

Heat Island or Oasis

Eugene's options for the future

Guest Viewpoint • 04/20/2023

By Lee Gaillard

We are lucky to live in the Pacific Northwest — but long-term rainfall trends are down. And Eugene's summers are hotter, drier. Ominous.

We're not alone: From 1987 to 1992 California shriveled like a raisin in the sun. And on the East Coast? In 2000 Georgia experienced its worst drought since the start of record keeping in 1895; mid-2001 to mid-2002 — Maine's driest period ever.

Despite these unmistakable warning signs, silence from Washington, D.C., continues to deafen: no national commission on water usage policy; not a peep concerning proactive national and regional watershed management; no mandates for community water conservation planning or recycling by industry.

In Eugene, where do we stand? The last few weeks' increased shower activity has helped reduce overall rainfall deficit, but the U.S. Geological Survey chart for April 11 still lists Eugene as "abnormally dry" (D0), temporarily "coming out of drought," even though it remains in a long-term "severe drought" (D2). Our early spring rainfall totals remain below normal for both the calendar year and the rain year (Oct. 1, 2022 to Sept. 30, 2023). Calendar year through Dec. 29: our total rainfall of 30.67 inches needed 33 percent more (another 10 inches) to reach *The Register-Guard's* listing of a 40.5-inch "normal." January and February of this year was the eighth driest first two-month period in the past 129 years. The overall trend shows that 15 of the past 22 years have yielded rainfall totals well below 40-inch norms.

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Temperatures? 2021 came in as our second warmest year in the last 82, including a new all-time record high in June of 111°F — three degrees over 1981's previous record of 108°F. And since 2000, Eugene's population has increased from about 139,000 to today's figure of more than 182,000. Per capita water usage estimates vary, but most sources would give 70 gallons daily per person as an acceptable figure. Therefore, with 43,000 more people, every day we are using almost 3 million more gallons of water than we did in 2000, an amount that will only increase as temperatures continue to rise.

Now add in the "urban heat island effect." In summer, for example, New York City is about 7°F warmer than surrounding areas. According to the EPA, "Urban heat islands occur when cities replace natural land cover with dense concentrations of pavement, buildings and other surfaces that absorb and retain heat. This effect increases energy costs (e.g., for air conditioning), air pollution levels, and heat-related illness and mortality." Buildings block cooling breezes while the sun's heat gets absorbed by dark asphalt and concrete during the day only to be radiated back at night, disrupting sleep. Given its recent growth, Eugene now stands as Oregon's second largest city, just ahead of Salem. Therefore, with hotter summers caused by climate change, we also face an increasing heat island effect.

What can we do to save water, keep temperatures lower, and maintain a cooler, moister, more comfortable environment? Careful urban planning will be crucial as we urge city leaders to consider the following steps:

- Require that flat roofs be either 'green' (with grass, native herbage or rooftop gardens) or painted white. Subsequently cooler rooftop temperatures will lower air-conditioning costs. (In Dearborn, Michigan, Ford's 10-acre truck assembly plant roof is covered with sedum and various other plants. Stormwater runoff is reduced and the plants mitigate greenhouse gasses by absorbing carbon dioxide and emitting oxygen.)
- Mandate permeable paving for all new and upgraded parking lots, driveways, sidewalks and streets, thus trapping rainwater and helping refill aquifers; show homeowners how to harvest and reuse rainwater to reduce runoff and lower water bills.
- Install neighborhood gardens, miniparks with shaded benches and chairs: air will be cooler, moister, more oxygen-rich.
- Build up to reduce sprawl: create space between structures for newly planted trees; design taller office and apartment buildings with green roofs and terraces and shops on ground level, surrounded by green space.
- Plant more trees citywide: in empty lots, median dividers, parks, along streets. (Keep them watered, especially in their early years.) A 10-percent increase in tree cover can reduce a city's heat island effect by up to 7°F.
- Require industries to filter and recycle their cooling and waste water; permit sale only of water-saving shower heads and toilets; tell local orchard and farm owners to install drip irrigation if they have not already done so (79 percent of Oregon's water use is by our farmers and ranchers).

While Eugene has been blessed with recent rains, it still faces increasing challenges from hotter summers, forest fires and long term rainfall deficits. We should take further measures that will make our city shadier, cooler, moister and even more livable.

A retired educator, Lee Gaillard lives and writes in Eugene. His writing has appeared in The Seattle Times, The Chicago Tribune, The Philadelphia Inquirer, Twentieth-Century Literature, English Journal, and other publications.