

# 8 practice climate-smart gardening



## Protect the Chesapeake Bay

Like farmers, homeowners play an important role in protecting our soil and water resources, especially the Chesapeake Bay. This series of fact sheets highlights various conservation measures—best management practices—that farmers use to produce healthy crops, combat climate change, and protect water quality in the Chesapeake Bay and its tributaries. Homeowners can apply these same conservation measures to home, lawn, garden, and landscape projects. Working together, we can make a difference for the Bay. For more information on ways to improve your lawn or garden, adapt to climate change, and protect the Bay, contact the organizations listed on the back panel.



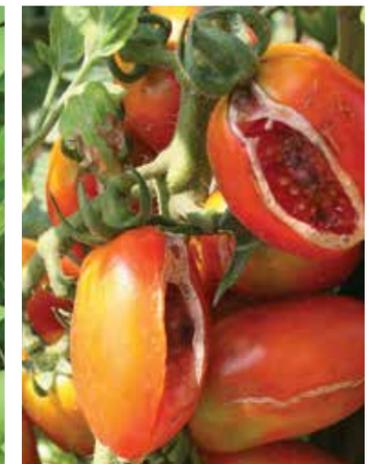
## What is Climate Change?

Scientists define climate change as a long-term shift in global temperatures and regional weather patterns. Although Earth's climate has warmed and cooled naturally over time, the evidence shows that human activities are speeding things up. The fossil fuels that we burn to produce electricity, power industry, drive our cars, and run our households release carbon dioxide and other gasses into the Earth's atmosphere. These "greenhouse" gasses trap the sun's heat and contribute to the warming of the Earth's atmosphere. Agriculture contributes to climate change, but farmers also serve as part of the climate change solution. So can you.

## Climate Change and Your Backyard

Farmers, gardeners, and anyone who spends time outdoors are already familiar with climate change. Warmer winters and hotter summers have caused trees to bloom earlier and hang onto their leaves later. In dry years, drought stress leads to premature leaf drop, while in wet years we see more plant disease problems and waterlogged soils. New and aggressive invasive plants and weeds are popping up in the garden and outcompeting native plants for nutrients and sunlight. Bird and animal migration patterns are also changing. Some species have become year-round residents in our backyards, while others have disappeared in some areas altogether.

LEFT TO RIGHT: Climate change threatens to alter the range of the Eastern Towhee; the rise of superweeds along with hail damage threaten plants, trees and crops.



## Climate Change and the Chesapeake Bay

The Chesapeake Bay is highly vulnerable to the effects of climate change. Rising sea levels, warmer water temperatures, and coastal flooding are the new reality for the Bay and low-lying coastal communities. Climate change impacts the abundance and variety of aquatic life in the Bay and threatens to reverse hard-fought nutrient and sediment reductions achieved over the last 40 years. Frequent and heavy rains increase urban and agricultural runoff, and warmer water temperatures can lead to more dead zones in the Bay. The Chesapeake Bay Executive Council has called on the Bay states to integrate climate action into their restoration plans to address this threat.

## Follow the Lead of Maryland Farmers

Maryland farmers are coping with the effects of climate change. Warmer winters, hotter summers, extreme weather, flooding, and saltwater intrusion on low-lying farmland have led to crop failures, planting and harvest delays, and rising production costs. But farmers are not sitting idly by. They are using new technologies and updated farming methods to make their farms more resilient while helping to slow climate change. You can follow their lead in your backyard or garden.



### Other Ways to Reduce Your Carbon Footprint

- Start a vegetable garden.
- Support local farmers. Locally grown foods are fresher and reduce carbon emissions associated with long-distance transportation and storage.
- Reduce food waste and compost food scraps to reduce methane emissions in landfills. Methane is a greenhouse gas that contributes to climate change.

### Additional Extension Resources

- Climate-Resilient Gardening**  
<https://go.umd.edu/climateresilientgardening>
- Coastal Climate Program**  
<https://extension.umd.edu/programs/environment-natural-resources/program-areas/coastal-climate-program>
- Explore Home Energy Topics**  
<https://extension.umd.edu/resources/environment-energy/energy/home-energy>

**Maryland Department of Agriculture**  
Office of Resource Conservation  
50 Harry S. Truman Parkway  
Annapolis, MD 21401  
410-841-5863  
[mda.maryland.gov/conservation](http://mda.maryland.gov/conservation)

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**HOME & GARDEN INFORMATION CENTER**  
12005 Homewood Road  
Ellicott City, MD 21042  
[extension.umd.edu/hgic](http://extension.umd.edu/hgic)

**MASTER GARDENER**  
[extension.umd.edu/mg](http://extension.umd.edu/mg)

**MARYLAND DEPARTMENT OF AGRICULTURE**



## Reduce Your Lawn's Carbon Footprint

While healthy lawns can remove carbon from the air, maintaining your property can take a heavy toll on the environment. Here are some ways to reduce your lawn's carbon footprint and become part of the climate change solution.

- Reduce your use of gas-powered lawnmowers and power tools. Use a push reel, battery-powered, or electric mower to cut your grass and a rake or broom instead of a leaf blower.
- Use fertilizers wisely. Synthetic nitrogen fertilizer is a significant contributor to greenhouse gas emissions.
- Fertilize responsibly by following Maryland's Lawn Fertilizer Law. Go to [mda.maryland.gov/fertilizer](http://mda.maryland.gov/fertilizer).
- TIP!** Leave grass clippings on the lawn. They provide free fertilizer and can reduce your lawn's nitrogen needs by up to 50 percent.
- Plant lawn alternatives in areas where grass does not grow well. This will reduce mowing and eliminate the need for fertilizers and pesticides that take energy to produce.
- Native meadows and grasses are excellent lawn alternatives. They provide food and cover for pollinators and birds.

## Plant a Wide Variety of Plant Species

Landscapes with more plant diversity are more resilient to invasive pests and disease pressures in a changing climate.

- Select native plants whenever possible. Native plants require less water and fertilizer. They provide food and shelter for wildlife, help store carbon, and reduce soil erosion.
- Plant a wide selection of native flowering trees, shrubs, and plants.
- Increased plant diversity will support pollinators and beneficial insects that prey on garden pests.
- Plant a butterfly garden. Plants favored by butterflies include butterfly milkweed (*Asclepias tuberosa*), common milkweed (*Asclepias syriaca*), Eastern purple coneflower (*Echinacea purpurea*), phlox (*Phlox spp.*), bee balm (*Monarda didyma*), goldenrod (*Solidago spp.*), and New England aster (*Aster novae-angliae*).



## Take Steps to Protect and Build Healthy Garden Soils

Here are four steps that you can take to build healthy soils in your garden that can better capture and store carbon from the atmosphere.



**1 Increase organic matter.** Improve your lawn or garden's soil health by applying a thin layer of compost on top of the surface, a practice known as topdressing. You can make your own compost from yard waste and food scraps.



**2 Put away your tiller.** Tilling can compact your soil, bring weed seeds to the surface, and disrupt soil-dwelling organisms that help to make the soil healthy. Follow the lead of Maryland farmers and practice no-till or low-till gardening to reduce soil erosion, increase residue cover, and increase soil organic matter.



**3 Rotate crops each season.** Change the location of the vegetables you plant in your garden each year. This simple activity can help interrupt pest, disease, and weed cycles.



**4 Plant a cover crop.** Cover crops provide food for the huge populations of beneficial organisms that live in the soil. Plant a cover crop of crimson clover, barley, or winter rye in your garden this fall to control erosion, reduce nutrient runoff, increase soil organic matter, and improve your garden's productivity.

**TIP:** Disturb your soil as little as possible when planting seeds or transplants.



## Manage Stormwater Runoff

Climate change is expected to increase the frequency and intensity of extreme weather events. You can do several things around your home to slow down the flow of rainwater runoff and put that water to good use.

- Create a certified Bay-Wise Landscape to help protect the Chesapeake Bay from runoff.
- Create a rain garden, swale, or vegetated buffer to reduce erosion and help excess water seep slowly and harmlessly into the ground.
- Use flexible tubing to divert downspout water away from your home's foundation so that it can be absorbed by your lawn, plants, or rain garden.



## Conserve Water

Although Maryland's yearly weather will be wetter, more severe and prolonged droughts are a major feature of climate change. Here's what you can do:

- Set up a drip irrigation system to prevent over-watering and apply water directly to plant roots.
- Purchase a rain barrel equipped with mosquito netting to capture and store rainwater runoff from downspouts.
- Plant drought-tolerant native perennial plants like the Eastern Prickly Pear Cactus (*Opuntia humifusa*), Maryland's only native cactus.
- Use mulch or compost to help plants retain moisture and reduce evaporation. A two-inch layer of mulch is best.



## Use Energy Efficient Landscaping

- Plant evergreen trees on the northwest side of your house to protect against winter winds.
- Plant deciduous trees on your home's west, east, and southwest sides. They will block the sun in summer and allow sunshine to penetrate and warm the house in winter.
- Use plants to shade your air conditioning unit. This will help keep the unit cool so that it does not work as hard. Leave at least 3 feet of space on all sides of the unit to allow good air circulation. Make sure your landscaping offers easy access for maintenance and repairs.

