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Bay-Friendly Backyards

SAVE THE BAY®

NARRAGANSETT BAY

Yard care tips
that save time,
money and
the Bay.



ACKNOWLEDGMENTS

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introduction

How can you make your yard more attractive, cut back on chores and improve the quality of your local waters? Simply following the steps in this guidebook will help you reduce the time, effort and money spent maintaining your yard — and, at the same time, will restore the health of Narragansett Bay and Rhode Island's coastal waters.

Everybody lives in a watershed — an area of land where rain and melting snow flow downhill into a body of water, such as a river, salt pond, estuary or ocean. Narragansett Bay's watershed extends from Worcester to Taunton and from Newport to Narragansett. Even if you don't live *on* the water, your actions matter. We are all connected to and responsible for the health of our coastal waters.

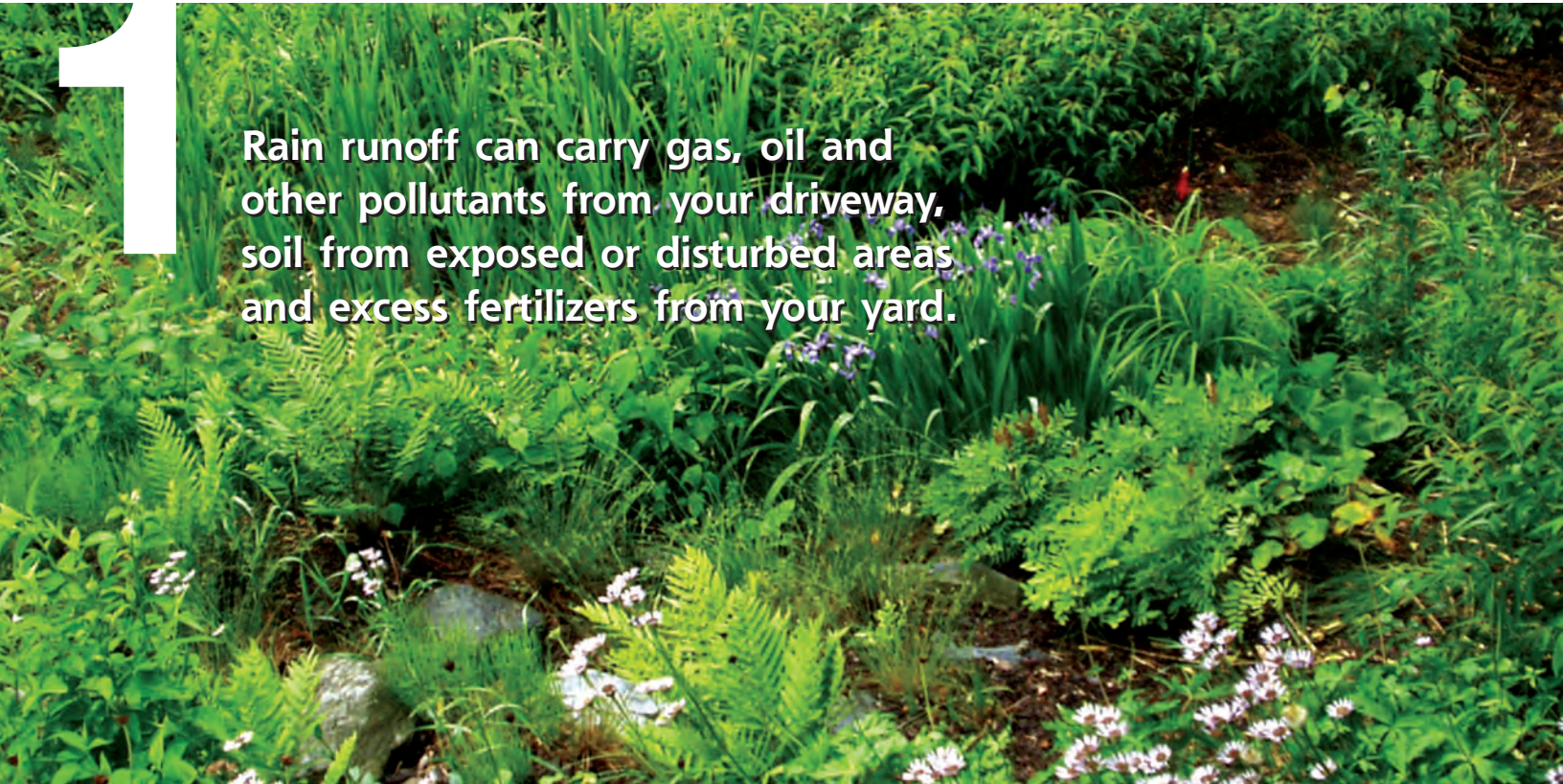

At first glance, your lawn might be the last place you would look for pollution sources. However, improperly managed yards have a harmful effect on Rhode Island's water quality. Excess fertilizer and pesticides can run off your yard and flow into local waters. The polluted runoff ends up over-fertilizing the Bay and contributing to smelly, summertime seaweed blooms, which can lead to fish kills and make the Bay less enjoyable for swimming and fishing. In addition, an increased demand for water in the summer months due to outdoor watering impacts fish and aquatic life when rivers and streams run low.

Not to worry, though. There are some simple steps you can take.

To minimize and even eliminate harmful impacts on local waters, use the tools in this guide to:

- **Reduce the amount of water running off your yard.**
- **Create a rain garden.**
- **Enhance your garden with native plants.**
- **Adopt environmentally friendly lawn and garden practices.**
- **Save time and money on maintenance.**

rainwater



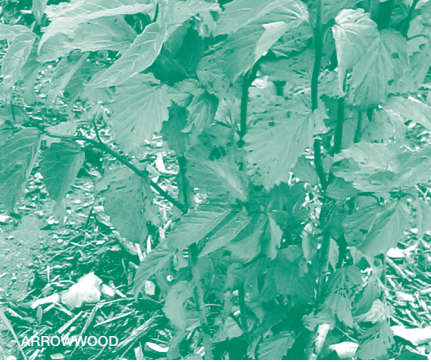
Rain runoff can carry gas, oil and other pollutants from your driveway, soil from exposed or disturbed areas and excess fertilizers from your yard.



MAKE YOUR YARD A SPONGE

Rainwater that lands in your yard is a free resource that often just washes away. In some communities, watering is restricted in the summer months. The next time it rains, watch where the water flows from your gutters and your yard. Use the techniques below to capture the water for reuse.

- Rain barrels can be hooked directly to downspouts. The rain they collect from the roof can be reused for watering your lawn and flower garden.
- Use alternatives to concrete and asphalt for driveways (such as gravel or crushed shells) and walkways (such as blue stone set in stone dust or sand). Plant shrubs around driveways, and direct runoff to planted areas.
- Plant groundcover, shrubs or trees on steeper slopes. These plants have deeper root systems than grass and can better hold the soil in place, slow down stormwater and help water soak into the soil.
- Direct downspouts from your roof onto flat grassy or gravel areas or into rain gardens. Rain gardens are shallow, planted depressions that collect and infiltrate rainwater diverted from your roof and paved surfaces. Rain gardens collect a few inches of rain during a storm; the water soaks slowly into the ground and dries up before the next storm.



CREATE A RAIN GARDEN

Rain gardens are simple to design, dig and plant, requiring minimal maintenance. Create your own using these steps and the Web sites in our Resources section.

LOCATION

- Keep rain garden at least 10 feet away from foundation, and let the downspout end about 4 feet from the outside edge of the garden.
- Determine rain garden size by estimating how much runoff will drain into it.

DEPTH AND SOILS

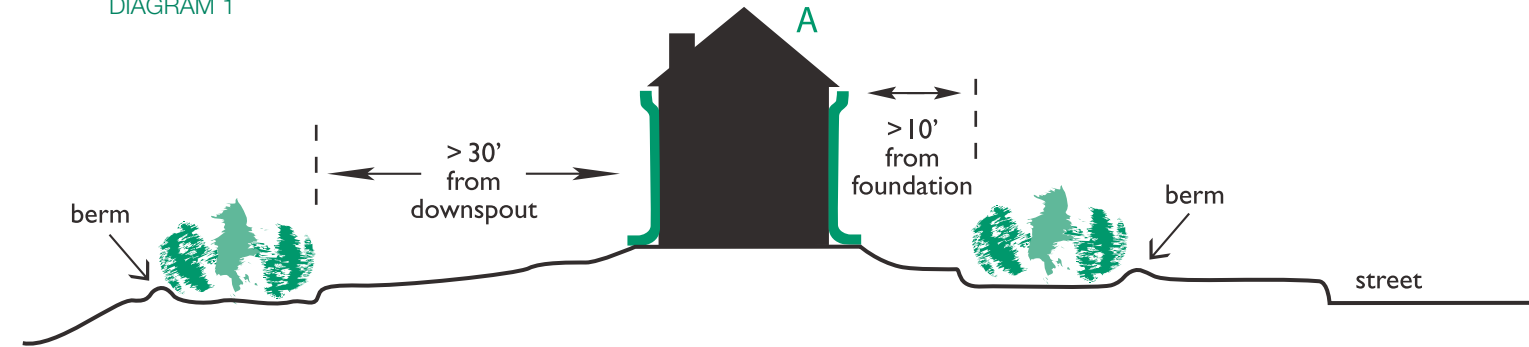
- If your yard slopes, make garden level by digging and creating a berm on the lower end. Call 1-888-DIG-SAFE first.
- Till the soil to a depth of 18 inches throughout garden area, and add amendments as needed.

- The soil in your rain garden should allow excellent root growth and recharge of water. Mix 50% sand, 30% aged compost and 20% topsoil.
- The base of the final garden should be flat and depressed 3-8 inches to hold and infiltrate rainwater.

PLANTS AND MAINTENANCE

- Plant with a mixture of wet and dry tolerant grasses, flowers and shrubs. (Refer to RI Coastal Plant Guide.)
- Use 2 inches of mulch to retain moisture and limit weeds.
- Put tallest plants in deepest part of garden.
- Weed and prune shrubs once a year. Replace mulch as needed, maintaining a minimum depth of 2 inches.

DIAGRAM 1



PLANNING THE SIZE OF YOUR RAIN GARDEN

A rain garden does not need to be big in order to be functional. Below is a sample calculation that refers to roof A in the Diagram 1 above.

- **STEP 1** Calculate the roof surface area for each downspout ($A = 30' \times 20' \text{ roof} = 600 \text{ ft}^2$)
- **STEP 2** Multiply the roof surface area by a size factor. Size factor varies based on garden slope, soil type and depth, and distance from downspout. ($600 \text{ ft}^2 \times 0.25 = 150 \text{ ft}$ or a $10' \times 15'$ rain garden)
To determine your size factor and get step-by-step instructions on creating a rain garden, download the how-to manual at www.learningstore.uwex.edu/Assets/pdfs/GWQ037.pdf
- **STEP 3** Create a planting plan for the rain garden (see Diagram 2 on the following page).

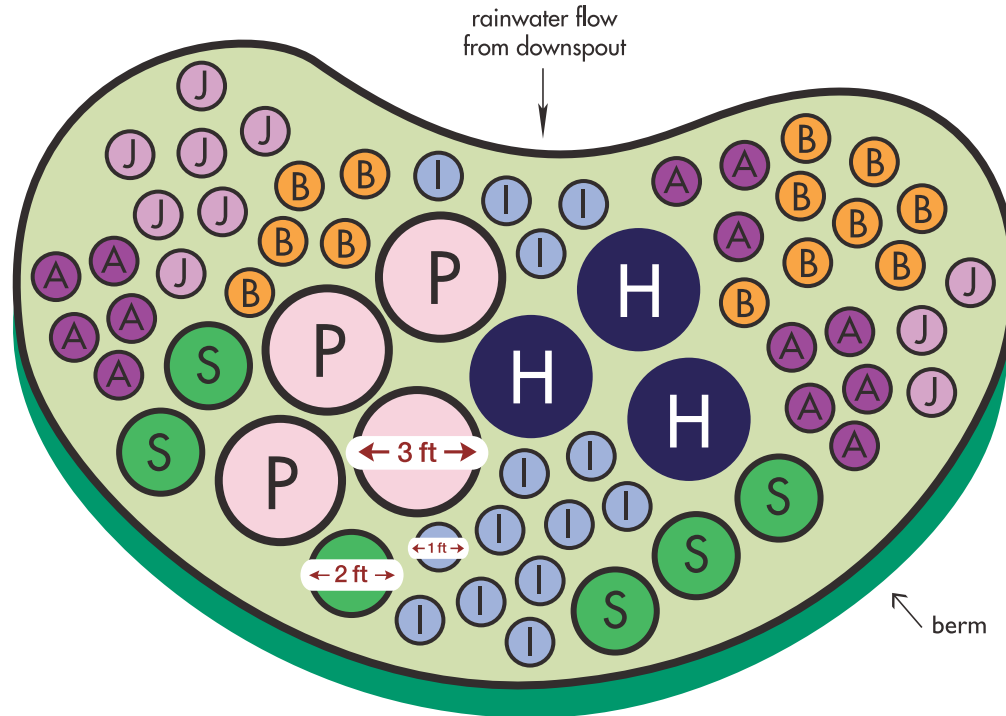
on plants & planting

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DIAGRAM 2:
10'x15' RAIN GARDEN
WITH 1FT, 2FT AND 3FT-
DIAMETER PLANTINGS

SAMPLE RAIN GARDEN PLANTS:

- A - New England Aster
- B - Butterfly Milkweed
- H - Highbush Blueberry
- I - Blueflag Iris
- J - Joe Pye Weed
- P - Sweet Pepperbush
- S - Switchgrass



Why Natives?

Plants that are native to southern New England are less likely to need intensive watering or fertilizing as compared to plants from other parts of the world. Native species also make excellent habitat for local wildlife.



 suitable for rain gardens


Waterfront homeowners can create and maintain a buffer of native plants to infiltrate rainwater and prevent erosion. Buffers filter and remove pollutants, provide habitat for wildlife and prevent unwanted species such as non-migratory Canada geese from feeding on your lawn.

RED CEDAR

INTEGRATE NATIVE PLANTS INTO YOUR LANDSCAPE

Native New England plant species have evolved to the soil and climate conditions of our region, making them hardier than exotic species and saving homeowners the cost of replanting and expensive maintenance. When purchasing native plants, refer to the scientific name, and *do not buy hybrids or cultivars*. A hybrid typically has a third name added to the Latin name (*Ilex glabra compacta*), whereas a cultivar has a third name in quotes (*Ilex verticillata* “Red Sprite”). Following are some examples of native trees, shrubs and perennials that make sustainable and attractive wildlife habitat.

TREES


 **AMERICAN HOLLY**, *Ilex opaca*
Slow-growing evergreen; grows to 40 ft; showy red berries; deep green, prickly leaves.

PAGODA DOGWOOD, *Cornus alterniflora* Grows up to 25 ft; shade-tolerant but fares better in sunlight; prefers slightly acidic, well-drained soil.


RED CEDAR, *Juniperus virginiana*
Conical shaped evergreen; grows 30


to 50 ft; blue berries; requires full sun and well-drained soil.


RED MAPLE, *Acer rubrum* Grows 40 to 60 ft; fast growing; prefers full sun, but will grow in shade; widely adaptable to different soil conditions.


 **SHADBUSH**, *Amelanchier canadensis*
Small tree; grows in clumps with showy masses of white flowers in late April.


SHRUBS

 **ARROWWOOD**, *Viburnum dentatum*
Grows 6 to 12 feet; fast growing; requires partial to full sun; tolerates drought.

 **BAYBERRY**, *Myrica pensylvanica*
Semi-green shrub; grows 8 to 10 feet; wavy-edged leaves; waxy silver berries; turns purple in autumn.


 **BLACK AND RED CHOKEBERRY**, *Photinia* (formerly *Aronia*) *melanocarpa* and *P. pyrifolia* (formerly *A. arbutifolia*)
Grow 4 to 5 feet in shade and full sun; tolerate any soil, adapted to wetter areas; purple/black and red berries.

 **HIGHBUSH AND LOWBUSH BLUEBERRY**, *Vaccinium corymbosum* and *V. angustifolium* Grows 6 to 12 feet (highbush) and up to 2 feet (lowbush); white/pink bell-shaped flower clusters; prefer moist, acidic soil; grow in full sun.

 **MOUNTAIN LAUREL**, *Kalmia latifolia*
Evergreen shrub; grows 5 to 8 ft; white and pink blossoms; prefers acidic soil and moderate shade.

STEEPLEBUSH AND MEADOWSWEET, *Spiraea tomentosa* and *S. latifolia*
Deciduous shrub; grows 3 to 6 feet; pink flowers.

 **SWEET FERN**, *Comptonia peregrina*
Grows 2 to 3 feet; aromatic fern-like leaves; full sun to partial shade; tolerant of dry soil.

 **SWEET PEPPERBUSH**, *Clethra alnifolia*
Grows 6 to 9 feet; flowers are fragrant pink/white in July-August; turns gold in autumn.

VIRGINIA ROSE, *Rosa virginiana*
Grows 3 to 6 feet; pink summer roses; glossy oval dark leaves; red fall foliage.

BAYBERRY

STEEPLEBUSH

SWEET FERN

SWEET PEPPERBUSH



MULTIFLORA ROSE



ORIENTAL BITTERSWEET

The easiest time to control invasive species is when they are NOT dominant in the landscape. Always consult a certified Invasive Manager for the removal of invasive species in sensitive areas, like coastal buffers.

WINGED SUMAC, *Rhus copallina*
Mid-sized shrub with stems covered in short, soft hairs; distinctive foliage with winged stems.

💧 **NATIVE PERENNIALS** include New England Aster, Butterfly Milkweed, Blueflag Iris and Joe Pye Weed.

ELIMINATE INVASIVE PLANTS

Exotic invasive plants aren't native to this region and can outcompete native plants. Quick-growing invasives are generally spread by seed-eating animals.

Below are three common invasive plants sold at nurseries in Rhode Island (with native alternatives):

BEACH ROSE / MULTIFLORA ROSE, *Rosa rugosa* and *R. multiflora*
Native alternatives: Virginia rose, Carolina rose, swamp rose, sweet pepperbush.

BURNING BUSH, *Euonymus alatus*
Native alternatives: highbush blueberry, red chokeberry, winterberry holly, winged sumac.

JAPANESE BARBERRY, *Berberis thunbergii* **Native alternatives:** winterberry holly, inkberry, bayberry, red and black chokeberry.

Below is a list of four common invasive plants established in Rhode Island:

HONEYSUCKLE, *Lonicera morrowii*
A flowering shrub with a fragrant white to yellow flower; berries are dark red and may remain on shrub through winter; tolerates a variety of conditions; invades disturbed sites and woodland edges.

JAPANESE KNOTWEED, *Polygonum cuspidatum* Bamboo-like plant growing 5 to 10 ft tall with small flowers in the fall; spreads quickly to form a dense stand; spreads rapidly from long rhizomes and by seed; tolerates a variety of conditions



including full shade, high temperature, drought and high salinity.

MULTIFLORA ROSE, *Rosa multiflora* Thorny shrub with white flowers and small red rose hips; found in fields and roadsides; forms dense thicket, which can choke out native plants; adapts to wide range of environments from extremely dry to standing water.

ORIENTAL BITTERSWEET, *Celastrus orbiculata*
Deciduous woody vine that can reach 60 ft high depending on surrounding vegetation; fruit is green changing to bright yellow/orange once mature; vines damage and kill native vegetation by constricting and shading the trees or shrubs; seeds remain viable for several years, and control actions must continue until seed sources are eliminated.

PLANT RESOURCES

THE RHODE ISLAND COASTAL PLANT GUIDE
(includes lists of native and rain garden plants plus local nurseries that carry them)
www.uri.edu/cels/ceoc/coastalPlants/CoastalPlantGuide.htm

INVASIVE PLANTS
www.pwa-nh.org/invasivesguide.htm

CONTROL TECHNIQUES FOR COMMON INVASIVES IN RHODE ISLAND
www.nps.gov/plants/alien/fact.htm

CERTIFIED INVASIVE MANAGERS
www.uri.edu/cels/ceoc/documents/CertifiedIMs.pdf

INVASIVE:
RUSSIAN OLIVE

lawn care

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If you hire a maintenance service, ensure that the landscape service provider follows these tips. Ask your landscaper to use organic fertilizers and alternative pest control strategies.



CREATE A SUSTAINABLE LAWN AND GARDEN

SEEDING

- Minimize the size of your lawn to save time and money on mowing and watering.
- Select seed mixes containing drought- and disease-tolerant grass species like fescues. Minimize use of Kentucky bluegrass because it requires regular watering and fertilizer.

MOWING

- Set your mower at 3 inches. Grass at this height needs less water, prevents most sun-loving weeds from sprouting and is more drought-tolerant and disease-resistant than shorter grass.

- Leave the clippings where they fall. They reduce evaporation, keep the soil cooler during hot weather and provide up to 30% of your lawn's nutrient needs.

WATERING

- Just say no to H₂O! Lawns that turn brown and dry during the summer are only dormant and will green up when it rains.
- If you must water, do it in the morning, which reduces evaporation, and water only once a week with 1 inch of water. Place a rain gauge in the sprinkler zone to measure the right amount.
- Use soaker hoses for gardens.

Sprinkler systems set to turn on every day actually weaken the grass by encouraging shorter roots. Water once a week instead, and let it dry out in between. During wet weather you can shut off your sprinkler timer and save on water bills.



FERTILIZING

- Too much fertilizer contributes to thatch build-up, leaches into the groundwater and washes off into the Bay. It also causes excessive grass growth, undermines natural resistance and requires more frequent mowing.
- If you must use fertilizer, use a one-half application of slow-release organic fertilizer in the spring and one full application in the fall, no later than mid-October.
- Shop for slow-release organic fertilizers derived from manure, compost and other natural sources. Organic fertilizers increase soil moisture retention, provide minerals and trace elements not found in chemical fertilizers, and release nutrients slowly so they are available to plants for longer periods of time.

CONTROLLING WEEDS AND PESTS

- Weeds can sometimes be a symptom of soil problems. Soil testing is available through the University of Rhode Island Cooperative Extension. Call 1-800-448-1011.
- Choose natural or organic ways to control pests. Make your own insecticidal soap spray, with two and a half tablespoons of liquid dish soap in one gallon of water. Spray liberally on affected plants and repeat if necessary.
- Encourage natural pest predators. Plant a variety of flowering plants that will attract beneficial insects, like butterflies and bees as well as pest predators.
- Identify pests before treating. Call the Master Gardeners Hotline at 1-800-448-1011.

COMPOSTING

- Compost, including yard waste, grass clippings and vegetable scraps, improves the ability of soil to retain water and provides slow-release fertilizer for your plants. For tips on backyard composting or purchasing a compost bin, contact Rhode Island Resource Recovery Corporation (RIRRC) at 401-942-1430.
- For proper disposal of pesticides and other hazardous materials, contact RIRRC's Eco-Depot at 401-942-1430.

LAWN CARE RESOURCES

SEEDING

www.uri.edu/ce/factsheets/sheets/selectturf.html

PEST MANAGEMENT AND SOIL TESTING

www.nysipm.cornell.edu/landscapes/default.asp

www.uri.edu/ce/publications/soiltest.pdf

COMPOSTING

www.uri.edu/cels/ceoc/ceoc_programs_mcrp.html

www.rirrc.org

CERTIFIED ORGANIC LAWN CARE PROFESSIONALS

www.organiclandcare.net



The water you see running in the gutter or hear gurgling in storm drains carries pesticides, herbicides, fungicides and fertilizer off our yards and into the Bay.





ADDITIONAL RESOURCES

STEP-BY-STEP INSTRUCTIONS FOR CREATING A RAIN GARDEN

www.learningstore.uwex.edu/Assets/pdfs/GWQ037.pdf (from University of Wisconsin)

www.dnr.wi.gov/runoff/rg/

STORMWATER MANAGEMENT BEST PRACTICES

www.epa.gov/oaintrnt/stormwater/best_practices.htm

MAKING WILDLIFE HABITAT AT HOME

www.nwf.org/backyard

BACKYARD CONSERVATION

www.nrcs.usda.gov/Feature/backyard

LAWN AND GARDEN CARE TIPS

www.nrcs.usda.gov/feature/highlights/homegarden/lawn.html

RI MASTER GARDENERS

www.urimga.org/

URI LANDSCAPING OUTREACH

www.uri.edu/ce/landscapehort.html

www.uri.edu/cels/ceoc/ceoc_programs_clp.html

TOP TEN YARD CARE TIPS

1. Water your lawn no more than 1 inch per week. Use a rain gauge to keep track.
2. For the healthiest lawn possible, set your mower to its highest setting.
3. Reduce your fertilizer use, and use organic, slow-release fertilizers.
4. Choose native plants from the nursery to reduce maintenance and increase the habitat value of your yard.
5. Capture rain from your roof with a rain barrel. Use the captured rain to water your lawn and flower garden.
6. Choose alternatives to harmful pesticides like beneficial insects or non-toxic chemicals.
7. Compost your yard and kitchen waste. Use the compost as an excellent fertilizer for your lawn and gardens.
8. Remove invasive plants growing wild in your yard, and refrain from purchasing invasives from nurseries.
9. Test your soil so you can identify and address problems.
10. Reduce the size of your lawn to save money and time on maintenance.



Have yard care questions?
Call us at 401-272-3540, x113.
Learn more at
WWW.SAVEBAY.ORG/Backyards

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