

CONSERVATION FARMING IN THE SCITUATE RESERVOIR WATERSHED

Volume 2

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Scituate Reservoir Watershed Education Program

Passing on...



...Clean Water

A Collaboration Between:

NORTHERN RHODE ISLAND CONSERVATION DISTRICT

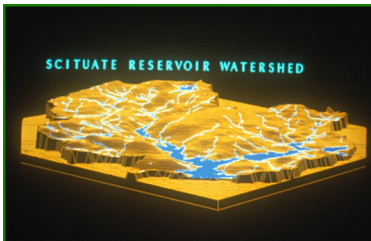
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Above is a 3-D image of the Scituate Reservoir Watershed.

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

June 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!

Prevention and Control of Pests and Diseases On Your Land

There is no doubt that you've dealt with pests and diseases on your farm or in your garden in the past. Every year can be different- from dealing with blights to tomato hornworm, to problems with deer or woodchucks or nuisance insects in your garden. Each instance is a source of anger and frustration. ***Integrated Pest Management*** (*most often referred to as IPM*) is the prevention and control of pests and diseases that focuses on looking at your garden or farm as a *whole system*. The "whole system" approach looks at each plant, animal, insect or bird that exists in and around your garden, and takes them and the way they exist together into consideration. This means encouraging the helpful insects and animals while discouraging the problem creatures. When you look all of these factors together, you will be better able to prevent future outbreaks from occurring. By understanding the principles of IPM you will be able to plan your garden in the most ideal way and reduce your use of chemical fertilizers and pesticides. The goal of this newsletter is to give you the basic information on IPM, and to provide you with the resources to make it easy for you to use this integrated approach!



Simple Steps Toward a Healthy Garden

Clockwise from top right: Encourage other insect-eaters like little brown bats (Credit: US Fish and Wildlife Service, Public Domain); cover your crops with garden fabric to protect against frost, insects, weeds and birds, and keep edges clean (Chris Gang from Red Planet Vegetables, Johnston, RI, Credit: Kate Sayles); install birdhouses to encourage beneficial birds (Credit: Gary Kramer, NRCS California); attract pollinators to your garden using wildflowers (Red Planet Vegetables, Johnston RI, Credit: Kate Sayles).



A Healthy and Productive Garden is a Diverse Garden

Follow these steps to make your garden more productive!

- **Plan your Garden** by choosing hardy, insect and disease resistant plants that are suitable for the soil and climate in your garden. Keep your garden neat, and use mulch to reduce weed growth between crops.
- **Don't Guess, Soil Test!** Having your soil tested is a simple, cost-effective way to determine if your garden is in need of supplemental nutrients. Check out the UMass Amherst Soil Testing Lab website (www.umass.edu/soiltest) for instructions on taking proper soil samples, and for information on pricing and analysis.
- **Create a Compost Pile** using household vegetable scraps, grass clippings, coffee grinds, egg shells and other organic matter. When decomposed, these ingredients make healthy, nutrient-rich, balanced soil! If your soil is low in nutrients and needs amending, incorporate your compost!
- **Rotate your Crops** from one year to the next to break the life cycle of persistent insects and pests. Avoid monocultures which can lead to large pest problems. Rotate your crops based on the nutritional needs of your plants. In the off-season, plant cover crops to improve soil nutrients and structure.
- **Discover Companion Planting!** When planning your garden, consider the placement of plants, and choose plants that are beneficial when planted together. For example, basil keeps insect pests away from tomatoes. Plant climbing beans next to corn, so they have a place to climb.
- **Monitor and Identify Pests** in your garden to better understand their life cycle. Choose methods of treating for insects in your garden based on their biology. Set pest damage thresholds for yourself— how much damage are you willing to deal with in your garden? Can you hand-pick some of the larger insects (like tomato hornworm)?
- **Encourage Beneficial Insects and Animals** to pollinate your plants and control your insect populations. Plant flowers and grasses that attract pollinators like native bees and butterflies. Set up bird houses to attract insect-loving animals such as birds (purple martins, bluebirds and chickadees) and bats.
- **Try Chemical-Free Pest Controls**, such as sticky traps, beer traps for slugs, row covers, [natural insect repellants](#), and [natural irritants](#). The control method that you use should be dependant on what you want to control.
- **Use Pesticides Responsibly!** Some insects are beneficial to your garden. Use alternative methods of pest treatment, when you can! Avoid broad-spectrum pesticides— pesticides that kill a wide range of insects. Choose pesticides that will treat only the individual species of insects that you are looking to control. Follow all of the directions for application and use precaution! Many pesticide/fungicide sprays don't work half as well as good management— with late blight, no amount of fungicide will kill it once you have it, but good garden upkeep maintenance will keep it at bay.
- **When in Doubt, Ask the Experts!** Contact your [University Extension](#), [State](#) and [Federal agencies](#), your local Conservation District, and local farmers and gardeners for more information. **Please see www.nricd.org/agriculture-forestry.htm for more resources! Once there, use the links attached to this document for easy navigation!**

IPM at Red Planet Vegetables

Matt Tracy and Catherine Mardosa from [Red Planet Vegetables](#) at Matthewson Farm in Johnston had the following advice for the Northern District about their IPM strategies.

Monitoring Pests— You Can't Beat It!! Making traps out of yellow duct tape and pheromone spray (check your local garden center) is a great way to trap insects and get an idea of what you're dealing with. Identify the insects you've caught, and learn as much as you can about them. Avoid planting certain



Beneficial Insects: Left: ladybug larva go to town on harmful aphids in the spring, so keep them around (Joseph Berger, Bugwood.org). Right: if you spot a tomato hornworm with white sacks all over it, leave it! It's being predated by a parasitic wasp, which will kill the worm and other harmful insects in your garden (Clemson University-USDA Cooperative Extension Slide Series, Bugwood.org)!

crops when the insects that affect them are around—for example, flea beetles are bad in the spring, so back off planting Brassica crops (cabbage, broccoli, etc) until late summer. Keep your garden clean and well organized so it's easy to monitor pests. Hand-picking is a lovely thing to do at the end of the day! Take a twilight stroll through your garden, make observations, and pick off larger problematic insects that are feeding on your vegetables. Look for the helpful insects too!



Cilantro that has gone to seed near the lettuce crops acts like an "insectary", providing shelter and food for native beneficial insects at Red Planet Vegetables.

Encourage Beneficials! Plant native wildflower mixes to encourage pollinators to your garden (and they dazzle in Spring, to boot)! At Red Planet, Matt and Catherine let their cilantro go to seed and use it as an "[insectary](#)" near their

lettuce crops to encourage bees, predatory wasps and other helpful insects. Other insectary plants include alyssum, clover, and edible berries (raspberry, elderberry, etc). Plant sunflowers to encourage birds, and plant buckwheat for quick, weed-smothering growth, abundant flowers and it's nitrogen fixing properties.

Prevent Against Weeds, Frost, Birds and Insects by weeding and covering your crops with garden/agricultural fabric. Use a stirrup hoe (see picture) to pull the weeds in the top layer of soil up around your plants, and leave them exposed to the sunlight for a day or so to kill them. Then, cover your crops with garden fabric, which will protect them from the elements. Since the weeds are dead, only your crop will be left to grow!



Chris Gang from Red Planet using a stirrup hoe to weed before covering crops with garden fabric.

Red Planet Vegetables started in 2004 and grows chemical-free vegetables in Johnston. For more information, go to redplanetvegetables.wordpress.com, or email Matt and Catherine at marsfarmer@yahoo.com.