

HOME-GARDEN

Global climate change poses challenges for gardeners

Mark Richardson Special to the Telegram & Gazette

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Growing up in New England, I often heard the adage, “If you don’t like the weather here, just wait a minute.” Truly, this is a region that celebrates its signature seasonal swings.

Generations of New Englanders have grown to love the region’s weather patterns, including the quirks, and our gardens often reflect our understanding of this region’s unique climate. However, over the past several decades, that understanding has been stymied by the impacts of climate change and gardeners are forced to adapt their knowledge toolbox.

The global climate is changing because burning fossil fuels releases carbon dioxide and other greenhouse gases into the atmosphere. While plants absorb carbon dioxide during photosynthesis, they can’t keep pace with rampant emissions warming the planet. A hotter planet impacts weather patterns in surprising, often extreme ways that science is working to understand. Climate attribution science looks closely at the connections between climate change and weather patterns to assess how emissions impact extreme weather events across the globe.

It’s important to remember that climate and weather are not the same, but they are intertwined, and gardeners see the impact of both. While weather refers to a singular event or a short-term trend, climate refers to long-term weather averages in an area. Weather brings cold snaps, for example, while climate informs the plant hardiness zones that tell us which plants will survive our winters. While at times we might enjoy how shifting plant hardiness zones have expanded the palette of plants to choose for New England gardens, this flexibility is a very thin silver lining.

Both precipitation and temperature are weather events impacted by climate change and two of the key components to understand when making decisions about how to adapt our gardens. In 2021, Worcester broke an 83-year-old monthly record for rainfall with nearly 14 inches of precipitation in July. The following year, 2022, the entire region was stuck in a

historic drought, with Boston recording the driest 4-month stretch from May to August in 138 years. Last summer, this column would have featured water-wise plants and green ground covers. But this year, we almost reached the record for precipitation in July again, with more than 12-inches of rainfall. This feast or famine situation makes many gardening tasks challenging.

A changing climate also brings new threats as insect pests and diseases make the most of opportunities to expand their ranges. Fire blight, for example, is a plant disease caused by a bacteria called *Erwinia amylovora* that affects plants in the rose family like apples and cherries. Most varieties of apple are susceptible to fire blight, but historically, it was a minor concern in New England. The bacteria that cause fire blight spreads in rainy, warm weather with air temperatures above 75 degrees Fahrenheit. It can spread quickly from tree to tree, carried by honeybees, when apple blossoms are open. Until about 15 years ago, it was rare in central Massachusetts to see air temperatures that high while apples were in flower in mid-May. This kept fire blight in the category of minor nuisance rather than virulent plant pathogen. Since 2010, we consistently reach temperatures above 75 degrees while apples are in bloom, facilitating the spread of the disease and forcing hobbyists and commercial growers to manage the disease or risk losing their trees.

New Englanders are proudly resilient. While gardeners can't solve the climate crisis, we can make our gardens more sustainable and better prepared for what lies ahead. We can choose native plants that are better adapted to the region's weather extremes. We can favor biological diversity when selecting plants so that we're not dependent on the survival of a limited plant palette. We can incorporate rain gardens and other design features in our landscapes to slow stormwater and limit flooding. And we can make climate-friendly choices to reduce our environmental impact, like reducing our lawns and transitioning to battery-powered landscape equipment. Landscape for Life (landscapeforlife.colostate.edu), a partnership between the U.S. Botanic Garden and Colorado State University Cooperative Extension, offers resources for those interested in learning more about climate-conscious gardening. Another adage, "change is the only constant," reminds us that we can meet the current challenges and adapt our gardens to a changing climate.

Gardening Central Mass. is written by the team at New England Botanic Garden at Tower Hill. Located on 171 acres in Boylston, New England Botanic Garden is one of the region's top horticultural resources. All year long, garden visitors experience the wonder of plants, learn about the natural world, and make joyful connections. There is so much growing at

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