

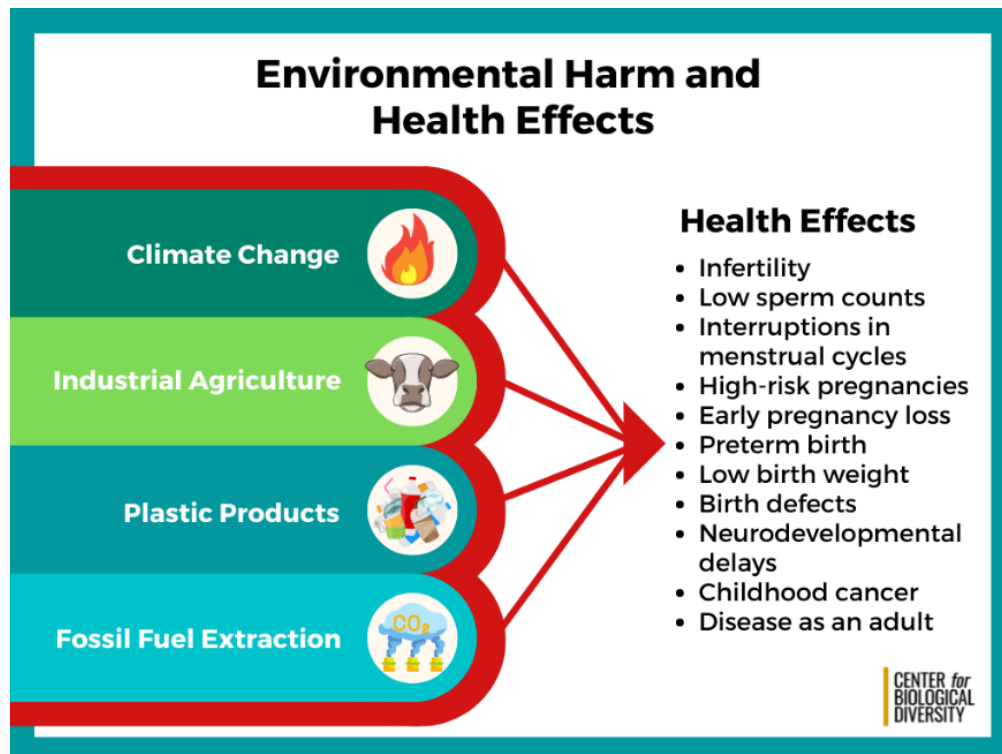
About This Paper

Our health and the environment are deeply interconnected. The exploitation of people, animals and nature drives the environmental crises we face today and damages the health of the most marginalized people. Reproductive health, specifically, is affected by poor environmental quality, making it difficult for parents to have healthy pregnancies and raise their children in safe and healthy communities. Improving environmental conditions results in positive public health outcomes and is essential for achieving reproductive justice.

Many invisible environmental threats — such as toxic chemicals in the air and water and extreme temperatures — impede reproductive justice and cause harm to pregnant people, fetuses, infants and children. This paper explores how fossil fuel extraction — driven by capitalism — effects reproductive health.

This is just one chapter in a much larger report, [The Influence of Environmental Toxicity, Inequity and Capitalism on Reproductive Health](#). The report seeks to help people understand the links between environmental harm and reproductive harm more clearly. It also explores the role capitalist systems play in undermining reproductive and environmental health and hopes to demonstrate that in order to achieve reproductive justice we must overhaul extractive and exploitative systems to help people and the planet thrive.

By exposing the connections between fossil fuel extraction and negative reproductive health outcomes such as infertility, low sperm counts, interruptions in menstrual cycles, high-risk pregnancies, early pregnancy loss, birth defects, preterm birth, and low birth weight, we hope to increase awareness of the invisible threat of fossil fuel extraction, illuminate the role of capitalist growth models in causing harm, and propose solutions for mitigating the ongoing reproductive injustice caused by this environmental crisis.



Visit [the website](#) to view the full report, including the chapters on plastic products, industrial agriculture, and climate change.

Fossil Fuel Extraction

The Issue

Fossil fuels are non-renewable energy sources derived from the deeply buried remains of ancient animals and plants. Due to this biological origin, they have a high carbon content and can only be extracted using invasive and highly polluting techniques such as mountaintop-removal coal mining, fracking and drilling. Because of government policies, subsidies, and existing infrastructures that externalize costs and keep fossil fuels artificially “cheap,” these methods continue to be favored by industry despite the increasing availability of renewable energy sources like solar or wind, which are better for reproductive health and the planet.

The lifecycle of fossil fuel energy consists of dangerous emissions and leaks. Fossil fuel extraction sites and refineries emit harmful particles and chemicals into the air, water, and soil, exposing nearby communities and wildlife to toxic pollutants. Transportation of gas and oil via pipelines and “bomb trains” [increase the risks of toxic exposure](#) as well as dangerous spills and explosions. Fossil fuel production is also a major source of methane gas, the second most abundant human-generated greenhouse gas after carbon dioxide. Toxic particulate matter in the air caused by the burning of fossil fuels in power plants, vehicles, and other sources have been linked to [8.7 million annual deaths worldwide](#).

Fracking, mining (surface, mountaintop and coal), and fossil fuel combustion also [send heavy metals](#) like cadmium, arsenic, lead, and mercury into nearby drinking water and soil as runoff. In fact, burning and extracting fossil fuels is the [main cause of mercury contamination](#). Heavy metals like mercury are significant contributors to [drinking water contamination](#). Water and air pollutants from fossil fuels further contribute to soil toxicity, which can impede crop production and contaminate the crops that do grow, leading to food insecurity. As a result, air, land, water and food become contaminated, exposing individuals who live and work in communities where fossil fuels are extracted to these toxic chemicals.

This paper aims to provide a brief, introductory overview of the relationship between fossil fuel extraction and reproductive justice. It does not intend to cover the complex, comprehensive harms caused by the fossil fuel industry.

The Reproductive Health Harms of Fossil Fuel Extraction

Emissions from the production and burning of fossil fuels have detrimental effects on reproductive health and reproductive justice. The pollution emitted from the extraction of fossil fuels [has been shown to build up in biologically female bodies](#), leading to worsened health outcomes like breast and ovarian cancers. These toxics can also cause poor pregnancy outcomes including stillbirth, early pregnancy loss, low birth weight, birth defects and neurological delays in children. This is because burning and extracting fossil fuels [releases endocrine-disrupting chemicals \(EDCs\) into soil, water and air](#), which are then absorbed by humans through food, contaminated water and breathing in air pollution. Similarly, mercury, which enters water sources and soil from coal-fired power plants and coal combustion, [can lead to](#) low birth weight, stillborn birth, increased risk of early pregnancy loss, and infant mortality.

Living or working near fossil fuel operations has been directly linked to poor reproductive health outcomes. Several research studies in regions with a high density of fossil fuel operations have provided empirical data for this relationship. For example, [one study](#) found that babies born to women residing in coal mining areas in West Virginia had a low birth-weight rate 16% higher than those in other counties, while [another found](#) that pregnant women near fracking sites had a 40% increased risk of going into labor prematurely and a 30% increased risk of a high-risk pregnancy. [Another recent study](#) found that people living near mountaintop-removal sites were 42% more likely to have children with birth defects or experience stillborn births.

While fracking for natural gas has been touted by the industry as a relatively safe fossil fuel extraction option, it uses fluids comprised of more than 1,000 chemicals, many of which are endocrine disruptors. [These chemicals increase the risk](#) of perinatal morbidity, premature birth, low birth weight, and overall high-risk pregnancies. Those closest to high density fracking locations are [more likely to go into premature labor](#), with 6% going into labor extremely prematurely, which is medically defined as before 28 weeks of pregnancy.

Fracking has also correlated with poor health outcomes for babies, as severe birth defects affecting the brain and spine were significantly more prominent in children living within two miles of a drilling or fracking location. Women living near ongoing fracking in rural Colorado were found to be [30% more likely](#) to have babies with congenital heart defects. Since fracking operations use many of the same chemicals as conventional oil and gas operations, some of the risks posed by fracking are [posed by conventional methods as well](#).

How Fossil Fuel Extraction Is Linked to Capitalism and Inequity

Fossil fuel extraction relies on the exploitation of people and the land they live on. Not only does the extractive process affect fertility and fetal health but it inhibits parents' abilities to raise their children in safe, stable environments. These consequences are worse for marginalized communities, whose neighborhoods are regularly displaced, and whose health is harmed, as a result of corporate, capitalist industrial endeavors given free rein to pollute without significant penalty or redress.



Mining and drilling degrade the environment and release toxics into the air, water and soil, fueling environmental-related reproductive harm. Simultaneously, fossil fuel production exploits people by contaminating their neighborhoods and endangering their homes and bodies. This harm leads to increased risk of reproductive problems for everyone exposed. However, with less money or access to social resources, such as comprehensive healthcare, marginalized communities inevitably suffer greater environmentally triggered harm than those with economic privilege.

If growth continues to be held up as the primary measure of economic health, humans will continue to be exploited — and the environment pushed past its carrying capacity — to generate private profit.

Impacts on Communities of Color

[People living near sites of extraction](#) through mountaintop removal, coal mining and fracking are often low-wealth, people of color, and Indigenous communities. Black children are 79% more likely to live in highly polluted neighborhoods than white children, and [68% of Black people in the United States live near coal-fired power plants](#), which has a direct effect on their ability to raise children in a healthy environment. For example, asthma is the most widespread chronic childhood disease, but Black and Latino children are more affected than white children because they're [more likely to live near industrial pollution](#).

Living near extraction sites also affects the educational experience of Black, Indigenous and children of color. A [2016 report](#) found that pollution from oil and gas industries was linked with approximately 750,000 summertime asthma attacks for kids and 500,000 missed school days. Additionally, the majority of U.S. farmland owned by Black, Indigenous, and other farmers of color is located in [areas most contaminated by the fossil fuel industry](#), such as Appalachia and the Southeast.

The harmful impacts of pollutants on these communities only increase with higher levels of poverty or lower rates of healthcare access, as well as disparities in the quality of healthcare. A

multitude of societal barriers and systemic inequalities within and outside of healthcare, along with greater exposure to environmental toxicants, has put [Black women in far greater danger](#).

Black pregnant women experience preterm labor [50% more often](#) than white women, while low birth weight and stillborn births are twice as common for Black women as for white women.

Impacts on Indigenous Communities

Indigenous communities have also been notably exploited by the fossil fuel industry. While reproductive justice demands a safe and sustainable environment for children, Indigenous families have had their land destroyed by toxic chemicals. The Ponca tribe's land in Nebraska has become so toxic and the soil so contaminated from fossil fuel pollutants that [food cannot grow within a 16-mile radius of their land](#).

Indigenous women are particularly harmed by these toxics because their cultural practices require more interaction with water and soil than other members of their community. These women must inevitably choose between physical safety or maintaining their spiritual and traditional identities, since [industrial pollution has made it impossible for them to do both](#).

The Gendered Impacts of Fossil Fuel Extraction

Despite the ongoing research showing the harm of fossil fuel extraction, companies continue to take efforts to conceal these risks from the public. In the 1960s companies like Shell and Imperial Oil, an ExxonMobil subsidiary, were concerned that fossil fuel-related pollution caused health problems. By the 1980s Imperial Oil had proposed plans to investigate birth defects in the offspring of industry workers. These companies not only continued harmful production but aggressively lobbied against clean-air regulations and [sowed doubt about the scientific evidence linking fossil fuels to health issues](#). Little has changed, and profit continues to be prioritized over wellbeing, with [major banks like JP Morgan Chase and Citi leading fossil fuel financing](#).

Contaminants from fossil fuel extraction sites place additional obstacles on women's advancement beyond harming their health. [Patriarchal norms continue to disproportionately enlist women and girls in unpaid domestic labor](#), including food preparation, obtaining clean water, child rearing, and caring for sick family members. When air, water and soil become polluted, it often [falls on mothers](#) to navigate these dangers and provide safe care for children and elders who fall ill. This can often include forgoing paid employment to stay home and care for their families, further diminishing their economic equality and impeding opportunities for economic independence.

Indigenous women, girls, and two-spirit people, in particular, have [experienced greater levels of abuse](#) by the men working in coal, oil and gas, with increased rates of sexual abuse, trafficking, and domestic violence against Indigenous women and children [linked to fossil fuel extraction sites](#).

Capitalist models rely on the unpaid labor of women in these spaces, requiring them to compensate for the damage caused by business ventures without supportive policies to help them advance economically, or even remain financially secure. [Increased fossil fuel extraction places further harmful demands on women](#). While industry leaders claim to provide jobs for locals at extraction sites, women are rarely seen as viable candidates for these jobs and instead often only experience the negative consequences of fossil fuel operations.

Such consequences include increased sexual abuse of women living near fossil fuel extraction sites, where there are often temporary “man camps” for workers to live in.

Case Study: Cancer Alley

Photo credit: Alejandro Dávila Fragoso / Earthjustice



Communities in the Louisiana region known as Cancer Alley have experienced firsthand how fossil fuel extraction explicitly harms the less privileged. Cancer Alley is the nickname for an 85-mile-long stretch of land along the Mississippi River where 150 fossil fuel refineries operate.

The nickname comes from the extremely high rates of cancer experienced by those living in the area, but poor health outcomes within the region are significantly higher among low-wealth people and people of color. [The parishes predominantly inhabited by Black residents suffer the most](#).

The disparity of outcomes highlights present-day environmental oppression driven by capitalism; the origins of Cancer Alley tell a similar story. The land was originally settled by freed enslaved people, but in the 1960s, fossil fuel industries began to take over and develop extraction sites and processing plants nearby. This was supported by the government, which rezoned parts of the area to allow industrial production, often failing to inform residents of the change. As a result, descendants of the freed enslaved people who originally settled on this

land now [experience higher-than-average rates](#) of hysterectomies, miscarriages, and a breadth of other reproductive challenges because of extreme exposure to environmental toxics.

People living closest to toxic pollutants are most likely to ingest them, but communities farther away can absorb residual contaminants through polluted water and food grown in toxic soil. Fenceline communities, the neighborhoods that exist near extraction and production sites, have higher rates of exposure to toxic pollutants. Like Cancer Alley, fenceline communities [most commonly have higher populations of low-wealth, people of color, or immigrant families](#).

Examples of Solutions

Stop the Expansion of Oil, Gas and Coal Development

Despite the many negative consequences of fossil fuel extraction, extraction sites continue to grow. To stop further expansion, we must stop leasing public land to fossil fuel industries. The Center for Biological Diversity's [Keep It in the Ground campaign](#) calls for a ban on new leasing of public lands for oil and gas extraction. Similarly, the Build Back Fossil Free campaign [calls on the president](#) to cease approval of new fossil fuel projects, protect marginalized communities that are disproportionately harmed by fossil fuels, and declare a climate emergency. However, these outcomes have not yet occurred, and more government action is required to shut down ongoing extraction sites and prevent future sites from being built.

Increase Transparency for People Living in High-Risk Areas

Reproductive harms to those living near extraction and production sites are well researched and documented, but education about the risks of these toxicants for those living nearby is often limited. Policies that mandate transparency to nearby communities and regular updates about toxic emissions would empower residents to understand how their bodies are affected and whether there are steps they can take to mitigate risk.

The American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women and the American Society for Reproductive Medicine Practice Committee are similarly [calling for healthcare workers in high-risk neighborhoods to translate research for their clients](#), sharing the risks with their patients and addressing avenues for protection. The U.S. Energy Information Administration has created interactive maps with the locations of coal-mining plants, fossil fuel sites and power plants, which can help identify high-risk neighborhoods, but clear, multilingual information needs to be disseminated directly to those affected by fossil fuel activity.

Shift to a Community-Based Clean Energy Economy

In addition to inhibiting fossil fuel extraction and production, the clean energy economy has been shown to decrease economic disparities through job opportunities. A [2019 investigation](#) found that investing in clean energy increased economic mobility for low-wage individuals at far greater lengths than fossil fuel industries and non-energy related fields. In fact, clean energy has added approximately 320 new occupations across energy production, energy efficiency, and environmental management disciplines.

The research found that those currently employed in clean energy jobs tend to earn more, with a higher minimum wage compared to other industries employing workers of similar economic background. Higher wages are particularly noteworthy in the clean energy economy because

these occupations tend to have lower educational requirements than other jobs in the workforce offering similar pay, making [economic advancement more accessible to groups who might face obstacles in their job search elsewhere](#). These workers often learn specific technical skills and obtain marketable scientific knowledge through job-specific training and on-site learning.

A community-based energy economy — also known as energy democracy — provides a stark contrast to the exploitation inherent in energy systems under capitalism. As defined by the Local Clean Energy Alliance, “Energy democracy is a way to frame the struggle of working people, low-income communities and communities of color, along with their allies, to take control of energy resources and decision-making from the corporate energy establishment and use those resources to empower their communities.”

Democratizing energy represents a significant opportunity to make a just transition from a fossil-fuel-based economy to a new clean energy economy grounded in principles of economic and social justice. For example, distributed solar generation allows communities to gain local control over their energy system rather than leaving that control in the hands of monopoly utilities that are often investor-owned. [Progressive distributed solar energy policy choices](#) can enable renters and individuals who cannot afford to purchase solar energy systems to invest in renewable energy.

Notes About the Scope of This Paper

This paper aims to provide a brief, introductory overview of the relationship between fossil fuels, racial inequity, reproductive justice, and their connection to capitalism. It does not intend, nor is it able, to cover the full range of issues relevant to these complex subjects.

In the context of this paper, “capitalism” refers to market capitalist systems predicated on models of infinite growth. While the discussion of capitalism in the paper frequently references racist, sexist and classist outcomes that perpetuate reproductive injustices, it’s not the intention of this paper to collapse racism, sexism or classism into capitalism.

Gender is the behavioral, cultural or psychological traits typically associated with one sex. Gender is viewed along a continuum and includes both binary and non-binary gender identities, including LGBTQIA+. We acknowledge that all people are affected by these issues, and gender-diverse people often face additional challenges due to the lack of inclusive healthcare and other systems of oppression. Within this document we use gender-neutral terms when possible; however, since the literature to date has largely reported results in a binary way — female or male — we have retained some gendered language to accurately represent the best available research.