



United States Department of Agriculture

Natural Resources Conservation Service

Environmental Credit Trading

Carl Lucero

National Leader for Clean Water

Natural Resources Conservation Service

2007 Ag Outlook Forum



Environmental Credit Trading in the Press



Source: 2006 Fox - EPRI Solutions



Environmental Credit Trading

What is it?

Environmental Credit Trading is an innovative way of thinking that applies economic principles to our natural resources allowing us to buy and sell environmental performance.



Essentials for Trading to Occur

- *Supply and Demand*
- *Establish a value for the Product or Service*
- *Ability to measure the Product or Service*
- *Rules to Govern Transactions*
- *Entity to Ensure Rules are Followed*
- *Must be Voluntary and Transparent*



Environmental Credit Trading

Drivers:

- Regulation*
- Threat of impending Regulation*
- Philontropic*
- Tax Credits*



Environmental Credit Trading

- *Water Quality*
 - *Phosphorus*
 - *Nitrogen*
 - *Temperature*

- *Air Quality*
 - *CO₂*
 - *Methane*
 - *Nitrous Oxide*

- *Biodiversity*
 - *Mitigation Banking*
 - *Conservation Banking*



Environmental Credit Trading Scenario



Market Drivers:

Laws, Regulations or policies that set limits on emissions or environmental damage

Buyers (Industry):

Need to purchase environmental credits to meet regulatory obligations (Permits)



Brokers:

Facilitates payments between buyers and sellers. Can also serve as an aggregator.



Sellers (Landowners):

Through implementation of conservation practices can provide environmental credits



Aggregators:

Bundles environmental credits from many landowners making them available for trading. Can work through a Broker or sell directly to the buyer.



Payments

Credits

Credits

Credits

Payments

Payments



Actions needed to facilitate Water Quality Credit Trading

- *Develop and evaluate necessary tools and methods for estimating environmental credits*
- *Education and outreach to promote the benefits of environmental credit trading*
- *Cooperation and collaboration with other agencies to remove barriers*



NRCS/EPA Water Quality Credit Trading Partnership Agreement

- *Agreement signed on October 13, 2006 by:*
 - *USDA NRE Under Secretary Mark Rey*
 - *EPA Assistant Administrator Ben Grumbles*
- *Purpose:*
 - *To promote a long term working relationship between the USDA NRCS and EPA - OW on collaboration efforts to establish viable water quality credit trading markets.*



NRCS/EPA Water Quality Credit Trading Partnership Agreement

- ***Partnership Goals:***
 - *Mutual commitment*
 - *Program Coordination*
 - *Establishment of uniform standards*
 - *Elimination of barriers*
 - *Establish a pilot project in the Chesapeake Bay*



NRCS/EPA Water Quality Credit Trading Partnership Agreement

Goals for a Pilot project in the Chesapeake Bay:

- Value Added*
- Innovative approaches*
- Model and Tool validation*
- National Example*



Other NRCS Activities

- *Development of an NRCS Environmental Credit Trading Handbook*
- *Development of a Nitrogen Trading Tool*
- *Conservation Effects Assessment Project*



Environmental Credit Trading

Examples - CIG

- *In Pennsylvania, we are demonstrating a reverse auction system for farmers to install specific conservation practices to reduce nutrients.*
- *In Florida, we are working with the World Wildlife Fund and ranchers to reduce phosphorus in Lake Okeechobee.*
- *In West Virginia we are working with the WVU Research Corp. for the Development and Implementation of a Water Quality Bank and Trade Program for the Potomac River Watershed.*
- *In Ohio we are developing a point to nonpoint source water quality trading program in the Great Miami River Watershed to improve water quality*



Final Thoughts

- *Environmental Credit Trading is:*
 - *NOT a replacement for our conservation programs*
 - *a new revenue stream that parallels our conservation programs*
 - *a voluntary process that can produce more environmental improvements at a lower cost*



End

For more information...

Carl Lucero

(301) 504 – 2222

carl.lucero@wdc.usda.gov



2007 Ag Outlook Forum



Tualatin Temperature Project

- Clean Water Services (CWS) is a wastewater/drinking water provider
- Faced with a TMDL for temperature they looked at options
 - Chill water, point source reduction
 - Invest in conservation



Vander Haak Dairy Project

- **Anaerobic Digester Constructed in 2004**
- **Capacity to Treat Manure from about 1500 Milk Cows**
- **Estimated Biogas Production 137,000 cu-ft/day**
- **350 kW Generator for Electricity Production**
- **Methane Emission Reductions: 500 metric tons/yr,**
- **Methane has a 20:1 Carbon Equivalency**

2005: \$2.25 - \$2.50/Ton/Year

2006: \$4.50 - \$4.60/Ton/Year



Hickory Pass Ranch, Texas

- Privately owned family ranch.
- Bank established in 2002.
- 3003 acres for the golden-cheeked warbler
- Over 400 credits sold
- Selling at \$5000.

