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*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*
  - *CO<sub>2</sub>*
  - *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

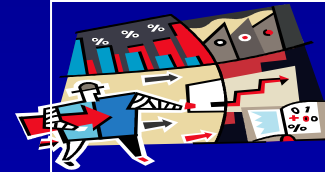
## Buyers (Industry):

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*

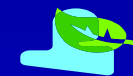
*Credits*

*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...*

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# *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.

