UNIVERSITY OF MARYLAND EXTENSION

Solutions in your community

Bay-Wise Maryland Yardstick

How does your landscape measure up?

The Chesapeake Bay is a national treasure and a vital part of the state of Maryland. Yet, the health of the Bay is in trouble due to increased development, resulting in pollution and sediment runoff entering local waterways. Most Maryland residents live within a half-mile of a drainage ditch, storm drain, stream or river. These local waterways eventually drain into the Chesapeake Bay. What we do to maintain our own landscapes can affect the health of our local waterways, the Chesapeake Bay and our environment.

The misuse of pesticides and fertilizers, lack of soil management, and poor plant selection can all contribute to the degradation of Maryland's streams, rivers, and the Bay. Maintaining environmentally-sound gardens and yards by using sustainable gardening practices improves water quality, conserves natural resources for future generations, and saves you money.

Individual efforts may seem small but they all add up to make a big difference improving the health of our environment.

By changing a few simple landscape practices, you and your family can help keep Maryland communities healthy.

"What we do to maintain our own landscapes can affect the health of our local waterways, the Chesapeake Bay and our environment."

Client: _____

Date: _____ Score: _____

Are you a Bay-Wise homeowner?

Homeowners can contribute to a cleaner local waterway, Chesapeake Bay and environment by using several environmentally sound approaches.

- *Control Stormwater Runoff*
- *Encourage Wildlife*
- *Protect the Waterfront*
- *Mow Properly / Water Efficiently*
- *Manage Yard Pests with Integrated Pest Management (IPM)*
- *Mulch Appropriately / Recycle Yard Waste*
- *Fertilize Wisely*
- *Plant Wisely*

Directions: Listed in this brochure are approaches and management practices designed for individual home landscapes. Read through the choices carefully. Select the actions that you have already taken in your yard. Mark off your credits on the yardstick (on the front page) as you complete each action. Your goal is to reach or exceed 36 inches.

Control Stormwater Runoff

Any rain and irrigation water that runs off your yard carries soil, debris, fertilizer, and pesticides into neighborhood storm drains and ditches that lead to local streams, rivers, drinking water reservoirs, and the Bay. These substances can harm living organisms, habitats, and water quality. Reducing runoff from your property minimizes these problems. To further restore and enhance infiltration into the soil, where possible, deep till (only on level areas) and amend compacted soil with compost.

Actions:

- ☐ Direct downspouts and gutters to drain onto the lawn, plant beds, or rain gardens where rain will soak into the soil rather than run off on driveways or impervious areas. However, make sure to direct this water at least 10 feet away from the house to avoid wet basement and foundation problems. **Credit: 1 inch**
- ☐ Plant groundcovers on thinly vegetated areas, under trees, or on slopes to decrease erosion. **Credit: 1 inch**
- ☐ Core aerate and amend compacted soil with compost to restore and enhance infiltration. **Credit: 1 inch**
- ☐ Keep grass clippings, fallen leaves, pet waste, and other yard waste out of storm drains, waterways, and drainage areas. **Credit: 1 inch**
- ☐ Plant mulched beds containing trees, shrubs, native grasses, or groundcovers along the low edges of your property to catch runoff. **Credit: 1 inch**
- ☐ Install a properly designed rain garden where it will catch runoff from roofs or other impervious surfaces. *This will also help slow and soak up stormwater instead of allowing it to run off your property.* **Credit: 3 inches**
- ☐ Install rain barrels to collect and store water from downspouts. *This reduces runoff and conserves water.* **Credit: 1 inch**
- ☐ Pick up and dispose of pet waste, every day. Dispose of this waste in garbage that goes to landfill. Do not put in compost pile. **Credit: 1 inch**

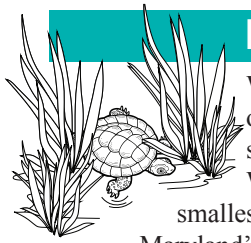
Encourage Wildlife

Maryland has a great diversity of wildlife. Providing adequate food, water, and shelter can increase the number and variety of species that visit your yard. Local wildlife relies on native plants for food and shelter.

Actions:

- ☐ Provide and properly maintain a water source, such as a birdbath or small pond, for wildlife. Change birdbath water every other day to provide a fresh, clean drink and discourage mosquitoes. **Credit: 1 inch**
- ☐ Provide and properly maintain wildlife shelters such as a toad house, birdhouse, a dead tree (snag), or woodpile. Keep woodpile away from house to deter unwanted insects. **Credit: 1 inch**
- ☐ Incorporate native trees into your landscape. *Native oaks, sugar maple, river birch, and American hickory have a high wildlife value.* **Credit: 1 inch**
- ☐ Plant native shrubs and perennials that provide cover, nesting areas, or produce berries/seeds to encourage birds. *Dogwood, black or red chokeberry, serviceberry, early, tall or three-lobed coneflower, Indian grass and switchgrass are examples. Native honeysuckle, native beebalm and native lobelias, (such as cardinal flower) encourage visits from hummingbirds.* **Credit: 1 inch**
- ☐ Encourage pollinators to visit your yard by including nectar-rich plants such as Joe-pye weed, native asters, blazing star, and goldenrod. **Credit: 1 inch**
- ☐ Incorporate butterfly larva host plants such as white turtlehead (for the Baltimore checkerspot), spicebush (for the spicebush swallowtail), pawpaw tree (for the zebra swallowtail), and milkweed (for the monarch butterfly) into your landscape. **Credit: 1 inch**

Protect The Waterfront



Waterfront property owners realize the special contribution our waterways and the Bay make to our quality of life. They should also recognize how fragile these natural treasures can be. Waterfront property includes those properties that border even the smallest streams. Permits may be required to modify properties within Maryland's critical area.

Actions:

- ☐ Establish a border of low-maintenance or no-mow vegetation buffer adjacent to all bodies of water including streams, storm drains, and water retention ponds to absorb nutrients, slow runoff, and provide wildlife habitat. **Credit: 3 inches**
- ☐ Use native grasses with deep root systems, such as Switchgrass, Little Bluestem, or Indiangrass, to prevent erosion on hillsides along waterways. **Credit: 2 inches**
- ☐ Do not fertilize within 15 feet of any waterway or your well. **Credit: 1 inch** ***SUBTRACT 5 inches if fertilizer is applied within 15 feet of waterway.***
- ☐ Keep grass clippings, other yard waste, and animal waste away from stream banks, waterways, or the river's edge. **Credit: 1 inch**

Mow Properly / Water Efficiently

Here are some quick lawn care facts: Mowing height can affect pesticide use. Cool season grasses (fescues, bluegrasses, ryegrasses) naturally go into a semi-dormant state during summer's heat and drought. Tall fescue lawns are more drought tolerant than Kentucky bluegrass. Conserve water and mimic seasonal patterns by not watering during summer. If you feel you must keep your lawn growing during this time by watering, do so only when your lawn and landscape really need the water. Limiting watering is a key to reducing runoff and maintaining healthy waterways.

Actions:

- ☐ Mow cool season grasses high (3–4 inches) to encourage a deeper, more drought- and pest-tolerant root system. A higher cut also shades out weeds. Remove no more than a third of the grass blade when you mow. **Credit: 2 inches**
- ☐ Use a reel (push) mower that mows 3–4 inches high. **Credit: 1 inch**
- ☐ Maintain lawn equipment in good condition. *Well-tuned engines are more efficient and emit less pollution.* **Credit: 1 inch**

Lawn Irrigation:

- ☐ Allow cool season grasses to go dormant during summer months. **Credit: 2 inches**
- ☐ If you choose to irrigate your lawn, do so only when it begins to wilt. Be sure to follow local water ordinances. Apply ½ to 1 inch of water per application (to a depth of 6 inches), but never more than the soil will absorb. *Never allow water to run off of your yard. Long, slow, soaking applications are good; avoid short, frequent, shallow applications, which can actually do more harm than good.* **Credit: 1 inch**
- ☐ Water early in the morning to conserve water; watering during the heat of the day causes higher losses to evaporation. *Morning watering also reduces potential disease problems (evening watering encourages diseases).* **Credit: 1 inch**

Landscape Irrigation:

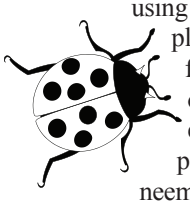
- ☐ Direct water spray at the base of the landscape plant. *Excess water on the leaves increases the potential for foliar diseases.* **Credit: 1 inch**
- ☐ During hot dry weather, occasional overhead watering can temporarily help to cool plants and provide moisture for beneficial insects & spiders. Water overhead in the morning only. *This allows time for the leaves to dry before disease can set in.* **Credit: 1 inch**
- ☐ Design and maintain a landscape that, once established, will survive on natural rainfall amounts by planting trees, shrubs, and perennials that are native/adapted to your area. **Credit: 2 inches**
- ☐ Use drip- or micro-irrigation to conserve water in plant and flower beds. **Credit: 1 inch**

For landscapes that use an in-ground irrigation system:

- ☐ Give your irrigation system a check-up. Replace broken and mismatched sprinkler heads. Redirect sprinkler heads so that water falls only on lawn and garden areas, not on paved surfaces. **Credit: 1 inch**
- ☐ Install a rain shut-off device on your automatic sprinkler system. *The shut-off device will override your system's timer when an adequate amount of rain has fallen.* **Credit: 1 inch**
- ☐ Design or modify your irrigation system to water lawn areas separately from plant beds, which have different water requirements. Calibrate your irrigation/sprinkler system to apply no more than 1 inch of water per application. **Credit: 1 inch**

Manage Yard Pest with Integrated Pest Management (IPM)

Improper use of pesticides can harm humans, pets, beneficial organisms and the environment as well as produce pests that are resistant and require increasingly powerful pesticides for their control. Pesticides should be used only for treatment of serious insect, weed and disease problems. IPM is a comprehensive process used to manage pests. It involves an understanding of the life cycle of the pest, other organisms (including beneficial organisms, our pets and ourselves), and the effects of a pesticide on these non-target organisms. When confronted with a pest, consider all possible alternatives, and use a pesticide only as a last resort. Always read the label before using any pesticide. The steps of IPM include: regularly monitor for signs of plant problems and insect pests (use a hand lens for a closer look and don't forget the undersides of the leaves); prevent pest problems before they occur; once identified, consider cultural or mechanical means of control; encourage beneficial organisms; and as a last resort, if deciding to use a pesticide, try bio-rational materials like insecticidal soap, horticultural oil, neem, B.t. (for caterpillar pests) first. Recognize and understand that some damage is okay and even necessary in establishing a healthy ecosystem.



Actions:

- ☐ Avoid routine applications of herbicides, fungicides, and insecticides. Spot treat only affected plants or lawn areas rather than spraying your entire lawn and landscape. (Ask your lawn and landscape maintenance company to follow these strategies if they maintain your landscape). **Credit: 1 inch**
- ☐ Learn to identify three beneficial insects that provide natural control of harmful pests. List them. _____ *Note: praying mantids are not necessarily beneficial — they will eat beneficial insects as well as pests; but they do indicate an environment where few harsh pesticides are used.* **Credit: 1 inch**
- ☐ Many plants that attract & feed beneficial insects are edible. Plant at least one or two in the garden to do double duty. Examples include anise, basil, carrot, coriander, dill, fennel, mints, anise hyssop, kale, Asian greens, parsley, sage, and thyme. **Credit: 1 inch**
- ☐ Use non-pesticide tools such as attractants (e.g., slug traps) and barriers (e.g., floating row cover), and hand-pick insects to control pests in preference to pesticides. Avoid using Japanese beetle traps — they will actually attract beetles to your landscape. **Credit: 1 inch**
- ☐ Hand-pull weeds frequently where possible. *It requires less effort to remove weeds when they are young and tender. This is a non-toxic way to control weeds.* **Credit: 1 inch**

- ☐ Remove plant debris and diseased plants to prevent the spread of disease from one season to the next. Dispose of in garbage to reduce further spread — do not compost. **Credit: 1 inch**
- ☐ Choose resistant varieties of plants to reduce potential need for pesticides. **Credit: 1 inch**
- ☐ If deer, groundhogs, raccoons, or rabbits are a problem in your garden, use fencing or repellents to deter or repel them. **Credit: 1 inch**
- ☐ Attract beneficial insects to your garden by planting beds with a variety of native plants. *These plants and other herbs help diminish pest invasions, provide habitat, and produce small flowers that serve as nectar and pollen sources for beneficial insects.* **Credit: 1 inch**

Mulch Appropriately / Recycle Yard Waste

Mulching retains soil moisture, moderates soil temperature, and helps prevent erosion and weeds. By using mulch you'll use less water, have healthier plants, and fewer weeds. (Note: never use freshly-ground organic material, like brush or hardwood bark, as mulch. It robs nitrogen from the soil and can cause plant yellowing. Allow these materials to age for at least 6 months before using.) Also, in a Maryland landscape, grass clippings, leaves, yard trimmings, and organic kitchen scraps, such as vegetable & fruit peelings, egg shells, and tea and coffee grounds, should be composted rather than sent to the landfill or down the kitchen disposer.

Actions:

- ☐ Maintain no more than a 2- to 3-inch layer of organic mulch over the roots of trees, shrubs, and in planting beds. *Deeper mulch may prevent water from filtering down to the plant roots. Prevent wood mulch from coming in contact with tree or shrub bark. The same microorganisms that break down the mulch will damage and destroy woody plants. Leave at least 1 inch of space between the base of the tree or shrub and the mulch.* **Credit: 1 inch**
- ☐ Create self-mulching areas under trees and shrubs where non-diseased leaves and pine needles can remain where they fall. **Credit: 1 inch**
- ☐ Use by-product mulches such as shredded hardwood, pine bark, or pine bark nuggets. *These may be available from your community or check your local garden center. (Caution! Excessive use of hardwood mulch can cause manganese toxicity in acid-loving plants, like azaleas.)* **Credit: 1 inch**
- ☐ Use compost, fallen leaves, dried grass clippings, and pine needles found in your yard as mulch under trees, shrubs, and in flower beds, rather than bagging and discarding them. *Pine needles are great in beds of acid-loving plants like azaleas, Japanese pieris and rhododendron. They make attractive natural mulch and they're free.* **Credit: 1 inch**
- ☐ Create and maintain a compost pile with collected clippings, leaves, and kitchen scraps (no animal products, please; crushed eggshells are okay). *Check your local city/county ordinances to see if kitchen scraps can be used.* **Credit: 2 inches**
- ☐ Vermicompost indoors if you cannot compost outdoors. **Credit: 1 inch**

Fertilize Wisely

Healthy lawns can protect soil and water quality by holding soil in place with their roots. But be careful. Fertilizers can be harmful to the environment and your yard if not used properly. When applied at the wrong time or over-applied, fertilizers can create salt problems in the soil, affect winter hardiness, exaggerate pest problems, and make plants grow excessively (which can mean more mowing!) Fertilize only as needed to maintain the health and quality of lawns. Do not over-fertilize. The University recommends using no more than .9 pound of total Nitrogen (which can include 0.7 pounds of soluble Nitrogen) per 1,000 square feet of lawn per application and no more than 2 to 3 applications per year. Excess nitrogen and phosphorus (two primary components of fertilizer) can leach out of the soil and pollute groundwater or run off landscapes and pollute local streams and rivers and the Chesapeake Bay. If heavy rain is forecast, avoid fertilizing lawn to prevent polluted runoff. Do not apply lawn fertilizer between November 15 and March 1. Acid-loving plants such as azalea, camellia, heath, leucothoe, mountain laurel, pieris, and rhododendron grow best in soils with a pH of 4.5 to 6.0. Fertilize with acid-forming fertilizers, but test soil periodically to prevent making the soil too acid.

Actions:

- ☐ Test your soil every 3 to 5 years. Results will indicate nutrient/lime needs. Follow recommendations as specified. *Call your county Extension office or the Home and Garden Information Center, HGIC, at 1-800-342-2507, for information on getting your soil tested.* **Credit: 2 inches**
- ☐ Use a fertilizer with the proper balance of nutrients for landscape plants. *Generally, trees and shrubs need a ratio of 3:1:1 of Nitrogen, Phosphorous, Potassium (N-P-K); flowering plants need a higher amount of P than N and K while established lawns need a fertilizer high in N, no P and moderate in K. Use appropriate fertilizer on turf. The N should be higher than the K. Appropriate formulations might be: 28-0-4 or 35-0-6.* **Credit: 1 inch**
- ☐ Fertilize cool season grasses (fescues, bluegrass and ryegrass) only in the fall (September through early November). Warm season grasses such as Zoysia and Bermudagrass should only be fertilized from mid-May to early June. **Credit: 1 inch**
- ☐ Grass-cycle. *Minimize the need for synthetic lawn fertilizers by using a mulching blade on your mower and leaving grass clippings on the lawn to decompose. This is called grass-cycling and can fertilize your lawn for free.* **Credit: 1 inch**

- ☐ Use compost, slow release, or natural organic fertilizers. *Buy fertilizers that contain at least 20% of the nitrogen in slow release forms. Look for words such as water insoluble nitrogen (WIN), controlled release nitrogen, sulfur coated urea (SCU), IBDU, ureaformaldehyde (UF) or resin-coated urea to indicate slow release forms.* **Credit: 1 inch**
- ☐ Avoid spilling/leaving granular fertilizer on paved surfaces. Sweep it back onto the lawn or collect it for use later. **Credit: 1 inch**
- ☐ During the fall, mow when lawn is lightly covered with fallen leaves. Leave finely shredded leaves on lawn to decompose and release nutrients to the soil. *Mulching mowers are great for this task. This action adds 'free' nutrients to the lawn which reduces the amount of recommended fertilizer by 25–30%.* **Credit: 3 inches**
- ☐ Check here if you never fertilize your landscape plants. **Credit: 5 inches**
- ☐ Check here if you never fertilize or don't have a lawn. **Credit: 5 inches**

Plant Wisely

Plants suited to your site, especially Maryland natives, will require minimal amounts of water, fertilizer, and pesticides and they may provide benefits to your home. A variety of plants helps create a healthy environment. Group plants in the landscape according to their water and maintenance needs. Replace problem-prone plants with better adapted, non-invasive species.

Actions:

- ☐ Incorporate a variety of native plants into your landscape. Give yourself credit if you have at least 4 different species. List them. _____ _____ **Credit: 1 inch**
- ☐ If you choose to have a lawn, plant drought-tolerant turfgrass species such as turf-type tall fescue, fine fescue, or zoysiagrass instead of higher-maintenance species like Kentucky bluegrass. In areas with no foot traffic, consider planting native grasses, ground covers, or shrubs. **Credit: 1 inch**
- ☐ Convert lawn to a conservation landscape. Determine how much grass you want for children, pets, recreation, or ornamental purposes. *Grass requires extensive maintenance to grow well, potentially resulting in greater air and water pollution. Where possible, replace unneeded lawn areas with beds of low or no maintenance native ground covers, grasses, perennials, shrubs, or trees.* **Credit: 2 inches**
- ☐ Save energy by using trees and shrubs to shade the southern and western walls of your home and your air conditioner compressor. **Credit: 1 inch**
- ☐ Use deciduous trees on southern exposures to allow the sun to passively heat your home in winter, and/or use evergreen trees and shrubs on northwestern exposures to protect your home from cold winter winds. **Credit: 1 inch**
- ☐ Educate yourself about what is invasive in our area and avoid planting these plants. Help stop the spread of invasive, exotic plants such as English ivy, Bamboo, Purple loosestrife, Japanese honeysuckle, Norway maple, 'Bradford' callery pear, Russian olive, Chinese bittersweet, Multi-flora rose, Kudzu, and Tree of heaven by removing them from your landscape. **Credit: 1 inch** ***SUBTRACT 3 inches if landscape contains any above-mentioned plants.***

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www.extension.umd.edu/baywise

For specific information on how to pursue an action contact:

University of Maryland Extension
Home & Garden Information Center (HGIC)
12005 HOMEWOOD ROAD • ELLICOTT CITY, MD 21042
1-800-342-2507

You can also order fact sheets by phone or on-line. Find list at:
http://extension.umd.edu/hgic/resources
then click on the Publications link.

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