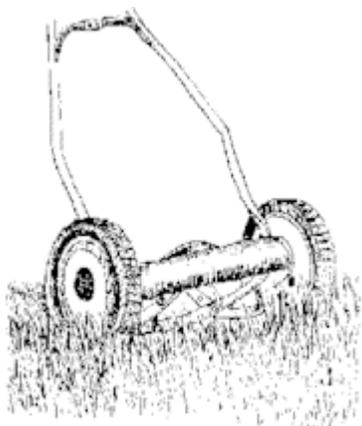


Conservation Landscaping: A BayScapes Homeowner's Guide

BayScapes are environmentally sound landscapes benefiting people, wildlife and Chesapeake Bay. BayScaping advocates a "holistic" approach through principles inspired by the relationships found in the natural world.



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What does conservation landscaping mean?

Conservation landscaping promotes landscaping management that works with nature to reduce pollution and enhance wildlife habitat. It encourages a low input formula for yard care: less fertilizer and pesticide use, combined with less lawn area and the use of beneficial plants, equals less water use and less overall maintenance. The goal of the BayScapes program is the protection of vital soil and water resources.

This guide suggests practical techniques to help you manage your landscape wisely and, at the same time, reduce overall maintenance. Through simple

changes in the management of your lawn and garden, BayScaping represents an innovative way for you to contribute to the health and vitality of local waterways and Chesapeake Bay.

Why is conservation landscaping important to Chesapeake Bay?

The Bay region is growing, and growing rapidly. During the next 25 years, the population in the watershed will expand from 13 million to an estimated 16 million people, as more and more of us wish to live close to the water. With this increase in people will come the need to convert more forest and crop land to residential areas. Additional buildings and paved surfaces will follow. This fundamental land-use change has negative implications for the Bay, such as reduced wildlife habitat and increased soil erosion and runoff into local streams and rivers during storms.

Along with this change in land use will come additional lawn and landscaped areas falling to individual management. Indeed, thousands of Bay residents make daily decisions about the care and maintenance of their lawns and gardens—decisions resulting in the purchase and use of fertilizers, pesticides and other products that affect water quality in local creeks and rivers.

BayScapes encourages you to take responsibility for the natural resources in your community. BayScapes begin at home.

Where does conservation landscaping begin?

BayScapes begin with the soil. Soil quality affects almost everything that you

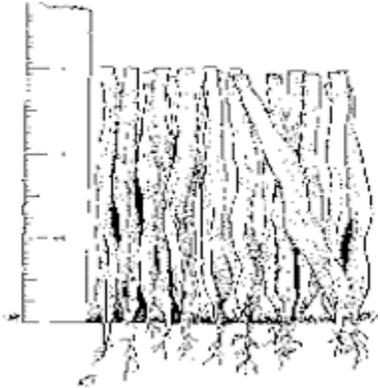
think of as part of your landscape-trees, shrubs, flowers, vines, and lawn area. Good soil quality through wise management is the key to conservation landscaping. This includes maintaining a healthy vegetative cover to prevent soil erosion from wind and water, maintaining proper soil pH and fertility levels, and using beneficial insects to promote a healthy soil.

Vegetative cover can be a stand of grasses, vines, groundcovers, mulches, or even vegetables and herbs. Whatever the choice, it performs a vital service in holding soil in place and preventing it from washing into local creeks and rivers.

Soil pH and fertility are determined by analyzing soil samples from different soil locations throughout your landscape. Fertility describes the presence of nutrients and minerals in the soil, while pH measures acidity/alkalinity levels; together they tell you what plants your soil can support. Lime and gypsum may be used to adjust soil pH, while soil fertility can be improved by introducing organic matter such as leaf mold, manure, bark, peat moss and even sawdust.

Few people are lucky enough to have soil loose enough to poke with a finger, yet holds water like a sponge. You can rest assured, however, that earthworms and beneficial insects have been hard at work in such a wonderfully balanced soil structure. Their presence indicates healthy, chemical-free soil, teeming with microorganisms. Microorganisms such as bacteria, for instance, keep disease-causing fungi in check by competing with them for food. Try examining your soil's characteristics: clay or sand-like, wet or dry, dark or light. You can learn a lot about your landscape this way and will probably discover that more than one soil type exists throughout your lawn and garden.

The environmentally sound lawn



Americans have an obsession with weed-free lawns. According to the Environmental Protection Agency, each year we spend an estimated \$950 million on fertilizers and another \$1.5 billion on pesticides for landscape uses. By contrast, BayScapes shows that a healthy lawn provides the best defense against an infestation of weeds. An environment-ally sound lawn tolerates a few weeds here and there, and permits only hand removal of unwanted weeds.

Cool-season grasses in the Bay region will benefit from fall applications of balanced fertilizers that include at least 10 percent water-insoluble forms of nitrogen. Cut these grasses to a 2.5 inch height in the spring, move up to a 3 inch or 3.5 inch cut in the summer, and then back down to 2.5 inch when autumn comes. These mowing heights, alone, will reduce weeds by more than 50 percent.

Lawn clippings represent nutrient recycling at its best. With proper mowing, clippings will not cause excess thatch (a tightly packed layer of organic debris that develops on the soil surface). Rather, clippings break down and return nitrogen to the lawn, reducing the need for fertilizers.

Pest control can quickly become a never-ending cycle in a lawn until you adopt a healthy soil, healthy lawn philosophy. This means treating only serious or threatening intolerable pest infestations and using biological or physical control methods.

When re-seeding, overseeding or seeding a new lawn area, you have an opportunity to take advantage of improvements in seed quality and diversity. Familiarize yourself with the newly available hybrids of grass seed specifically tailored to local climate and soil conditions. Choices include perennial ryegrass, fine fescue and turf-type tall fescue, as well as ornamental grasses. You will

find that some varieties perform better than others in drought conditions and some tolerate disease well. A landscape professional or Cooperative Extension service agent can help.

Finally, a lawn will tell you when it needs watering; you have only to watch for the signs. When you walk across the grass and leave footprints that do not rapidly disappear, your lawn needs water. Water thoroughly to provide a good soaking, and avoid watering during the heat of the day to minimize unnecessary evaporation and possible wilting.

Lawn alternatives

In many situations, grass can be a maintenance burden or it can be difficult to grow, and a different ground cover may be more suitable. Excellent locations for ground cover alternatives may be found on steep slopes, wet or shady areas and highly erodible sites. When selected carefully, ground covers improve infiltration of water into the soil, slow run-off and reduce maintenance. Ground covers come in a variety of textures and colors, many with beautiful blooms. Here are a few other ideas to consider as you reduce your total lawn area:

- Wildflower meadows provide a colorful, low-maintenance alternative to lawns and create habitat for birds, butterflies, and mammals.
- Decks and brick-on-sand patios offer cozy outdoor seating while allowing water to permeate through to underlying soil.
- Water gardens introduce sound and texture into the landscape and attract wildlife.

Tree and shrub selection

Selecting proper trees and shrubs for the home landscape can seem a daunting



challenge; however, it can be simplified with a little research and time spent walking through nurseries and garden centers. Traditionally, trees and shrubs have been chosen according to characteristics such as seasonal bloom intensity, bloom duration or fall leaf color. While these characteristics are important, today's environmentally sound landscapes include trees and shrubs selected for their resilience in times of drought, resistance to disease, wildlife benefits, low-input requirements and ease of care, along with year-round appearance.

Such landscapes incorporate plantings of native species-those that have succeeded without human help in the Bay region for thousands of years. Natives require little in the way of water, fertilizers or pesticides to thrive and offer a more natural look. Beneficial plants-those providing food or cover-may be combined with natives to maximize the benefits to wildlife. (Use the BayScapes Beneficial Plants List for ideas; then consult with a nursery professional and check with your local library.)

Fruit and vegetable gardening

Remember the delights of growing selected fruits, berries and vegetables for your family. When looking for trees and shrubs that meet functional needs-such as screening away an objectionable view or providing interest with bloom or foliage-consider using a fruit-bearing tree or a clutch of berry bushes. Fruit trees provide dramatic early blossoms and a bounty of delicious, fresh fruit at harvest. Berry bushes have the same benefits while providing wildlife with needed cover and food. You may wish to avoid peaches, apples and pears, because they require high maintenance and offer little shade. Vegetable gardens offer the purity and satisfaction of home-grown food while teaching about plant development from seed. Experiment with different varieties of seed and starter plants.

In the autumn, garden plots can be "put to bed" with a cover crop of legumes or cereal grains that will prevent soil erosion while returning vital nutrients. The humus produced as the cover crop decays will improve the soil's structure and enhance its ability to retain water. A garden compost pile provides a prolific source of organic humus to improve soil throughout your landscape.

Integrated Pest Management

When spotting an insect on a plant, most of us fear that if action is not immediately taken, the entire yard will be under assault. This results in a trip to the local nursery or garden center to purchase a handy pesticide, which we then use to eradicate the pest: quickly, permanently and usually excessively. The more we learn about natural processes, however, the more we understand that insects and their predators are interconnected in a delicate and complex way. This new-found knowledge has resulted in an emerging approach to pest control, known as Integrated Pest Management (IPM). IPM advocates the tolerance of occasional minor outbreaks of pests wherever possible. And if that is unacceptable, pests are controlled with biological means (such as milky spore for Japanese beetles or sabadilla for chinch bugs), or are physically removed from plant leaves by hand or by tool. IPM advocates, as a last resort, careful use and application of the least toxic compound for the specific pest identified.

Recent breakthroughs in technology have yielded effective pesticide compounds, such as insecticidal soaps and improved horticultural oils. These products, which once had limited application periods, can now be used year-round and are competitively priced.

Finally, a new breed of entrepreneur-the IPM contractor-is emerging in urban and suburban markets in response to growing public concern about the widespread use of toxins. You can learn more about this new technology by reading trade publications and talking with local and state agronomists and horticulturalists.

Putting it all together

Conservation landscaping closely resembles the cooperative principles of the BayScapes program itself. It asks you to take a holistic view of the home landscape-lawn, trees, shrubs, flowers, ground covers and vegetable plot -- and consider how your management of each element affects local wildlife, neighborhood streams and water quality in the Bay.

Lawn care: a checklist of risk factors

Remember, maintaining a healthy, pest-resistant lawn with fewer applications of fertilizers and pesticides is possible, but it does not happen by chance. You must frequently scout your landscape for signs of trouble. The following list states common factors that contribute to weeds, disease and insect damage.

Factors increasing the risk of weed problems:

- Grass species and variety selection inappropriate to Bay region
- Seed contaminated with weeds
- Mowing height too short
- Nitrogen fertilizer inadequate
- Insects have previously damaged area(s)
- Nitrogen fertilizer applied at wrong time
- Soil suffers from acidity problems or phosphorous or potassium deficiencies
- Poor drainage

Factors that increase the risk of disease damage:

- Grass species and variety selection inappropriate to Bay region
- Frequent, light watering at night
- Excessive nitrogen fertilizer applied at wrong time
- Excessive clippings left on lawn
- Poor drainage

Factors that increase the risk of insect damage:

- Thatch buildup in excess of 0.5 inch
- Turf areas open to 80% to 100% sun exposure

- Indiscriminate application of pesticides that kill beneficial insect species
- Excessive application of nitrogen fertilizer
- Factors that increase plant stress, such as moisture, poor soil conditions or inappropriate mowing height
- Pest populations in adjacent lawn areas
- Newly established lawns

Where can I get more detailed information?

For specific information about soils, soil testing, water management, pest control and other issues, refer to other guides in this BayScapes series and/or contact your local Cooperative Extension office. For additional information on emerging and innovative landscape products and services, the resource list on this page may be helpful.

For detailed specific instructions for the safe use of fertilizers and pesticides in your community, contact your local or area Cooperative Extension office. The Cooperative Extension is a service of the land-grant university systems in the District of Columbia, Maryland, Pennsylvania and Virginia.

Suggested reading list:

Healthy Lawn, Healthy Environment - Caring for Your Lawn in an Environmentally Sound Way. Public Information Center PM-2113, USEPA, 401 M Street, S.W. Washington, D.C. 20460.

Composting: A Recipe for Success. Composting Productions, International Marketing Exchange, P.O. Box 775, McHenry, IL 60051.

Campbell, Stu. Let it Rot. Story Communications, P.O. Box 445, Schoolhouse Road, Pownal, VT 05261.

Pesticides and You. National Coalition Against the Misuse of Pesticides, 701 E. Street, S.E., Suite 200, Washington, D.C. 20003, (202) 543-5450.

Citizen Guide to Pesticides. USEPA Region III, 814 Chestnut Street,

Philadelphia, PA 19107.

Alternative landscape resources and products:

- Necessary Trading Company, P.O. Box 305, New Castle, VA 24127.
 - AgLife, P.O. Box 84, Boonsboro, MD 21713.
 - The Bio-Integral Resource Center, P.O. Box 7414, Berkeley, CA 94707, (415) 524-2567.
 - Compost Park, American Horticultural Society, River Farm, 7931 E. Boulevard Drive, Alexandria, VA 22308.
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For More Information:

For detailed specific instructions for the safe use of fertilizers and pesticides in your community, contact your local or area Cooperative Extension office. The Cooperative Extension is a service of the land-grant university systems in the District of Columbia, Maryland, Pennsylvania and Virginia.

BayScapes is an environmental education initiative developed by the Alliance for the Chesapeake Bay and the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office

For more information on BayScapes, contact:

U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
(410) 573-4578

Alliance for the Chesapeake Bay, Inc.
Chesapeake Regional Information Service
1-410-377-6270

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