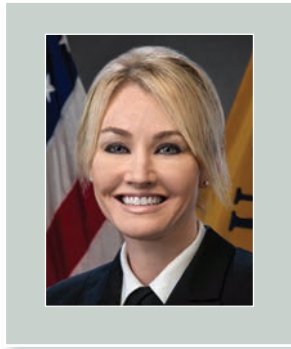


► PRESIDENT'S MESSAGE



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Environmental Health and Rural Water Quality on Earth Day

Each year, Earth Day on April 22 serves as a global reminder of the need to protect our planet and its ecosystems. Most Earth Day celebrations spotlight issues like climate change, deforestation, and biodiversity loss, but one crucial environmental health challenge often overlooked is water quality in rural areas. While urban populations benefit from advanced water treatment systems, many rural communities grapple with inadequate water infrastructure, contamination, and limited resources to address these issues.

Access to clean water is essential not only for drinking and cooking but also for agriculture, hygiene, and industrial processes. Contaminated water can lead to a host of health issues, including gastrointestinal illnesses, reproductive problems, and neurological disorders. Moreover, poor water quality has broader implications for economic stability, educational attainment, and social benefits.

In the U.S., the problem with water quality disproportionately affects rural areas, where smaller populations often rely on private wells or smaller community water systems. These sources are less likely to benefit from advancements compared to municipal water systems.

Rural areas face unique challenges when it comes to maintaining water quality. Rural areas have aging infrastructure and many rural water systems were built decades ago and have not been adequately updated. Corroding pipes and outdated treatment facilities can introduce contaminants like lead, nitrates, and pathogens into drinking

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water. Rural areas also deal with agricultural runoff because they often depend on agriculture, which can contribute to water contamination through pesticide and fertilizer runoff. Excess nutrients—particularly nitrogen and phosphorus—can lead to harmful algal blooms and dead zones (i.e., less dissolved oxygen in water) in water bodies. In addition, nearly 15% of the U.S. population relies on private wells, which are not protected under the Safe Drinking Water Act. Private well homeowners are responsible for testing and treating their water, yet many lack the financial means to do so regularly.

The consequences of poor water quality in rural areas are far-reaching. Contaminants like arsenic, nitrates, and *E. coli* pose immediate health risks. Long-term exposure to pollutants such as heavy metals and industrial chemicals can increase the risk of chronic illnesses, including cancer and kidney disease. Children, pregnant individuals, and older adults are particularly at risk.

For example, nitrate contamination, often resulting from agricultural runoff, has been

linked to methemoglobinemia (i.e., blue baby syndrome), a condition that reduces the ability of blood to carry oxygen in infants. Similarly, exposure to arsenic—a naturally occurring contaminant in groundwater—can lead to skin lesions, developmental effects, and increased cancer risk.

Addressing water quality challenges in rural areas requires a multifaceted approach that integrates policy changes, community involvement, and technological innovation. Federal and state governments should allocate more funds to upgrade rural water systems. Programs such as the U.S. Department of Agriculture's Rural Development Water and Environmental Programs provide essential support but need greater reach and funding. The Safe Drinking Water Act should include private wells or create a parallel framework for regular testing and monitoring, and make that accessible and affordable for private well owners.

Also, public education campaigns can raise awareness about the importance of water testing and maintenance. Further, local organizations can play a role in training residents to manage and protect their water resources effectively. Lastly, collaboration between government agencies, nonprofits, and private companies can bring technical expertise and financial resources to rural water projects.

Earth Day's theme for 2025—Invest in Our Planet—underscores the importance of taking collective action to address environmental challenges. Advocating for clean water in rural areas aligns perfectly with this mission. By highlighting this often-neglected issue,

Earth Day can inspire policymakers, organizations, and individuals to prioritize rural water quality as a cornerstone of environmental health.

Simple actions, such as donating to organizations working on rural water projects or supporting policies that enhance water infrastructure funding, can make a significant impact. Educational initiatives, community cleanups, and advocacy efforts can also help

shine a spotlight on the invisible struggles of rural communities.

As we celebrate Earth Day and reflect on the many ways to care for our planet, let us remember that environmental health begins with the basics. Clean water is not just an environmental issue, it is a human right. By addressing water quality challenges in rural areas, we take a crucial step toward building a healthier and sustainable future. Let this

Earth Day serve as a reminder that no community, no matter how remote, should be left behind in the pursuit of shared progress. 🌱



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