and Results

The workshop had approximately 50 participants and 13 speakers in attendance. Participants came from several states across the country, although the majority was from Maryland. The participants were well distributed among agricultural organizations/producers, municipal/industrial point sources, and potential aggregator groups. The agenda for the pilot workshop is presented in Attachment D and includes the speaker names and affiliations.

During the role playing exercise, participants were asked to answer the series of questions regarding their preferences for a WQCT program (materials for this exercise included as Attachment E). Results from the workshop are below:

Farmers:

- The pricing of a credit varied within the group, but at first many agreed they would only accept a price just below the cost of the WWTP upgrade costs. Later in discussion, the group started to explore the idea of taking a lower price than just below upgrade costs.
- Farmers preferred individual deals with individual WWTPs and wanted a minimum contract value to participate. The group discussed the possibility of forming a cooperative that would provide a resource to farmers needing to negotiate contracts and come to a consensus on the overall, average price of a credit.
- Farmers wanted the government to calculate credits for each BMP (in order to standardize a credit); they also expected that government would verify the credit.
- Farmers did not want to front the costs for the BMPs and preferred a “reopener” clause in the contracts in order to allow for escalating credit pricing over long-term contracts (10-20 years per draft trading guidance document).
- Farmers wanted the trading policy to better define the aggregator’s role and thought government should play a role in certifying aggregators.
- Farmers felt they were ready to trade at the end of the exercise.

Aggregators:

- In terms of credit pricing, aggregators stated they would do their “homework” on supply and demand in the watershed, utilize cost-share dollars to get as many farmers to baseline as possible, and determine cost per credits on multiple variables; no price range was determined.
- Aggregators preferred large-scale trading volumes, but thought the exercise limited the geographic extent of the watershed in which they could trade.
- They preferred an RFP type process from WWTPs/buyers in order to help define the demand, and help with pricing.
- Possible early incentives might help farmer participation, including paying for the BMP implementation up front.
- Aggregators wanted private buyers to be able to post needed or available credits to the online marketplace to help the aggregator’s role.
- The group determined that government needed to: 1) grandfather existing contracts as policy changes; 2) promote new BMPs by approving Tier II and Tier III BMPs; and, 3) to certify the credit verifiers. The group did not come to a consensus on whether the government should certify aggregators.

- After discussing issues with the larger group, the aggregator group decided they would be ready to trade.

Wastewater:

- In terms of price, the WWTP group was not fixed on a specific price point they would go to, rather they would be willing to pay as much as it takes up to a certain point were growth is deemed “unaffordable.” They were intentional about not sharing a price point with farmers.
- The preference was to trade at scale, but in some cases, to work with local farmers/BMPs. Farmer participation is important and may be a challenge to get steady, reliable supply of credits in first 5-10 years of market start-up.
- WWTPs preferred a competitive bidding structure with an RFP type process, but thought government should set a credit pricing floor to encourage initial participation by farmers.
- WWTPs liked the idea of early buy-in or trading incentives, as well as early incentives for farmers to help grow/stabilize the market. They realized a “reopener” clause may be necessary to negotiate trades with farmers when entering into long-term contracts (10-20 years per guidance).
- Generally, the group wanted more detail about what the proposed trading program from the Department of Environment and Department of Agriculture, yet in the end the group said they were ready to trade.

Evaluation and Feedback

Unlike the other workshops conducted for this project, this workshop provided a platform for the MDE and MDA to introduce draft water quality trading guidance for the state. Several speakers from MDE and MDA were added to the agenda to introduce these, forecast further trading opportunities in Maryland, and provide general feedback to workshop participants. In addition, information from the draft WQCT guidance was incorporated into the role playing exercise on day 2 of the workshop.

**Workshop Evaluation Summary
Water Quality Credit Trading Workshop
March 4-5, 2009
Wye Mills, MD**

1. Please indicate your Registration Type:

Business	5
Federal	2
State	2
Nonprofit	4

- | | |
|------------|--------------------------|
| University | 1 |
| Other | 7 (all local government) |
2. How are you involved with Water Quality Trading?
- | | |
|---------------------------------------|----|
| Potential aggregator | 1 |
| Buyer | 2 |
| Engineering | 3 |
| Consultant | 1 |
| Potential regulator | 1 |
| Facilitator/educator | 2 |
| General interest | 11 |
| Planning | 6 |
| Policy development | 1 |
| Evaluation | 1 |
| Technical | 4 |
| Role of SCD | 1 |
| Seller | 3 |
| Outreach to farmers to encourage BMPs | 1 |
3. How did you first learn about this conference?
- | | |
|-----------------|----|
| Email | 14 |
| Colleague | 8 |
| Website posting | 1 |
4. Did this conference meet your expectations? (1=fell short, 5=exceeded)
- | | | |
|---|------------|----|
| 1 | Fell short | 0 |
| 2 | | 0 |
| 3 | | 1 |
| 4 | | 16 |
| 5 | Exceeded | 4 |
5. Were you satisfied with the structure/format of this workshop?
- | | |
|-----|----|
| Yes | 18 |
| No | 1 |

Suggestions for the future:

- Cold room!
- Get a grant to provide a national conference!
- Very good interaction and discussion
- Maybe try not to jam so much into day 1? Could have done some presentation Day 2?
In the end, it worked, so maybe your experience is that it needs to be this way.
- Propose a short background session and then allow forum/question & answer session
- The open discussions were filled with great questions/comments. This time was more beneficial than the extensive presentations.
- Really enjoyed the format.
- Role play great idea. Found it difficult to fully or effectively participate due to lack of knowledge (treatment plant).

6. What would you like to see addressed at a future training workshop?

- Start from the beginning and spend more time on the background of the trading concept of split the workshop into 2 levels; introduction and practical
- Work through a couple examples of calculations worksheets.
- N/A—good mix of info/participation
- Try to use real watershed farmers and WWTP to look at real numbers.
- Full examples of actual trades.
- The MD policies should have been clearly defined before we discussed so much arbitrary items.
- Maybe some examples from other eco-system services markets regarding aggregation, developing markets, trading/banking mechanisms
- Maybe a case study in a specific watershed
- Details of case studies, examples
- More specific prices, discussion of BMPs, resources for individual watersheds (to find specific nutrient loads, etc.)
- More focus on strategy to get the various players into the trading market. More info on how future regulations will push players into the market and create demand.

7. Please rate the following:

a. Overall speaker quality:

Excellent	6
Very Good	15
Good	0
Fair	0
Poor	0

b. Use of time:

Excellent	4
Very Good	11
Good	5
Fair	1
Poor	0

c. Meeting facility:

Excellent	3
Very Good	12
Good	5
Fair	1 (Cold!)
Poor	0

d. Hotel accommodations:

Excellent	0
Very Good	7
Good	1
Fair	0
Poor	0

e. Food:

Excellent	4
Very Good	8
Good	9
Fair	0
Poor	0

f. Registration process:

Excellent	5
Very Good	9
Good	5
Fair	0
Poor	0

Provide more location detail/map. Building Name, Room #
Letter of confirm. Helpful/receipt needed.

g. Value of workshop (\$)

Excellent	7
Very Good	13
Good	1
Fair	0
Poor	0

8. Did the conference provide sufficient information on:

a. Fundamentals of trading:

Exceedingly	4
Fully	12
Partially	5
Barely	0
Not at all	0

b. Trading program examples:

Exceedingly	0
Fully	13
Partially	8
Barely	0
Not at all	0

c. Case study details/materials:

Exceedingly	0
Fully	12
Partially	8
Barely	1
Not at all	0

d. Developing WQT programs:

Exceedingly	1
Fully	13
Partially	7
Barely	0
Not at all	0

e. Different roles in WQT:

Exceedingly	2
Fully	16

Partially	3
Barely	0
Not at all	0

Additional Comments:

- Thanks very much! Good job to organizers. Hope to get speakers to come to my jurisdiction as we develop process.
- Use microphone.
- The disparity between TMDLs and Trib Strategy goals created good discussion—could have continued and learned more.
- Very good and very professionally done. Nice to see some real facilitation.
- Very good information on the MD trading program.
- Would like more info on baseline assessment for farmers at the watershed level.

Retention Survey: July 16, 2009

Did participation in the Wye Mills, MD Water Quality Credit Trading workshop (March 4-5, 2009) improve your understanding and knowledge of water quality credit trading benefits, processes, and technical issues?		
Answer Options	Response Percent	Response Count
Not at all	0.0%	0
Somewhat	54.5%	6
Very much so	45.5%	5
<i>answered question</i>		11
<i>skipped question</i>		0

Did you share the information you gained from the workshop with others?		
Answer Options	Response Percent	Response Count
Yes	81.8%	9
No	18.2%	2
<i>answered question</i>		11
<i>skipped question</i>		0

Have you taken steps to develop a water quality credit trading program or participate in water quality credit trading?		
Answer Options	Response Percent	Response Count
Yes	45.5%	5
No	54.5%	6
<i>answered question</i>		11
<i>skipped question</i>		0

WORKSHOP 2: SHERRODSVILLE, OHIO

This workshop took place in Sherrodsville, Ohio, at Atwood Lake Lodge on July 8-9, 2009. This workshop served as a general training on WQCT in a different part of the State of Ohio from the pilot workshop. The location was selected to draw participants from both the Ohio River Basin area in the southeast portion of the state and participants working in the Lake Erie Watershed to the north. Presentations were led by trading experts involved in WQCT in Ohio and from around the country in order to highlight interstate and national trading projects.

Workshop Participation and Results

The workshop had approximately 24 participants and 12 speakers in attendance. Participants came from several states within the region and attracted participants from West Virginia, Texas, Pennsylvania, and California, in addition to participants from Ohio. The participants were well distributed among agricultural organizations/producers, municipal/industrial point sources, and potential aggregator groups. Soil and Water Conservation Districts from Ohio were well represented at this workshop. The agenda for the workshop is presented in Attachment F and includes speaker names and affiliations.

During the role playing exercise, participants were asked the series of questions regarding their preferences for a WQCT program (these exercise materials are included as Attachment G). Results from the workshop are as follows:

Farmers:

- Farmers had several concerns before determining whether they would participate in trading. They felt they needed to consult someone they trust and wanted to have a guarantee that trading policy and conditions would not change during their trading contracts.
- Farmers also wanted assurance that they would not be regulated for participating in trading and preferred to get technical assistance in order to start participating in trading (ultimately paid for as part of their trading agreement).
- Farmers wanted to know what risk they would be assuming, how their credits would be verified, and they needed flexibility in program participation.
- They preferred a system that would allow for both trading through an aggregator and direct trading by each individual farmer.
- Farmers did not want to participate in a trading program that was not already developed, although with the right early incentives, they would consider early trading with incentives.

- In terms of payment for credit generation, farmers wanted upfront payments for BMPs and annual installments over the life of the contract.
- After discussing the early issues farmers had with the entire group, they decided they were ready to trade with the right technical assistance.

Aggregators:

- In terms of credit pricing, aggregators stated they would work to find the cheapest credits first, which would drive down the price per credit. They wanted to meet with the buyers (WWTPs) to determine if they had requirements/concerns that would affect pricing (e.g., preference for local credits to emphasize local community benefit to trading program).
- Aggregators thought credit price would be influenced by their “business” costs or transaction costs, overhead, etc. In the end, they predicted a credit would cost between \$6-9.99 to generate and sell on the market.
- Aggregators were generally interested in longer-term credits and trading in higher volumes of credits, which would bring prices down.
- Aggregators argued that the trading program needed a third party to manage risk for both buyers and sellers and this aggregator would assume most of the liability for the transaction. Potential aggregators included SWCDs, agribusinesses, consultants, etc.
- Aggregators thought some sort of centralized clearinghouse might be appropriate in the watershed described in the exercise, although they concluded that a clearinghouse might have to develop secondary to the initial market development.
- The major barriers to trading for the aggregator group included: convincing buyers/sellers of aggregators’ value; evaluating and understanding all of the risks; discovering price through assessment of demand and supply; gauging the future potential of market; developing contract language; determining credit contract length; and, externalities in addition to credit price.
- Aggregators were ready to trade early on with the concept that they were providing a valuable and necessary service in a trading market.

Wastewater:

- In terms of pricing, the WWTP group determined they would pay between \$6-10 per credit.
- Considerations the WWTP group had before participating in trading included: being involved in the WQCT planning process, need for an insurance pool of credits, desire for the aggregator group to assume risk and assure credits will be there for life of contract; and, would prefer government covers a portion of the planning costs with federal/state funding.
- The WWTP group wanted a good monitoring plan, good verification of credits, and a trading program plan that was both politically and scientifically acceptable.

- WWTPs may need a market feasibility study to determine if trading will work for them in the long-term and participating in a pilot project may be of interest to the group.
- In terms of a market or trading structure, the group determined that they do not care what structure they use to trade, they want the lowest priced credit. They also wanted to evaluate risk in trading over time and will need to build public support for the trading plan/program before moving forward.
- The group was ready to trade if the price was not higher than traditional WWTP upgrade costs.

Evaluation and Feedback

The format and agenda for this workshop was very similar to the first pilot workshop, except that the role playing exercise used the three shorter key trading questions from Maryland. The role playing exercise was adapted from the Maryland workshop to include Ohio trading rule information and was specific to the Muskingum River watershed setting. Additionally, the role playing exercise was modified by consolidating the small group breakouts into two instead of three sessions in the afternoon on day two.

Workshop Evaluation Summary

Water Quality Credit Trading Workshop

July 8-9, 2009

Sherrodsville, OH

1. Please indicate your Registration Type: Business Federal Govt.
 State Govt. Nonprofit University Other (please explain)

Business=3 ; Fed Govt.=2; State Govt=5; Nonprofit=3; University=4

2. How are you involved with Water Quality Trading? (General Interest, Planning, Buyer / Seller, Regulator, Technical / Engineering, etc.)

General Interest=12; Planning=4; Buyer/Seller=2; Regulator= 1; Tech/Eng=2; Research=1

3. How did you first learn about this conference? Mailing Email Colleague Searching Internet Other (please explain)

Mailing= 0; E-mail=10; Colleague=2; Searching internet=2; Other=1 (Professor)

4. Did this conference meet your expectations? *(please rate on the scale below)*

Fell Short -----Exceeded

1 2 3 4 5
 1: 0 2: 0 3: 1 4: 9 5: 6

5. Were you satisfied with the structure/format of this workshop? Yes No YES=15 NO=1

If not, what suggestions do you have for the future:

- I think a simple introduction explaining the concept of what WQT Points were should have been done. I needed to have more explanation before hearing rules & regulations from EPA. It took me quite a while to figure out what WQT was. I needed this intro to grasp everything else.
- Maybe make the speaker times shorter, due to retention luls.

6. What would you like to see addressed at a future training workshop?

- Implementation of trading from the ground up. Basically how to get trading going in our area.
- At my level of knowledge this was very informative
- Importance of a pilot program in different areas
- New and emerging other areas where trading is possible. Discuss also a short presentation on ps to ps trading.
- Maybe start off the workshop with some of the basic information or the concept and how it works.
- Explain how specific BMPs work (e.g. cost of BMP to implement and yield of reduction)
- Since I am most interested in how to set up a WQT system, more info on steps to take in establishing such a program with a programmer would be great, but I got a good basis of info.
- I could not understand how initial permits are distributed among the polluters, explanation about some economic issues
- More examples of successful programs
- Panel of actual participants of trading
- The examples of the process were helpful

7. Please rate the following:

h. Overall Speaker Quality	8 Excellent	9 Very Good	0 Good	0 Fair	0 Poor
i. Use of time	5 Excellent	10 Very Good	1 Good	1 Fair	0 Poor
j. Meeting Facility	8 Excellent	7 Very Good	2 Good	1 Fair	0 Poor
k. Hotel Accommodations	2 Excellent	7 Very Good	5 Good	0 Fair	0 Poor
l. Food	0 Excellent	7 Very Good	8 Good	1 Fair	0 Poor
m. Registration Process	8 Excellent	6 Very Good	3 Good	0 Fair	0 Poor
n. Value of Workshop (\$)	10 Excellent	7 Very Good	0 Good	0 Fair	0 Poor

8. Did the conference provide sufficient information on...?

- a. Fundamentals of trading 6 Exceedingly 6 Fully 5 Partially 0 Barely 0 Not at all
- b. Trading program examples 7 Exceedingly 10 Fully 0 Partially 0 Barely 0 Not at all
- f. Case study details/materials 10 Exceedingly 6 Fully 1 Partially 0 Barely 0 Not at all
- g. Developing WQT programs 2 Exceedingly 13 Fully 1 Partially 1 Barely 0 Not at all

h. Different roles in WQT all

3 Exceedingly 10 Fully 4 Partially 0 Barely 0 Not at

9. Additional Comments:

- Excellent workshop
- Learned much more than expected
- Overall informative workshop
- Sparked many ideas for WQT in TX
- Liked the format
- Enjoyed workshop - got excited as this is a definite possibility for my area

Retention Survey: September 21, 2009

Did participation in the Sherrodsville, OH Water Quality Credit Trading workshop (July 10-11, 2009) improve your understanding and knowledge of water quality credit trading benefits, processes, and technical issues?		
Answer Options	Response Percent	Response Count
Not at all	0.0%	0
Somewhat	20.0%	2
Very much so	80.0%	8
<i>answered question</i>		10
<i>skipped question</i>		0

Did you share the information you gained from the workshop with others?		
Answer Options	Response Percent	Response Count
Yes	88.9%	8
No	11.1%	1
<i>answered question</i>		9
<i>skipped question</i>		1

Have you taken steps to develop a water quality credit trading program or participate in water quality credit trading?		
Answer Options	Response Percent	Response Count
Yes	30.0%	3
No	70.0%	7
<i>answered question</i>		10
<i>skipped question</i>		0

WORKSHOP 3: INDIANAPOLIS, INDIANA

The final workshop took place in Indianapolis, Indiana, on August 26-27, 2009. This workshop served as a general training on WQCT in Indiana and surrounding states due to the developing potential for trading opportunities in the area. Participants from this workshop were asked to complete an evaluation form from the workshop in order to provide feedback to presenters and project partners. Presentations were led by trading experts involved in WQCT around the country in order to highlight interstate and national trading projects and opportunities.

Workshop Participation and Results

This workshop had approximately 20 participants and 10 speakers in attendance. Approximately half of the participants were from Indiana, with the other half coming from different states around the country. The participants were not as well distributed among different groups, with the majority representing government, private consulting/agribusiness firms, and NGOs. A few representatives were present from municipalities and one farmer from Ohio attended the workshop. The agenda for the workshop is presented in Attachment H and includes speaker names and affiliations.

During the role playing exercise, participants were asked to answer a series of questions regarding preferences in a WQCT framework (trading exercise materials included as Attachment I). Results from the workshop are as follows:

Farmers:

- Farmers had several concerns/questions they needed addressed before they would participate in a trading program, including: who takes on the liability for the credits; will the program be flexible for farmers; can farmers still participate in cost-share/farm bill programs; and, can credits be generated from older BMPs.
- Farmers wanted to know more about price discovery of a credit or pound of reduction. Other concerns over cost were whether the buyer would cover time/costs to negotiate trade, are WWTPs buying the credits or the practice, etc.
- Farmers felt they needed to gain a better understanding of what their credit or pound of generation potential was (perhaps using the local SWCD for technical assistance).
- At first farmers decided they would represent themselves in trading and not rely on an aggregator. They agreed a clearinghouse might work best with individual farmers negotiating trades. In the end, some of them would consider using an aggregator.
- Contract length was an important issue for farmers, wanting to be paid over several years, but uncertain if 10+ year contract would work for them.
- In the end, the farmer group decided they were ready to trade.

Aggregators:

- Aggregators put a range of prices on the combined credit from \$6.00-9.99 (just below what it would cost to purchase from the existing WWTP with credits).
- The aggregators decided they would cater to the WWTPs by meeting with them to determine their needs/concerns. The credit supply seemed more than ample in the watershed, so supply should be easy to secure.
- Aggregators were generally interested in longer-term credits and trading in higher volumes of credits, which would bring prices down.
- Aggregators argued that the trading program needed a third party to manage risk for both buyers and sellers and this aggregator would assume most of the liability for the transaction. Potential aggregators included SWCDs, agribusinesses, consultants, etc.
- The group decided that they preferred the government to require certification for aggregators, and that high standards could be expected, which would benefit trading.
- In the end, the aggregator group was ready to trade.

Wastewater:

- The WWTP group recognized the need to have a diverse portfolio of BMPs for credit assurance. They were also concerned about liability and who would assume this if BMPs failed or did not deliver credits.
- The group considered a buyers coalition or association to eliminate competition and stabilize the price of a credit.
- The WWTP group wanted trading rules to be established, and preferred that the WWTPs were involved in this process, but not the lead.
- The group had several barriers to trading that they identified, including: needing assurance; wanting control over where the credits come from; limited liability on their behalf; a buffer between buyer and seller; and, punitive damages in contract terms.
- For pricing, they wanted a low credit price, but also required assurance and insurance that credits would be delivered.
- The WWTP group was ready to trade if the price of a credit was lower than upgrade costs and proper insurance of credits was in place.

Evaluation and Feedback

The final WQCT workshop held in Indianapolis, Indiana, was similar to the Sherrodsville workshop, but focused more specifically on the Ohio River Basin and future potential for WQCT. Speakers with

experience in program development were included on the agenda because Indiana has not developed statewide WQCT rules.

This evaluation was emailed to participants after the workshop. It was shortened from the earlier evaluation form formats to increase the response rate. Unfortunately, the response rate was rather low.

Please indicate your registration type:		
Answer Options	Response Percent	Response Count
Business	50.0%	2
Federal Government	0.0%	0
State Government	25.0%	1
Nonprofit	25.0%	1
University	0.0%	0
Other	0.0%	0
Other (please specify)		0
<i>answered question</i>		4
<i>skipped question</i>		0

Answer Options	Response Percent	Response Count
Mailing	0.0%	0
Email	50.0%	2
Colleague	50.0%	2
Searching internet	0.0%	0
Other	0.0%	0
Other (please specify)		0
<i>answered question</i>		4
<i>skipped question</i>		0

Were you satisfied with the structure/format of this workshop?		
Answer Options	Response Percent	Response Count
Yes	100.0%	4
No	0.0%	0
If not, how could we improve?		1
<i>answered question</i>		4
<i>skipped question</i>		0

Please rate the following:						
Answer Options	Excellent	Very Good	Good	Fair	Poor	Response Count

Overall Speaker Quality	1	2	1	0	0	4
Use of Time	1	2	1	0	0	4
Meeting Facility	2	2	0	0	0	4
Hotel Accommodations	1	0	0	0	0	1
Food	1	2	0	0	0	3
Registration Process	1	2	1	0	0	4
Value of Workshop	2	0	2	0	0	4
<i>answered question</i>						4
<i>skipped question</i>						0

Did the conference provide sufficient information on...?						
Answer Options	Exceedingly	Fully	Partially	Barely	Not at all	Response Count
Fundamentals of trading	1	3	0	0	0	4
Trading program examples	1	2	1	0	0	4
Case study/details/materials	1	3	0	0	0	4
Developing trading programs	1	0	3	0	0	4
Different roles in trading	1	2	1	0	0	4
<i>answered question</i>						4
<i>skipped question</i>						0

Retention Survey: not performed due to project end date.

CONCLUSIONS

The WQCT trainings developed and delivered as part of this project directly educated over 160 individuals in the agricultural and water quality sectors. Many others in these sectors were educated indirectly by the workshop participants, as many noted in their evaluations that they shared information about the trainings with colleagues. In particular, Soil and Water Conservation District and Certified Crop Advisors that attended the workshop are now able to share information they learned at these workshops. With the knowledge they gained, District personnel and CCAs can help farmers and others understand trading, which results in further education of potential trading stakeholders. In addition, staff members from different government departments (agriculture and environment) that participated in workshops as speakers were able to learn from other individuals involved in WQCT around the country and solicit feedback from potential stakeholders. A long-term result of the project training should be increased participation in WQCT programs in Ohio, Maryland and Indiana due to the general education, awareness, and capacity-building these workshops promoted.

Workshop Benefits and Transferability of Results

The benefits of these workshops were two-fold -- educating individual participants on WQCT and

increasing awareness and interest in local and regional WQCT programs. The workshops were designed to provide several benefits to participants. Each workshop included a group of speakers who have relevant, expert information on WQCT as well as local program examples and national examples to showcase different trading program elements and requirements (see Attachment J for speaker biographies). Workshop participants were encouraged to interact with expert speakers and ask questions to gain knowledge from this resource. Further, the workshops created a forum for participants to interact with other potential trading stakeholders. The interactive sessions, on day two especially, provided this much-needed capacity building and interaction between nonpoint sources, point sources, and potential aggregators. The role playing trading exercise brought together diverse, interdisciplinary groups that engaged in a collaborative process to answer key questions about trading (see individual workshop summaries).

In addition to educating individuals and providing a platform for interaction between stakeholder groups, the workshops benefit regional WQCT programs by promoting trading through increased interest of engaged participants. Now that workshop participants understand how trading works and have explored other stakeholder concerns and priorities, they can educate others about WQCT and increase interest in developing viable trading programs within their local watersheds. Thirty-five of the forty-one participants, or approximately 85% of the participants who responded to the follow-up survey, noted they had shared information with co-workers and colleagues.

Future Training Needs

The workshop's basic format has been fine-tuned to provide a quality training experience for those seeking a basic understanding of water quality trading, and could be transferred to any area in the U.S.

Many of the participants in the four workshops conducted through this grant expressed interest in having a similar workshop in their area. In general, the workshop would be useful in the Mississippi River Basin, outside of the Ohio River Basin (which was already covered as part of this grant project). In particular, stakeholders in Illinois would like to have the same WQCT workshop conducted in their state. Workshops in these locations would provide educational information and capacity-building for stakeholders developing market-based programs through the latest round of EPA Targeted Watershed Grants.

In addition to workshop opportunities, participants may require future training on the specifics of WQCT program development. The format for such training will not likely be a workshop, but rather require working meetings with involved stakeholders to determine specific programmatic components.