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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

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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

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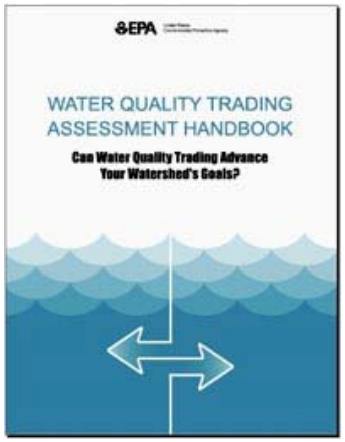
US EPA Resources and Tools

- 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



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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

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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.

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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

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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

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Other Federal Agencies (USGS, NOAA, Forest Service)

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

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States with Trading Policies In-place or Under Development

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

Note: Numerous 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