ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-DWGB-26-3 2010

Water Efficiency Practices for Outdoor Water Use

Outdoor water uses increase water consumption during spring and summer by an average of 50 percent. Landscape watering and car washing are the two main outdoor water uses responsible for this demand for water. This increase in demand comes at a time of year when there is less water naturally available in the environment due to warmer temperatures and plant uptake.

By implementing just a few minor changes in how you use water outdoors, you will find that you can maintain your existing outdoor activities using much less water. This will save money on your water and electric bill, and protect the environment by leaving more water for New Hampshire's rivers, wetlands and aquifers. In the case of outdoor lawn watering, using water more efficiently will actually improve the durability of your grass, reduce the need for chemical amendments, and decrease lawn mowing frequency.

The following sections address conservation for landscape and garden irrigation and other outdoor uses.

Landscape and Garden Irrigation Conservation:

Use water-wise and region-appropriate landscape plantings. Visit the fact sheets webpage at www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm and scroll to WD-DWGB-26-4, "Fundamentals of Xeriscaping and Water-Wise Landscaping."

Watering frequency should be based on soil moisture, weekly precipitation and plant/turf conditions. Typically, established landscape plants and turf grass require one inch of water per week, and this amount may be applied in one application. You may see golf courses watering lush greens almost continuously; however, these are often exotic grasses that must be cooled from the heat of the day. Do not copy the watering practices of these types of operations.

Use a rain gauge to calculate your lawn and garden water needs. A rain gauge allows you to measure how much rain has fallen. These devices are available for a minimal cost at your local garden/hardware store and are easy to use. Mature lawns only require about one inch of water a week. The amount of water you should apply to your garden or lawn equals one inch minus the amount of rain you received for the week.

Soil moisture sensors are useful in determining how wet your soil is. You can check the moisture of the soil to determine watering needs. In some instances you will find that you do not need to water even if it has not rained recently.

Water only those areas that are dry. Water by hand, if possible.

Determine sprinkler or hose application volumes by placing cans at various locations in the lawn or garden. Mark a one-inch depth on the inside of the cans. Time how long it takes your sprinkler heads or hose to deliver an inch of water to each of the cans, and average the times it takes to fill each can one inch

deep. This is how long you should run your sprinklers or hose to deliver an inch of water.

Completely wet the plant root zone each time you water to prevent dry layer formations that inhibit root growth. Probe the soil after irrigating to determine whether the water reached the root zone. If water penetration is too deep, too shallow, or spotty, adjust your watering practices to correct it.

Do not over-water your lawn. Only water to the depth of the root zone. Excess water percolates too deeply, making it unavailable for plant use. Also, too much water prevents air from reaching root systems and encourages shallow roots and plant diseases.

Plant drought-resistant turf grass. The most drought-tolerant grasses are the fine leaf fescues. The University of New Hampshire Cooperative Extension recommends a mix containing hard fescue, Chewings fescue and perennial ryegrass. Most garden centers carry this type of mix.

Set your mower height to two inches. Longer grass blades retain moisture better, shade the root system, and encourage roots to grow deeper and stronger.

Keep the mower blades sharp. Mowing with a dull blade gives grass a “split ends” look making it seem drier than it is.

Give lawns the lowest priority for watering, since they are able to go dormant for long periods of time, slower to die and less expensive to replace than other vegetation.

If using a sprinkler system, connect it to an automatic timer. If you do not have a timed system, set a kitchen timer to avoid over-watering.

Be sure sprinkler heads are producing drops rather than a mist. This helps to reduce evaporation.

If you use automatic, pop-up sprinkler heads, choose the type that incorporate electronic sensors to monitor soil moisture and rain events. Periodically check to ensure sensors are operating properly.

Operate automatic sprinkler systems connected to public water systems only when the water demand is low, usually between 4 a.m. and 6 a.m.

Irrigate between 9 p.m. and 9 a.m. to prevent evaporative water loss.

Don’t water the pavement. Adjust sprinklers so that they water only the plants.

For larger systems, develop an irrigation maintenance program. Routinely inspect all water lines, valves and pumps for leaks. Keep replacement and repair parts on hand. Inspect sprinkler nozzles to ensure they are operating properly and are distributing the water uniformly. Evaluate irrigation system pressures to better control application rates.

Apply appropriate fertilizers to encourage the growth you want in your plants. Nitrogen promotes leaf growth, phosphorus benefits fruits and flowers and potassium promotes root development. For instance, lettuces require primarily nitrogen; grass needs nitrogen in the spring and potassium the rest of the growing season. Roses and tomatoes call for phosphorus. Usually a balanced fertilizer, such as 10-10-10 that contains 10 percent each of potassium, phosphorus and nitrogen, is best for vegetables, shrubs and flowers. Specialty fertilizers for lawns contain higher percentages of either nitrogen or potassium depending upon what time of year they should be applied.

Do not irrigate during windy conditions.

Utilize drip or trickle irrigation wherever possible. These systems apply water near the root zone of the plant, ensuring a complete watering while lessening excess water usage.

Plant species native to New Hampshire. Native plants are hardier and tend to need less water. Visit the New England Wildflower Society's website at www.newfs.org for information about native plants.

Use mulch to retain moisture. Mulch can be used almost everywhere in the garden, even on row vegetables. Mulch hay, straw and sheet composting work well in the vegetable garden.

Minimize your lawn area. Replace grass with moss, rocks, gravel, wood chips or mulched flowerbeds. Consider xeriscape or "Zen" gardens. Xeriscape effectively uses drought-tolerant vegetation that subsists on precipitation alone. Zen gardens traditionally contain no vegetation, only raked sand, sculpture and a water feature. See fact sheet WD-DWGB-26-4 "Fundamentals of Xeriscape and Water-Wise Landscaping" for more information.

Use rain barrels, cisterns, and ponds to collect water that can be reused for gardens.

Establishing Turf grass:

Underlay turf areas with at least six inches of loam.

Choose a drought-resistant seed mix that favors at least 50 percent fine leaved fescues. You will need three to four pounds of seed per 1,000 square feet. Try to avoid mixes that contain Kentucky bluegrass. This grass, despite its name, is actually a native to England and requires a whopping 35 inches of rain a growing season to survive.

Test your soil. Fine leaf fescues thrive at pH values between 5 and 6.5. If your soil test indicates more acid conditions apply lime at a rate of 50 lbs/1,000 square feet. Contact your county cooperative extension for cost and information on obtaining a soil test kit. See extension.unh.edu for a complete listing of UNH county extension services and contacts.

Apply a starter-type fertilizer and till lime and fertilizer into the top 6 inches of the soil.

Rake and smooth the soil.

Apply seed uniformly. A broadcast spreader is an excellent tool for seeding lawns. The two most common types of spreaders are push spreaders that drop the seed out of the bottom of a hopper as you walk behind them and the crank type that broadcast the seed in a circular pattern from the hopper as you turn a crank. Make sure you overlap your passes with the seeder to avoid bare spots.

Roll or tamp the soil to make sure you have good seed-to-soil contact. The seed must be in contact with the soil to germinate. Water the area thoroughly.

Apply a weed-free mulch such as straw. Don't allow the seeded area to dry out, as seeds also need moisture to germinate.

The best time to plant grass seed in New Hampshire is August through September. If you plant earlier there is greater risk of broadleaf weed infestation. If you plant too late in the season the slow-germinating fescues will not have time to establish a good root system before freeze-up. Once established, a lawn of fine leaved fescues requires no watering. For more information, visit the UNH Cooperative Extension's website at extension.unh.edu.

Other Outdoor Water Use Conservation:

Cover swimming pools when not in use to prevent evaporation.

Lower the water level in the pool to prevent water loss from splashing.

Minimize pool filter backwashing.

Wash vehicles using a bucket and sponge, using a hose for rinsing only.

Sweep driveways, walks and decks with a broom rather than hosing them off.

Use hose nozzle shutoff devices.

Check your irrigation system, outdoor faucets, and hose connections for leaks. A 25-cent hose gasket can save money on your water or electric bill.

For Additional Information
Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at http://des.nh.gov/organization/divisions/water/dwgb/index.htm. All of the bureau's fact sheets are on-line at http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm. More information about the DES Water Conservation Program can be found at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm

Additional Resources
University of NH Cooperative Extension, Home & Garden Education Program. Phone: 1-877-398-4769

UNH Cooperative Extension. Links to home and garden fact sheets.
www.extension.unh.edu/resources/category/Home_and_Garden

North Carolina Cooperative Extension. Detailed fact sheet on efficient irrigation. Includes directions for setting up a drip irrigation or sprinkler system.
www.bae.ncsu.edu/programs/extension/publicat/wqwm/ag508_6.html

References
_____; *MRI Water Conservation Technical Bulletin #7, Water Conservation Best Management Practices for Landscape and Turf Management;* New England Interstate Water Pollution Control Commission, Wilmington, MA; 1996.
_____; *MIL-Handbook-1165, Water Conservation;* US Dept. of Defense; 1997; pp 67-75.
Vickers, Amy; *Handbook of Water Use and Conservation;* WaterPlow Press, Amherst, MA; 2001; pp 140-223.