

The New York City Watershed

How is it, or is it not, an example of ecosystem services trading and market development?

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NYC Watershed Program Goals

- Provide clean drinking water to 9 million people.
- Avoid multi-billion dollar filtration costs.
- Satisfy the terms of the 1997 Memorandum of Agreement between NYC and multiple governmental and nongovernmental stakeholders.
- Avoid negatively impacting the economic viability of watershed communities.

How it Works

- Implemented through a comprehensive watershed protection program funded primarily by NYC DEP and secondarily by USDA Forest Service grants and NRCS and FSA cost share.
- Applies conservation practices on private forest and farm land to mitigate nonpoint source pollution in cooperation with landowners.
- Creates opportunities for forestry and farming land uses to perpetuate, still contingent on outside market forces.

What is it?

- A socio-economic-political-environmental agreement between government regulators and New York City pursuant to providing safe drinking water....
- A Consent Decree, known as the Filtration Avoidance Determination (FAD).
- Regulated by EPA, NYS Dept. of Health and NYS Department of Environmental Conservation.

What is it?

- Involves the watershed communities, nonprofit entities, watershed landowners and regional businesses.
- Is an alternative to restrictive land and water use regulations considered limiting to working lands business enterprises.
- Is the application of a suite of anti-degradation, conservation and economic development practices.

4 Basic Tenets

- Voluntary
- Locally led (nonprofit Boards of Directors)
- Scientifically-Based
- Funded by NYC....

What it is not

- It is not designed on the premise of direct payments to individual landowners, businesses or municipalities for the “value” of clean water (but does include USDA programs that do).
- It does not quantify services and values in monetary terms but....

“Baseline”

1. Percent of watershed publicly-owned, controlled through easements or managed under conservation plans.
2. Phosphorus levels at sub-basin scale.
3. Water quality:
 - Nutrients
 - Coliform
 - Turbidity

“Additionality”

1. Percent of watershed publicly-owned, controlled through easements or managed under conservation plans. Graduated levels of “control” through:
 - a. Development of Conservation Plans and implementation of Conservation Practices.
 - b. NYC and NGO WQ Conservation Easements.
 - c. Fee acquisition (willing sellers).

“Additionality”

1. Phosphorus levels at sub-basin scale.
 - a. Soil sampling on all farm fields.
 - b. Phosphorus indexing
 - c. Nutrient (manure) management plans (with financial incentives for adherence).
 - d. Source to Stream suite of practices.
 - e. Subsequent periodic sampling.

“Additionality”

1. Water quality:
Achieved through all means of watershed protection and tested/monitored by NYC and reported to regulatory agencies. This is where the proof is.

Improved WQ = “Additionality.”

Values Exchanged

- Clean drinking water.
- Viable working farms and forestland.
- Sustainable, long-term greening of the landscape.
- Political and civil cooperation.
- Filtration (\$\$\$) Avoidance.

Some Specific Tools With a Monetary Exchange

- Nutrient Management Credit Program
 - Adherence with Nutrient Management Plans assisted by providing equipment to farmers.
 - \$\$ Credits earned for repair and maintenance of manure spreading equipment.
 - Distance and tonnage \$\$ credit for larger farms to incentivize custom spreading.

Some Specific Tools With a Monetary Exchange

- CREP: Conservation Reserve (Enhanced) Program – USDA FSA/NRCS.
 - Riparian lands removed from disturbance.
 - Reforested through native tree plantings.
 - Conservation practices installed at government's expense and performance and supplemental incentives paid to landowner.
 - 10 or 15 year contracts with landowners with annual rental payments paid by FSA.

Some Specific Tools With a Monetary Exchange

- Cost-sharing with landowner the development of Forest Management Plans by private Consulting Forester.
- Cost-sharing or loaning specialized timber harvesting equipment (BMPs).
- Enlisting sawmills to provide a \$\$ premium for watershed woods harvested by (watershed) Trained Logger Certified (TLC).

Some Specific Tools With a Monetary Exchange

- Management Assistance Program (MAP)
 - Providing \$\$ resources through competitive grant program for implementation of Forest Management Plan components.
- Economic Assistance Program (EAP)
 - 1:1 Matching grants for creation/expansion of secondary wood product businesses.

Outcomes

- Improved Water Quality since inception of Program.
- Farm numbers have reduced, increased diversification, acres under management has not significantly decreased.
- Forestland parcelization has slowed.
- Outside market forces have likely influenced these latter trends.

Transferability

- The entire NYC watershed protection program is replicable if scaled to size of watershed and extent of resources. It is dependent on the process of engagement and the 4 basic tenets.
- More refined BMP prioritization methodologies still in process.
- Timber harvesting MP monitoring protocol.
- Riparian protection strategies (e.g. CREP).
- Pending economic developments projects.

Potential Quantitative Adaptations

- Quantify correlation between land units and amount of water protected/provided.
- More refined farm management incentives to increase grazing and no-till practices.
- Direct payments (property tax offsets?) to keep land in forest cover.
- Other?

Credits

- The publicly-available program material of:
 - The New York City Department of Environmental Protection
 - The Watershed Agricultural Council of the New York City Watersheds, Inc.
 - The US Forest Service
 - The 2002, 2007 EPA Filtration Avoidance Determinations for the NYC Watersheds