

Conserving Water on Home Lawns and Landscapes in New Jersey

Michael T. Olohan, Former Program Associate in Watershed Management & Theodore B. Shelton, Ph.D., Extension Specialist in Water Resource Management (retired)



To conserve water on your lawn and landscape as well as minimize water use, New Jersey homeowners have a variety of options to choose from. These options will reduce the overall use of water as well as create a more environmentally friendly home landscape. By conserving water and establishing low-water use, drought-resistant plantings, you'll also reduce maintenance time and promote a more sustainable, low-input (less fertilizer, pesticide, and water) home lawn and landscape.

Principles of Low-Water Use Landscaping

- * Water only where and when needed.
- * Improve your soil for optimum water holding capacity.
- * Use low-water demanding or native plants and consider reducing lawn size.
- * Apply organic/inorganic mulches.

Water Only Where and When Needed

Water the lawn only when and where it's needed. Remember that millions of acres of crops, in New Jersey and elsewhere, depend entirely on natural rainfall. Watering is only necessary when rainfall does not occur for an extended period.

On a windy, bright sunny day, as much as 40% of sprinkler-applied water is lost to evaporation. Early morning watering (4:00–8:00 A.M.) is best to avoid disease and conserve water.

The typical thunderstorm may provide 1/2–3/4 of an inch of water. Use an inexpensive plastic rain gauge to check natural rainfall or put empty coffee cans on at least two areas of the lawn and measure. If rainfall is sufficient, you may wish to turn off automatic sprinklers or stop watering for 4–7 days.

Knowing when to water is very important. The best way to do this is to check your soil moisture periodically. Use a hand trowel to check the upper 6 inches of soil for moisture.

This is easy and practical. Being knowledgeable about the plant's cultural requirements will include knowing its watering needs, and drought tolerance. Cool-



season grasses generally require 1–1½ inches of water per week for optimum growth. Turfgrass, for example, may take on a dull green color when water is needed. Another indication that it is time to water is when footprints remain in the grass for some time. Drought-tolerant lawn mixes for sun/shade are available at garden centers.

To encourage drought-tolerance in your plants, gradually adapt them to infrequent but deep watering. Even for low-water demanding varieties,



it takes about two growing seasons for new plants to develop sufficient roots to withstand extended dry periods. Most bluegrass will go dormant during a drought and await rain. However, some varieties may not recover from a long dry period. If reseeding, consider a drought-tolerant turf-type tall fescue or hard fescue.

Many types of irrigation systems exist to help the homeowner apply the correct amount of water to trees, shrubs, and gardens. Drip irrigation systems provide a controlled flow of water directly to the plant's root system. Wasted water due to runoff, overspraying, and evaporation is greatly reduced.

Modern drip systems will pay for themselves very quickly in the cost of water and time you save. Systems are available which are easily installed by the homeowner. Currently, drip systems have not proven reliable for lawns. However, there are efficient sprinklers for turfgrasses.

Improve Your Soil

Probably the most overlooked aspect of landscape water conservation is improving the soil for optimum

water-holding capacity. In New Jersey, clay soils are typically found in the northern part of the state and sandy soils in the south, with a diversity of soil types in between. A good soil should be well-drained; hold nutrients, sufficient moisture, and oxygen; and be the correct pH for the plants being grown.

Clay soils are often very compact with little aeration. Plant roots suffer from oxygen starvation and clay also binds water, causing plant roots to rot. Sometimes, plants will wilt even when there is available soil moisture. Sandy soils have soil particles so large that they do not hold water. Water is wasted in sandy soils as it percolates below the root zone, often removing valuable plant nutrients.

Improving the soil by adding organic amendments such as compost or peat moss will help increase soil aeration, water retention, and microorganism activity, and moderate pH. This will enhance soil health and nutrient availability. (See RCE fact sheets FS074, *Backyard Leaf Composting*, and FS117, *Using Leaf Compost*, for information on how to make your own backyard compost.)

When redesigning your landscape, 2–4 inches of compost or peat moss should be incorporated into the top 6–9 inches of topsoil, or approximately six cubic yards per thousand square feet. Adding organic matter to your lawn by topdressing with compost or other organic soil amendments at 1/4–1/3 of an inch per application will gradually improve soil texture, and reduce reliance on applications of fertilizers, pesticides, and water.

Use Low-Water Plants and Minimize the Lawn

By using low-water demanding plants and minimizing the lawn, you can drastically cut water use on the home landscape. Reducing the size of the lawn and using sound cultural practices to establish, maintain, and manage it will result in more efficient water use. Many ground covers thrive

where grass does poorly—under dense shade or shallow-rooted trees such as Norway Maple, European Beech, or Horsechestnut.

Ask yourself these questions:

- ✓ Are you growing grass where grass is impossible to maintain?
- ✓ Are you trying to grow grass where active play tramples out all vegetation?
- ✓ Are you growing grass just because you can't think of anything else to plant?

You should plan your landscape by balancing lawn areas (active play and recreation areas) with other aesthetic and low-maintenance considerations. Remember: lawns require a lot of work. Consider these five factors for proper care and management:

1) Seed Selection

In the shade, under low-fertilizer conditions, the fine fescues are still the most successful of the grasses. Some bluegrasses are drought-tolerant such as Mid-Atlantic and Midwest. Bluegrasses are good in full sun and well-drained soil, but require more water, fertilizer, and attention. Perennial ryegrasses, and tall fescues in mixtures do well in full sun and heavy traffic. Tall fescues take 1–2 years for adequate root development before they tolerate heavy foot traffic.

2) Fertilizer and Lime

Do not overfertilize your lawn. Test your soil and determine its current pH, texture, and nutrient levels at least once every 3–5 years. Returning clippings to the lawn may reduce fertilization needs up to 50%. County offices of Rutgers Cooperative Extension sell soil test kits for a nominal fee. Separate soil samples are required for each different area. Established fescue lawns can usually survive with only one feeding a year, preferably in mid- to late-November. Fertilization ultimately depends on variety, turf quality desired, and the amount of

turf maintenance desired.

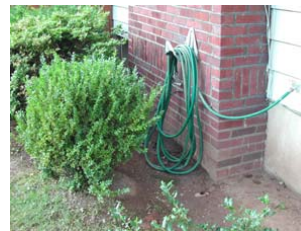
3) Mowing

Mowing height is an important consideration during droughts. Lawns cut shorter than two inches are prone to browning out. Increase mowing height and cut less than 1/3 of the grass blade to avoid summer lawn scorching.



4) Watering

Water only when needed. A bluegrass lawn needs water when it takes on a wilted blue appearance. Become aware of stress areas



within the lawn, such as areas in competition with shade and shallow tree roots, compacted soils, and southwest embankments. Drip irrigation can be used under mulches

during daytime since mulch reduces evaporation. Make sure sprinklers water the lawn, not the street, driveway, or sidewalk.

5) Turfgrass Alternatives

Alternatives to grass provide variety in the landscape. These include organic and inorganic mulches and living ground covers. Three shade-tolerant groundcovers are English Ivy, Pachysandra, and Periwinkle. Varieties of low-growing junipers provide interest year-round and flourish on steep, dry, and sunny sites. Refer to Rutgers Cooperative Extension bulletin E080, *Landscaping for Water Conservation, A Guide for New Jersey* for a complete selection of living and woody ground covers, landscaping techniques, and native, drought-tolerant trees, shrubs, and

plants.

Apply Organic and Inorganic Mulches

Mulches are divided into two basic types: organic or inorganic. Some organic mulches that will break down and improve the soil while retarding weeds and conserving water include wood chips, bark chips, and shredded bark. For weed reduction, an organic mulch should be 3–4 inches thick. Other organic mulches include salt hay, grass clippings, compost, and finely shredded paper. These mulches add organic matter to the soil as they break down and



enhance beneficial microorganisms.

Inorganic mulches may range from pea-size gravels and river-worn cobbles to boulders. If porous black plastic is laid out first, and then overlaid with 3–4 inches of gravel, weed control and water retention are greatly enhanced. Black plastic should not

underlay organic mulches because they slide off and the black plastic looks unsightly. Other inorganic mulches include landscape fabric, porous plastic, and foil. (See RCE fact sheet FS058, *Mulches for Vegetable Gardens*.)

Mulches can be used around the edges of lawns, under trees, on flower beds, and vegetable gardens. Mulches help conserve soil moisture by minimizing runoff and allowing the rain to slowly soak into the soil. Mulches also reduce weed growth, help moderate soil temperature, and may decrease garden disease problems.

(NOTE: This fact sheet revises and updates information in previous Rutgers Cooperative Extension fact sheets FS596, FS597, and FS598, the “Principles of Low-Water Use Landscaping” series.)

Other Resources...

- FS058 *Mulches for Vegetable Gardens*
- FS074 *Backyard Leaf Composting*
- FS117 *Using Leaf Compost*
- FS688 *Fine Fescues: Low-Maintenance Species for Turf*

Photos Courtesy of Nicholas Polanin

© 2004 by Rutgers Cooperative Research & Extension, NJAES, Rutgers, The State University of New Jersey.

Desktop publishing by Rutgers-Cook College Resource Center

Revised: July 2004

**RUTGERS COOPERATIVE RESEARCH & EXTENSION
N.J. AGRICULTURAL EXPERIMENT STATION
RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY
NEW BRUNSWICK**

Distributed in cooperation with U.S. Department of Agriculture in furtherance of the Acts of Congress on May 8 and June 30, 1914. Rutgers Cooperative Extension works in agriculture, family and community health sciences, and 4-H youth development. Dr. Karyn Malinowski, Director of Extension. Rutgers Cooperative Research & Extension provides information and educational services to all people without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Rutgers Cooperative Research & Extension is an Equal Opportunity Program Provider and Employer.