

Using Water Wisely in the Garden

Nicholas Polanin, Somerset County Agricultural Agent

Why does water conservation become an issue only during droughts or seasons of insufficient rainfall? As our population and economy continue to expand, experts warn that even normal rainfall may be incapable of meeting water needs. Conserving water outside the home is as important as practicing conservation measures inside the home. Our water use typically doubles during the gardening season. We need to annually evaluate how this additional water is utilized. Planning for and practicing water conservation in the landscape can actually increase plant success during times of drought. Properly selected, sited and planted within the landscape, these trees, shrubs, or other plants may have decreased demand for water, require less maintenance such as pruning and fertilizing, and provide additional protection for your landscape investment for years to come.

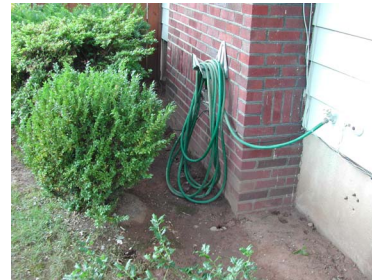
“But what can I do?”

• In General:

1. Improve the water-holding capacity of your soil by incorporating compost or other organic matter into the soil. Organic matter will help poorly drained soils drain better and will help droughty soils retain moisture.
2. Select and plant drought tolerant varieties.

They require less water and will survive times of mandatory water use restrictions.

3. Repair all leaks in your hoses and faucets. Leaks like these can easily waste 10 gallons of water a day, totaling 3,650 gallons a year. Use a pistol-grip nozzle that shuts off when you are not using it. Turn off faucets not in use.



Even small leaks can lead to excessive water losses - note the wet soil under the hose.

4. Collect rainwater, sump water, or water condensed by air conditioner units or dehumidifiers for later use in the garden. The use of other waste or “gray water” for garden irrigation may vary or be restricted in your area. Please contact your state or local Health Department for current regulations.
5. Know how to water. Roughly translated, one inch of rainfall equates to 65 gallons of water spread over an area of 100 square feet. Your water pressure and sprinkler system can help you determine how best to supply water to your landscape.



6. Water use should be timed for maximum efficiency. Water early in the morning when demand is low, landscape plants and turf will not be stressed, and little water can be lost to evaporation.
7. Avoid sprinklers that produce a fine mist and avoid watering in windy weather. This will minimize water loss to wind and evaporation. Keep sprinkler heads clean to prevent uneven watering and clogging.
8. Wherever possible, replace conventional overhead sprinklers with drip or trickle irrigation. Using a soaker hose around new plantings can reduce water use by 25 to 50% while supplying an adequate amount of water directly to the root area.
9. Avoid overwatering. Properly calibrate your automatic sprinkler system or time your manual watering, applying water only as fast as the soil can absorb. Watering should be based upon soil moisture levels and plant requirements rather than a set schedule or air temperature. Make sure to check your irrigation system regularly, avoiding additional watering during rainfall.
10. Use mulch wherever possible, but sparingly. Root development of shrubs and trees is greatly enhanced by the use of mulch inside the dripline of the plant. This will also slow the loss of soil moisture, prevent runoff and erosion, and control weeds. Do not pile mulch against the base of young trees or shrubs, and keep the mulch depth to no more than 2 to 3 inches.

• **In the Vegetable Garden:**

When there is no rain, water shallow-rooted vegetables (lettuce, corn, or cabbage) twice a week, with approximately one-half inch per watering. Deeper-rooted vegetables like tomatoes, squash, and peppers should receive a weekly, 1-inch watering.

Many vegetables have critical periods of growth during which irrigation is absolutely essential. Cucumbers, for example, must have water from flowering through fruit set, while peppers require a steady supply of moisture from seedling to maturity. Onions and muskmelons, however, require less moisture as they begin to mature. Larger gardens may benefit from a trickle or drip irrigation system, while smaller gardens can be easily irrigated by hand.



Leaving plant beds without mulch will encourage weed infestation and lead to soil moisture losses.

The use of mulch will help to reduce the competition of weeds while retaining moisture levels in the soil. Grass clippings, compost, and other organic mulches often need additional nitrogen as they decompose. Landscape fabric spread under the mulch may also help reduce weeds, but provides little benefit in retaining soil moisture.

• **In the Flower Bed:**

Mints, perennial salvias, and composites (like coreopsis, rudbeckia, and purple coneflower) are drought tolerant.

Many ornamental grasses and plants with succulent foliage (sedums, hens and chicks, and cacti) have low water requirements. Plants that mature early (like spring-flowering bulbs) or late (like autumn-blooming crocus or lycoris where the foliage dies back in the summer) are good selections because they do most of their growing when water is plentiful.

Proper design and planting for water demand are key components in any successful flower

garden. Impatiens and astilbe, for example, can be grown in full sunlight, but will have a much greater water demand. It is much easier, more rewarding, and less exasperating to select and plant sun and shade-tolerant varieties according to their preferred growing recommendations.

- **Trees & Shrubs:**

Consider plants and varieties based on their water requirements. Some good drought tolerant trees are Hedge maple (*Acer campestre*), Hawthorne (*Crataegus* spp.), Scotch pine (*Pinus sylvestris*), Dawn redwood (*Metasequoia glyptostroboides*), and Amur Cork Tree (*Phellodendron amurense*). Ash, oak, ginkgo, thornless honey locust, blue atlas cedar, crabapple, and Colorado and white spruce are also good selections.

Shrubs tolerant of dry soil conditions include: Korean barberry (*Berberis koreana*), Cotoneaster, Cherry elaeagnus (*Elaeagnus multiflora*), and St. Johnswort (*Hypericum kalmianum*). Hollies, lilacs, yews, and junipers are also excellent selections.

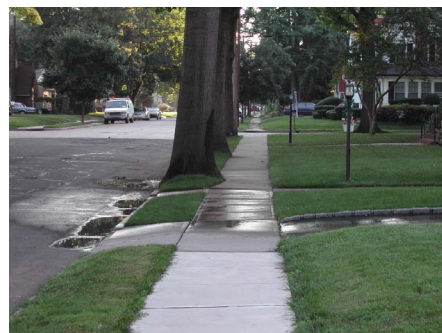
To care for young and newly transplanted trees and shrubs, provide weekly watering. Soak rooting areas well, preferably to a depth of 8 to 10 inches, protect area from foot traffic, and remove competing turf under the tree and replace with 2 to 3 inches of organic mulch. Broadleaf evergreens may become susceptible to foliage damage from winter desiccation. Consider applying an anti-transpirant for winter protection, especially if these plants have a southwest exposure. Be sure to follow label instructions.

Established and mature shade trees can also be protected from the ill effects of drought by fall applications of deep root fertilization, corrective pruning of dead, dying, or unnecessary growth, and the control of primary leaf feeding pests such as mites, leaf hoppers, and aphids. Trees suffering from drought stress are also susceptible to secondary pests such as cankers and borers, and may require additional control measures. For large, valuable and extensive tree plantings, con-

sider engaging the services of a reputable, professional tree care company.

- **Turf & Lawns:**

Management to maintain your lawn should be based upon a complete soil test. Acid soil conditions may restrict root growth of some turf varieties, increasing their susceptibility to drought damage. Increase your mower blade height to decrease water loss and increase shade to the crown. In times of insufficient rainfall or irrigation regulations, postpone seeding or sodding new lawns until the early fall months and reduce nitrogen fertilizer use. Restrict traffic on the lawn, especially when it is heat stressed or dormant. Avoid daily light waterings to decrease disease pressure and encourage deeper root growth. Water as infrequently as possible, applying 1 to 1.5 inches of water once a week on heavy (clayey) soils or .5 to .75 inches twice a week on light (sandy) soils when natural rainfall is deficient. Without sufficient water, lawns will turn brown and become dormant. Turf that enters dormancy gradually has a better chance of full recovery. The longer the dormancy, the longer the recovery time required. In severe cases, turf failure may require complete renovation with seed or sod. Anticipate greater weed problems in your lawn during the spring following a season of drought or dry soil conditions.



Properly calibrate automatic lawn sprinkler systems to minimize unnecessary water losses.

These pages contain some practical tips for conserving water use throughout your garden and landscape. Only you can take the lead in deciding to make these water-saving practices an integral part of your garden planning and maintenance.

Some of this information is compiled from previously published Rutgers Cooperative Extension bulletins. For further information and greater details, please consult these publications, available through the RCE web site www.rce.rutgers.edu or the Rutgers Cooperative Extension County office listed in the phone book under County Government.

E080 *Landscaping for Water Conservation—A Guide for New Jersey*. T. B. Shelton and B. Hamilton. 1987.

FS058 *Mulches for Vegetables*. S. Reiners and P. Nitzsche. 1997.

FS074 *Backyard Leaf Composting*. F. Flower and P. Strom. 1991.

FS107 *Water Conservation for Homes, Institutions and Business*. NJDEP. 1985.

FS117 *Using Leaf Compost*. R. Flannery and F. Flower. 1991.

FS862 *Hints for Household Water Conservation*. Susan E. Lance. 1996.

FS921 *Conserving Water on Home Lawns and Landscapes in New Jersey*. M. T. Olohan and T. B. Shelton. 1998.

Water Conservation Checklist for the Home. U.S. Department of Agriculture, Extension Service, Program Aid No. 1192, August 1977.

Water Conservation Measures. National Drinking Water Clearinghouse, December 1998. NRCC Building, Evansdale Drive, Morgantown, WV, 26506. 1-800-624-8301, www.ndwc.wvu.edu.

Other Water Conservation Sources

Soil and Water Conservation—A Classroom and Field Guide. USDA, Soil Conservation Service publication, No. 341.

The Blue Thumb Project, c/o American Water Works Association, 6666 West Quincy Avenue, Denver, Co. 80227-2090. 303-794-7711.

U. S. Environmental Protection Agency, Office of Ground Water and Drinking Water. 401 M Street, SW, Washington, DC 20460.

Project WET (Water Education for Teachers), The Wetlands Institute, 1075 Stone Harbor Blvd., Stone Harbor, NJ 08427-1424. 609-368-1211. www.projectwet.org.

New Jersey Waters—A watershed approach to teaching the ecology of regional systems. Sponsored by the NJ Audubon Society. www.njaudubon.org/education/njwaters.html.

Give Water a Hand—A national educational program for local environmental service projects. www.uwex.edu/erc/gwah.

Adopt-a-Watershed—A K-12 school/community learning experience. www.adopt-a-watershed.org.

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

Desktop publishing by Rutgers-Cook College Resource Center

Revised: July 2003

**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.