

How oil and gas impacts Texas' environment and public health

From polluted air and poisoned water to rising earthquakes and vanishing wildlife, oil and gas operations are putting Texas' environment – and Texans' health – at serious risk.

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Oil Rig setting sun



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Oil and gas have created enormous wealth for Texas, but they have also created a host of environmental and public health problems. Almost 5.3 million Texans live within a half mile of an active oil or gas well, increasing their risk for the most adverse impacts.

Air pollution

The oil and gas industry releases an extreme amount of greenhouse gases. In 2021, more than [873 million metric tons \(MMT\) of global warming pollution](#) was released into the atmosphere in Texas alone.

Additionally, countless toxic chemicals reach the atmosphere during drilling operations, even after [a well has been abandoned](#). One common pollutant is benzene, which is a carcinogen. A [2023 report](#) from Boston University found that the lives of 1,314 Texans were cut short by oil and gas pollution in 2016.

Flaring health effects

If drilling and well operators are only interested in oil, they may burn natural gas that is created as a byproduct of oil drilling through a process called flaring. Alternatively, operators may sometimes pipe this gas into the market. However, Texas operators too often rely on flares—some that only partially burn the gas before releasing it—or they vent uncombusted, hazardous methane directly into the atmosphere. This wasteful release of fossil fuel resources is also bad for the climate and public health.

Air pollution from flaring also contributes to smog, which can make it [harder to breathe, trigger asthma attacks, and cause chronic lung problems](#). Additionally, living near oil and gas flaring in the Eagle Ford Shale can [increase the risk of preterm birth and lead to other adverse birth outcomes](#).

Water use

[Texas' state water plan](#) reported that 16.9 billion gallons of water were used for mining (primarily oil and gas extraction but also coal, uranium and other types of mining) in 2020— the equivalent of 25,600 Olympic swimming pools. Oil and gas companies are depleting aquifers in West Texas due to the immense amount of water needed for their operations, [pumping water at up to 6.5x its recharge rate](#). These aquifers are a main source of drinking water for people living in West Texas, increasing water shortages in an area already prone to extreme drought.

Water pollution

Most water in the oil and gas industry is used for drilling. Well operators add miscellaneous chemicals, including [forever chemicals \(PFAS\)](#), to make it an effective drilling fluid during fracking and resulting in a byproduct called “produced water”. This water can only be recycled a couple of times, and after becoming inoperable, must either be industrially treated or stored.

In one storage method, billions of pounds of chemicals are forced into underground injection wells. Other times, this water is stored in above-ground tanks. Current storage capacity, both underground and above-ground, is close to full, and oil companies are looking for new places to store these hazardous byproducts. Newly proposed storage options risk water pollution and increase the threat to public safety and health.

Either storage method runs the risk of contaminating the groundwater, whether it be through inadequate storage or mechanical failure. [TCEQ's Groundwater Assessment](#) identified 548 sites contaminated by oil and gas operations. In 2005, a leak of produced water was found at [Midland's T-Bar Ranch](#) well field. Decades later, the clean-up continues, and the complete remediation project could cost the city more than \$9 million.

Orphan wells

There are over [6,000 orphan wells](#) in Texas. These are wells that stopped producing a profit, and are often left for the state to plug due to operator bankruptcy – a gross abdication of their responsibility.

Orphan wells add to climate pollution and are a threat to water quality as both gases and liquids can escape through faulty well casings and through fissures in rock. They can also reach the surface through the borehole. Unplugged wells also leak methane – a major contributor to global warming – at [5,000 times the rate of plugged wells](#). From 1993 to 2008, orphaned wells [contaminated groundwater at 30 documented sites in Texas](#).

Land use

In 2014, oil and gas took up [2081 km² \(514,000 acres\) of land](#) for pipelines and well pad construction. This poses a drastic threat to Texas' wildlife. For example, the Permian Highway Pipeline runs through the habitat of the [golden-cheeked warbler](#), an endangered songbird species that nests only in Central Texas' Ashe juniper woodlands, numbering fewer than 30,000 warblers in the wild.

In 2020, Texas had more than [200 fossil fuel projects planned or under construction](#), including projects to build or expand 17 oil and gas terminals, 20 refineries and 73 pipelines.

Earthquakes

The number of earthquakes in West Texas has been increasing due to oil and gas extraction, specifically due to the injection of wastewater into wells during the fracking process. In 2021, [209 earthquakes of 3.0 magnitude and greater occurred in Texas](#). This is more than double the earthquakes recorded during the year prior, and more than eight times since 2017.

Recently, there was a [4.9 magnitude earthquake in the Permian Basin that was felt in El Paso](#). This earthquake was the sixth strongest in Texas history.

AUTHORS

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Danielle is a student at the University of Texas at Austin, majoring in geology and minoring in geography. She is in the Environment and Sustainability Bridging Disciplines Program at UT, where she is engaging in multidisciplinary research in geology and environmental science. She is interested in water quality and (micro)plastic pollution, and hopes to influence positive environmental change through her research and outreach.

Luke Metzger

Executive Director, Environment Texas Research & Policy Center

As the executive director of Environment Texas, Luke is a leading voice in the state for clean air and water, parks and wildlife, and a livable climate. Luke recently led the successful campaign to get the Texas Legislature and voters to invest \$1 billion to buy land for new state parks. He also helped win permanent protection for the Christmas Mountains of Big Bend; helped compel Exxon, Shell and Chevron Phillips to cut air pollution at four Texas refineries and chemical plants; and got the Austin and Houston school districts to install filters on water fountains to protect children from lead in drinking water. The San Antonio Current has called Luke "long one of the most energetic and dedicated defenders of environmental issues in the state." He has been named one of the "Top Lobbyists for Causes" by Capitol Inside and received the President's Award from the Texas Recreation and Parks Society for his work to protect Texas parks. He is a board member of the Clean Air Force of Central Texas and an advisory board member of the Texas Tech University Masters of Public Administration program. Luke, his wife, son and daughters are working to visit every state park in Texas.



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FOSSIL FUEL POLLUTION

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APRIL 21, 2026



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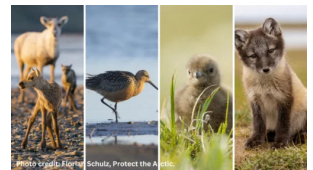
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