

Case Study: Hydraulic Fracturing in the United States

In the United States, human law has not forgotten nature, but it hasn't protected it either. Fracking is a prime example. Some 400 million years ago, ancient aquatic environments dried up, cementing fine sedimentary deposits over the millennia into hard shale, which now lie 2 miles or more below our feet. Through the wonder of modern technology some industry-friendly political will and serious legal heft, today these ancient shale formations are the new underground playground of oil and gas corporations.

Under our current structure of law, communities are not allowed to say "no" to fracking even as our health, safety and welfare is at risk. In many states fracking is unregulated and even unmonitored. Most communities are not even notified that fracking is happening near them. Fracking is a legal drilling process, and corporations with a state permit and ownership or lease of mineral rights to drill have the law on their side. Residents are seen as having "no authority" in their own communities. Cloaked in Constitutional protections, exemptions and well-greased political cover, the oil and gas industry stands on solid legal ground as they roll into town.

And what about environmental protections? The ownership of ecosystems is promoted and protected by law, upholding the control and dominance of humans over nature. The law does not "see" nature as anything but property. Our ecosystems have no legal standing in a court of law. From the tar sands of Alberta to mountaintop removal for coal, to fracking and deep ocean drilling, profound damage has been done with the full blessing of the law.

Case Facts: **Everyone lives downstream from fracking**

The United States is in the midst of an unprecedented oil and gas drilling rush—brought on by a controversial technology called hydraulic fracturing or FRACKING. Along with this fracking-enabled oil and gas rush have come troubling reports of poisoned drinking water, polluted air, mysterious animal deaths, industrial disasters and explosions. Hydraulic fracturing, or "fracking" is an advanced drilling technique injecting millions of gallons of water, sand, and some 600 toxic chemicals at pressures high enough to crack through (or in the case of "acid" fracking to liquefy) hard shale, releasing "trapped" natural gas and oil. Hydraulic fracking produces *300,000 barrels* of natural gas a day, and it has pushed US oil output to a 25-year high. There are approximately 800,000 active oil and gas wells in the United States, hovering above some of the world's largest hard shale formations from offshore and through California to Wyoming, to Texas, Colorado, New Mexico the Midwest, the Dakotas, and throughout most of the East.

Chronology of Fracking

Despite a history that can be traced back to the 1940s, shallow vertical hydraulic fracturing had not been utilized on a massive scale until 2003, when the Halliburton Corporation developed the technology to make deep horizontal shale drilling possible. Expansion was aided by a landmark study conducted by the

Federal Environmental Protection Agency (EPA) in 2004 which found that hydraulic fracturing posed no threat to underground drinking water supplies. Shortly afterwards, hydraulic fracturing was exempted from the Safe Drinking Water Act by the Bush administration in the Energy Policy Act of 2005. Since that time fracking has become the new boom industry.

Damage determination

Impacts on Nature, people and communities

- Unlike most industrial activity which is placed far from sight, fracking is taking place less than 200 feet from homes and schools, on federal lands, in densely populated areas, and on farms and ranches.
- It takes upwards of *400 tanker trucks* to carry water and supplies to and from well pads, just one small piece of the fracking infrastructure.
- Each frack job uses between 2-8 million gallons of water. Each well pad can be fracked up to 18 times. Nationally, fracking uses *over 100 trillion gallons of water and 400 billion gallons of "frack fluid" comprised of up to 600 chemicals*. The list of toxic additives for hydraulic fracturing includes kerosene, benzene, toluene, xylene, and formaldehyde.
- On average, [330 tons of chemicals](#) are used per fracking operation—2/3 of the toxic chemicals remain underground. The millions of gallons of toxic waste water produced cannot be processed by wastewater treatment. Instead this waste water is left in open air pits that look like low tech plastic-lined fish ponds. Thousands of these toxic stews were washed away during Superstorm Sandy and the recent extreme floods in Colorado.
- There are over 51,000 fracking wells in Colorado alone, most of which have been drilled in the last four years. These wells, which produce both gas and oil, also leak gases like methane, the primary component of natural gas and a potent greenhouse gas. Methane is up to 105 times as powerful as carbon dioxide as a greenhouse pollutant. Scientists have theorized that fugitive emissions of methane from fracking wells could make gas worse than coal pollution for the climate.
- Fracking wells and tailing ponds also leak volatile organic compounds (VOCs), which cause asthma, cancer, and severe illness. Oil and gas emissions are the main source of volatile organic compounds in Colorado and the third-largest source of nitrogen oxides. There have been many reported cases of illness from fracking pollution in Colorado since the boom began, causing families to uproot for the sake of the health of their children. This is true in every state that has active fracking.
- Smog caused by fracking emissions have already sent toxic ozone readings soaring in what was once pristine Rocky Mountain habitat. Ozone-forming air pollution measured along the Colorado Front Range by scientists is up to twice the amount that government regulators have calculated should exist. The researchers pinpoint oil and gas development as the main source.
- Studies of fugitive methane emissions from fracking have found astounding levels of pollution. A study from the Uinta basin in Utah, found massive methane leaks from fracking wells. In Uinta, wells were estimated to be leaking 60 tons of methane per hour.

- Fracking causes earthquakes. A study by the Geothermic Research Journal confirms a 2011 series of tremors in Ohio, a state that was not seismically active prior to fracking, were caused by spent hydraulic-fracturing materials injected deep into the ground.
- Even the EPA, the agency that under the Bush Cheney administration exempted fracking from the Clean Air Act and the Clean Water Act, confirms that natural gas and oil production is the second-biggest source of U.S. greenhouse gases.

Evaluation of the future damage

We are only just beginning to understand the long term environmental damage caused by fracking, but the damage to the climate, earth, wellbeing and democracy is already felt.

Identification of responsible parties

The legalization of what is arguably one of the dirtiest energy production methods on earth is criminal. The federal EPA shoulders particular responsibility for exempting fracking from existing regulatory structures, which cleared the path for individual states to let fracking go unmonitored and unregulated, as is the case in California and a number of other states. The agencies responsible for oversight of oil and gas in each state have taken the side of fracking. The legislatures of all states that have refused to protect communities from fracking are also to blame for allowing this irresponsible activity within their borders, and green lighting the use of massive quantities of precious water to be spoiled and wasted. The judiciaries have taken the side of fracking against communities who seek to ban it locally, upholding unjust law that denies the rights of ecosystems to be free from harm, and forces communities to become sacrifice zones for activities that are harmful and antidemocratic. The judiciary also upholds the secret recipes for fracking fluid, despite the dangers to the ecosystem and people. Governors of states where fracking is happening are also complicit in propping up and supporting this dangerous practice. There are hundreds of corporations who are engaged in the process from trucking of supplies and water, to the manufacture and installation of well casings, the chemical companies who provide the proprietary fracking fluid. Halliburton is to blame for developing and promoting the advanced technology for fracking, and the oil and gas companies who conduct the drilling, and the leasing companies that control, buy and sell the mineral "rights" that are a critical component to enabling this activity to take place in rural lands as well as in large urban areas.

Restoration

Eco means "home". Our ecosystem, Earth, and the cosmos itself, is a resilient, self-regulating system of relationships, of which we are only a small part. *Ecology* is the understanding of our home. Living within the caring capacity of the planet we call home requires that we adhere to the natural laws governing all life and our own human wellbeing. Ancient and living Indigenous and spiritual cultures who live in connection with land and have knowledge of its care have much to teach us about a world in which what we take away, we must also return to the air, the soil, water and other creatures.

Economy is the management of our home.

Indigenous and spiritual traditions tell us a successful economy must be rooted in our understanding and respect of these relationships, and that our continued wellbeing and prosperity depends on it.

Science and common sense tell us that endless more on a finite planet is an impossibility, yet even as it is clear we have already exceeded the limits to growth we continue faster toward a dystopian future of human creation.

As a species, at the current rate of "use" by industrialized nations, we would need 5 planets worth of "resources." Clearly we can no longer pretend that technology can provide a "fix".

The subordination of the web of life to the chains of the market/growth of the corporate-led market system cannot and will not continue, because it inherently erodes the primary means of production on this planet, which is the diversity of life itself. Recognizing Rights of Nature codifies into human law the true laws of nature. Fracking is a violation of the rights of nature.

Reparations for the violations of human rights

Despite the clean and green reputation of natural gas, affected communities nationwide are proving just how dirty and dangerous fracking is. More alarming perhaps is that in frackland, USA, communities have discovered they have no say in whether the practice comes to their neighbourhoods, on to the school playground, or even under their homes—calling into question whether or not our laws are protecting people and nature, or corporate profits. Some communities have faced a shutdown of their water systems, such as Dimmock, PA, due to fracking. The website, the list of the harmed documents the tens of thousands of people who have been affected by fracking and have suffered health consequences ranging from asthma to fracking-induced cancers/cancer clusters and deaths, and the loss of livelihoods of farmers, ranchers, and others who depend on the vitality of healthy ecosystems. Many homeowners have been forced to abandon their homes in "frackland" including the mayor of Dish, Texas, because it was too dangerous to stay. Insurance and mortgage companies have also spoken out, by denying loans and refinancing or insurance to people who live in the midst of fracking. How can this debt be truly repaid to the thousands who lives have been devastated, and whose human rights have been so blatantly violated?

Some communities however, are changing the game. Taking a civil rights approach, 19 US communities in 6 states (CO, PA, NM, NY, MD, OH) have successfully banned fracking by writing new laws that place the rights of residents and their local ecosystems above the interests of would-be frackers. They join the ranks of 160 communities across the country who have banned other harmful practices, and they join the nations of Ecuador and Bolivia in recognizing the laws of nature, which is a critical shift in placing human rights in right relationship with our ecosystems.

Authority of the presenter/intervener

Shannon Biggs is the Director of the [Community Rights program at Global Exchange](#), an international human rights organization based in California, USA, where she assists communities confronted by corporate harms to enact binding laws that place the rights of communities and nature above the claimed legal "rights" of corporations. MS. Biggs leads over a dozen community-based campaigns to ban fracking in California. She is the co-author and editor of two books, *Building the Green Economy: Success Stories from the Grass Roots* and *The Rights of Nature: Making the Case for the Universal Declaration on the Rights of Mother Earth*. She is a founding steering committee member of the Stop the Frack Attack network, the largest national fracking network in the United States and a leading member of the Californians Against Fracking coalition. Prior to coming to Global Exchange she was a senior staffer at International Forum on Globalization (IFG), she also was a Lecturer in International Relations at San Francisco State University. Shannon holds a Masters in Economics/Politics of Empire the London School of Economics (LSE), and has a BS in International Relations from San Francisco State University (SFSU)

b. Sustained relation to the facts (presenting the elements of the case)