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Opportunities for Local Regulation and Management of Pesticide and Fertilizer Application

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Prepared for:

North and South Rivers Watershed Association

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TABLE OF CONTENTS

LIST OF ATTACHMENTS

INTRODUCTION

The following report was developed for the North and South Rivers Watershed Association (NSRWA) by the Horsley Witten Group (HW) as part of a larger project funded by the Massachusetts Environmental Trust. The NSRWA's main goals are to protect our water resources, educate and encourage stewardship, and restore our environment by promoting responsible growth of the region. To meet these goals, NSRWA works on a variety of projects and are involved with a number of issues in the region. The Greenscapes program is one of these such programs, which promotes effective and inexpensive, organic lawn care and landscaping practices that protect the environment by reducing the need for water and chemicals (www.nsrwa.org/greenscapes). Excerpts from the NSRWA Greenscapes Guidebook are provided in Attachment A of this report.

The overarching goal of this project was to examine three major components of public and private landscaping practices that have the potential to impact water resources: 1) Water use and irrigation; 2) Landscape design; and 3) Application of fertilizers and pesticides. In all three cases, HW and NSRWA attempted to identify the most effective way to regulate or control these practices at the local level. With regard to the first two practices, HW developed three model ordinances/bylaws that can be used by local communities to address irrigation practices and landscaping design. The models apply technical requirements to a broad range of irrigation uses and landscaping practices in a way that expands the regulatory jurisdiction beyond what has been implemented to date in Massachusetts.

With regard to fertilizer use and pesticide application, research demonstrated that any attempt to regulate these activities through the use of local bylaws would be ineffective. Local bylaws designed to regulate the amount and type of these compounds would create legal conflicts and/or enforcement issues that preclude the successful application of any such regulation. From an enforcement perspective, the use of fertilizers and pesticides in residential and commercial settings occurs at unpredictable intervals, in an incredibly dispersed manner, and in a way that is rarely visible. The effective monitoring of these activities by a municipal agent would simply be impossible. From a legal perspective, the regulation of pesticide use is relegated to state-level agencies and therefore is not within the jurisdiction of municipal authorities.

Although local bylaws do not represent a viable option for municipalities to directly control the use of fertilizers and/or pesticides, there are other ways in which local authorities can indirectly impact these activities. The goal of this report is to identify these opportunities by examining existing informational resources, funding sources and outreach techniques that have been successfully applied by cities and towns in the Commonwealth.

SUMMARY OF PESTICIDE REGULATIONS

Federal Regulations

At the federal level, the Environmental Protection Agency (EPA) has the power to register and regulate pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). FIFRA allows states to have primary enforcement responsibility[1].

State Regulations

In Massachusetts, the Massachusetts Pesticide Control Act (MPCA) designates the Pesticide Bureau of the Massachusetts Department of Agricultural Resources (MDAR) as the agency in control of pesticide regulation[2]. Chapter 333 of the Code of Massachusetts Regulations pertains to State Experimental Use Permits, registration of pesticide products, licensing of pesticide dealers, certification and licensing of pesticide applicators, implementation of Integrated Pest Management (IPM) techniques and Rights of Way Maintenance Plans, prevention of non-point source contamination of drinking water supplies, and procedures for pesticide application[3]. The MPCA also includes the recently enacted Act Protecting Children and Their Families from Harmful Pesticides (CFPA), which restricts the use of pesticides on property used by school children and requires parental notification for school outdoor pesticide use[4].

Municipal Regulations

The MPCA places the exclusive authority for regulating the labeling, distribution, sale, storage, transportation, use and application, and disposal of pesticides in the Commonwealth with the Pesticide Board (Chapter 132B, Section 1). State law, therefore, preempts Municipal regulation of pesticides.

Under the current Massachusetts law, municipalities have little authority on the regulation of pesticide use. They cannot regulate pesticide use by private homeowners or by landscape professionals on private land. Towns cannot restrict pesticide use through their zoning bylaw nor can they enforce regulations set at the State level, including the CFPA.

In short, there are two primary ways in which municipalities in Massachusetts *can* implement pesticide use reduction:

1. Adopt municipal policies governing pesticide use on municipally owned land; or
2. Provide community outreach and education about pesticide use.

[1]http://www.epa.gov/pesticides/regulating/index.htm
[2]http://www.mass.gov/agr/pesticides/
[3]http://www.mass.gov/agr/legal/regs/pesticides_regulations_list.htm
[4]http://massnrc.org/ipm/index.html

HOW TOWNS CAN HELP REDUCE THE USE OF TOXIC PESTICIDES

I. Getting Started

1) Organize a Pesticide Awareness Committee

As discussed above, under current Massachusetts law, there are essentially two methods by which towns can reduce pesticide use: 1) implementing town policies governing pesticide use on town-owned land, and 2) providing community outreach and education on pesticide awareness and alternatives. In order for towns to accomplish these two goals, it is helpful to organize a pesticide awareness committee. This committee would be responsible for applying for grant funding (see "Funding Options" below), establishing a town policy restricting pesticide use on town-owned land, and providing education and outreach regarding pesticides and their alternatives. The towns of Wellesley, Marblehead, Swampscott, and Carlisle are among those that have established such committees.

The town of Wellesley has produced a useful tool to assist town pesticide awareness committees in reaching their pesticide reduction goals: the "Pesticide Reduction Resource Guide for Citizens and Municipalities of Massachusetts". This guide, which may be downloaded online, provides the laws and regulations governing pesticide use, as discussed above, a step-by-step outline for municipal pesticide use reduction, information regarding the chemical effects on health, and some alternatives to pesticides[5]. The Pesticide Reduction Resource Guide's Step-by-Step Outline for Municipal Pesticide Reduction is provided on the following page. As presented in this Step-by-Step outline, it is important to organize a pesticide awareness committee and become educated on pesticide management before drafting a pesticide policy or providing outreach and education to the community.

[5]http://www.turi.org/content/content/download/2362/21474/file/rpac_guide02.pdf

Step-by-Step Outline for Municipal Pesticide Use Reduction

1. **Read Introduction** to the Guide.

2. **Identify one key person** within the town and one from the community who will advocate and work for pesticide use reduction; or cultivate those people.

3. **Meet to develop a pesticide use reduction strategy.**
   - Identify key departments that need to be integrated into the processs; e.g. health department and those involved with maintenance of fields and buildings.
   - Identify secondary departments that need to be involved; typically town leader(s), recreation department, schools, natural resources.
   - Outline steps to take and a time line for action.

4. **Develop a list of chemicals** used on town land and buildings; or found in local hardware or garden supply stores. Find out how much your town spends on pesticides and/or contractors who are applying pesticides.

5. **Research chemical health effects** for each chemical. www.scorecard.org/chemical-profiles/; or http://data.pesticideinfo.org/; or http://ace.orst.edu/info/extoxnet/pips/ghindex.html

6. **Look up alternatives** http://www.pesticide.org/factsheets.html

7. **Develop presentation** packet to present to key departments, include:
   - Your goals (e.g. adopt an organic pest management policy for town-owned land; send yearly notices to residents);
   - Health hazards and financial cost of pesticides used in your town;
   - Describe alternatives; and,
   - Statements from individuals and organizations in support of your position.

8. **Meet with key departments** to present information packet, and bring them on board.

9. **Design flyer** from health department to send to all residents.

10. **Send flyer** to town residents from the health department.

11. **Draft town pest management policy** restricting pesticide use on town property.

12. **Adopt policy** and get it signed by key departments.

13. **Maintain information resource center** in town department.

14. **Develop long-term strategy** for continued education of the public and training for town employees. Beyond sending a yearly flyer, the strategy may include:
    - Hosting health awareness or organic lawn care talks;
    - Handing out organic landscaping brochures to residents;
    - Writing newspaper articles;
    - Involving the schools by putting pesticide awareness into the curriculum; and/or,
    - Getting local garden supply stores to sell non-toxic pest control products.

15. **Stay informed** about pesticide alternatives and adverse health effects.

2) Apply for Grant Funding

In order to raise awareness about how to reduce toxic pesticides, most Massachusetts communities seek financial support through grant funding. Three primary grant funding sources were identified for towns in Massachusetts that strive to reduce pesticide use:

- The Toxics Use Reduction Networking (TURN) Grant Program
- The New England Grassroots Environment Fund (NEGEF)
- The Pesticide Environmental Stewardship Program (PESP) Grant Program

The Toxics Use Reduction Networking (TURN) Grant Program

Communities have been able to provide pesticide awareness and outreach through the Massachusetts Toxics Use Reduction Institute's (TURI) TURN Grant Program. TURN encourages citizen involvement in the State's Toxic Use Reduction (TUR) Program, fosters collaborative action, and develops model projects and materials for other communities to replicate. The towns of Wellesley, Marblehead, Pittsfield and Newton have utilized TURN funding to build strong local and regional pesticide awareness campaigns, develop informative and data-intensive outreach materials such as brochures and guides, as well as produce organic lawn demonstration projects. Detailed descriptions of these and other town projects as well as their associated outreach materials are available on the TURN grant program website[6].

Listed below are some requirements associated with the TURN grant program.

- Downloadable grant applications are available on the TURN program website[7].

- Eligibility
  Community organizations include any non-profit group operating at the local level, particularly those involved or otherwise interested in promoting environmental activities. Their primary office and majority of work must be performed in Massachusetts. Municipalities include any office, agency, or department that is operated through a city or town in Massachusetts.

- Basic Criteria
  - Involve active partnerships and collaboration;
  - Raise level of awareness, understanding and or implementation of TUR concepts and practices at the community or municipal level;
  - Produce a concrete product such as policies, informational brochures, training workshops, surveys, or a video;
  - Be feasible within the time period of the grant program; and
  - Be replicable and transferable to other communities.

[6]http://www.turi.org/content/content/view/full/2679/
[7]http://www.turi.org/content/content/view/full/3778/

- Grant Amount
  TURI and its grant program is funded through the Massachusetts TUR Program and is located within the School of Health and the Environment at the University of Massachusetts Lowell. The maximum award amount for fiscal year 2006 was estimated to be $12,000.

- Timetable and Deliverables Anticipated for fiscal year 2006

  Milestones and Deliverables:

July 21, 26	Pre- Grant Informational Meeting
August 30	Proposals due
September 23	Notification of award
October 20	Grantees return completed contracts
October 25	TUR Training Workshop and Project Briefing **(Attendance Required)**
November 1	Projects officially begin
December – February	On-site meeting with Program Coordinator
March 16	Project Update Meeting /Interim Progress Report due/First Billing **(Attendance Required)**
June (2nd or 3rd week)*	State House Presentations or Report Out Event **(Attendance Required)**
June 28	Final Progress Report and Project Materials due/Final Billing

  *(*Dates may change)*

Massachusetts groups that have received funding include:

- Marblehead Pesticide Awareness Committee, Marblehead, MA ("Marblehead's 'Awareness through Education' Campaign and 'Organic Lawn and Garden Demonstration Project'")

- Westford Water Department, Westford, MA ("Westford's Healthy Lawns for Healthy Families Regional Project")

- Newton Green Decade Coalition's Committee for Alternatives to Pesticides, Newton, MA ("Newton's Alternatives to Pesticides Education Program")

- Wellesley Health Department and Natural Resources Commission, Wellesley, MA ("The Town of Wellesley Pesticide Awareness Campaign and Regional Pesticide Awareness Collaborative")

The New England Grassroots Environment Fund (NEGEF)

The NEGEF is a small grants program designed to foster and give voice to grassroots environmental initiatives in New England. It provides grants of up to $2,500 to fuel civic engagement, local activism, and social change[8]. The Carlisle Pesticide Awareness Group (CPAG) used grant funding from the New England Grassroots Environmental Fund in November 2003 to fund a Board of Health mailing to all town residents that asked residents to consider the health and environmental risks of lawn and garden pesticides (including herbicides, insecticides, fungicides, etc.) and to reduce or eliminate their use.

Massachusetts groups that have received funding include:

- Carlisle Pesticide Awareness Group, Carlisle, MA
- Green Decade Coalition/Newton, Newton, MA
- GreenCAPE, West Barnstable, MA
- Herbicide Free Power Lines, Plainfield, MA
- Hilltown Anti-Herbicide Coalition, Ashfield, MA
- Marblehead Pesticide Awareness Committee, Marblehead, MA
- Natick Environmental Coalition, Natick, MA
- Neighborhood Pesticide Action Coalition, Jamaica Plain, MA
- Preserve Our Pond, North Scituate, MA
- Protect Our Water Resources, Natick, MA
- Stoneham Environmental Action Committee, Stoneham, MA
- Watertown Citizens for Environmental Safety, Watertown, MA

[8]http://www.grassrootsfund.org/

The Pesticide Environmental Stewardship Program (PESP) Grant Program

The Office of Pesticide Program's Biopesticides and Pollution Prevention Division has supported a regional grant program under the PESP since 1996. The PESP program represents a cooperative effort of the EPA, USDA, and FDA to reduce the use of and risks from pesticides. Under this program EPA provides funding to support projects which promote reduced pesticide use and risk in both agricultural and non-agricultural settings. States and federally recognized tribes are eligible to submit project proposals for PESP grants; other organizations can partner with an eligible state or tribe to receive funds. Individual grant awards are $40,000 or less. Information about the grant program and downloadable forms are available on the PESP website[9].

Within EPA Region I, which includes Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, and Vermont, the contact for this program is:

Andrea Szylvian (szylvian.andrea@epa.gov)
1 Congress St Ste 1110 (CPT)
Boston, MA 02114-2023
(617) 918-1198 (phone)
(617) 918–2064 (fax)

Massachusetts groups that have received funding include:

- The University of Massachusetts at Amherst has used PESP grant funding to provide IPM education and outreach statewide.

[9]http://www.epa.gov/oppbppd1/PESP/

II. Adopt a Town Policy restricting Pesticide Use on Town-owned Land

Drafting a town pesticide management policy is Step #11 of 15 within the Step-by-Step Outline for Municipal Pesticide Use Reduction provided on page 3 of this report. Before drafting a town policy it is important to follow steps 1-10, which include organizing a pesticide awareness committee, meeting to develop a pesticide use reduction strategy, conducting research and providing awareness to the community. Once these steps have been completed, the town pesticide awareness committee should begin drafting a town policy restricting pesticide use on town-owned land. It is important to remember when drafting the policy that the town may only enforce pesticide restrictions on town-owned property. Therefore, although the policy may encourage the reduction of pesticides on private property through education and outreach, it should not include any language that refers to regulating pesticides on private property. Also, as the enforcement of the CFPA resides at the state level and not with the town, the policy can not enforce the requirements of this act.

Several Massachusetts towns have implemented town policies governing pesticide use on town-owned lands. These policies can either require Organic Pest Management (OPM) or Integrated Pest Management (IPM) on town-owned lands. IPM is an ecologically-sound approach to suppressing and eliminating pest populations to keep them from causing health, economic or aesthetic harm. IPM utilizes site-specific information about pest biology and behavior, environmental conditions, and the dynamics of human characteristics and activities in dealing with the prevention and control of pests that interfere with the purpose and use of a particular site. OPM, on the other hand, strives first and foremost to prevent pest problems through the application of natural, organic horticultural and maintenance practices. OPM can incorporate some of the principles of IPM in its program. The towns of Marblehead, Wellesley, Newton, and Andover are among those that have set in place town policies that restrict pesticide use on town-owned property. In December of 2005, the town of Marblehead Board of Health adopted an Organic Pest Management Regulation that further enforces their policy on pesticide use on town-owned property.

III. Provide Outreach to your Community about Pesticides and their Alternatives

As discussed above, in Massachusetts, state law preempts municipal regulation of pesticides, and towns can only regulate pesticide use on town-owned property. Therefore, providing education and outreach to your community about the dangers of pesticide use and possible alternatives to harmful pesticides are currently the most effective ways to reduce pesticide use on private property.

The following pesticide use reduction summary was extracted from the TURI website[10]. It provides a brief overview of what pesticides are, why they should be managed, and what can be done.

> "The term pesticide is used broadly to refer to a whole array of chemicals used to control or eradicate rodents (rodenticides), insects (insecticides), weeds (herbicides), fungus (fungicides), and bacteria (bactericide). They are used in indoor and outdoor environments such as in and around buildings, lawns, gardens, golf courses, roadsides, and roadside right-of-ways.
>
> The science and understanding of the environmental and human health effects of pesticide exposures is evolving. Since the passage of the Food Quality Protection Act in 1996, additional testing is being performed on pesticides to better understand their full effects, especially on developing children. Also, many older pesticides are being re-evaluated through a re-registration process. This has led to two commonly used pesticides, dursban (chlorpyrifos) and diazinon, being removed from the market for general use.
>
> While much is being learned about the effects of pesticides on humans and the ecological environment, pesticides are toxic by design. Reducing the use of pesticides by learning alternative approaches to pest control in public areas, homes and gardens can greatly reduce threats to public health and the environment.
>
> One toxic use reduction strategy, referred to as Integrated Pest Management (IPM), emphasizes addressing the source of the pest problem. For instance, the structural condition or sanitation of a building could attract pests and allow easy entry. Similarly, poor soil health encourages unwanted pests to thrive in your lawns or gardens. An IPM approach would entail sealing entry points of a building and testing soils to determine appropriate amendments. IPM is a systematic, common sense strategy used to obtain long-term solutions to pest problems while reducing reliance on pesticides. If a chemical control is required, the lowest risk pesticides are selected and used in a manner to reduce human exposure. Organic turf management and gardening techniques, which are well developed, provide a non-synthetic chemical approach."

[10] http://www.turi.org/content/content/view/full/3755/

It should be the responsibility of the town pesticide awareness committee to become educated on the current Federal and State pesticide regulations, pesticides currently used in the town, the hazardous effects of these pesticides (if any), and the safest and most cost-effective alternatives to these pesticides. Once the Pesticide Awareness Committee is informed, it can provide a clear message to the community.

Outreach can be provided in the form of flyers, posters, brochures, letters to home-owners and businesses, lecture series, and even television and radio advertisements. Since 1996, the TURN program has supported eight pesticide reduction projects covering over 20 municipalities in Massachusetts. Outreach materials, including flyers, brochures, posters, and letters that were associated with these projects are available online[11]. These materials could be used as examples for your own outreach campaign, although they should be reformatted to meet the needs of your community. Two focus areas for outreach and education, regarding pesticide use are: 1) the State-Required School IPM Program, and 2) pesticide use on private lawns and gardens.

Reducing Pesticide Use on School Property

The State manages the School IPM, or Integrated Pest Management, Program, required by the CFPA. According to the CFPA, administrators of daycares, schools and school age child care programs must ensure that their facility ("school property") has an IPM plan on file with MDAR. In order to assist school administrators in reaching the goals of this Act, MDAR and the Center for Agriculture at the University of Massachusetts have joined forces to create the Massachusetts Natural Resources Collaborations (NRC). Their website provides a wealth of information directed to schools and daycares, parents, and even pest management professionals[12]. There is information describing how to create and edit an IPM plan online, locate a plan by town, as well as a frequently asked questions page and a link to the CFPA regulations.

It is important to note that this act requires schools to implement an IPM plan, but not an OPM, or Organic Pest Management, plan. An OPM plan can only be required for public schools if the town creates a policy that requires an OPM plan for all town-owned property.

Although towns do not have the power to enforce this Act, they can provide education and outreach to the community about the Massachusetts law. The Children's and Families' Protection Act Implementation Guide, funded by TURI, and produced by the Toxics Action Center for Massachusetts citizens provides information regarding this Act and the rights of MA citizens as they pertain to this Act. The Guide can be downloaded from the TURI website[13].

[11]http://www.turi.org/content/content/view/full/3791/
[12]http://massnrc.org/ipm/
[13]http://www.turi.org/content/content/view/full/3796/

The Toxics Action Center conducted a project, entitled the Pesticide Free Schools Initiative, using TURN grant funding. The objective of this project was to work with five to ten neighborhood groups and their municipalities on implementation of the CFPA. Toxics Action produced and disseminated a Citizen's Guide to the law and assisted the partnering communities in developing and implementing their IPM Plans. The lessons learned were shared with policy makers and appropriate state agencies to enhance future implementation efforts.

Reducing Pesticide Use on Private Lawns and Gardens

According to Mark Buffone of the MDAR, the biggest problem faced by pesticide managers at the State level is controlling pesticide application by private homeowners. Education is essential to changing attitudes with regard to lawn care. Many private homeowners and business owners simply do not know their options when it comes to managing their lawns, gardens, and landscaping. Through education and outreach, towns can relay information regarding alternative lawn care options, and hopefully reduce the overall use of harmful pesticides and nutrient-rich synthetic fertilizers. Summaries and outreach and education opportunities for two pest management options, IPM and OPM, are discussed below.

IPM

As discussed earlier, IPM, or Integrated Pest Management, is an ecologically-sound approach to suppressing and eliminating pest populations to keep them from causing health, economic or aesthetic harm. IPM utilizes site-specific information about pest biology and behavior, environmental conditions, and the dynamics of human characteristics and activities in dealing with the prevention and control of pests that interfere with the purpose and use of a particular site. IPM often reduces the use of harmful pesticides, but may not eliminate them completely.

The MDAR Pesticide Bureau has produced a variety of publications to assist private homeowners and building managers in maintaining their own IPM program. These resources are all available on their website[14]. Among these are "A Homeowner's Guide to Environmentally Sound Lawn Care" and an "Integrated Pest Management Kit for Building Managers".

Towns can assist in implementing private IPM programs by providing education and outreach to the community. Education and outreach could include sending letters to private homes and businesses that describe IPM and its advantages, holding public seminars and workshops to teach home and business owners how to implement an IPM program, and by advertising the advantages of IPM in flyers, brochures and/or the local newspaper.

[14]http://www.mass.gov/agr/pesticides/publications/index.htm

OPM

OPM, or Organic Pest Management, is the safest form of pest management as it does not include the use of any chemical pesticides. As opposed to IPM, which can, and often does, incorporate the use of some pesticides, OPM strives first and foremost to prevent pest problems through the application of natural, organic horticultural and maintenance practices. OPM can, however, incorporate some of the principles of IPM in its program.

Several towns have begun to implement OPM programs and there are many educational resources available. The town of Marblehead, for example, through its "Awareness through Education" campaign run by MPAC (Marblehead's Pesticide Awareness Committee), has started the Living Lawn Project, an organic lawn and garden demonstration project, which broke ground in August 1998 in response to homeowners' demands for information on alternatives to typical toxic 4-step lawn care programs[15]. The program's classes on the Simple Steps Towards Organic Lawn Care have educated and inspired hundreds of homeowners who want a beautiful lawn on their own property, without the use of hazardous pesticides.

Outreach and education opportunities for OPM are similar to IPM. Through the use of flyers and brochures, and letters to private homes and businesses, towns can present the benefits of OPM and how it can be implemented. There are several examples of flyers and brochures promoting organic methods for lawn and garden care on TURI's website at http://www.turi.org/content/content/view/full/3791/.

Towns can effectively educate their communities on the advantages of OPM, and how to implement an OPM program through public seminars and workshops. Pat Beckett and Chip Osborne, co-chairs of MPAC and the Living Lawn Project have provided lectures to communities in Massachusetts and throughout the country on the Simple Steps Towards Organic Lawn Care program; organic athletic turf management for municipalities; and pesticides as a public health issue. They can be contacted via e-mail at info@livinglawn.org for booking information or by phone at 877-332-3276 Ext. 15.

Another comprehensive program that encourages alternatives to pesticides is NSRWA's Greenscapes education program. The Greenscapes program provides workshops, educational resources, and information on how to hire an organic lawn care or landscaping professional. This information is available on their website at www.greenscapes.org. For more information, communities on the south shore are encouraged to contact NSRWA (781-659-8168 or paula@nsrwa.org) and all other MA communities are encouraged to contact Wendy Garpow at the Mass Bays Estuary Association (781-378-1610 or wendy@massachusettsbays.org).

[15] http://www.livinglawn.org/

SUMMARY OF FERTILIZER REGULATIONS

Each state in the U.S. has its own fertilizer regulatory program. The scope of these programs generally deals with the shipping, handling and labeling of these materials. In Massachusetts, all fertilizer or lime products manufactured or distributed within the state must be registered with the Massachusetts Department of Agricultural Resources (MDAR)[16]. The Commonwealth regulates product labeling and licensing of manufacturers and distributors according to 330 CMR 15.00, under the regulatory authority of M.G.L. c. 128, §§ 64 through 83. Massachusetts does not specifically regulate fertilizer application, although the Department of Environmental Protection (DEP) has placed nitrogen application limits on certain golf courses as part of the Groundwater Discharge Permit program.

In contrast with the intensely monitored fertilizer application that takes place in golf course management, private homes provide a highly irregular and widely dispersed source of fertilizer application. The "behavioral" nature of this pollutant source creates a situation that is extremely difficult to monitor and leaves municipalities with few options for directly regulating fertilizer use. There are examples of communities in Massachusetts, however, that have developed some innovative approaches to water resource protection that indirectly affect the ability of some residential and commercial settings to indiscriminately apply fertilizer.

OPPORTUNITIES ARISING FROM STATE AND COUNTY INITIATIVES

The current state regulations pertaining to fertilizer use are primarily focused on protecting the commercial farmer as a consumer, and do not reference environmental implications associated with fertilizers or regulating the over-application of fertilizers by private home and business owners. The MDAR is currently working on updating these regulations with a focus on adopting the "Heavy Metals Rule". This rule, which protects human health by limiting the concentration of heavy metals in fertilizers, has been adopted by several other U.S. States. Managing nutrients in fertilizers, however, is a difficult issue to address, and the revised regulations are not anticipated to include language related to managing fertilizer over-application or excess nutrients.

Although the Commonwealth does not generally regulate the application of fertilizers, certain state level regulations do provide a window of opportunity for addressing this issue. These state level programs generally focus on protecting the quality of groundwater reserves and surface water resources from excessive nutrient loads. One example of this sort of opportunity may arise from the Massachusetts list of impaired waters, also known as the "303(d) list." This list of water bodies is assembled by the state every two years in response to a federal mandate. The Commonwealth uses available water quality data to determine if a water body meets the standards applicable to its designated use. For example, if a particular river is supposed to be "swimmable and

[16]http://www.mass.gov/agr/farmproducts/fertilizer/

fishable", but does not meet this standard due to excessive levels of pathogens, metals or other pollutants, this water body may be added to the list. The waters listed as impaired will then require a Total Maximum Daily Load (TMDL) analysis to determine how much of the specified pollutant(s) needs to be reduced in order for the water body to achieve compliance with its use designation. Where a water body does not meet the standards for nutrients, the TMDL analysis can be used as the legal framework for targeting larger fertilizer sources within a watershed.

The DEP model Groundwater Protection Bylaw/Ordinance is another example of state level regulations geared toward the protection of groundwater reserves. The model bylaw provided by DEP follows the regulatory language of 310 CMR 22.21 and is structured to allow certain land uses within Zone II or Zone III contributing areas by right or by Special Permit. The model bylaw also provides a list of uses that should be prohibited in these areas. Overall, the document provides a basic framework for establishing a Groundwater Protection District and many communities have adopted these provisions with minor adjustments to suit their local needs.

Although the model bylaw does not specifically regulate the application of fertilizers, it does provide a framework in which large scale development could be monitored for excessive use of fertilizers through the use of monitoring wells. In the Zoning Bylaw for the Town of Plymouth, for example, the Special Permit Granting Authority may require groundwater monitoring within their Aquifer Protection District for certain potentially hazardous uses[17]. These provisions could be easily expanded to include monitoring for nutrient concentrations in groundwater as a condition for issuing a Special Permit. For individual uses that may encourage fertilizer application (e.g. golf courses, larger commercial operations, community housing) restrictions on fertilizer use may be imposed in response to nutrient levels in groundwater exceeding a certain level. Because the groundwater monitoring wells provide an easier enforcement vehicle, these types of conditions may prove to be a viable option for regulating fertilizer use in Groundwater Protection Districts. Limitations of this approach may include the cost of monitoring imposed on landowners and the limited applicability to residential areas.

On a regional level, the Cape Cod Commission's (CCC) Regional Policy Plan (RPP) provides an example of targeting nutrient loads to both the sole source aquifer beneath Cape Cod and to the numerous sensitive embayments that characterize this region[18]. The Water Resources section of the RPP requires a maximum nitrogen load of five parts per million (ppm), unless it is proven that there will be no adverse impacts on water resources. To calculate nitrogen loading, the CCC has set standards for nitrogen concentrations in wastewater flows and lawn fertilizers. This indirectly controls fertilizer application rates, because new development and redevelopment must stay under this five ppm nitrogen threshold.

[17]http://www.plymouth-ma.gov/Public_Documents/PlymouthMA_TownClerk/Bylaws/zoning%20bylaws%206106.pdf
[18]http://www.capecodcommission.org/RPP/home.htm

To further protect water resources on Cape Cod, the town of Mashpee has included nitrogen loading regulations in its zoning bylaw[19]. The zoning bylaw requires that a water quality report be submitted for every subdivision plan application within the town. The report must include calculations of phosphorous and nitrogen loading generated by the project, using given standards for fertilizer, wastewater, and road runoff. The report is required to include the existing condition of the receiving water body or water supply and what the increase in loading is expected to be as a result of the proposed project. Also required is a comparison of the total nutrient loading from the proposed development with the existing and potential loading from all other developments and acreage within the recharge area of any receiving surface water body or water supply well.

PROVIDING COMMUNITY OUTREACH

As with pesticide awareness, providing education and outreach to your community about the dangers of improper fertilizer application are currently the most effective ways to manage fertilizers, and consequently nutrients, on private property. Fertilizer outreach is a good first step for decreasing the potential impact of fertilizers on our water resources, and can be provided in the same form as pesticide outreach (flyers, posters, brochures, letters to home-owners and businesses, workshops, etc.). The MDAR Bureau of Farm Products and Plant Industries manages a fertilizer webpage that contains links to the state law and regulations, as well as other useful information, including a fact sheet that provides tips when buying and applying fertilizers[20]. Although this website is intended for commercial farmers, much of the information is useful to the general public. In addition, the UMASS Amherst Extension Agriculture and Landscape Program provides fertilizer and pesticide services for commercial and private customers[21]. The North and South Rivers Watershed Association also produced a Reference Guide with some helpful fertilizer tips[22].

ADDRESSING THE PROBLEM AT ITS SOURCE

The regulatory programs established in Massachusetts for nutrient management, whether at the state, county or local level, provide a limited amount of opportunity to indirectly monitor or enforce fertilizer application limitations. Although these initiatives help frame discussions of development practices during the permitting process, they still fall short of providing widespread, easily managed, monitoring of ongoing landscape maintenance. A more effective approach, from a regulatory perspective, is to more closely examine the landscapes that are being developed in commercial and residential settings.

[19]http://www.ci.mashpee.ma.us/Pages/MashpeeMA_Planning/2006ZoningBylaws.pdf
[20]http://www.mass.gov/agr/farmproducts/fertilizer/
[21]http://www.umass.edu/agland/
[22]http://www.nsrwa.org/greenscapes/guidebook/05.fertilizeralt.pdf

As part of this project, HW and NSRWA developed a model landscape design bylaw that addresses the technical approach to developing new landscapes. The thought process behind the model bylaw recognizes that the approach to developing landscapes from the outset can have a profound effect on the amount of water and nutrients required to maintain that landscape over time. Specifications for topsoil cultivation, species selection, turf limitations, planting practices and other landscaping practices are clearly prescribed in this model bylaw. Peer review was provided by a number of stakeholders, including landscape professionals, to ensure that the bylaw provides a reasonable and technically sound approach to establishing more sustainable landscapes. The bylaw represents a truly effective way to limit fertilizer use by eliminating the need for excessive supplemental application.

ATTACHMENT A

Excerpts from NSRWA Greenscapes Guidebook

Saving water and money doesn't mean your landscape has to suffer.

See inside for tips and special offers to keep your landscape and wallet green!

The Greenscapes Reference Guide is published once a year by the North and South Rivers Watershed Association on behalf of the Greenscapes Program partners and sponsors.

NSRWA
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2006 Greenscapes Reference Guide

April 22, 2006 **Volume 2, Issue 1**

Learn how to have a beautiful landscape that protects our water.

See inside for:

www.Greenscapes.org

What are Greenscapes?

Beautiful landscapes that protect our water.

Greenscapes are full of color and interest, and require very little water and chemicals to maintain. Greenscaping is a compilation of landscape practices that drastically reduce water usage, encourage groundwater recharge, protect our water supply and reduce stormwater pollution.

The goal of Greenscapes is to let nature provide the landscapes' water and nutrient needs. In southeastern Massachusetts our soils, climate and water supply make it unrealistic to have lawns that resemble golf greens, even if we had all the time and money in the world. Established Greenscapes have plants and turf with deep roots, which are naturally resistant to drought, weeds and disease.

Greenscapes are good for you, your wallet and your environment in many ways. By following the recommendations in this Guidebook, you will:

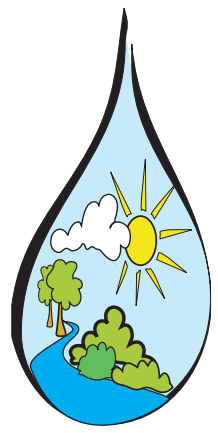
- Increase your property values;
- Save money on your water bills;
- Nuture a safe environment for your family;
- Create more habitat for wildlife;
- Enjoy more free time by doing less landscape maintenance;
- Reduce stormwater pollution; and
- Protect your community's water resources.

A beautiful and functional Greenscape with plenty of lawn for recreation. The low-maintenance plants provide interest and color to frame the backyard, including Black-eyed Susan, Butterfly Bush, Autumn Joy Sedum, and ornamental grasses.

Why should I Greenscape?

We need to make sure there is enough clean water for people and the environment.

There are two major threats facing the water resources of southeastern Massachusetts. First, like many urbanized areas in the U.S., we are running out of drinkable water sources and there is less and less water available to sustain our rivers, streams and wetlands. Second, water quality of our ponds, rivers and bays is impaired, and improvements are difficult and expensive. These two inter-related problems are partially due to maintainance of our landscapes.



Consider the amount of drinkable water that is being used to irrigate our landscapes. During the summer season, many communities are faced with water demands that are 2-3 times more than the winter season. Not only does this place a stress on the environment, but our water supply systems cannot keep up with demand. This can result in a loss of pressure and potentially cause safety concerns for fire fighting. In addition, the more water we use, the more sources of water we will have to find and develop. The cost of developing new sources of water is large and those costs are transferred to consumers and citizens.

Now consider the fertilizers, herbicides, insecticides and fungicides being used on our landscapes. Chemicals that are not immediately absorbed by plants in our landscapes can end up polluting our water through stormwater runoff. Excess nutrients either leach through the soil to the groundwater, or they are washed by rain into stormdrains that lead to the nearest waterbody, contaminating our drinking water and causing rapid alga growth in ponds and bays.

Keep reading to learn how you can have a beautiful landscape that is good for your family, your wallet and your environment too. For additional information about the Greenscapes program, be sure to visit out website **www.Greenscapes.org**.

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The Greenscapes Reference Guide is published once a year by the North and South Rivers Watershed Association
P.O. Box 43, Norwell, MA 02061 • greenscapes@nsrwa.org • 781.659.8168

The 2006 Greenscapes program is a multi-partner outreach effort sponsored by the North and South Rivers Watershed Association, the Massachusetts Bays Program, Aquarion Water Co. (Hingham, Hull), Pinehills Water Company, and the Towns of Cohasset, Duxbury, Hanover, Kingston, Marshfield, Norwell, Pembroke, Plymouth, Scituate and Weymouth.

The 2006 Greenscapes program is also financed in part by grants from the MA Department of Environmental Protection, Massachusetts Environmental Trust, and the U.S. Environmental Protection Agency. Views expressed do not necessarily reflect those of the Greeenscapes partners or sponsors, nor does the mention of any trade names or commercial products constitute endorsement or recommendation for use.

We greatly appreciate the assistance and support of these and other people who have led the Greenscapes program in their communities:

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Mike Clark, Vinny Kalishes & Anthony Antoniello

Weymouth Water Department
David Madden, Robert O'Connor and David Tower

How Do I Greenscape?

Follow the suggestions in this Guidebook.

This Guidebook will tell you everything you need to know to get started. Keep reading to learn how you can immediately and easily implement some Greenscapes principles, such as modifying how you mow and water your lawn. Other Greenscapes recomendations will require a bit more effort, such as amending your soil and overseeding your lawn with drought-tolerant grasses. Over time, consider replacing problem or low-priority areas of your lawn with beautiful planting beds.

Attend free workshops this May.

Learn about different aspects of Greenscaping from highly-qualified landscaping professionals at our free workshop series, Thursday evenings in May. The back cover of this Guide has the complete schedule and details. You must register either online at **www.greenscapes.org** or by sending us the registration form on page 20.

Sign-up for our free email newsletter.

We will send you six monthly issues with timely landscaping tips and information about the weather, watering restrictions, and upcoming Greenscapes opportunities. To subscribe, send a blank email to **greenscapes-subscribe@lists.nsrwa.org**. We will not use your email for any other purpose nor share it with others.

Take advantage of our special offers.

This Reference Guide is full of special offers to keep your landscape and your wallet green! Keep reading to find out how you can save money on Greenscapes goods and services such as rainbarrels, sprinkler timers, irrigation system checks, compost bins, private consultations and more.

Participate in the Greenscapes Contest and Tour.

Show the South Shore your fabulous Greenscape — you could win fame and fortune! Winning entries will receive gift certificates and may be showcased on the NSRWA 2006 House Tour on September 10, 2006. See page 18 for rules.

Display a Greenscapes lawn sign.

Are you already a Greenscaper or are you willing to try at least five Greenscapes tips? Let your community know you are doing your part to help protect our water with a small, attractive Greenscapes sign in your yard. Your neighbors will be green with envy as they admire your beautiful landscape and coveted sign. To get your free sign, send us the registration form on page 20.

Hire professionals who Greenscape.

When hiring a landscaping contractor to help with your landscape, provide them with a copy of this Guide and ask them to follow the recommendations. Consider choosing a contractor who is a Massachusetts Certified Horticulturist (certified by the Massachusetts Nursery and Landscaping Association: **www.mnla.com**), an Accredited Organic Landcare Professional (**www.organiclandcare.net**), and/or a certified specialist from the Irrigation Association (**www.irrigation.org**).

Encourage your landscaper to attend one of our co-sponsored training workshops for landscaping professionals, such as the NOFA Organic Lawn & Turf course in August (see page 4). Our website **www.greenscapes.org** has additional information on choosing a qualified landscape professional, as well as a list of local contractors who have attended our past training workshops.

Have a technical question?

There are lots of places to look for more information about environmentally-responsible landscaping! Consider scheduling a Greenscapes Consultation (see below) if you would like some individualized advice for your landscape. You can also call the Massachusetts Horticultural Society's free "Hort Line" at 617-933-4929 (Mondays, Wednesdays and Fridays from 10 am to 2 pm) and speak directly with a volunteer certified Master Gardener. A great source of information is the University of Massachusetts Cooperative Extension. Their website (**www.umassgreeninfo.org**) is full of fact sheets, publications, training opportunities, and other resources. Another option is to consult your local garden center with a trained horticulturist on staff.

Help sustain the Greenscapes program.

This free program is provided to citizens because of contributions from regional environmental organizations, South Shore communities, state and federal grant programs, and private donations. Please contact your community representative (see page 2) and let them know you appreciate their support of the Greenscapes program!

SPECIAL OFFER!

GREENSCAPES CONSULTATIONS

Register now for a 90-minute private consultation at your home or business to learn how you can save time, money and water by implementing Greenscapes practices. A Greenscapes Advisor will conduct a site inspection, soil analysis, and review of your existing maintenance practices. You will receive customized recommendations for improving your soil, strengthening your lawn, and beautifying your landscape. Initial 90-minute consultations are $75; optional follow-up 60-minute consultations are $50. Call Barbara Anglin at 508-732-9962 (extension 2) to schedule.

Greenscapes is an "ally" of the U.S. EPA's GreenScapes Program. **www.epa.gov/greenscapes**.

GreenScapes Environmentally Beneficial Landscaping

Pesticide Alternatives...

Prevent your lawn from becoming a "drug addict."

It is a myth that pesticides (chemicals including insecticides, herbicides, and fungicides) are a mandatory part of landscape care. Pesticides are toxic substances that may pose a health risk to your family, pets and wildlife that ventures into your yard if they are overused or carelessly applied.

Recently, nearly 70 cities and towns in Canada have imposed restrictions and bans on the use of lawn and garden pesticides. This was due to mounting evidence that such chemicals may pose an unacceptable and unnecessary risk to humans and the environment. *(American Water Works Assoc. Journal, Feb. 2006)*

There is no such thing as a weed-free or insect-free lawn.

If you look closely at even the healthiest landscapes, you will see a complex blend of plants and insects. Finding a few weeds or insects in your lawn is not a cause for alarm.

Eliminating weeds and insects altogether is not realistic nor necessary for a beautiful lawn. Pesticides can disrupt the ecological balance of your landscape by killing the microbial life, earthworms, beneficial insects and birds that keep "bad" insects in check.

Don't be tempted to rely on pesticides as a quick-fix solution to landscape problems — most insect and weed problems are signs that your landscape is not getting what it needs.

The good news is pesticides are not necessary for a beautiful, low maintenance landscape. So why take the chance if you don't have to? By following the Greenscapes recommendations on this page and elsewhere in this Guide, you will be able to naturally control most insect and weed problems.

Reconsider your definition of "weed".

Although advertisements will try to convince you they are "weeds", plants such as clover and dandelion can be attractive and useful additions to a lawn. They add color and texture, feel great to walk on barefoot, and even provide your lawn with nutrients. Regular mowing will keep these plants from taking over your lawn and make them less attractive to bees.

Remember that a "weed" is defined as any plant that exists where you don't want it – consider accepting a variety of plants in your lawn, and you automatically won't have "weeds" at all!

Routine chemicals aren't necessary.

If you have been using a chemical program in the past (either do-it-yourself or lawn treatment service), you can stop and still have a beautiful lawn. You may initially experience an increase in weeds; however, this will change as the healthy grass crowds them out. Once restored, it is still important to replenish the soil nutrients. A lawn in transition may need more fertilizer (test your soil to find out for sure), but as your soil gets healthier, the fertilizer requirement will decrease.

Your best defense is your mower.

Taller grass (mowed to approximately 3") will help prevent weeds by shading out the competition. Be sure your mower blade is sharp or you will rip and tear the grass blades, which invites disease. See page 4 for more information.

If you have a few weeds, eliminate them before they spread.

Use the "ounce of prevention" approach to weeds – if you stop ten from developing, you won't have a million to deal with. Look for weed seedlings every time you mow and persistently eliminate them before they get a foothold and spread. Pull them out by hand using a weed fork, making sure to remove the whole plant and the long taproot. To treat recurring weeds, use a vinegar-based herbicide.

Prevent weed germination organically.

Corn gluten meal can help prevent weed seeds from germinating, particularly crabgrass. Corn gluten is a natural by-product of the wet milling process of corn. Follow the directions on the bag and apply to trouble areas in the early spring before the forsythia blooms (do not apply at the same time as grass seed). Corn gluten contains 10% nitrogen, so be careful to avoid over-fertilization (see page 6 for more information). Corn gluten may require up to three years of application to achieve maximium effectiveness.

Encourage natural predators.

Put up bird feeders and bat houses to attract natural predators of insects. Birds and bats in your yard will consume insects by the thousands and provide you with entertainment too. Attracting birds and bats will not increase the likelihood of them moving into your attic or wall spaces.

If insect problems persist, seek professional help.

Before spending money on insecticides, first improve your maintenance techniques by following the recommendations in this Guide. If you still suspect an insect problem, don't self-medicate! Instead, seek advice from a respected garden center or trusted landscape specialist and follow their instructions for selecting insecticides for a specific pest (*not* a broadcast control that could kill beneficial insects). Follow their recommendations for using organic controls such as insecticidal soaps, beneficial nematodes, and/or milky spore powder.

Dispose of unused pesticides wisely.

Pesticides (insecticides, herbicides, and fungicides) are considered "household hazardous waste". Due to their toxicity and potential to pollute water resources, **it is illegal to dispose of unwanted pesticides with the trash** and you must take them to a Household Hazardous Waste collection event. Residents may attend their own town's event at no charge (see schedule below), or you may attend another town's event with permission from your town's Recycling Coordinator. For more information, contact your Town Hall or the South Shore Recycling Cooperative at 508-785-8318 or **www.ssrc.info.**

HOUSEHOLD HAZARDOUS WASTE COLLECTION

Free disposal of unwanted pesticides, herbicides, fungicides and insecticides

4/8/06	**Weymouth DPW, 120 Winter St.**
4/22/06	**Hanover Transfer Station, Rt. 139 (Hanover residents only)**
4/29/06	**Duxbury Middle School, St. George St. (with Kingston)**
5/6/06	**Plymouth DPW, 159 Camelot Dr.**
5/20/06	**Hingham — Plymouth River School**
6/10/06	**Cohasset / Hull — DCR lot, Rockland House Rd. @ G.W. Blvd., Hull**

Fertilizing Alternatives...

Let nature provide the nutrients.

Fertilizers contain nitrogen, phosphorous, potassium, and other elements that help build strong roots and plants. But as the saying goes, too much of a good thing can be bad.

Many of us unknowingly waste time and money by putting too much of the wrong kind of fertilizer on our landscapes, often at the wrong times. This is partially because our soil is not properly balanced (that is, it's too acidic or alkaline) to allow plants to absorb the nutrients they need in the first place. Not only does your lawn and bank account suffer, but so does the environment.

Generally speaking, lawns need much less fertilizer than is advertised. Fertilizers that are not immediately absorbed by plants in our landscapes end up polluting our water through stormwater runoff. These excess nutrients either leach through the soil to the groundwater or they are washed by rain into stormdrains that lead to the nearest waterbody. These nutrients can contaminate our drinking water and cause rapid alga growth in ponds and bays. Alga blooms not only make swimming and boating unpleasant, but also block sunlight and deplete oxygen, killing fish and other animals.

Save time and money by following these helpful guidelines to provide your lawn with all the nutrients it needs to be healthy, beautiful, and easy to maintain.

Have your soil professionally tested.

The foundation of a Greenscapes lawn is balanced soil that is nutrient-rich. If your soil isn't healthy, your lawn and other plants aren't healthy. Find out your soil's pH and other characteristics by sending a sample to the soil lab at the University of Massachusetts (call 413-545-2311 or visit **www.umass.edu/plsoils/soiltest** for instructions). For a small fee, you will receive an analysis and recommendations for improving your soil. Some local nurseries also provide soil sample analyses.

Add lime if your soil is acidic.

Your soil's pH should be between 6.0 and 7.0 for a healthy lawn. Most landowners in southeastern Massachusetts will find that their soil's pH is below 7, which means it is acidic. Acidic soil is more hospitable to weeds than grass because it prevents nutrient absorption. Adding lime will remedy this problem. To raise your soil's pH one point, use a mechanical spreader to evenly broadcast 40 pounds of pelletized lime per 1000 square feet of grass (that's approximately 400 pounds for a quarter-acre lawn). Be sure to determine lime quantity by the lawn surface area, *not* the total acreage of your lot.

The NSRWA is a member of the *Think Blue Coalition*. See the *Think Blue* website for a calendar of free events.

Leave grass clippings on the lawn.

Mulching mowers create fine grass clippings that will break down and add nitrogen and organic matter to the soil. Leaving grass clippings on the lawn over the season provides the equivalent of one regular fertilizer application, and will not cause thatch. Take advantage of this free natural fertilizer and let nature do the work!

Top dress with compost.

If your soil analysis shows that your lawn needs nutrients, a thin layer of compost (1/4" or less) will provide most of what your soil needs. Compost also adds organic materials that help the soil retain moisture. High-quality compost is available in nurseries by the bag or in bulk, or you can make your own. The best time to treat your lawn with compost is in the spring, by using a wheelbarrow, shovel and lawn rake. You will need about one cubic yard of compost per 1,500 to 2,000 square feet of lawn area. For more about composting, see page 7.

Aerate compacted turf.

If water puddles on high-use areas of your lawn, the soil may be compacted and need to be aerated. Aerating the lawn punches holes in the soil to allow air, water, and nutrients to reach the roots. You can rent a powered aerator from rental yards or large garden centers. Leave the small plugs of thatch and soil on your lawn and they will quickly decompose. The best time to aerate is in the early fall.

Clover is a free source of nutrients.

Dutch white clover is a beautiful low-growing, broadleaf species that used to be a welcome addition to many lawns. However, society's recent quest for the "perfect" lawn has changed this perception. White clover is a great addition to any Greenscape lawn because this hardy perennial smothers weeds, prevents erosion, retains moisture and builds fertility as it naturally "fixes" nitrogen in your soil. Clover is tough enough to withstand foot traffic and offers beautiful dark green foliage and small white flowers. If bees are a concern to your family, control the blooms with frequent mowing.

If necessary, use organic fertilizers.

If you follow the guidelines on this page, chances are your lawn already gets enough nutrients. However, if your soil test shows that you still need to add additional nutrients, choose an organic fertilizer as this will supplement your soil as well as "feed" your plants. Be sure to: (1) use an organic, slow-release, water-insoluble fertilizer at the recommended dose; (2) don't spread the fertilizer if heavy rain is predicted; (3) evenly distribute the fertilizer using a mechanical spreader at the lowest setting, going over the area two or three times; and (4) sweep up fertilizer that accidentally lands on paved surfaces.

Organic fertilizers and synthetic fertilizers are not the same.

Organic fertilizers are less concentrated, but have longer lasting benefits because they gradually release nutrients. Synthetic fertilizers are more concentrated which makes it is easier to overfertilize, burning the plant, and potentially harming soil organisms. Synthetic fertilizers also tend to be more water-soluble, leaching out of the soil faster and potentially polluting our water resources. Organic fertilizers offer an additional benefit of recycling waste that would otherwise contribute to pollution.

ATTACHMENT B

Pesticide and Fertilizer Links

Pesticide Links

Pesticide Regulations	
Federal Regulations - FIFRA	http://www.epa.gov/pesticides/regulating/index.htm
State Regulations - MPCA	http://www.mass.gov/agr/legal/regs/pesticides_regulations_list.htm
MA CFPA	http://massnrc.org/ipm/index.html
Town of Marblehead Pesticide Regulations	http://www.marblehead.org/documents/Health/BOH%20%20OPM%20REGULATION%20DEC%202005.doc
Grant Programs	
TURI	http://www.turi.org/content/content/view/full/2679/
NEGEF	http://www.grassrootsfund.org/
PESP	http://www.epa.gov/oppbppd1/PESP/
Other Pesticide Links	
NSRWA Greenscapes Program	www.greenscapes.org
MDAR Pesticide Bureau	http://www.mass.gov/agr/pesticides/
Pesticide Reduction Resource Guide	http://www.turi.org/content/content/download/2362/21474/file/rpac_guide02.pdf
TURI Outreach Materials List	http://www.turi.org/content/content/view/full/3791/
MA NRC School IPM Program Outreach	http://massnrc.org/ipm/
CFPA Implementation Guide	http://www.turi.org/content/content/view/full/3796/
MDAR Pesticide Publications	http://www.mass.gov/agr/pesticides/publications/index.htm
UMASS Entomology Dept. – community outreach	http://www.umass.edu/ent/outreach/
Carlisle Pesticide Awareness Group	https://home.comcast.net/~carlislepag/
Wellesley Pesticide Awareness Committee Homepage	http://home.comcast.net/~little.sarah/
Natick Pesticide Outreach Brochure	http://natickma.virtualtownhall.net/Public_Documents/NatickMA_Health/LWP.pdf#search=%22massachusetts%20pesticide%20brochure%22
EPA New England Pesticide Program Homepage	http://www.epa.gov/ne/eco/pest/index.html
UMASS Turf Program Homepage	http://www.umassturf.org/
UMASS Turf Program Publications	http://www.umassturf.org/publications/publications.html
GreenCAP – Committee for the Alternatives to Pesticides (Newton)	http://www.greendecade.org/greencap.html
Harvard Pest Management Website	http://www.uos.harvard.edu/ehs/pes.shtml
Beyond Pesticides	www.beyondpesticides.org
Marblehead Pesticide Awareness Committee	http://livinglawn.org/mpac5.html
Grassroots - Alternatives to Pesticides	http://www.grassrootsinfo.org/alt2pest.html
Alliance for a Healthy Tomorrow (work on legislation to protect the public from environmental toxins)	www.healthytomorrow.org
Toxics Action Center	http://www.toxicsaction.org/
Toxics Action Center's Refuse to Use Chemlawn campaign	http://www.refusetousechemlawn.org/

Fertilizer Links

Fertilizer Regulations	
State Law	http://www.mass.gov/agr/legal/statutes/fert/index.htm
State Regulations	http://www.mass.gov/agr/legal/regs/farmprod_1500~1_fertilizerlime.pdf
Other Fertilizer Links	
NSRWA Greenscapes Program	www.greenscapes.org
MDAR Bureau of Farm Products and Plant Industries Fertilizer Page	http://www.mass.gov/agr/farmproducts/fertilizer/
Association of American Plant Food Control Officials	http://www.aapfco.org/
UMASS Extension Agriculture and Landscape Program	http://www.umass.edu/agland/
MA DEP Model Groundwater Protection District Bylaw/Ordinance	http://www.mass.gov/dep/water/modgwpd.pdf