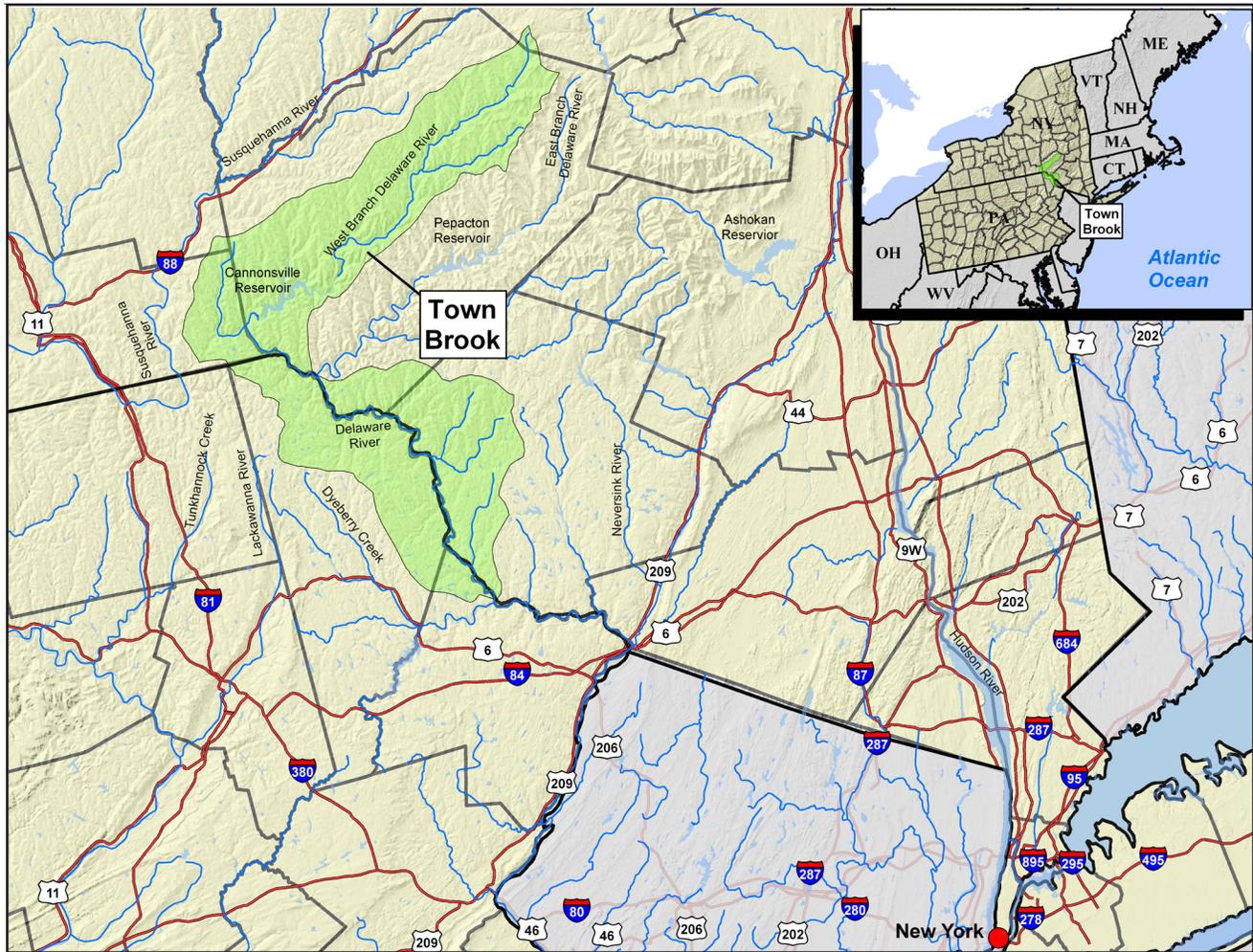




Town Brook Watershed, New York: 2004-2006

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Measure phosphorus losses from dairy farms and evaluate effects of conservation practices in reducing phosphorus losses.

Watershed Description

- Drains into Cannonsville Reservoir, a major component of New York City’s drinking water supply.
- 9,143 acres (Town Brook Watershed, sub-area of Cannonsville Reservoir Basin)
- 49% agroforestry; 48% grass and hay
- About 230 animal feeding operations in Basin (roughly 2/3 dairy, 1/3 beef)

- About 13,000 dairy cows and 1,200 beef cattle, total in both watersheds.
- Cannonsville Reservoir designated as phosphorus-restricted due to algal blooms that interfere with water treatment.
- A Total Maximum Daily Load (TMDL) has been established for phosphorus.
- Participant in Clean Water Act’s Section 319 Nonpoint Source Pollution Program.

Issues: Runoff from Catskill dairy farms pollutes reservoir with phosphorus.

*Agricultural Research Service



Rainfall simulation experimental setup.



National Phosphorus Project rainfall simulation equipment.



Soil moisture determination at a rainfall simulation site.

Approach

Water Sampling: Phosphorus and sediments

Watershed models: SWAT (Soil and Water Assessment Tool) linked with a best management practices (BMPs) tool to evaluate expected reductions in phosphorus losses; model will identify watershed hot spots where maximum reductions can be made in phosphorus losses at minimum cost.

Whole farm plans: To date, about 160 of the animal feeding operations in the Basin are participating in whole-farm planning. Approved BMPs are being installed under a 100% cost-share program supported by New York City.

Communicating Results

Three annual progress reports. Other reports: quantifying phosphorus reductions by individual BMPs, coupling of chemical and hydrologic processes controlling phosphorus losses to better understand how to control losses, suite of user-friendly indices and models to evaluate effects of BMPs.

Collaborators

- USDA Natural Resources Conservation Service
- U.S. Geological Survey
- Delaware County Soil and Water Conservation District
- Watershed Agricultural Council
- New York City Department of Environmental Protection
- New York State Department of Environmental Conservation
- Cornell University Cooperative Extension
- Cornell University Department of Agricultural and Biological Engineering

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