

SECTION 18: LAWN CARE

18.1 Lawns and the Chesapeake Bay Watershed

As of 2011, nearly 3.8 million acres within the Chesapeake Bay watershed were planted in turf grass, 1.3 million of them in Maryland alone, making it that state's largest crop. The study, *Urban Fertilizers & the Chesapeake Bay*, states that, "about 30% of the Bay's phosphorus load comes from urban and suburban runoff...and 10% of nitrogen-tainted runoff." It goes on to say, "whether fertilizer is organic or chemical, its nutrients can harm the Bay and local waterways." During the growing season, turf grass requires continual care, most often performed with high carbon emitting gas-powered mowers, and often with fertilizers and pesticides.

That said, U.S. National Arboretum Grass Roots Initiative coordinator Geoff Rinehart advises that, "environmentally responsible lawn care options have increased significantly in the last 10-15 years, with more improved turf grass varieties from which to choose, and lawn care products such as slow-release fertilizers and OMRI-certified pesticides more easily integrated into management regimes. In addition, there are an increasing number of battery-powered mower and other outdoor power equipment available as commercial models."

The national consortium, Turfgrass Water Conservation Alliance (TWCA), independently field tests various turf seeds in order to determine which varieties fare best in different regions with respect to water needs. They offer a [mobile phone app](#) determining the best regional types with associated water requirements, plus publications and webinars advocating drought tolerant species. Reducing water use is one helpful step. Reducing or eliminating nitrogen rich pet waste from grassy private and public areas is another.

Suburban lawns interrupt continuous landscape mosaics offering safe passage to wildlife. Reducing the size of lawn areas and interconnecting conservation landscaping and buffer plantings greatly improves wildlife connectivity and species diversity. In addition, properly timed mowing can prevent harm to ground-nesting birds. University of Delaware professor Dr. Douglas Tallamy says, "Studies

have shown that even modest increases in the native plant cover on suburban properties raise the number and species of breeding birds, including birds of conservation concern."

This manual is neither a complete source on organic lawn care nor a forum on the environmental implications of lawns and their care. It does not address specialized turf care protocol such as that for sports fields. However, this manual advocates that in areas where lawns are desirable, they are not maintained as a monoculture, are minimally watered and fertilized, kept free of herbicides, in an effort to support pollinators and birds, and mowed only when needed, to a length of 3.5 inches or taller. This manual also advocates annual evaluation of lawn areas with the intention of replacing areas, particularly around trees, with suitable native groundcover plants requiring less care, which also keeps equipment from damaging tree trunks during routine maintenance. There is no question that some lawn areas are necessary and desirable spaces for people to enjoy the outdoors. To that end they should be responsibly maintained.



Include servicing pet waste stations in sustainable landscape maintenance proposals. Fecal bacteria and parasites and nutrients have a significant negative impact on the Chesapeake Bay.

PHOTO: CHERYL CORSON

18.2 Legislation and Regulation

Many states and local jurisdictions address the nutrient loading of traditional lawn care practices by statute or regulation. [Maryland](#) and Virginia are two examples with state fertilizer legislation. In addition, Virginia has an Urban Nutrient Management Program for farmland and urban areas. In Virginia, a Nutrient Management Plan may be required depending on the landscape type (for example, golf courses require them). Nutrient Management Plans, when required, must be written by state certified planners, training for which is available twice a year. [Training items](#) included are site analysis, hydrology, soil testing, quantities, components, and application dates for fertilizers when needed, for both warm and cool season grasses. Pennsylvania also has a [Nutrient Management Program](#).

As with any application of pesticides or fertilizers, be sure it is only done by appropriately certified staff. Be sure landscape specifications clearly state lawn care protocol. See the [Seattle Public Utilities Landscape Specifications](#), Section 4, Turf Maintenance, for adaptable boiler plate language.

18.3 Lawn Care Methods

The following principles of effective and environmentally sensitive lawn care have been adapted largely from the Chesapeake Bay Foundation's publication, [Steps for Healthy Lawns and a Healthy Bay](#) among other sources:

1. Test soil at least every three years, taking samples when the ground is not frozen.
2. The target soil pH for soil is slightly acidic (between 5.8 and 6.5).
 - a. Do not use synthetic fertilizers.
 - b. Use organic fertilizers or natural (animal or plant based) slow-release fertilizers.
 - c. Apply after spring green and not during dormancy.
 - d. Do not use quick release fertilizers.



Allow grass clippings and leaves to mulch in place.

PHOTO: JOHN SHORB LANDSCAPING



Do not mow bare dirt or mow into tree trunks and over surface tree roots, as this worker is doing.

PHOTO: CHERYL CORSON



Top dress compost over lawn areas as shown here, rather than tilling, which destroys soil structure.

PHOTO: LEVEL GREEN LANDSCAPING



Compost tea is an easily made, non-toxic brew helpful for lawns and planting beds.

PHOTO: CHERYL CORSON

- e. Keep nitrogen applications to 1 lb per 1,000 square feet or less, or within applicable state laws or guidelines.
 - f. Apply lime to raise soil pH.
 - g. Apply iron sulphate or sulphur to lower pH.
 - h. Apply compost as a top dressing if needed.
 - i. Use compost tea if needed, within applicable state and local regulations.
 - j. Do not apply fertilizer just before it rains, when windy, or within 15 feet of any water feature.
3. Allow grass clippings to remain on the surface to decompose as fertilizer.
 4. Sweep any grass clippings that land on a paved surface and return them to the soil.
 5. For commercial use, sharpen mower blades every other week, or as soon as grass tips appear jagged or brown when cut.
 6. Mow grass taller, ideally 3.5 inches tall or no more than one-third of the length of the leaf blade, to maximize roots and shade the soil, preventing weed seed germination.
 7. When watering during lawn establishment, do so in the morning to avoid mildew, brown patch, red thread, and other fungal diseases. Allow grass to go dormant during summer droughts, which will not harm its roots. Never allow water to run off the surface onto pavement or into water bodies. Adjust mechanical irrigation systems monthly to reflect actual site conditions.
 8. Carefully select appropriate seed mixes, using third party tested varieties certified by the TWCA or the National Turfgrass Evaluation Program (NTEP). Explore any of several “eco-”grass mixes on the market which may be left un-mowed and whose roots are deeper than traditional grass, thus retaining more water.
 9. Overseed in early fall as needed (September to October).
 10. Aerate and dethatch as needed in early spring or early fall.
 11. Together with the designer and client, annually evaluate existing lawn areas for possible conversion into other types of vegetation.



Grass clippings should be swept from paved surfaced and returned to lawn areas to prevent the storm drain blockage and nutrient loading as seen here.

PHOTO: CHERYL CORSON

18.4 References

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