



ADDRESSING OIL AND GAS METHANE POLLUTION: THREATS AND OPPORTUNITIES

Methane is the primary component of natural gas.¹ When natural gas is leaked or intentionally released into the air during oil and gas production and transport, methane and toxic air pollution are released along with it. The Trump Administration rolled back Obama-era regulations that were designed to reduce methane emissions from all segments of the oil and gas sector. Under the former Administration's rollback, oil and gas companies were no longer required to monitor and repair leaks from transmission and storage segment sources, which are a substantial source of methane pollution, and methane was removed as a regulated pollutant. The U.S. Senate voted 52-42 in April to rescind this rollback and reinstate the Obama-era Environmental Protection Agency methane regulations. The bipartisan vote to restore the EPA's ability to protect people and wildlife alike from the threats posed by methane emissions is good news for public health, the environment, and the climate.

METHANE: QUICK FACTS

- Methane, which has more than 80 times the climate-altering impact of carbon dioxide (CO₂) over a 20-year period, is the second most prevalent greenhouse gas. Methane is a super-pollutant that fuels climate change, threatening human health², wildlife, and natural resources across the U.S.³
- The oil and gas sector is the single largest industrial source of methane emissions in the U.S., accounting for one-third of total methane pollution.⁴
- In 2019, methane emissions comprised about 10 percent of total U.S. greenhouse gas emissions.⁵
- Methane emissions can occur at any stage of the oil and gas supply chain (i.e., drilling and production, processing, transmission, storage, and distribution to end users).
- Operators typically release greenhouse gas pollution directly into the atmosphere through venting (direct release of methane) and/or flaring (burning, resulting in methane and carbon dioxide emissions). Methane is also wasted in enormous amounts through leaks in oil and gas infrastructure.⁷
- In addition to methane, other harmful pollutants are emitted by the oil and gas sector, including volatile organic compounds (VOCs) and air toxics like benzene (a known carcinogen). These pollutants can cause a range of harmful health effects such as asthma and some cancers, as well as environmental impacts. These pollutants can be particularly concerning for communities on and near tribal and federal lands where oil and gas production occurs.⁸ *Regulations that reduce methane would also reduce emissions of these other damaging pollutants.*

HUMAN HEALTH CONSEQUENCES

- Air pollution from oil and gas facilities can have a significant impact on public health—even in areas far from oil and gas production.



- 238 counties in 21 states face cancer risk that exceeds EPA’s one-in-a-million threshold level of concern due to emissions from oil and gas facilities—these counties have a population of over 9 million people.
- Oil and gas production creates air pollution that results in ozone, also known as smog. Ozone smog harms public health. Smog especially poses a threat to children who suffer from asthma.
- Nationally, there are more than 1 million summertime asthma attacks in children under the age of 18 due to ozone smog and particulate matter resulting from oil and gas pollution.
- Each summer, there are 3,600 respiratory related emergency room visits and 1,100 respiratory related hospital admissions nationally due to

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- Children miss 770,000 days of school nationally each year due to ozone smog resulting from oil and gas pollution.¹
- Nationally, 12.6 million people live within one-half of a mile of oil and gas facilities, including over 1 million Black Americans, almost 2 million Latinx, and over 240,000 Native Americans. In addition, there are more than 9,000 schools, with a total enrollment of nearly 3 million students, and 2,300 medical facilities located less than a half mile from an oil and gas facility.
- Peer-reviewed science shows that living near oil and gas facilities is associated with negative health impacts, including fetal defects and respiratory ailments.²⁶

WILDLIFE IMPACTS

- Climate change is one of the greatest threats to wildlife because of its potential to alter ecosystems, food and water resources, and wildlife behavior.
- Climate change—partly fueled by methane pollution—is leading to rapid shifts in the habitat, landscapes, and seascapes American wildlife depend on, placing numerous species at risk of extinction within this century if current rates of emissions continue unabated.¹⁸
- Oil and gas wells and infrastructure on federal and tribal lands can fragment wildlife habitat for species like the pronghorn, compounding harm for wildlife already impacted by a rapidly-changing climate. This can hinder migration routes, limit access to food, water, and other resources, and ultimately can lead to species population declines.
- Wildlife also can be harmed as a result of spills, chronic leaks, and crude oil releases.



- Loss of wildlife affects hunters and anglers, as well as wildlife watchers, outdoor recreational businesses, and wildlife managers, all of whom have a vested interest in conservation.¹⁹

IMPACTS OF METHANE WASTE ON THE ECONOMY AND ON TRIBAL LANDS

- A study by ICF International found that “[o]il and gas operations on federal and tribal lands emitted over 1 million tons of methane in 2013, about 12 percent of the nation’s methane emissions from oil and gas operations.”²⁰ This same study “estimates that fugitive and vented losses from oil and natural gas operations on federal and tribal lands amounted to over 65 billion cubic feet (Bcf) in 2013. This gas would be worth nearly \$330 million at current prices.”²¹
- Analysis by the Clean Air Task Force has shown that emissions on federal and tribal lands are disproportionately high—reported emissions from production basins dominated by these lands are much higher than expected, based on the portion of U.S. oil and gas produced on them.²² This analysis suggests that the ICF International analysis is conservative.
- Tribal communities lose resources when royalty revenues from oil and gas development on tribal lands are wasted. These revenues, if recovered, could be used to construct schools, hospitals, and hotels, and could generate additional jobs and economic development to improve the well-being of local communities, as well as remediate environmental impacts.
- In 2016, total expenditures on wildlife-watching trips, equipment, and other items in the U.S. amounted to \$75.9 billion.²³ A rapidly changing climate threatens this outdoor economy. Fees and taxes paid by hunters and anglers support non-game conservation programs run by state wildlife agencies, so a decline in outdoor recreation means a decrease in the funds for such programs.²⁴
- Individual Tribal nations suffer from methane issues and bear a large brunt of the impacts. A recent collaborative report found that oil and gas companies “waste roughly 1.5 billion cubic feet of natural gas a year from operations on Navajo lands, approximately \$4.8 million worth of natural gas. This deprives the Navajo Nation and allottees of as much as \$1.2 million in royalties every year while producing 21,700 metric tons of methane emissions that pollute the air and threaten the health of Navajo communities.”²⁷

POLICY RECOMMENDATIONS

- ***NWF and CATF urge policymakers to create regulations to reduce the emissions of methane and other pollutants from oil and gas facilities. Regulations should impel companies to conduct monthly leak detection and repair surveys — or employ continuous monitoring or other advanced monitoring technologies. In addition, regulations should require companies to utilize zero-emitting pneumatic technologies and other modern equipment that minimizes emissions or captures gas before it is released into the air. We urge Congress and the Biden administration to reinstate limits on methane pollution throughout the oil and gas supply chain to address the dangerous gap in clean air and climate protections. Setting reasonable, cost-effective methane regulations will provide regulatory certainty, avoid delays, and protect people and wildlife.***

¹ EPA Methane Emissions.

² U.S. National Climate Assessment (NCA), 2014, Highlights: Human Health. U.S. Global Change Research Program. <http://nca2014.globalchange.gov/highlights/report-findings/human-health#intro-section-2>

³ U.S. NCA 2014, Highlights: Ecosystems and Biodiversity, Plants and Animals. U.S. Global Change Research Program. <http://nca2014.globalchange.gov/highlights/report-findings/ecosystems-and-biodiversity#statement-16341>

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- ⁴ EPA, Climate Change, Emissions, Overview of Greenhouse Gases, Methane Emissions. <https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>. Emissions estimates are from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014*.
- ⁵ EPA, Climate Change, Emissions, Overview of Greenhouse Gases. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>. Emissions Estimates are from: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019*.
- ⁷ U.S. Government Accountability Office (GAO), Report to Congressional Requesters, Oil and Gas, Interior Could Do More to Account for and Manage Natural Gas Emissions, July 2016, page 6. <http://democrats-naturalresources.house.gov/imo/media/doc/Interior%20Could%20Do%20More%20to%20Account%20for%20and%20Manage%20Natural%20Gas%20Emissions.pdf>
- ⁸ EPA 2016. Proposed Climate, Air Quality and Permitting Rules for the Oil and Gas Industry: Fact Sheet. https://www.epa.gov/sites/production/files/2016-09/documents/og_fs_081815.pdf
- ¹⁸ U.S. NCA 2014, Ecosystems and Biodiversity.
- ¹⁹ NWF 2015. Game Changers: Climate Impacts to America's Hunting, Fishing, and Wildlife heritage. <http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2015/11-16-2015-Game-Changers.aspx>
- ²⁰ Environmental Defense Fund (EDF), New Study Quantifies Natural Gas Loss from Production on U.S. Public and Tribal Lands, June 23, 2015. <https://www.edf.org/media/new-study-quantifies-natural-gas-loss-production-us-public-and-tribal-lands>
- ²¹ EDF, Substantial Loss Of Natural Gas On Public Lands, Report: Cutting Energy Waste On Us Federal, Tribal Lands Could Save Millions. <https://www.edf.org/energy/substantial-loss-natural-gas-public-lands>
- ²² Clean Air Task Force, Supplemental Comments to May 30, 2014 Comments Submitted to Inform Modernization of the U.S. Bureau of Land Management's 34-Year-Old Rules. http://www.catf.us/resources/filings/BLM_Oil_and_Gas_Regulations/20150626-CATF%20Supplement%20to%20May%2030%20BLM%20Comments.pdf
- ²³ U.S. Fish and Wildlife Service (USFWS) 2018. 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. <https://www.census.gov/library/visualizations/2016/demo/fhw-16-nat.html>
- ²⁴ Voggesser, Garrit, Big Impacts on Big Game, Voices from the Field: Sportsmen Speak Out, NWF Blog, November 17, 2015. <http://blog.nwf.org/2015/11/big-impacts-on-big-game/>
- ²⁵ Newburger, Emma, Senate votes to restore Obama-era regulation of methane, a climate-warming gas, April 28, 2021. <https://www.cnbc.com/2021/04/28/senate-restores-obama-era-regulation-of-methane-emissions.html>
- ²⁶ Fann, Neal, et al, Assessing Human Health PM_{2.5} and Ozone Impacts from U.S. Oil and Natural Gas Sector Emissions in 2025, August 14, 2018. *Environmental Science and Technology*, Vol. 52, pages 8095-8103.
- ²⁷ EDF, New Report: Methane Waste and Pollution a Growing Problem on the Navajo Nation, April 29, 2021. <https://www.edf.org/media/new-report-methane-waste-and-pollution-growing-problem-navajo-nation>.