UNIVERSITY OF MARYLAND EXTENSION | BAY-WISE
A MASTER GARDENER PROGRAM

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Bay-Wise Maryland Yardstick

For Small Space Urban Gardens, Townhouses, and Apartment Balconies

How Does Your Small Space Garden Measure Up?

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

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 street gutter, storm drain, drainage ditch, 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 contribute to the degradation of Maryland's reservoirs, streams, rivers, and the Bay. Maintaining environmentally sound gardens and yards 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 in improving the health of our environment.

By Changing a Few Simple Landscape Practices, You and Your Family can Help Keep Maryland Communities Healthy

Name: _____

Date: _____ **Score:** _____

Are You a Bay-Wise Gardener?

Gardeners can contribute to cleaner local waterways, Chesapeake Bay, and our environment by using several environmentally sound approaches.

- Control stormwater runoff
- Encourage wildlife
- Protect the waterfront
- Mow properly/Water efficiently
- Mulch appropriately /Recycle yard waste
- Fertilize wisely
- Plant wisely
- Manage yard pests with Integrated Pest Management (IPM)

Directions: Approaches and management practices listed in this factsheet are designed for individual home landscapes. Read through the choices carefully. Select the actions that you have already taken in your garden. Check off your credits as you complete each action and total them when you are done. Your goal is to reach or exceed 36 inches.

Control Stormwater Runoff

Any rain and irrigation water that runs off your balcony, yard, or garden 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, loosen compacted soil with a garden fork or shovel (only on level areas) and amend it 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 walkways or other impervious areas. 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 non-invasive groundcovers on thinly vegetated areas, under trees, or on slopes to decrease erosion. **Credit: 1 inch**
- ☐ Core aerate lawn areas at the appropriate time, depending on the type of grass and amend compacted soil with compost to restore and enhance infiltration. **Credit: 1 inch**
- ☐ Keep trash, grass clippings, fallen leaves, pet waste, and other yard waste out of storm drains, waterways, and drainage areas. **Credit: 1 inch**
- ☐ Construct beds or install planters and fill with native trees, shrubs, grasses, and groundcovers 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. Use this stored water on non-edible plants to make room in the barrel for the next rain. *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 the 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 garden. Local wildlife relies on native plants for food and shelter. Mass plantings help wildlife easily find food and shelter.

Actions:

- ☐ Provide and properly maintain a water source for wildlife, such as a birdbath or small pond. Change birdbath water every other day to provide a fresh, clean drink and discourage mosquitoes and disease. **Credit: 1 inch**
- ☐ Provide and properly maintain wildlife shelters such as a toad house, birdhouse, or a dead tree (snag). **Credit: 1 inch**
- ☐ Incorporate small native trees into your landscape. *Flowering dogwood, redbud, and serviceberry 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. *Red osier dogwood, black or red chokeberry, bayberry, possumhaw viburnum (smooth witherod), native rhododendron, early, tall or three-lobed coneflower, indiangrass, little bluestem, and switchgrass are examples. Native honeysuckle, native beebalm, great blue lobelia, cardinal flower, scarlet beebalm, bluestar, and three-lobed coneflower 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, goldenrod, black-eyed Susan, purple coneflower, and hyssop. **Credit: 1 inch**
- ☐ Incorporate butterfly larva host plants such as white turtlehead (for the Baltimore checkerspot) 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 the fragility of these natural treasures. Although we often don't think of it this way, "waterfront property" also includes those properties that drain to street gutters and storm drains.

Actions:

- ☐ Establish a buffer border of low-maintenance vegetation 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 slopes along waterways. **Credit: 2 inches**
- ☐ Do not fertilize within 15 feet of any waterway. **Credit: 1 inch**

  SUBTRACT 5 inches if fertilizer is applied within 15 feet of waterway.

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 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 your yard. Long, slow, soaking applications are good; avoid short, frequent, shallow applications, which can actually cause 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 cool plants and provide moisture for beneficial insects and spiders. Water overhead in the morning only. *This allows time for the leaves to dry and will reduce the potential for disease.* **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 container gardens:

- ☐ Choose containers that are large enough and deep enough to prevent them from drying out too quickly. **Credit: 2 inches**

Manage Yard Pests with Integrated Pest Management (IPM)

Improper use of pesticides can harm humans, pets, beneficial organisms, and the environment. Some pests may develop resistance, requiring increasingly powerful pesticides for their control. Pesticides should be a last resort for treating serious insect, weed, or disease problems. IPM is a comprehensive process used to identify and manage pests. It involves understanding 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 before applying a pesticide and always read the label first.

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, and Bt (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 mantises 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 and 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 insect pests. Avoid using Japanese beetle traps — they will 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 and the soil is moist. This is a non-toxic way to control weeds.* **Credit: 1 inch**

- ☐ Remove diseased plants to prevent the spread of disease from one season to the next. Dispose of these materials to reduce further spread — do not compost. **Credit: 1 inch**
- ☐ Choose resistant varieties of plants to reduce the potential need for pesticides. **Credit: 1 inch**
- ☐ If squirrels or rats 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 a variety of native plants. *These plants and other herbs provide habitat and produce 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. Also, grass clippings, leaves, yard trimmings, and organic kitchen scraps, such as vegetable and fruit peelings, eggshells, and tea and coffee grounds, should be composted rather than sent to the landfill or down the kitchen disposer. Compost slowly adds nutrients to the soil in addition to improving soil structure.

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 touching tree trunks. The same microorganisms that break down the mulch will damage and destroy bark. 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 or nursery.* **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**
- ☐ Leave fallen leaves in garden beds as long as possible in spring to allow insects living in and under the leaves to complete their life cycle. **Credit: 1 inch**
- ☐ Maintain a compost bin 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 encourage excessive growth (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 0.9 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 turfgrass 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 acidic. Typically, trees, shrubs, and herbaceous perennials grow well with the available nutrients in the soil and added organic matter and don't require supplemental fertilizers. However, heavily disturbed urban soils with little topsoil may require more fertilizer and organic matter to support healthy plant growth.

Actions:

- ☐ Test your soil every 3 to 5 years. Results will indicate nutrient/lime needs. Follow recommendations as specified. The *Home and Garden Information Center (HGIC) website* has detailed information on how to collect and submit a sample to a soil testing lab.* **Credit: 2 inches**
- ☐ Base fertilizer and lime applications on soil test results and recommendations. *Use appropriate fertilizer on turf. See HGIC web pages* on fertilizing different types of plants.* **Credit: 1 inch**
- ☐ Fertilize cool season grasses (fescues, bluegrass and ryegrass) 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 reduces the need for fertilizer by 25%.* **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, urea formaldehyde (UF), or resin-coated urea to indicate slow-release forms. Most organic fertilizers release nitrogen at a slow or moderate rate.* **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 the 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 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 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 (for each species up to 4)

- ☐ 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, groundcovers, 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 maintenance native ground covers, grasses, perennials, shrubs, or trees.* **Credit: 2 inches**

- ☐ Save energy by using trees and shrubs to shade and cool 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. Stop the spread of invasive, exotic plants such as English ivy, bamboo, purple loosestrife, Japanese honeysuckle, Norway maple, 'Bradford' callery pear, Russian olive, Japanese barberry, 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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