



Federal Water Quality Trading Policies and Policy Directions

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Water Quality Trading – A Market Mechanism for Improved Environmental Protection

- Optimize abatement expenditures on a watershed scale (bounded exchange market)
 - Bilateral contracts
 - Exchange networks (brokers, banks, clearinghouses, trading associations)
- Payment for ecosystem services
 - Ecosystem markets

Early History

- Originally proposed in the 1960s as alternative to rigid technology and industry-specific discharge standards for regulated point sources
- Several trading projects developed since the 1980's with little measurable success (with some salient exceptions, e.g. the Long Island Sound point to point trading program)
- Research examining economic underpinnings, trading program elements and impediments
- EPA's 1996 Draft Framework for Watershed-Based Trading

Federal Policies on WQ Trading

- General purpose
 - Articulate broad agency commitment to utilize market mechanisms to address far-reaching environmental challenges
 - Establish agency direction regarding use of trading and other market mechanisms when existing legislation / regulation / policy does not articulate agency position
- Functions
 - Define / clarify regulatory parameters within which trading is permissible
 - Articulate specific agency commitments to advancing / utilizing market mechanisms to achieve environmental results
 - Provide framework and commit agency resources to address issues and to develop decision support and evaluation tools

US EPA WQ Trading Policy, January 2003

■ Purpose

- Assure that trading programs comply with the Clean Water Act
- Identify conditions under which trading can be utilized
 - As a tool for implementation of Total Maximum Daily Loads (TMDLs)
 - Applied in advance of a TMDL to restore impaired waters
 - To maintain high quality waters and accommodate growth
- Identify constraints
 - Trading cannot create “hot spots”
 - May be well suited for reducing nutrients and sediment, but may not be appropriate for other pollutants (e.g. persistent bioaccumulative toxins)
 - Technology-based controls must be applied before credits can be purchased by regulated point sources



US EPA WQ Trading Policy (continued)

■ Motivations

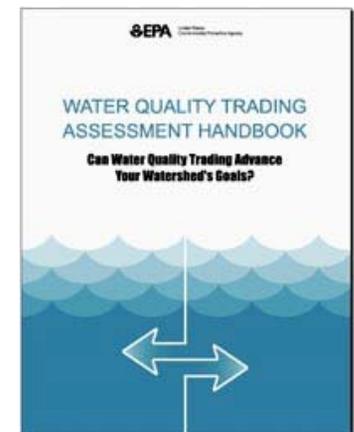
- A tool to facilitate allocation of loads and load reductions needed to achieve water quality standards
- To help address challenges controlling nonpoint sources (however, trading programs that include NPS components are far more complex)

■ Significance

- Provided clarity in the use of trading to achieve water quality results
- Demonstrated EPA's commitment to exploring trading feasibility under a variety of conditions

US EPA Resources and Tools

- Grant funding
 - Targeted Watershed Grant Program
 - Science to Achieve Results (STAR) Research Program
 - Sustainable Environments Research Program
- Blue Ribbon Water Quality Trading Awards Program
- Second National Water Quality Trading Conference, May 2006 (EPA / USDA)
- Water Quality Trading Assessment Handbook, 2004
- Watershed-based National Pollution Discharge Elimination System Permitting
- Water Quality trading training curriculum under development
- National Water Quality Trading Network





USDA WQ Trading Policies

- Statement by Secretary Mike Johanns before the American Water Resources Association, January 23, 2007
 - USDA 2005 Initiative on Market-Based Environmental Stewardship – “...encourage(s) the trading of credits for engaging in environmentally-friendly activities like producing cleaner air and water, preserving wetlands and habitat for endangered species, and reducing greenhouse gas emissions.”
 - Market mechanisms should “supplement” traditional federal efforts (conservation programs)
 - Environmental credits from agriculture are “the property of the farmer, the land owner, the one who applied the conservation practices on the land, regardless of the federal cost-share dollars that were invested.”



USDA WQ Trading Policies (continued)

- Natural Resources Conservation Service, Departmental Regulation, USDA Roles in Market-Based Environmental Stewardship (Number 5600-003, 12/20/06)
 - Policy
 - Broaden the use of private sector markets for environmental goods and services, including environmental credit trading
 - Effective private sector markets require consistent, well-defined and quantifiable environmental goods and services
 - Key elements
 - Cooperation with other federal, state and tribal agencies
 - Facilitate consistent, efficient and effective agency level policies, programs and activities
 - Promote use of environmental credit trading and voluntary registries
 - Develop, test and evaluate innovative tools and methods

USDA WQ Trading Policies (continued)

- Key elements (continued)
 - Encourage and conduct research and technology development to ... ensure that policies and programs have a firm scientific basis
 - Conduct outreach, education, technology transfer and partnership building
 - Foster knowledge within USDA agencies
 - Establishes the USDA Market-Based Environmental Stewardship Council to facilitate Departmental activities

- USDA 2007 Farm Bill listening sessions included substantial discussion on facilitating the use of market mechanisms to expand conservation practices beyond those funded by existing conservation programs.



Applying knowledge to improve water quality
**New York - New Jersey
Puerto Rico - Virgin Islands**
Regional Water Coordination Program
A Partnership of USDA CSREES
& Land Grant Colleges and Universities

US EPA – National Resource Conservation Service (USDA-NRCS) Partnership Agreement, October 2006

- Establishes a mutual commitment to foster interagency coordination to
 - Establish trading standards
 - Remove barriers
 - Identify overlapping interests in grant and research programs to minimize duplication and maximize program effectiveness
- Emphasizes the importance of private sector water quality markets to complement existing federally supported conservation efforts by creating an additional revenue stream for water quality improvement
- Ensure that water quality credits produced by agriculture are credible and verifiable and may be used to offset regulatory requirements of industrial and municipal facilities
- Facilitate an “information infrastructure to promote third-party aggregation, brokering, banking and tracking mechanisms”
- Includes a commitment to collaborate on a pilot trading project in the Chesapeake Bay Basin



Conservation Effects Assessment Project (CEAP)

- Identify the specific benefits of conservation practices on a watershed scale
- Employ modeling and field verification to establish baseline and existing watershed conditions
- Can facilitate quantification and valuation of ecosystem services
- Potential for this approach to become an “enabling platform for ecosystem markets” (Johanns, 1/23/07)
- CEAP is a collaboration between USDA NRCS, Cooperative State Research Education and Extension Service, Agricultural Research Service and US EPA

Other Federal Agencies (USGS, NOAA, Forest Service)

Provide decision support tools for
water quality trading and
ecosystem services valuation



States with Trading Policies In-place or Under Development

- Florida
- Idaho
- Maryland
- Michigan
- Minnesota
- Ohio
- Oregon
- Pennsylvania
- Virginia

Note: Several other states have trading included in NPDES permit conditions or referenced in TMDLs

Conclusions

- Federal policies are beginning to play an important role in advancing the use of trading and other market mechanisms to achieve environmental results.
- However, we are just beginning and we have much to learn about how markets will function to achieve an array of societal benefits.
- Future directions
 - 2007 Farm Bill debate includes increased emphasis on market mechanisms and broader stakeholder engagement. This will likely raise the profile of WQ trading.

Conclusions (continued)

- Future directions (continued)
 - Greater emphasis at EPA on assessing the value to society from ecosystem services and tailoring regulations to optimize these values
 - Both the environmental community and the private sector are embracing (albeit to varying degrees) market mechanisms
 - Movement on greenhouse gas trading (if successful) also may yield greater acceptance for the adoption of WQ trading and other payment for ecosystem service schemes