

Home*A*Syst

for New Jersey



If yours is like most homes, it is surrounded by lawns, gardens, shrubs and trees -- which require regular maintenance. This assessment examines the potential impact of yard and garden care on the environment and on your health.

Topics covered:

- ✓ **Soil testing**
- ✓ **Fertilizers**
- ✓ **Pesticides**
- ✓ **Lawn type and maintenance**
- ✓ **Ground covers and erosion protection**
- ✓ **Composting**
- ✓ **Water conservation**

This worksheet helps you identify and evaluate pollution risks, and gives tips for reducing those risks.

Yard & Garden Care

What are the environmental concerns?

Your yard and garden, which are the largest and most natural settings of your home and property, might be the last places you would look for environmental problems. Behind beautiful landscapes are activities that may threaten your health and the environment. On average, homeowners use 10 times more chemical fertilizers and pesticides -- per acre -- than farmers use on farmland. Especially if applied improperly, these chemicals can find their way into drinking water wells, and pollute nearby lakes and streams. Closer to home, children are particularly vulnerable to pesticides that are stored or used without proper safety precautions.

Other problems occur when exposed soil washes away during a storm, harming wildlife habitat and choking waterways. Indiscriminate watering of lawns and gardens wastes large amounts of clean drinking water. Gasoline-powered mowers, weed cutters, leaf blowers and other devices make noise and pollute the air. *Powered by a two-cycle engine, a lawnmower in one hour spews the same amount of exhaust as a car driven 350 miles.* While it may seem that your contribution to pollution is minor, the cumulative effects of chemicals, soil loss, and wasted water from thousands of homes in your watershed have a significant impact.



Are you using your time and money effectively?

Americans spend a lot of money on garden gadgets, flowers, seeds, and chemical products. They also dedicate many

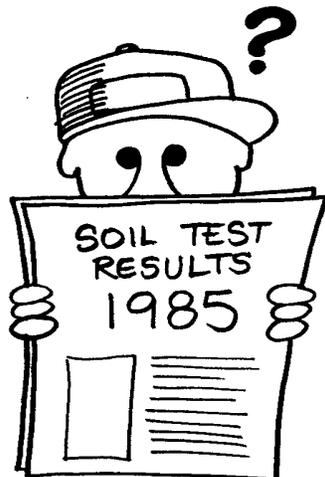
hours of leisure time caring for their yards and gardens. Valuable time and money may be wasted, however, if they do not follow environmentally-sound practices. Why are you spraying for a pest at the same time every year if you're not even sure it's even there? Think about the cost and effort to replace lawns or plants damaged by over-fertilization or misuse of pesticides. Areas with eroded soil are not only unsightly but require hard work to return them to productive use. Imagine how much less time lawn care would take if you did not have to rake and bag grass clippings. You can have low maintenance lawns without losing the well-kept appearance of your home. Good management practices not only benefit the environment, they can save you time and money.

Greening the White House

Take a cue from the White House where the groundskeepers have launched gardening and landscaping practices that protect the environment. White House staff now use Integrated Pest Management (IPM), an environmentally-friendly approach that controls pests using a minimum of chemicals. They fertilize only in autumn to reduce runoff, limit watering to the early morning hours to save water, and leave grass clippings on the lawn where they decompose naturally.

Managing Your Lawn, Garden, and Landscape

A well-kept home landscape with attractive flowers, woody plants and often a green lawn, is desired by most homeowners. Much time and money is spent to achieve this ideal, and the number of products and lawn-care services increases each year to meet the demand. Normal applications of lawn and garden products generally pose few problems. A properly

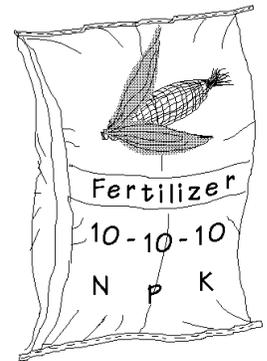


maintained home landscape, in fact, can help reduce soil erosion and increase water retention and soil fertility. Poor maintenance -- either through neglect or excessive chemical applications -- can lead to soil problems, polluted runoff that can make its way to Barnegat Bay, and unsafe drinking well water.

Look over the topics below, and read the ones that will help you better understand your yard and garden practices. Fill out the assessment table at the end to see where improvements might be needed.

Has your soil been tested?

Adding fertilizer without first testing your soil is like taking medicine without knowing if you need it. Your soil already has some of the nutrients -- such as phosphorus and potassium -- needed for good plant growth. It is important to find out how much of each nutrient is present. Soil testing takes the guesswork out of how much fertilizer to use. Call your county office of Rutgers Cooperative Extension to purchase a soil test kit. Testing involves taking small samples from 10 - 15 different locations in your yard or garden. The soil is analyzed at the Rutgers Soil Testing Laboratory and you receive a customized lab report indicating the amounts of each nutrient in each sample, as well as fertilizer recommendations. Because of local differences, some parts of your property may need regular applications of fertilizer while other areas may need little or none. Soil tests should be conducted every three years.



What fertilizers are needed for your lawn?

Nitrogen is the key plant nutrient for building a thick green lawn. Applied at the right time and in the right amount, fertilizers will supply the nitrogen you need. If applied at the wrong time or in the wrong amount, you may make conditions worse; insect and disease problems can increase. If too much is applied, fertilizer is likely to wash away before the grass uses it up, contributing to unwanted plant growth in nearby streams or lakes,

called eutrophication, rather than in your yard. Especially in sandy soils, nitrogen and other chemicals can seep downward and enter groundwater used for drinking. Also, if too little or the wrong type of fertilizer is applied you may develop poor turf, which can lead to increased soil erosion. Acidic soils may also require the addition of lime to raise the soil pH and enhance the availability of essential plant nutrients, improve soil structure, and enhance the growth of beneficial soil microorganisms.

If you hire a lawn care service, make sure they test your soil first. Insist that lawn chemicals only be applied when the weather is favorable -- when rain is not expected for at least 24 hours -- unless the chemicals need to be watered in. Be sure to keep children and pets away from treated lawns for at least 24 hours. Sweep excess fertilizer from walks, driveways, and roadways back onto the lawn before it is washed away by rain. Non-chemical fertilizers, such as compost and fish meal, and other soil amendments also should be applied based on the needs of your lawn.

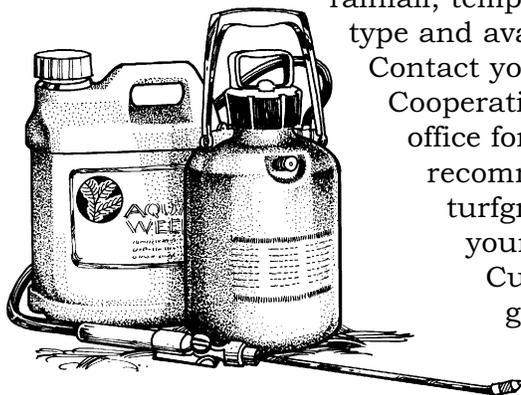
Are you taking proper care of your lawn?

It will be easier to keep your lawn healthy if the type of grass is suited to local growing conditions --which includes rainfall, temperature, soil type and available light.

Contact your county Cooperative Extension office for a list of recommended turfgrasses for your region.

Cutting the grass to the right height is important; lawns

cut too short invite weeds to invade. Grass clippings should be left on the lawn--in many cases they supply enough natural fertilizer so that only minimal additional fertilizer is needed to keep your lawn green and healthy. Switching to a human-powered or reel mower can cut down air and noise pollution. If you reduce your lawn size and grow plants that require little maintenance, such a mower can be practical.



Are you applying pesticides and herbicides wisely?

Although hand-removal of weeds, insects and other pests is safest for the environment and your health, chemical pesticides -- if properly used -- may pose only a minimal risk. The key is doing your homework before you start treatment. Correctly identifying the pest is the first step. Many plant problems are not caused by insects or disease, but are related to temperature extremes, waterlogging or drought, lawn mower damage, or overuse of chemicals. Learn when, where, and if pesticides are needed and if alternative treatments exist, such as horticultural oils. Apply them only where pests occur, not based on the calendar. Select products that are the least toxic or

that break down quickly into less harmful substances. Check with your county office of Rutgers Cooperative Extension or garden supply stores for information.



Pull weeds by hand instead of controlling with chemicals.

Remember that pest prevention is often simpler, and cheaper, than pest removal. If you have disease-resistant grasses or other plants--and keep them healthy--pests will be less of a problem. Be sure to ask yourself, for the sake of clean groundwater and an environment with fewer chemical pollutants, if you can tolerate a few more weeds and insects around your home. This concept is called "IPM."

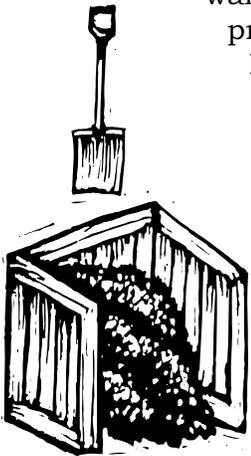
Integrated Pest Management. It sounds fancy, but Integrated Pest Management, or IPM, is simply a logical approach to controlling pests in your landscape. Although the use of non-chemical pesticide controls is preferred, chemicals may be used selectively as a last resort. Weeds can be controlled by hand-pulling or hoeing, and insects can be removed by picking them off vegetables and garden

plants. Clean up dead leaves and debris before they become a home to pests. Using natural predators to control pests is another method; you can release beneficial insects and microorganisms -- that feed on pest insects -- into your garden. When you have no other choice, try to find non-toxic or low-toxic pesticides such as insecticidal soaps. Follow directions carefully and mix only the amount you need. IPM may require more of your time and attention by regularly inspecting plants, but the benefits are clearly worth it! If hiring a landscape maintenance firm, see if they offer IPM as an option.

Do your landscape practices help prevent soil erosion?

Like pesticides and fertilizers, soil washed away by rain can pollute local streams and lakes. Even if you do not live near water, soil will be carried there by runoff from storms. Gardens, lawns, and construction sites with areas of bare soil, especially on sloped land, are prone to soil erosion. You can protect soil and reduce erosion by planting groundcover vegetation, using wood-chip mulch or landscape fabric, or maintaining a healthy turf. On steep slopes, plant a vigorous groundcover, avoiding turfgrass which requires mowing.

Building terraces or retaining walls on slopes can also help prevent soil loss. As with lawns, choose native plants that are suited to the area and are insect and disease resistant.



Do you make compost?

Composting is a cost-effective, natural way to handle leaves, clippings, vegetable scraps, and other yard wastes - materials that can no longer be sent to

landfills. In the end, you get a high-quality soil amendment. Composting takes advantage of nature's recycling system for breaking down plant and other organic materials. You can simply put yard wastes in a pile, or install a homemade or store-bought bin. In addition to yard waste, you can add vegetable trimmings and fruit peels (but not meat) from your

kitchen. Your compost pile will remain relatively odor-free if it is turned and aerated regularly.

Finished compost is valuable. It can be mixed into garden soil or spread on lawns as a slow-release source of nutrients. One word of caution: animal manures contain high levels of nitrogen, and different types of animals have different levels. If manure is left in piles exposed to the weather, nitrogen-rich runoff may result. If you mix manure from horses, sheep, cows or other plant-eating animals to your compost, be sure to add plenty of leaves, straw, sawdust, or pulled weeds to keep concentrations of nitrogen and other nutrients low. This will help prevent contamination of groundwater. Do not put pet wastes (from cats and dogs) in compost piles because of potential parasite and disease problems. Try to locate piles at least 50 feet from your well and from lakes and rivers. Check with your county office of Rutgers Cooperative Extension, garden stores, the library and your neighbors for ideas.

If you don't make your own compost, your county or municipality may have compost available for residents and landscapers. Check with your local recycling coordinator.

Do your yard care practices save water?

The average American uses up to 200 gallons of water each day. About half of that water may be used for landscaping and gardening, depending on climate and time of year. This is an immense amount of clean water -- and only a small portion is actually used by your plants. If you convert your landscape plants to native drought-tolerant plants adapted to your region and climate, you will take the biggest step in conserving water. Many perennial flowers conserve water because their roots grow deeper than annual flowers and require little or no watering once established. A shallow mulch -- around two inches -- of wood or bark chips over bare soil will keep water from evaporating and also reduce stormwater runoff.

Watering wisely. Watering slowly and deeply helps develop deep roots; in the long run your plants will need less frequent watering since they can tolerate short dry periods.

The plants that seem to benefit most from shallow watering are the ones you don't want--weeds. Over-watering wastes water and can injure certain plants. A good rule of thumb is to apply 1 inch of water per week. Another option is to allow established cool-season lawn

grasses to go dormant during the hot, dry summer rather than irrigating. Drip irrigation systems and soaker hoses deliver their water to the intended plants efficiently. The time of day when you irrigate matters, too--early morning is best.

ASSESSMENT 1 -- Assessing Your Yard and Garden Care

	LOW RISK	MEDIUM RISK	HIGH RISK	YOUR RISK
Fertilizers	Soil tested for nutrients and fertilizer used as recommended.	Soil tested, but more fertilizer used than is recommended.	Soil not tested and fertilizers used in large amounts. Fertilizer applied when ground is frozen.	
Pesticides	Non-chemical or low-chemical methods used to control pests (Integrated Pest Management).	Chemicals used according to label instructions.	Chemicals used without regard to label instructions or conditions.	
Lawn type and maintenance	Turfgrass suited to soil type, available sunlight, and climate. Pest-resistant grass preferred. Mowed to proper height.	Turfgrass is suited to the site but is well-fertilized and mowed short.	Grass type not suited to available light, soil or climate. Grass type is pest prone. Mowed too short. Too much thatch and over-watered.	
Ground covers and other plantings	Ground cover, flowers, trees and shrubs planted to reduce soil erosion. Plantings resist insects and disease.	A slow-spreading ground cover is used.	Lack of ground cover causes soil erosion. Plants require insect and disease-fighting chemicals to survive.	
Composting	Compost pile well-maintained and contains yard waste, vegetable food scraps, and nitrogen source, such as manure.	The compost pile is poorly maintained: It is not aerated or lacks the proper mix of materials. Dog, cat, and other pet wastes are added to the pile.	The compost pile is poorly maintained: It contains excessive high-nitrogen material and is not turned regularly. The pile is less than 50 feet from a shallow well or surface water.	
Water requirements of plants	Grass, flowers, trees and shrubs able to survive with normal rainfall.	Landscape plants require light to moderate watering.	Heavy watering is required to keep lawn and other plants alive.	
Watering methods	Watering done in the morning or evening, only as needed. Low water-use devices (like soaker hoses) are used. The sprinkler system is on manual control.	Watering is excessive. (For example, the sprinkler is left unattended and much of the water lands on the pavement.)	Watering done during the heat of the day and daily. Sprinkler systems are used without regard to weather conditions. There is excessive water runoff.	

Assessment 1 -- Assessing Your Yard and Garden Care

The table on page 77 helps you identify potential environmental risks related to your yard and garden maintenance practices. For each question, put the risk-level number (1, 2, or 3) in the column "Your Risk." Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the previous pages if more information is needed to complete this chart.

Responding to Risks

Your goal is to lower your risks. Complete the Action Checklist below to help you make plans to reduce your risks.

ACTION CHECKLIST

On the table below, write all medium and high risk practices you identified. For each medium and high risk listed, write down the improvements you plan to make. Use recommendations from this worksheet and other resources listed below to decide on actions you are likely to complete. A target date will keep you on schedule. You don't have to do everything at once, but try to eliminate the most serious risks as soon as you can. Often it helps to tackle the inexpensive actions first.

Write all high and medium risks below.	What can you do to reduce the risk?	Set a target date for action.
<i>Sample:</i> Fertilizers applied but soil has never been tested.	Contact your county office of Rutgers Cooperative Extension and request a \$6.00 soil test kit. Take soil samples and send to lab.	One week from today.

FOR MORE INFORMATION...

Who to contact for more information about lawn and garden maintenance:

Soil testing. Contact your county office of Rutgers Cooperative Extension to purchase a soil test kit for \$6.00.

New Jersey Poison Control Center. 1-800-POISON-1 Keep this number by your phone in case of emergency.

Publications and Resources

Rutgers Cooperative Extension is an excellent source of impartial information on proper lawn and garden care. Contact your county office of Rutgers Cooperative Extension for single copies of the fact sheets listed below, most of which are free unless otherwise noted. For bulk copies contact the Publications-Distribution Center, Cook College-Rutgers University, PO Box 231, New Brunswick, NJ, 08901, (732) 932-9762.

FS 117 Using Leaf Compost

FS 191 Pest Resistant Trees and Shrubs

FS 389 Minimizing Waste Disposal: Grass Clippings

FS 450 Using Water Wisely in the Garden

FS 521 Zoysiagrass Lawns in New Jersey

FS 584 Seeding Your Lawn

FS 595 Low Water Use Landscaping

FS 596 Principles of Low Water Use Landscaping I: Water Only When & Where Needed

FS 597 Principles of Low Water Use Landscaping II: Improve Your Soil

FS 598 Principles of Low Water Use Landscaping II: Low Water Demanding Plants

FS 599 Principles of Low Water Use Landscaping IV: Apply Mulches

FS 626 Fertilizing the Home Vegetable Garden

FS 633 Fertilizing the Home Lawn

FS 635 Managing Soil pH for Turfgrass

FS 675 Nutrient Sources for Growing Plants by the Organic Method

FS 684 Turfgrass Selection for Home Lawns

FS 766 Lawn Fertilizer Spreader Calibration

FS 797 Soil Testing for Home Lawns and Gardens

FS 826 Sources for Home Compost Bins

FS 839 How to Calculate the Amount of Fertilizer Needed for your Lawn

Grass: Cut It and Leave It

E080 Landscaping for Water Conservation (\$2.00)

Other publications available:

IPM: Integrated Pest Management from New Jersey Department of Environmental Protection, Office of Environmental Planning, 4th floor, CN 418, Trenton, NJ, 08625, (609) 633-1179.

A Greener Thumb. Rutgers Cooperative Extension offers a video, information packet, and educational outreach program focused on minimizing homeowner use of fertilizer, pesticide, and water in the landscape. Contact Mike Olohan, 80 Nichol Ave., New Brunswick, NJ 08901, (732) 932-0640 or E-mail: olohan@aesop.rutgers.edu for more information.

This Home*A*Syst assessment does not cover all potential risks related to yard care which could affect health or environmental quality. It is meant to serve as a starting point for identifying and addressing the most apparent problems and risks. There are other Home*A*Syst worksheets -- on a variety of topics -- to help homeowners examine and address their most important environmental concerns.

This worksheet was written by K. Marc Tefteau and Ray Bosmans, with the University of Maryland Cooperative Extension Service.

This worksheet was adapted for use in New Jersey and technical review provided by Joseph R. Heckman, Extension Specialist in Soil Fertility, Rutgers Cooperative Extension; Deborah Smith-Fiola, Agricultural Agent, Rutgers Cooperative Extension of Ocean County; Jan Larson, Program Associate in Natural Resource Management, Rutgers Cooperative Extension of Ocean County; Michael Olohan, Program Associate in Watershed Management, Rutgers Cooperative Extension, and Theodore B. Shelton, Ph.D., Rutgers Cooperative Extension.