

CONSERVATION FARMING IN THE SCITUATE WATERSHED

Volume 1

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Scituate Reservoir Watershed Education Program

Passing on...



...Clean Water

A Collaboration Between:

NORTHERN RHODE ISLAND CONSERVATION DISTRICT

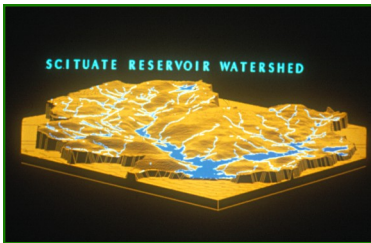
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Above is a 3-D image of the Scituate Reservoir Watershed.

Portions of Foster, Gloucester, Scituate, Johnston, and Cranston comprise this land area.

The Scituate Reservoir, lying in the lowest part of this land area, catches all water flowing over this watershed.

The Scituate Reservoir is the main source of drinking water in Rhode Island.

2012 Bulletins:

January Issue, *Vol. 1*— Nutrients, Water Quality and Rhode Island's Farms

May Issue, *Vol. 2*— Pest Management: Prevention and Control of Pests on Your Farm

September Issue, *Vol. 3*— Composting: Don't Treat Your Soil Like Dirt!



The Importance of Nutrients

As a farmer, you are already aware of the importance of nutrients in your farming practices. Whether you fertilize your crops to increase production and yield, or spread compost or manure to amend your soil, you interact with nutrients on a regular basis. Manure and compost build the soil's organic matter and fertility, and even enhance the soil's ability to hold water. While the application of nutrients is a necessary part of your business, an overabundance can potentially impact:

- crop yield and quality
- farm profitability
- drinking water and environmental quality

Nutrients and Water Quality

Nitrogen is a major concern for farmers and homeowners who get their water from drinking water wells on their property. Elevated nitrogen levels in drinking water can lead to such illnesses as "blue baby syndrome" where oxygen flow through the bloodstream is restricted in infants. High nitrogen levels can also cause reproductive problems in both humans and animals. In saltwater (Narragansett Bay), an excess of nitrogen can promote the growth of algae and aquatic weeds and lead to low oxygen levels. Water bodies with low oxygen levels can eventually lead to mass fish kills, and the reduction of other aquatic species.

Phosphorous is the nutrient of concern in freshwater systems like ponds, streams, and reservoirs. Excess phosphorous levels can have the same effect on fresh water bodies, such as the Scituate Reservoir. Since 60% of Rhode Island residents get their water from the Scituate Reservoir, maintaining low phosphorous levels are extremely important.



Above: Fish kill on Greenwich Bay as a result of increased nitrogen and a loss of oxygen, August 2003 (RI DEM).

Conservation Farmers As Good Neighbors

As a local farmer, you are an important neighbor. You provide your community with vegetables, meat, dairy products and other goods and services. As a good neighbor, you are always thinking about your impact on natural resources, and the impacts of your farm on your neighbors.

Conservation farms add character, beauty and open space to the Scituate Reservoir Watershed. This year the Scituate Reservoir Watershed Education Program is running an outreach and education campaign entitled, "Conservation Farmers as Good Neighbors." Proper farming techniques and education about agricultural issues will be taught in local schools. Students will create posters, and some of these posters will be used in a calendar that will be distributed to the community. Workshops will also be held throughout northern Rhode Island focused on nutrient management, and technical and financial assistance that your farm may qualify for.



This paper product was created in the USA from trees grown with sustainable forestry practices

Helpful Tips For Reducing Nutrients on Your Land

There are many things that you can do to help reduce the amount of phosphorous that is entering the reservoir, keeping in mind the main focus: *the reduction of soil erosion and runoff*. Below is a list of a few basic tips to keep the watershed healthy:

Don't Guess! Soil Test! Soil testing is the primary way to determine if crops and gardens are in need of supplemental nutrients. Test your soil regularly, and use the information from that test to guide your nutrient application. Apply **ONLY** what is needed. Although all plants need a certain amount of nutrients, too much can weaken plants and make them more susceptible to environmental factors and disease. Excess nutrients can also travel through the ground and reach surface waters.

Create and Maintain Vegetative Buffers near surface waters on your property to reduce runoff. Keep animals from directly accessing streams and ponds. Fence animals out or minimize their access and provide them with alternative watering sources. Leave room between a fertilizer application and surface waters or wells.

Plant Cover Crops in the off-season! Cover crops have many different functions on any farm, which include:

- Reduce soil erosion and improve soil structure
- Add organic matter and increase yields
- Reduce pest, disease, & weed pressure
- Manage nutrients and protect water quality
- Provide additional harvest and grazing options

Not sure what to plant? Check out Cornell's Cover Crops Decision Tool & Fact Sheets at www.covercrop.net.

Store Manure Properly until it can be properly spread on the land. Do not apply manure or compost when soil tests indicate high phosphorous levels. Supplement with other fertilizers to supply necessary nitrogen and potassium. See the following tips for proper manure storage:

- Keep manure and compost piles at least 100 feet away from drinking water wells and water bodies. Make sure the manure pile is downhill from your well.
- Cover, line, and contain manure storage and compost areas to keep rain, snow, and runoff from mixing in.
- Consider composting your manure— proper composting produces a stable, soil-like product that is free of pathogens and weed seeds!

For more information on *Livestock Best Management Practices*, please contact Holly Burdett, URI Home*A*Syst, at (401) 874.2249 or www.uri.edu/ce/healthylandscapes.

Scenes From Conservation Farms in the Watershed



Pine View Farm, Scituate RI

Phosphorous in the Scituate Reservoir

For the first time in history, the Scituate Reservoir is showing signs of high levels of phosphorous in the Regulating Reservoir (the water body in the village of North Scituate near Horseshoe Dam). There are likely multiple causes for the high phosphorous levels, including lawn and garden fertilizers, septic systems, animal waste from livestock, horses, pets and wildlife, soil erosion and runoff. Because the possible sources of the phosphorous loading into the reservoir are diverse, it is difficult to identify the exact sources. We are seeking your help, and we believe that we can come together as a community to reduce these high levels. This year, the Scituate Reservoir Watershed Education Program is making outreach efforts to the entire community on the common issues of septic system maintenance, responsible lawn care, disposal of pet waste, etc. Proper farming techniques are not detrimental to our water supply. **We are not looking for a reduction in farming within the watershed, but support and celebrate the increase in farms throughout the Ocean State.** Please make sure to inspect your farm, and take the proper steps to reduce the amount of phosphorous that you may contribute. *If you have any questions, please contact Northern RI Conservation District, 401.934.0840 OR by email at ksayles.nricd@verizon.net*



Arial photograph of the upper Regulating Reservoir that shows the aquatic plant growth in the northern part of the regulating reservoir. This can result from high phosphorous levels. **Courtesy of Providence Water.**

Nutrient Management Resources:

- **UMassAmherst Soil Testing:** www.umass.edu/soiltest. The function of the soil testing lab is to provide test results and recommendations that lead to the wise and economical use of soils and soil amendments. The website includes instructions on how to properly take soil samples.
- **USDA– Natural Resources Conservation Service:** www.ri.nrcs.usda.gov. (401) 828.1300. NRCS assists owners of private land throughout the state with conserving their soil, water, and other natural resources. They deliver technical and financial assistance to farmers and forest owners with resource concerns. NRCS can also provide technical assistance with nutrient and manure management!
- **University of Rhode Island Cooperative Extension Home*A*Syst Program:** www.uri.edu/ce/healthylandscapes. Holly Burdett (401) 874.2249. The Home*A*Syst program provides information on animal waste management, private well information, sustainable landscaping and other residential pollution prevention topics.