

HOW MINING HURTS COMMUNITIES



by The Protect Thacker Pass Campaign

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Extraction for “clean technologies” at a glance

By 2035, experts project a staggering 50 million acres of new land will be developed for energy production in the United States. The overwhelming majority of that development will be for so-called “clean energy” and “clean technology” projects such as wind and solar projects, mining associated with these technologies and EV lithium batteries, and transmission line and electric grid expansion and upgrades.

As the United States continues to invest in “clean technologies,” industrial development for these projects will grow. Congress, with the support of both the Trump and Biden Administrations, has passed legislation to incentivize this development, and heavily invested in domestic supply chains for critical minerals, positioning this supply as a national security issue.

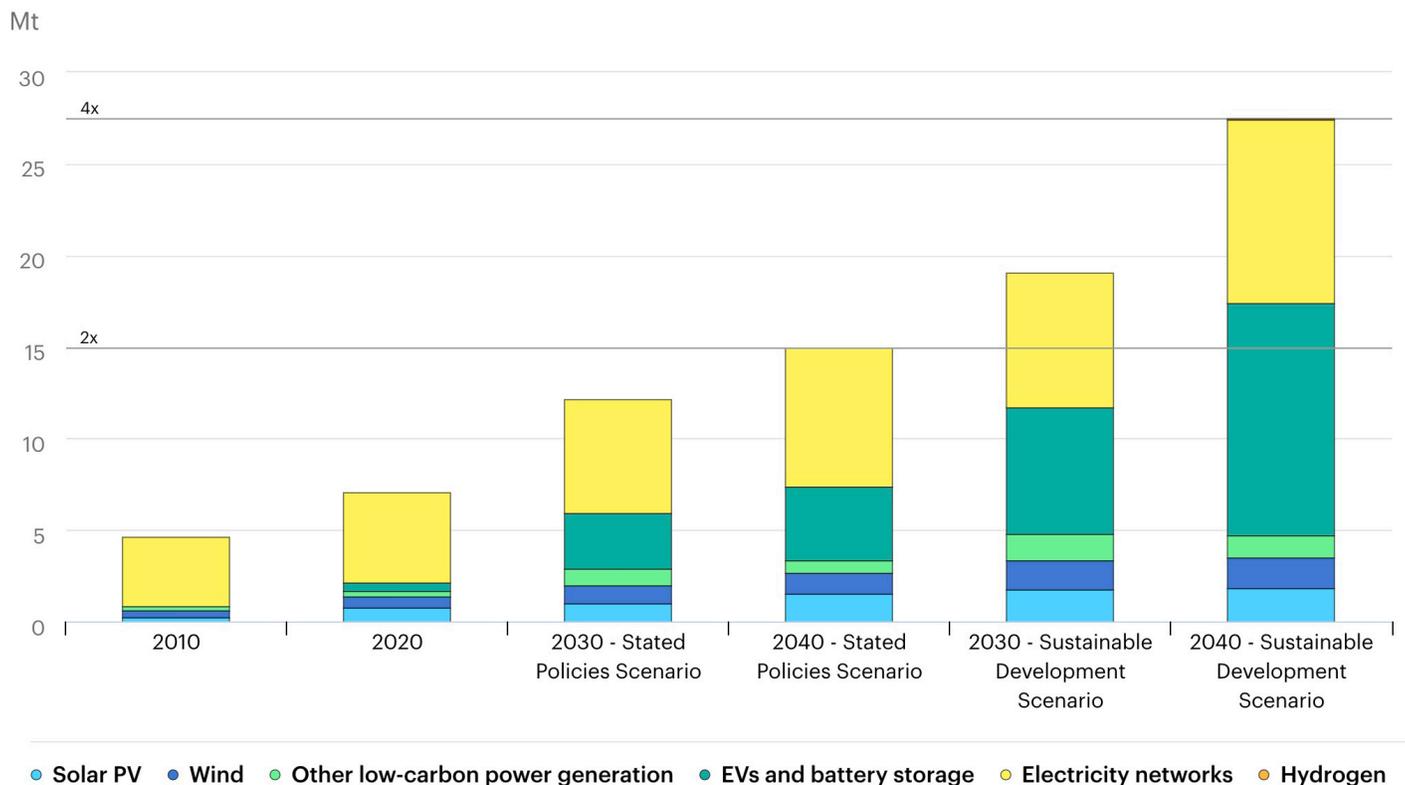
These projects require much more land than fossil fuel development, which is a concern for those living in rural areas, particularly in the Western United States.

Nevada is ground zero for the massive increase in minerals extraction required to meet “clean energy” and “clean technology” goals. According to the Bureau of Land Management (BLM), Nevada leads the nation with the largest mining program in the BLM, with more than 180,000 active mining claims (49% of the BLM total), 198 authorized mining plans of operations, and 282 active exploration notices.

Nevada also leads the nation in toxic pollution, in large part due to the mining industry. As of the EPA’s 2017 Toxic Release Inventory, Nevada had a total of 148 facilities managing toxic material in 2017, generating 397.7 million pounds of releases annually.

The rush to build “clean technology” and “clean energy” projects in the United States and around the world will dramatically increase the demand for materials, and thus mining. This report examines the implications of this expected increase in mining by investigating how mining hurts communities.

Total mineral demand for clean energy technologies to 2040



10x Building solar and wind systems requires roughly a **tenfold increase in total tons of materials** such as concrete, steel, and glass to deliver the same quantity of energy compared to power plants powered by fossil fuels. These technologies also require significant increases in specialty minerals and metals like copper, nickel, chromium, zinc, cobalt, and rare earths, often far more than a tenfold increase.

22 million

The current preferred BLM plan for solar energy would make **22 million acres of public land open to proposals for solar development** in 11 states, and Nevada's impact would be the largest.

“Technologies assumed to populate the clean energy shift ... are in fact significantly MORE material intensive in their composition than current traditional fossil-fuel-based energy supply systems.”

[The Growing Role of Minerals and Metals for a Low Carbon Future](#),

The World Bank, June 2017

384 At least **384 new mines** for minerals such as graphite, lithium, nickel, and cobalt will need to be built in the next decade to meet projected 2035 demand for electric vehicle (EV) and energy storage batteries.

500,000

The U.S. has over **half a million abandoned mine sites**, with tens of millions of gallons of water contaminated with arsenic, lead and other toxic metals flowing from these sites into surrounding streams and ponds without being treated.

Mining requires large amounts of water, particularly lithium mining: **500,000 gallons** of water are required to produce one ton of lithium. With more than 50% of lithium extraction coming from high desert environments like Nevada, this puts a strain on already stressed water supplies.

+70%

Extraction projects often bring man camps, and man camps bring violence.

A 2019 study conducted by the U.S. Bureau of Justice Statistics on violent crime in the Bakken oil fields in Montana and N. Dakota showed that from 2006-2012 **the rate of violent crime increased 70%**. There was no increase in violent crime outside this region.

The rate of serious crime (homicide, rape, etc.) increased 30%. Violent victimization by strangers increased 53% and women experienced a 54% increase in sexual assault.

51x Due to minerals demand for EV and grid storage batteries, **lithium demand in 2040 may be 51 times** higher than today's levels. Cobalt and graphite may grow by 30 times, nickel by 20 times, and rare earths by 7 times.

With commitments by Congress to prioritize domestic supply chains, this means an enormous increase in impacts from mining, refining, and manufacturing.

Materials critical to “clean technologies”



Image from Tesla Daily Podcast

EV and Grid Storage Batteries

Copper	Rare earths
Lithium	Molybdenum
Nickel	Silicon
Manganese	
Cobalt	
Graphite	
Zinc	



Photo by [Manny Becerra on Unsplash](#)

Solar

Tellurium	Chromium
Cadmium	Copper
Lead	Manganese
Arsenic	Nickel
Gallium	Aluminum
Indium	Silicon
Silver	Glass



Photo by [Thomas Galler on Unsplash](#)

Wind

Concrete	Manganese
Steel (Coal, Iron, and Nickel)	Chromium
Iron	Nickel
Fibreglass	Molybdenum
Polymers	Neodymium
Aluminium	Praseodymium
Copper	Dysprosium
Zinc	Terbium
	Balsam wood



Photo by [Andrey Metelev on Unsplash](#)

High Voltage Grid Lines and Towers

Aluminum	Porcelain
Copper	Glass
Steel (Coal, Iron, and Nickel)	Concrete

To meet climate goals, the world must add or replace **50 million miles** of transmission lines by 2040, according to an October, 2023 report by the [International Energy Agency](#).

Growth in demand means more mining

Building “clean energy” is creating demand for billions of tons of materials for solar and wind electricity generation, and grid storage and car batteries.

These materials must all be mined. Mining processes vary by material, but almost all modern extraction uses open pit mining, vast amounts of energy (diesel and electricity) and water, toxic chemicals for refining, and destroys the land being mined along

with surrounding land that is covered with waste rock, and poisoned with toxic tailings.

We list below a few statistics from the International Energy Agency (IEA) report [*The Role of Critical Minerals in Clean Energy Transitions*](#) to give you a sense of the scale of demand, and thus the mining, required for the materials for so-called “clean energy” and “clean technologies.”

Lithium

Lithium demand grows by **40 times**.

Nickel

Nickel demand grows by **89 times** for concentrated solar, by **41 times** for EV batteries and by **141 times** for grid storage batteries.

Silicon

Silicon demand grows by **460 times** for EVs and batteries.

Copper

Copper demand **triples** for solar and wind, grows by **68 times** for concentrated solar, **doubles** for high voltage grid lines, and grows by **28 times** for EV batteries.

Graphite

Graphite demand grows by **25-30 times** for EV and grid storage batteries.

Growth in demand to 2040.

To extract 1 ton of copper requires digging up, moving, crushing, and refining 200 tons of ore.

Meeting 20% of U.S. electricity demand from wind by 2030 would require 1.5 million metric tons of steel, 310,000 metric tons of cast iron, and 40,000 metric tons of copper.

U.S. General Mining Law

How to mine in the United States on public land:

1. ■ Set up a mining company in any country you like.

2. ■ Walk onto U.S. public land and stick a flag in the ground on a 20-acre lot.

3. ■ File a \$175 registration fee.

4. ■ Discover valuable minerals that can be extracted profitably, and get your claim.

5. ■ Mine as much as you can, paying zero royalty fees to the U.S. government. That's right; it's free.



Photo of the Kennecott Bingham Canyon Copper Mine in Utah by [Jay H on Unsplash](#)

How mining creates violence within communities

Canadian Mining Companies are Complicit in Human Rights Abuses

According to MiningWatch Canada, 75% of the world's mining companies are headquartered in Canada. They operate at over 8,000 sites in over 100 countries. A 2016 report to the UN found that “many of these mines are also sites of serious human rights violations, including direct violence against local women and environmental degradation that destroys women's ability to support their families. One recent study found that **Canada's mining companies are involved in such abuses and conflict more than any other country's.**”

Under the UN Committee on the Elimination of Discrimination against Women (CEDAW), “Canada is obligated to take appropriate measures to eliminate discrimination of any women by national corporations operating in other countries, and is required to do so by taking measures to prevent, prohibit and punish violations by those corporations. It also requires them to provide effective remedies to victims of such violations.”

Catherine Coumans of MiningWatch Canada says “**Canada has failed to do so.**”

In September, 2023, MiningWatch Canada briefed the Standing Committee on International Trade at the 1st session of the 44th Parliament in Canada. According to the report, “national security forces and private security firms guarding Canadian-owned mines in Africa, the Asia-Pacific region and Latin America have abused Indigenous peoples, defenders of human rights and the natural environment, and mine employees” and that “**these human rights abuses are 'persistent' and 'widespread globally.'**”

The Thacker Pass mine in Humboldt County, Nevada is owned by Canadian company Lithium Americas.

“Canada has been supporting and financing mining companies involved in discrimination, rape, and violence against women in their operations abroad, when it should be holding those companies accountable for the abuse.”

Case Study: U.S. Bureau of Justice Statistics 2019 Report on Violence from Man Camps in the Bakken Oil Fields Region

A Bureau of Justice Statistics (BJS) project studied “trends in violent crime from 2006 to 2012, a period during which regions of Montana and North Dakota that contain parts of the Bakken shale formation experienced relatively rapid growth in oil and gas production, an influx of new residents to work in oil sector-related jobs, and ... a corresponding increase in calls for service to local law enforcement.”

The report found that “from 2006 to 2012, the rate of violent victimization known to law enforcement in the Bakken oil-producing region ... increased, **particularly the rate of aggravated assault, which increased 70%.** There was no similar increase in rates of violent crime in the counties surrounding the Bakken oil region. Rates of male and female violent victimization in the Bakken region increased during this period, with the increase being higher for males (up 31%) than females (up 18%).”

Case Study: Enbridge Line 3

Increasing violence against women and girls when extraction projects come to a community is predictable. The Enbridge Line 3 crude oil pipeline project brought thousands of workers to Minnesota, many of whom ended up in man camps along the pipeline route. An October 2023 report on the risks and harms of oil and gas projects notes that the Minnesota Public Utilities Commission acknowledged in its environmental impact statement that **sex trafficking and sexual abuse would likely increase** and that “the affected regions do not have the resources to track and prevent this violence.” This prediction came true, with a large increase in reports of sexual violence; two workers employed by Enbridge subcontractor Precision Pipeline were charged in a sex trafficking sting operation.

NO LITHIUM MINES!

“As foreign mining and logging companies open up new areas for new forms of colonial exploitation, they set up prostitution industries to service the workers. These industries have a profound effect on local cultures and relations between men and women.” Sheila Jeffreys, *The Industrial Vagina: The Political Economy of the Global Sex Trade*, 2009.

“[Every 68 seconds, an American is sexually assaulted.](#)” Rape, Abuse & Incest National Network (RAINN), February 18, 2024.

1,910 people environmental defenders were killed worldwide from 2012 and 2022. On average, a defender was killed every other day in 2022. — [Standing Firm: A Global Witness Report](#), September, 2023.



“People were singing and dancing – the protest was peaceful. Then, the police started attacking ... It was terrible to watch.” — *Journalist Cesar Angulo, at a lithium mine protest in San Salvador, Argentina.*

“Mothers were screaming. I was all bloody. A rubber bullet hit my right eye and I felt as if I had a needle sticking to the back of my head. I knew then I was blind.”
— *Indigenous ceramist, Joel Paredes at a lithium mine protest in Humahuaca, Argentina.*

“I was paralysed. I felt someone choking me. They called me a socialist, a whore. I was in my underwear; they touched me. One put his fingers inside of me. The officers told me not to protest any more. When they left, they took the gag out and, one by one, kissed me on the lips. I stayed immobilised on the floor for 13 hours.”
— *Teacher and political activist Rosa (not her real name) at a protest against government restrictions on indigenous protest to facilitate lithium mining, Jujuy, Argentina.*

“It was these men just like this that raped me when I was three months pregnant. And it’s men just like this that are the ones that burned my house, and they burned my clothing and they burned everything I had in my house.”
— *Indigenous Guatemalan women Irma Yolanda Choc Cac and Angelica Choc who are pressing legal claims against Canadian mining company HudBay Minerals Inc. for rape, violence, and other human rights abuses that took place when their village was razed to make way for the Fenix nickel mine.*

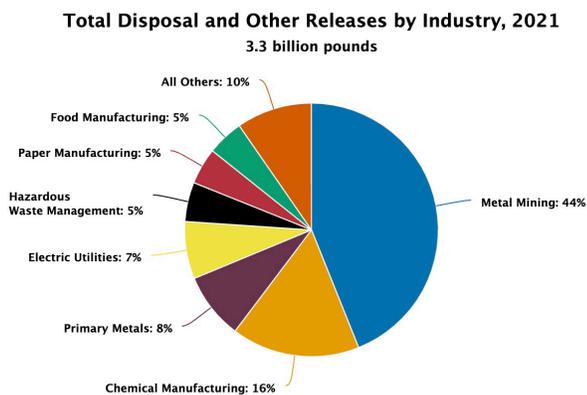
PROTECO

How mining poisons communities

Mining Injuries and Fatalities

As mining has become more automated, fatalities from U.S. mining have been dramatically reduced in recent decades. Since the U.S. Mining Health and Safety Administration began tracking mining injuries and fatalities in the mining industry in 1984, the injury rate has dropped from 5.72 injuries per 200,000 hours worked, to 1.86 in 2022, and the fatal injury rate has dropped from 0.0422 per 200,000 hours worked, to 0.0120 in 2022. There were 42 mine worker deaths in the U.S. in fiscal year 2023.

However, **the mining industry is still one of the most dangerous industries** in the United States. According to the U.S. Bureau of Labor Statistics, “Workers in transportation and material moving occupations experienced 1,620 fatal work injuries in 2022 and represented the occupational group with the most fatalities. The next highest was construction and extraction workers with 1,056 fatalities, an 11.0-percent increase from 2021.”



Metal Mining Toxic Releases

According to the [EPA](#), **the metal mining sector accounted for 44% of toxic inventory releases** (1.44 billion pounds) in 2021, which were primarily in the form of on-site land disposal.

Costly Cleanup and Remediation

The EPA estimates the backlog of cleanup costs for abandoned mines will cost taxpayers \$50 million or more, and that **mining has polluted 40% or more of western watersheds**.

Mining can pollute water for thousands of years after a mine closes, requiring perpetual water treatment.

Case Study: Heap Leaching and Cyanide

Heap leaching is a common process in Nevada for extracting gold and silver from ore. Ores are blasted from the ground, piled into heaps, and cyanide is applied to the heaps.

The cyanide reacts with the metals as it flows through the heap, and the cyanide-metal solution is collected below the heap and processed to further refine the metals. From an Earthworks report, [Cyanide Use in Gold Mining](#):

“Cyanide is highly toxic, and can result in substantial environmental impacts and public health risks if released into the environment. Cyanide spills have resulted in major fish kills, contaminated drinking water supplies and harmed agricultural lands.”

Their report describes a few specific examples of how cyanide heap leaching has poisoned communities:

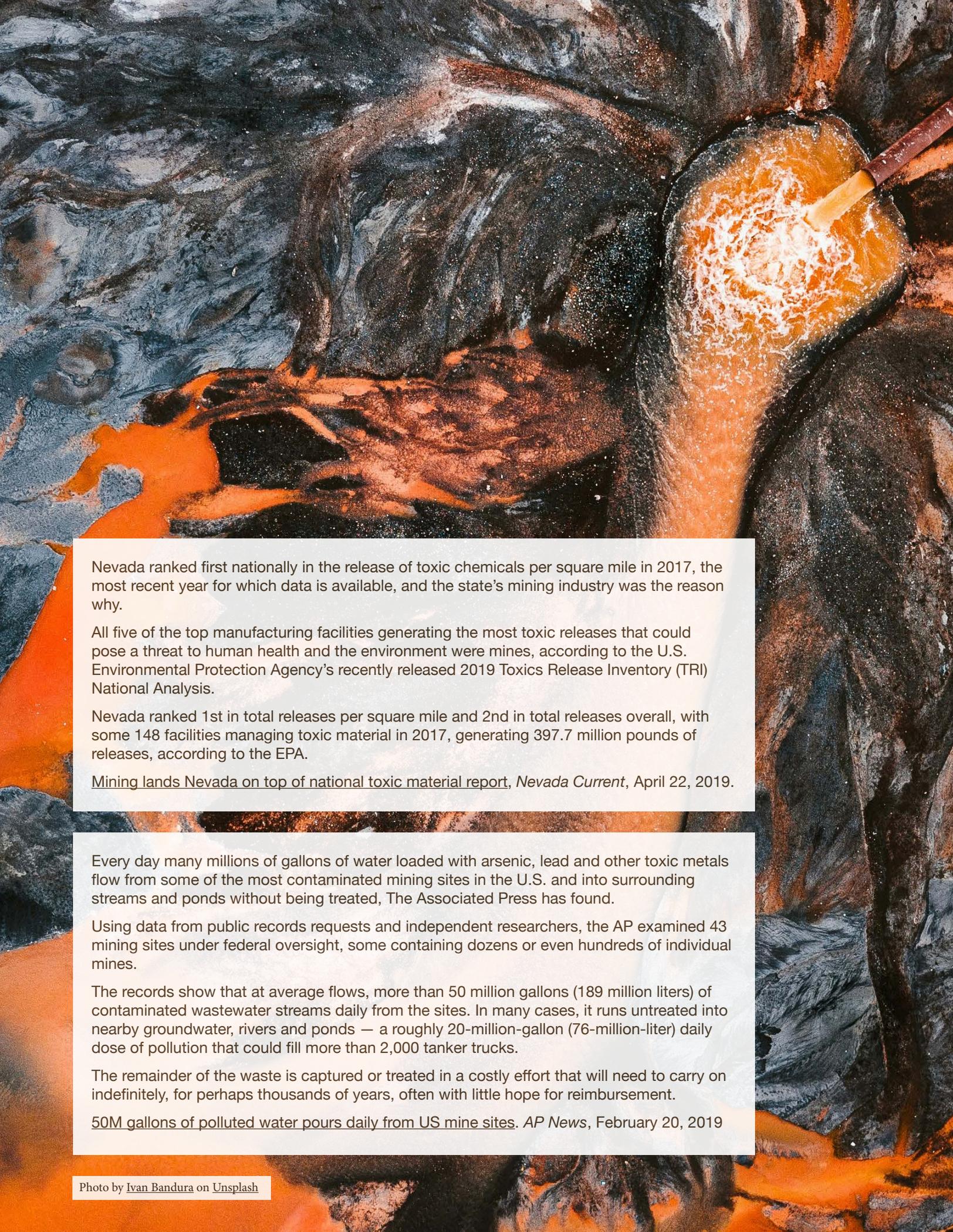
Mexico, 2014: 500,000 gallons of cyanide solution spilled from a retaining pond at the Proyecto Magistral mine, after heavy rains.

Kyrgyzstan, Kumtor Gold Mine, 1998: A truck carrying 2 tons of sodium cyanide crashed into the Barskoon river, resulting in more than 2,000 people seeking medical care.

United States, Zortman-Landusky Mine, Montana, 1982: 52,000 gallons of cyanide solution poisoned the aquifer that supplies fresh drinking water for the town of Zortman.

Romania, Aural Gold, 2000: A tailings dam ruptured, spilling 3.5 million cubic feet of cyanide-contaminated waste into the Tisza and Danube Rivers, killing fish and poisoning water supplies as far as 250 miles downriver in Hungary and Yugoslavia.

Turkey, Copley Gold Mine, February 13, 2024: The mine collapsed, sending ten million cubic meters of cyanide-laced tailings down a 200-meter slope, trapping nine workers underneath, and potentially contaminating the Euphrates River, western Asia’s longest river.



Nevada ranked first nationally in the release of toxic chemicals per square mile in 2017, the most recent year for which data is available, and the state's mining industry was the reason why.

All five of the top manufacturing facilities generating the most toxic releases that could pose a threat to human health and the environment were mines, according to the U.S. Environmental Protection Agency's recently released 2019 Toxics Release Inventory (TRI) National Analysis.

Nevada ranked 1st in total releases per square mile and 2nd in total releases overall, with some 148 facilities managing toxic material in 2017, generating 397.7 million pounds of releases, according to the EPA.

[Mining lands Nevada on top of national toxic material report](#), *Nevada Current*, April 22, 2019.

Every day many millions of gallons of water loaded with arsenic, lead and other toxic metals flow from some of the most contaminated mining sites in the U.S. and into surrounding streams and ponds without being treated, The Associated Press has found.

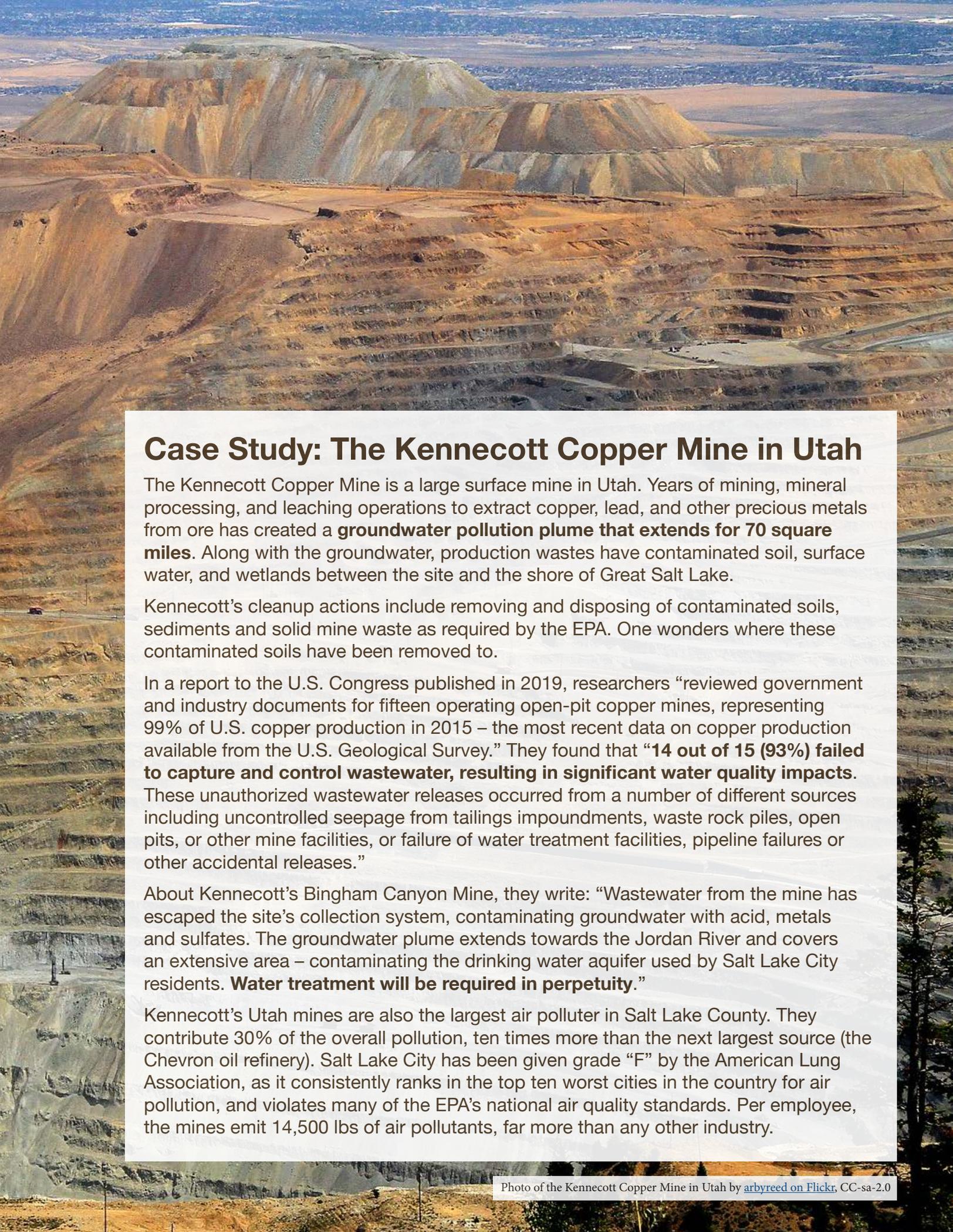
Using data from public records requests and independent researchers, the AP examined 43 mining sites under federal oversight, some containing dozens or even hundreds of individual mines.

The records show that at average flows, more than 50 million gallons (189 million liters) of contaminated wastewater streams daily from the sites. In many cases, it runs untreated into nearby groundwater, rivers and ponds — a roughly 20-million-gallon (76-million-liter) daily dose of pollution that could fill more than 2,000 tanker trucks.

The remainder of the waste is captured or treated in a costly effort that will need to carry on indefinitely, for perhaps thousands of years, often with little hope for reimbursement.

[50M gallons of polluted water pours daily from US mine sites](#). *AP News*, February 20, 2019





Case Study: The Kennecott Copper Mine in Utah

The Kennecott Copper Mine is a large surface mine in Utah. Years of mining, mineral processing, and leaching operations to extract copper, lead, and other precious metals from ore has created a **groundwater pollution plume that extends for 70 square miles**. Along with the groundwater, production wastes have contaminated soil, surface water, and wetlands between the site and the shore of Great Salt Lake.

Kennecott's cleanup actions include removing and disposing of contaminated soils, sediments and solid mine waste as required by the EPA. One wonders where these contaminated soils have been removed to.

In a report to the U.S. Congress published in 2019, researchers “reviewed government and industry documents for fifteen operating open-pit copper mines, representing 99% of U.S. copper production in 2015 – the most recent data on copper production available from the U.S. Geological Survey.” They found that “**14 out of 15 (93%) failed to capture and control wastewater, resulting in significant water quality impacts**. These unauthorized wastewater releases occurred from a number of different sources including uncontrolled seepage from tailings impoundments, waste rock piles, open pits, or other mine facilities, or failure of water treatment facilities, pipeline failures or other accidental releases.”

About Kennecott's Bingham Canyon Mine, they write: “Wastewater from the mine has escaped the site's collection system, contaminating groundwater with acid, metals and sulfates. The groundwater plume extends towards the Jordan River and covers an extensive area – contaminating the drinking water aquifer used by Salt Lake City residents. **Water treatment will be required in perpetuity.**”

Kennecott's Utah mines are also the largest air polluter in Salt Lake County. They contribute 30% of the overall pollution, ten times more than the next largest source (the Chevron oil refinery). Salt Lake City has been given grade “F” by the American Lung Association, as it consistently ranks in the top ten worst cities in the country for air pollution, and violates many of the EPA's national air quality standards. Per employee, the mines emit 14,500 lbs of air pollutants, far more than any other industry.

Case Study: The Gold King Mine waste water spill

Pollution from mine sites, historic and current, seeps, trickles, and flows into the soil and water every hour of every day in the United States. Historic populations of trout and other fish were long gone from the Animas and San Juan rivers in Colorado due to decades of acid mine drainage from mines in the region before a massive spill of tailings and waste water from the abandoned gold and silver Gold King Mine.

“Areas near mines often experience chronic exposure to heavy metals, but examining the history of mining pollution reveals that this exposure is occasionally punctuated by acute spills and accidental releases of mine waste,” write the authors of a 2018 [report](#) titled *Persistent Effects of the Gold King Mine Spill on Biota: Animas and San Juan Rivers, Northern New Mexico*. They continue, “A recent example of a significant, single-event contaminant release was on August 5, 2015, when more than eleven million liters [3 million gallons] of heavy metal-contaminated water was discharged from Gold King Mine (GKM), eroded a tailings pile, and flowed into Cement Creek, a tributary to the Animas River near Silverton, Colorado. The contamination plume flowed into the Animas River and San Juan River, crossing into New Mexico and Utah. Most of the heavy metal contamination released by the GKM spill existed as suspended solids which were likely deposited within the streambed sediment of the Animas and San Juan Rivers, and transported into Lake Powell, Utah.”

Contaminants, including arsenic (As), cadmium (Cd), copper (Cu), manganese (Mn), zinc (Zn), lead (Pb) and aluminum (Al), were found in the Animas and San Juan Rivers following the spill at levels above limits allowed by the Colorado Department of Public Health and Environment. From the [Wikipedia page](#) about the spill: “River visitors were advised to stay out of the water, and people were told to avoid contact with the river, including contact by their pets, and to prevent farmed animals from drinking the water. They were advised not to catch fish in the river. The Navajo Nation Commission on Emergency Management issued a state of emergency declaration in response to the spill; it has suffered devastating effects.” The spill reached Lake Powell on August 14, 2015.

Long-term contamination from the spill may be most evident in the trees, insects, and fish who live in the riparian areas along the affected rivers, and in wildlife and humans who eat the fish and any plants and crops contaminated with water from floodplain soils.

Sediments along the river beds will, of course, be contaminated for eons to come. No amount of money can unpollute a river.





Photo of the Gold King Mine spill in Colorado by [Riverhugger](#), CC-sa-4.0

How mining tears communities apart

Jobs, jobs, jobs

Most mining and extraction happens near or in poor and rural communities, because those are the communities that most need the jobs on offer from mining companies, and they are also the communities with the fewest alternatives, and the fewest resources to put up a fight to protect their land, air, and water.

Mining companies know this. And so these companies have become expert at exploiting these communities.

Pro vs. Con

Large extraction and development projects frequently divide communities because these projects have enormous impacts—on the landscape, the environment, and people’s physical and psychological health. Usually, the split in the community is around jobs vs. environmental impacts. Economic growth is welcomed by city and county councils, business leaders, and the unemployed, even at a cost to the environment. Those who depend on healthy and flourishing natural communities for subsistence lifestyles, farming, gardening, health, and clean air, water, and soil fight against these projects.

The divisions in these communities can be devastating.

Case Study: Haines, Alaska

The Palmer Project is a copper, zinc, silver, gold, and barite mine project in the advanced exploration stage near the town of Haines, Alaska.

The project claims cover an area of approximately 16,000 acres.

Haines is heavily reliant on commercial salmon fishing, and the local Tlingit tribe is dependent on the salmon for their main food source. The mine project threatens the Chilkat glacial river, which flows from the Saksai glacier, and could destroy the river’s salmon runs.

The Palmer Project will bring 220 full-time jobs and

40 contracting jobs to the town of 1,863.

The town is split over the mine. Gershon Cohen is a long-time Haines resident and worries about the mine’s tailings—the toxic waste materials and millions of tons of contaminated water that will have to be managed forever, in an earthquake-prone region of the country.

“The proposed mine has divided the community and sundered friendships, with each side accusing the other of surveillance and intimidation.”

Jones Hotch is a Tlingit tribal leader and Klukwan elder who is concerned about the environmental impacts this mine will bring, and about the impacts to his subsistence lifestyle.

Others, like Jan Hill, support the mine for the jobs and development it will bring to Haines. She believes the mining company will be “good

stewards of the environment.”

The division in the community is “nerve-wracking” Chilkoot Indian Association member James Hart says; a woman was yelled at in the street “just for having an opinion.” This incident made him more nervous for himself and his family.

Case Study: Halmahera island, Indonesia

The Weda Bay Nickel mining company is clearing the homeland of the O Hongana Manyawa people, one of the world’s last remaining uncontacted nomadic tribes living in voluntary isolation from the industrialized world.

“Holding strong opinions can be hard in a small community.”

Indonesia is rich in nickel, and its government is rushing to build new mines and refineries to supply the steel and electric vehicle (EV) markets. EV maker Tesla has reportedly invested \$5 billion in the

Weda Bay Nickel mining company, as have other EV battery production companies.

Sophie Grig, senior researcher for the indigenous rights nonprofit Survival International, says the O Hongana Manyawa “rely on the forest for everything that enables them to live and survive and thrive.”

Without the forest, they will not survive.



A Fort McDermitt tribal leader attacked a minor and choked him during a public community meeting with Lithium Americas. The youth was videotaping a meeting held about financial benefits from Lithium Americas of Canada, now digging into the Paiute Massacre Site for lithium in northern Nevada.

[Fort McDermitt Tribal Leader Choked Youth During Lithium Americas Community Meeting.](#) Brenda Norrell, *Censored News*, January 19, 2024.

How mining companies stifle community dissent

World-wide, systems are in place to protect and enable corporations to extract from the land in order to supply materials for development, industry, and economic growth. These systems are set up intentionally to deter individuals and communities from expressing their dissent.

Some of those systems include the use of violent repression and coercion, as we've already discussed in *How mining creates violence within communities*.

In this section, we focus on tactics other than direct violence corporations and states use to enable extraction. We describe these tactics primarily from the U.S.-centered perspective.

The Law

American law makes protecting the environment illegal.

The most important way the law does this is to define nature as property. Property comes with the right to consume and destroy that property. For example, if you own water rights to a river, you have the right to use that water as you see fit. Deep ecologist John Livingston called this **“resource-ism”**: **whenever humans define something as a “resource”, that thing’s destruction is only a matter of time.** The American legal system institutionalizes the idea that nature is a resource by defining nature as property.

Another way environmental protection is made illegal is corporate personhood—law that grants corporations the same rights as citizens. When a corporation acquires rights to mine private or public land, and citizens try to stop that mining project, the corporation can call on its own civil rights to defend the destruction of the land. U.S. corporations have protection under the First, Fourth, Fifth, Sixth, and Fourteenth Amendments to the Constitution, as well as under the Contracts Clause. As corporate anthropologist Jane Anne Morris writes, **“Corporate persons have constitutional rights to due process and equal protection that human persons, affected citizens, don’t have.”**

Citizens usually believe that environmental laws like the Clean Air Act and the Endangered Species Act will protect their communities, their land, their clean air and water, and the natural communities they love. We call this the **regulatory fallacy**. The regulatory system in the U.S. is not set up to protect the environment from harmful practices and pollution; rather, it is set up to **manage permits to allow the destruction of the environment**. To obtain a permit for a mine is to get permission to destroy the land, the water, the air, and the living beings who depend on that environment. **A permit makes harm legal.**

Law gains its power through violence. The government enforces the law, including the right to mine enshrined in the 1872 U.S. Mining Law, that allows corporations to destroy the land because the government has the means to enforce the law.

As an example, multiple tribes and several environmental groups filed lawsuits to try to stop Lithium Americas Corporation from mining Thacker Pass for lithium. The courts sided with the corporation, and along with that court order was the power for the corporation to use federal and state law enforcement to remove from public land peaceful protesters trying to stop mine construction. In May, 2023, this is exactly what they did.

It is widely understood that the 1872 U.S. Mining Law mandates that **mining is the highest and best use for U.S. public lands**. As Earthworks writes, “Federal land managers give preference to mining over all other land uses—from recreation to clean water to hunting.”

With this mandate, the pervasive ideology of “nature as property”, and corporate rights, it is clear, then, that **the law will not protect the land**.

Lawsuits

While the law clearly does not help communities and activists to protect the land we love, the law certainly helps corporations to make protesting destructive projects dangerous and expensive.

“A permit for a mine is “permission” to destroy the land.”

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for U.S. public lands. As Earthworks writes, “Federal land managers give preference to mining over all other land uses—from recreation to clean water to hunting.”

Corporations file lawsuits against non-violent protesters using a variety of tactics. A tactic common in recent years is a **SLAPP suit**, or a Strategic Lawsuit Against Public Participation. These lawsuits are used as a way to **intimidate or silence critics** by burdening them with legal costs and proceedings. The aim is not necessarily to win the case but to **deter individuals or groups from expressing dissent or protest**.

According to the [Business and Human Rights Resource Centre](#):

SLAPPs seek to manipulate the judicial system by masquerading as legitimate legal claims, abusing laws (e.g. on libel / defamation) to target valid and protected speech or protest.

SLAPPs can be effective in gagging critics: they take advantage of the prohibitive costs and time that it takes to litigate a case, and can result in prison sentences and other harmful physical, financial and psychological impacts on defenders.



Photo by Max Wilbert

Protesters as Terrorists

Multiple U.S. states have passed laws criminalizing “impairing or interrupting” construction and/or operation of “critical infrastructure”. Within just two years after the Standing Rock protests at the Dakota Access Pipeline (DAPL) river-crossing site, eighteen states put forward laws criminalizing protests, including laws that ratchet up penalties for activists protesting or planning protests of critical infrastructure.

Increasingly, government agencies are treating protesters as “terrorists”, **labeling even non-violent protesters as eco-terrorists and domestic terrorists**. Domestic terrorism enhancements can double prison time as DAPL protester Jessica Reznicek discovered, “even though no person was ever hurt, no person was intended to be hurt, she wasn’t charged with terrorism, and she didn’t plead guilty to terrorism,” according to Reznicek’s attorney, Bill Quigley.

In an article titled *Targeting Environmental Activists*

With Counterterrorism Measures is an Abuse of the Law, Human Rights Watch writes that “typically, environmental defenders peacefully exercise their rights to freedom of speech, association, and assembly. Only in exceptional cases would their acts meet a generally-accepted definition of terrorism. And when environmentalists engage in civil disobedience, they do not usually aim to undermine the rule of law.”

In recent years, law enforcement agencies have used tactics similar to those used with known terrorist groups to try to control environmental protests, including infiltrating activist groups, collaborating with private security firms and corporations to monitor and surveil activists, instituting no-fly zones over protest sites to restrict media coverage, and shooting from the sky drones recording environmental actions.

The International Center for Not-For-Profit Law U.S. Protest Law Tracker “follows state and federal legislation introduced since January 2017 that restricts the right to peaceful assembly.” According to their tracker (as of February, 2024) 45 states have considered passing such laws, and 21 states have enacted 42 such laws.

Community Benefits Agreements

Developers frame Community Benefits Agreements (CBAs) as safeguards to ensure that affected communities share in the benefits of major development projects. **The reality is these agreements are simply a way to ensure community compliance and silence**, no matter what short- or long-term detrimental impacts a project has on the environment, a community, and the health and well-being of its residents.

What is a Community Benefit Agreement? According to a 2005 report by Good Jobs First, a CBA is

...a legally enforceable contract, signed by community groups and by a developer, setting forth a range of community benefits that the developer

agrees to provide as part of a development project.

A CBA is the result of a negotiation process between the developer and organized representatives of affected communities, in which the developer agrees to shape the development in a certain way or to provide specified community benefits. **In exchange, the community groups promise to support the proposed project** before government bodies that provide the necessary permits and subsidies.

The October, 2022 CBA between Lithium Nevada Corporation (a subsidiary of Lithium Americas Corporation) and the Fort McDermitt Paiute and Shoshone Tribe is a good example of the kinds of agreements mining companies make with communities to ensure support for a project that will heavily impact the community in a wide variety of ways.

In exchange for the Tribe's support, the [company](#) promises jobs and skills training, and will build an 8,000 square foot community center that includes a daycare, preschool, playground, cultural facility and communal greenhouse, costing the company approximately \$5 million.

The agreement and [letter of support](#) was signed by the Tribal Council, despite that the Tribe itself is split over the mine, with elders and the group People of Red Mountain actively opposing the mine, participating in protests, and speaking out frequently against the project.

While Lithium Nevada stands to make billions of dollars and pay zero royalty fees to the U.S. federal government for the lithium it extracts, the people of the region are losing land where they have traditionally hunted and gathered, where a massacre in 1865 by the U.S. Cavalry ended the lives of at least 30 Paiute people (relatives of the survivors of this massacre live in Fort McDermitt today), and are losing the character of their quiet, rural communities forever. **Is total and permanent destruction of the land, air, water, history, community character and peace worth \$5 million?**

The Myth of "Consultation"

U.S. law requires federal agencies to consult with recognized tribes when a major project will affect them, because a project might impact subsistence lifestyles reliant on land or fishing areas, or impact areas of cultural and historical significance to tribes.

However, **federal agencies have no legal requirement to incorporate tribal input into final decisions about a project**, or to modify the project based on that consultation, so one might ask, is the consultation meaningful in any way?

At times, what counts as "consultation" borders on the ludicrous. To fulfill their consultation obligations before approving the Thacker Pass Lithium Mine Project, the Bureau of Land Management (BLM) sent letters of notification to initiate consultation sessions to just four of the ten regional tribes with cultural and historical connections to Thacker Pass. The agency

did so at the beginning of the Covid lockdowns, and during the holidays when Tribal offices were closed. Unsurprisingly, the agency received no comments or concerns from the tribes within the 30 day mandated response period, and therefore assumed that their consultation obligations had been met. The BLM went on to approve the Thacker Pass Lithium Mine Project in record time—1 year from initiating the permitting process—and as a result, some tribal members

did not find out about the mine until after it was approved.

Unfortunately, this indifferent and neglectful approach to consultation is not unusual.

The Myth of "Free, Prior, and Informed Consent"

Free, prior, and informed consent (FPIC), is essentially an international version of U.S. consultation. The aim of FPIC is to establish consultation with *informed* indigenous communities that will be impacted by large development projects, and allow communities to provide input and,

"One big problem with Community Benefits Agreements (CBAs), experts say, is that they're not laws, but rather private contracts between a developer and community groups. And if those groups aren't around to hold a developer accountable—or the developer isn't around and there's no successor clause—there's little anyone else can do to enforce an agreement."
— Neil deMause, *When Developers Promise Community Benefits, Who Holds Them Accountable?*

potentially, withdraw their consent *prior* to a project's development, *free* of coercion from corporations and governments with interests in these projects.

However, [research into the reality on the ground of the FPIC process](#) concludes that “the FPIC consultation undermines Indigenous autonomy, reinforces a context of substantial political and economic asymmetry between state, corporate and elite interest and Indigenous fishermen and farmers. Thus, the **FPIC consultation reinforces state–corporate power while simultaneously acting as a marketing platform for development projects** and constructing the illusion of real dialogue, negotiation and, by extension, democratic decision making.”

Recent events in Jujuy, Argentina are just one example of this inadequate process. Argentina requires consultation to be held before any project that affects indigenous people proceeds. Despite this, in Jujuy, a province which sits at the middle of the “lithium triangle”, constitutional reforms limiting the right of protest and facilitating lithium mining in the region were pushed through in just one week in 2023, despite the promise of a three-month consultation process with the region's indigenous communities. Protests erupted in the weeks following the reforms, during which provincial police used “indiscriminate force” and “a campaign of intimidation and surveillance” against protesters.

As in the U.S., it is typical—world wide—for consultation to be neglected and the interests of indigenous communities to be ignored or repressed.

Bureaucracy

Engaging with the public participation processes established by the U.S. federal government to understand and comment on proposed mining projects is almost insurmountable for most ordinary citizens.

To participate requires understanding federal and state law related to the projects, understanding the regulations of the government agencies involved, reading hundreds or even thousands of pages of scoping documents, environmental assessments, and environmental impact statements, and educating

oneself fully about the ecology and history of the area, including the flora, fauna, and human communities who will be directly impacted by a project.

It is no wonder so few people participate in this process. To write “substantive comments,” as agencies like the BLM require in order for those comments to be considered, demands expertise, time, and money most people simply don't have.

As a result, most projects receive comments primarily from organizations established with the purpose of submitting comments about certain kinds of projects, and, sometimes, filing lawsuits if they find agencies or mining companies are not fully complying with the law.

These organizations tend to be small, with limited resources and funding, so they are unable to comment on all of the many extraction projects underway in the U.S.

When these organizations do make substantive comments on a project during public input phases on scoping, assessment, and draft environmental impact statements, these comments are typically used by the agencies and the corporation to steer them to where they need to make adjustments in order to fully comply with the law. **The public input, in other words, helps the corporations to get the permits they require to proceed with a project.**

Remember, this is a system designed to permit extraction projects that are considered “the highest and best use” of the land, *not* a system designed to protect natural or human communities.

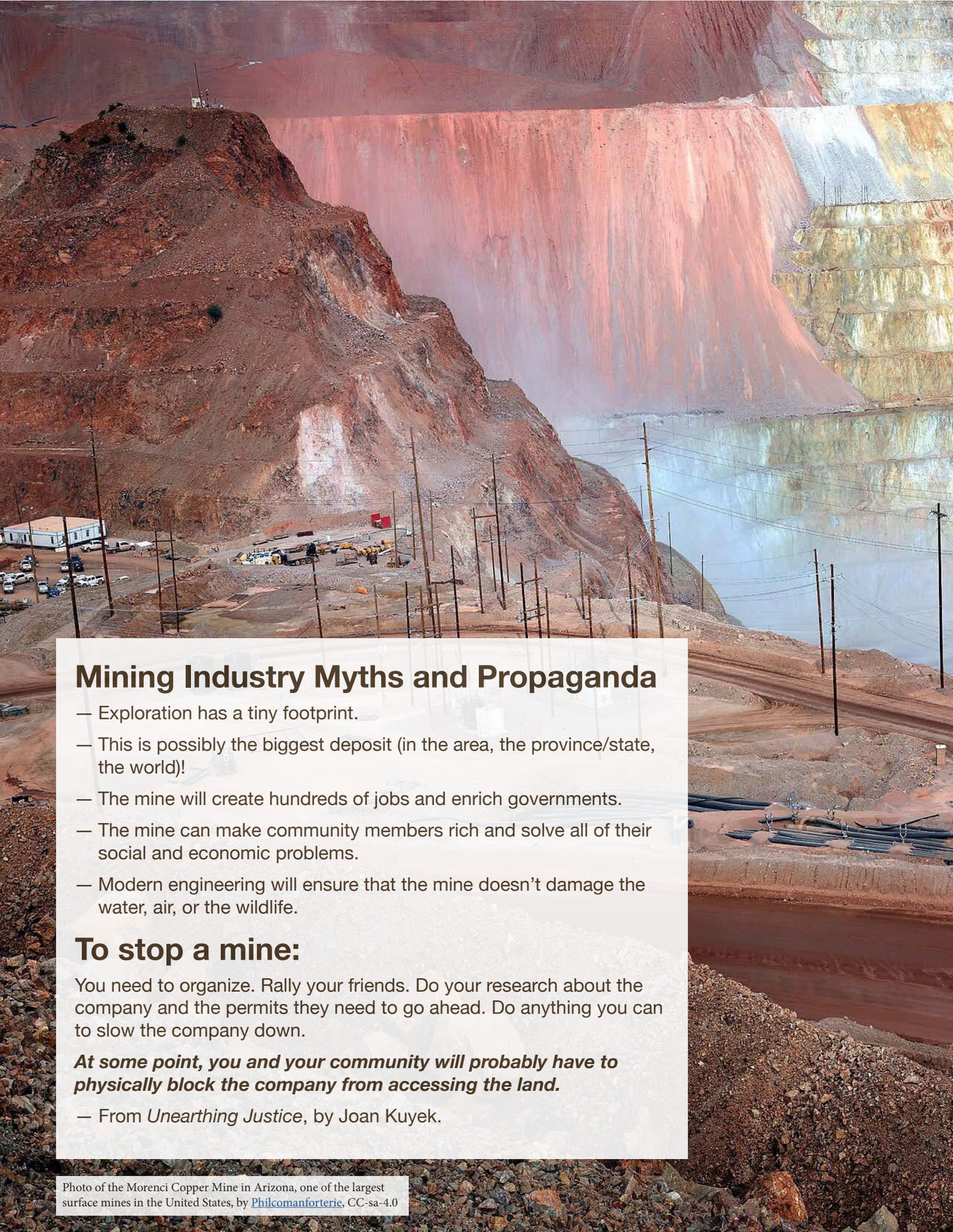
Do mining companies have all the power?

You might conclude, after reading this section of the report, that mining companies and the governments that enable them have all the power and there's nothing you can do. You might feel despair.

Action is the best antidote for despair. As Joan Kuyek writes in her book *Unearthing Justice: How to Protect Your Community from the Mining Industry*:

Sometimes ... direct action—the assertion of our responsibility to protect the earth and one another—is necessary. It is necessary to protect endangered species and resist destruction of land, water, and community.

“Learning how mining works can be a ‘nose-bleed’ learning curve.”
—Joan Kuyek,
Unearthing Justice



Mining Industry Myths and Propaganda

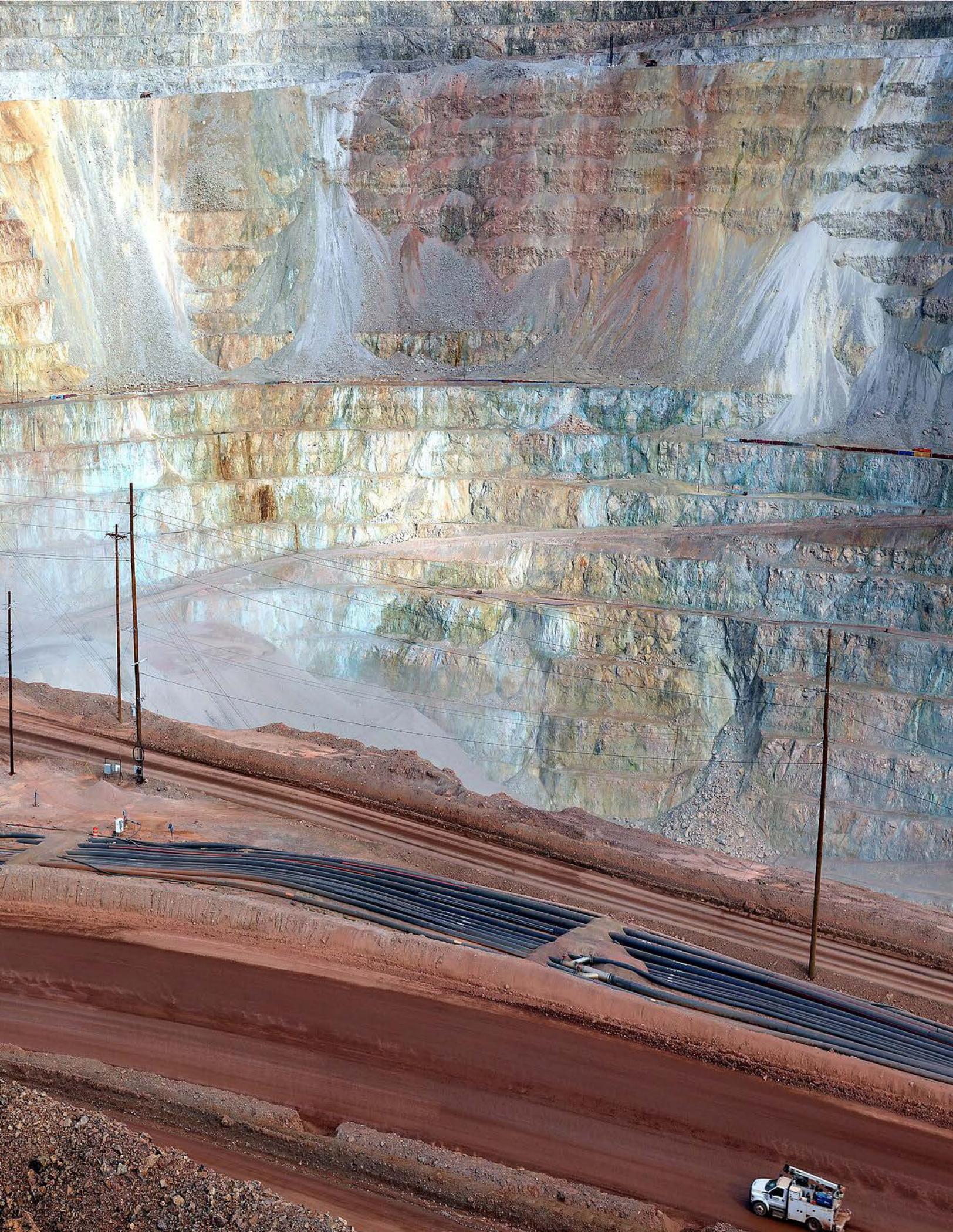
- Exploration has a tiny footprint.
- This is possibly the biggest deposit (in the area, the province/state, the world)!
- The mine will create hundreds of jobs and enrich governments.
- The mine can make community members rich and solve all of their social and economic problems.
- Modern engineering will ensure that the mine doesn't damage the water, air, or the wildlife.

To stop a mine:

You need to organize. Rally your friends. Do your research about the company and the permits they need to go ahead. Do anything you can to slow the company down.

At some point, you and your community will probably have to physically block the company from accessing the land.

- From *Unearthing Justice*, by Joan Kuyek.



How mining harms ecosystems

Mining is an inherently destructive process, no matter how it's done. Open-pit mining, underground mining, and brine pit mining all have catastrophic consequences on the environments where mining occurs. The damage is compounded by refining processes that use toxic and dangerous chemicals such as cyanide and sulfuric acid to leach metals from the ore.

The harms to a landscape are much larger than from the mining pit alone. Waste rock and tailings are usually piled on the land or stored behind large dams, and infrastructure built to support the mines, such as roads, ports, wells, pipelines, power stations, power lines, parking lots, housing for mine workers, and more, increases the scope of destruction.

In this section, we describe just a few of the many negative impacts mine construction and operation has on ecosystems. These impacts include deforestation, erosion, pollution, contamination of streams, rivers, and wetlands, dust pollution, noise and light pollution, biodiversity loss, greenhouse gas emissions, habitat fragmentation, and disrupted wildlife migration routes and breeding habits.

Overburden

First, we need to talk about “overburden,” the callous and cruel descriptor mining companies use for the natural communities living over the metals and minerals they wish to extract.

Open-pit mining is the most common method of mining around the world. Before an open-pit mine can be constructed, all life must be removed from the land. That includes the living soil and subsoil above the bedrock, and the natural communities who live on the land, including plants, animals, trees, and so on. Mining companies call these living communities the “overburden” because they

exist *over* the ore the mining companies want to get at to extract valuable minerals and metals.

Overburden is stripped using excavators, draglines (massive chains dragged across the land), graders, and other earthmoving equipment and removed from the mine site in large dump trucks. This process kills every living being on the land from the trees and wildlife to the bacteria who lived in the soil.

Despite mining company efforts to spin their projects as “environmentally sensitive” there is no such thing. The simple truth is that mining annihilates ecosystems.

“Mining is a rapid, ferocious, and continuous assault on the earth.”

**—Joan Kuyek,
*Unearthing Justice***

Mine footprints

Kennecott’s Bingham Canyon open pit copper mine in Utah is one of the largest mines in the U.S. The pit is three-quarters of a mile (3960 feet)

deep and nearly three miles wide. All open pit mines have a large footprint, some wider and some deeper than others. Every living being who lived on the land prior to mine construction was killed or driven away; the land at a mine site supports no life.

Billions of tons of rock are removed from the Earth over the course of a mine’s operation. Most of this rock is waste rock and tailings which is piled on top of the land next to the mine, or processed into tailings “ponds” (massive sludge lakes). This land, too, is rendered lifeless and barren, and, because of acid mine drainage and leaching chemicals, poisonous to living beings.



Removing overburden

The footprint extends beyond the mine pit, waste rock and tailings; the processing stations and refineries, roads, buildings, parking lots, fences, and more all have an impact, fragmenting and obliterating the ecosystems where they are situated. When water, soil, air, noise, light, and dust pollution are accounted for, the devastation expands even further.

Water

Removing vegetation, operating heavy equipment, constructing buildings and roads and power stations and parking lots and housing, and, eventually, blasting a massive pit into the Earth all causes erosion. Erosion contributes to sedimentation in waterways, which can smother vegetation and aquatic species.

Along with erosion, mining damages waterways far beyond the mine site itself with acid mine drainage. As Joan Kuyek describes in *Unearthing Justice*:

The metals that we mine can be found in rocks all over the earth. Undisturbed, these metals and the chemicals that are bound to them dissolve gradually and have established a long-term symbiotic relationship with the life around them. Mining destroys that relationship. It rips the desired metal from the rock that birthed it by smashing the rock to powder, and then uses chemicals and heat to break the chemical bonds...

Unwanted metals and chemicals are left behind in the extraction process and end up smashed to bits, with many surfaces exposed to air and water in waste rock dumps, tailings impoundments, mine dams and roads, and mine pits.

This smashed up waste rock is exposed to the elements. Rain falls on these rocks and trickles into streams taking sulfuric acid with it. The water carries acid away from mine sites and into streams, rivers, lakes, and groundwater, killing aquatic life and making these waterways inhospitable to all natural communities.

When leaching liquids containing chemicals such as cyanide and metal residues are added to this mix, the result is even more devastating. This toxic stew of acid and leaching chemicals is a poison to the plants and animals who live in waterways polluted by mines.

A 2021 study of the Appalachian eco-region where mountain-top mining is common found that streams from heavily mined watersheds had 40% fewer species than streams with cleaner water. The mining caused biodiversity loss in fish, insects, clams, crustaceans, algae, fungi, bacteria, and more.

Noise

While it is fairly obvious to most people that mining destroys the soil, obliterates and fragments habitat, and creates water, soil, and air pollution, many don't think about the threats to wildlife and ecosystems from noise pollution.

Any noise over 85 dB can be harmful to human health, especially with repeated exposures. Mine sites regularly operate at noise levels between 114-120 dB, with blasting noise reaching up to 160 dB. Of course, humans can protect their ears. Wildlife can't.

A 2023 paper studying neurobehavioral alterations from noise exposure in animals identified four main ways in which animals are adversely affected by noise pollution:

- (i) hearing loss, with noise levels of 85 Decibel or higher;
- (ii) masking, such as the inability to hear important environmental and animal signals;
- (iii) increased heart rate and breathing; and
- (iv) behavioral effects,

and found "anomalous responses from wildlife begin at noise intensities of around 40 dBA."

A separate study on how road noise affects birds found that "bird abundance declined by 31% on average" near road noise and changed their behavior significantly when exposed to road noise in the 55-61 dB range, far below the level

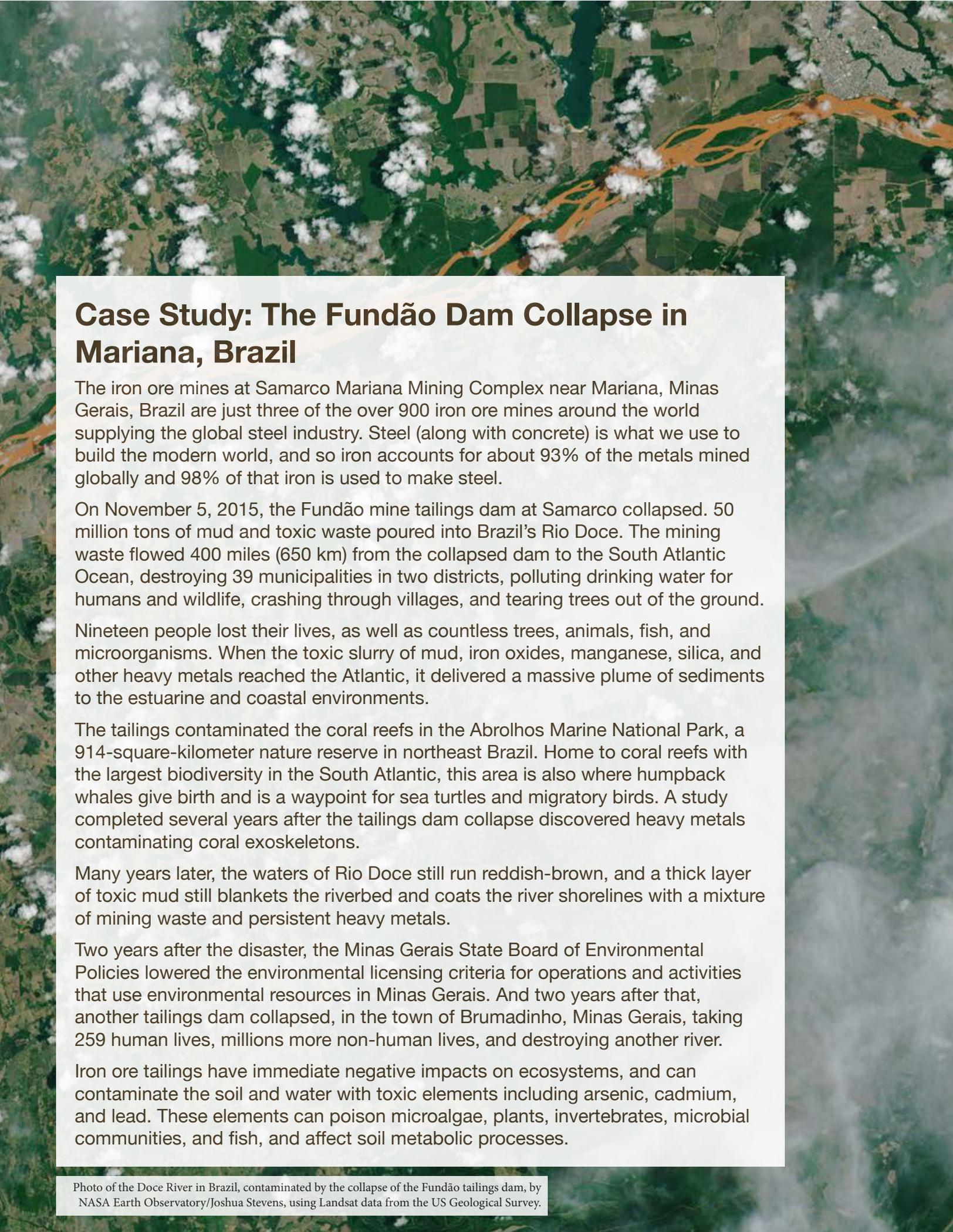
of noise at a typical mine site.

The Thacker Pass lithium mine in northern Nevada is situated near Greater sage-grouse leks, areas where sage-grouse display and mate. A BLM noise survey prior to mine construction measured ambient noise levels in the range of 13 to 26 dB, with an average level of 13 dB during lekking hours. This is the environment in which sage-grouse are used to living, foraging, mating, and breeding.

Sage-grouse are exquisitely sensitive to noise, and do not habituate to the impacts of noise over time. We anticipate the noise from the mine will have an enormous impact on these endangered birds.



Photo of Greater sage-grouse by [Bob Wick, BLM](#)



Case Study: The Fundão Dam Collapse in Mariana, Brazil

The iron ore mines at Samarco Mariana Mining Complex near Mariana, Minas Gerais, Brazil are just three of the over 900 iron ore mines around the world supplying the global steel industry. Steel (along with concrete) is what we use to build the modern world, and so iron accounts for about 93% of the metals mined globally and 98% of that iron is used to make steel.

On November 5, 2015, the Fundão mine tailings dam at Samarco collapsed. 50 million tons of mud and toxic waste poured into Brazil's Rio Doce. The mining waste flowed 400 miles (650 km) from the collapsed dam to the South Atlantic Ocean, destroying 39 municipalities in two districts, polluting drinking water for humans and wildlife, crashing through villages, and tearing trees out of the ground.

Nineteen people lost their lives, as well as countless trees, animals, fish, and microorganisms. When the toxic slurry of mud, iron oxides, manganese, silica, and other heavy metals reached the Atlantic, it delivered a massive plume of sediments to the estuarine and coastal environments.

The tailings contaminated the coral reefs in the Abrolhos Marine National Park, a 914-square-kilometer nature reserve in northeast Brazil. Home to coral reefs with the largest biodiversity in the South Atlantic, this area is also where humpback whales give birth and is a waypoint for sea turtles and migratory birds. A study completed several years after the tailings dam collapse discovered heavy metals contaminating coral exoskeletons.

Many years later, the waters of Rio Doce still run reddish-brown, and a thick layer of toxic mud still blankets the riverbed and coats the river shorelines with a mixture of mining waste and persistent heavy metals.

Two years after the disaster, the Minas Gerais State Board of Environmental Policies lowered the environmental licensing criteria for operations and activities that use environmental resources in Minas Gerais. And two years after that, another tailings dam collapsed, in the town of Brumadinho, Minas Gerais, taking 259 human lives, millions more non-human lives, and destroying another river.

Iron ore tailings have immediate negative impacts on ecosystems, and can contaminate the soil and water with toxic elements including arsenic, cadmium, and lead. These elements can poison microalgae, plants, invertebrates, microbial communities, and fish, and affect soil metabolic processes.



The scale of mining and its impacts at a glance

280

The number of active metal mines operating in the United States (as of 2022).

12,563

The number of active sand, gravel, coal, and non-metal mines operating in the United States (as of 2022).

917

The number of active iron ore mines in operation globally.

500

The years it will take the BLM to complete an inventory of abandoned hard rock mines and features on its land, at current staffing levels and resources.

620,000

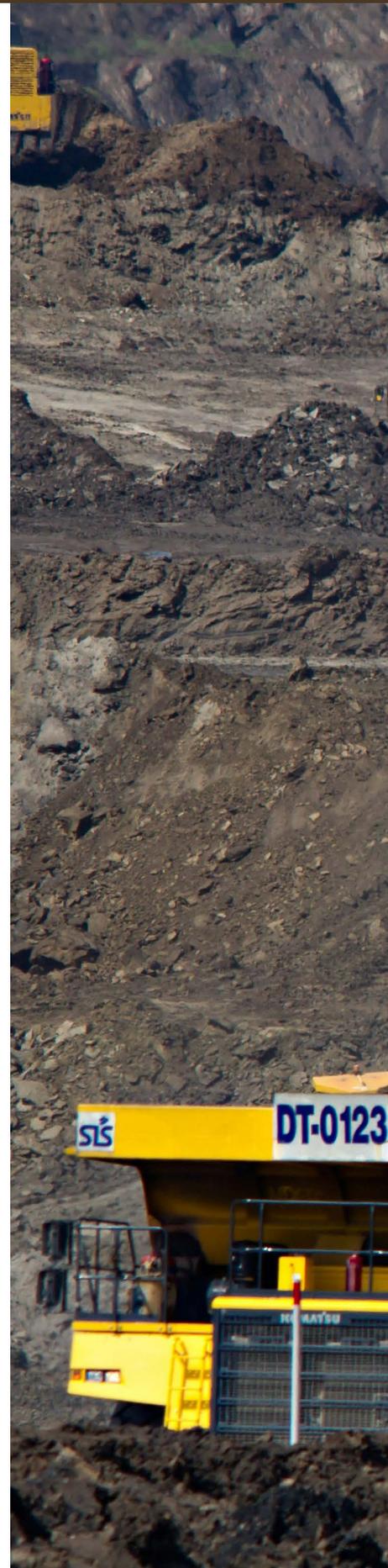
The estimated number of abandoned mine sites in 13 Western states in the U.S.

**\$50m -
\$538m**

The actual environmental hazard costs of the 25 most expensive mining and mineral processing sites in the U.S. The EPA has been working on some of these sites for more than 20 years. (As of 2019 data.)

90%

The UN's Global Resources Outlook 2019 report found that natural resource extraction and processing account for more than 90 per cent of global biodiversity loss and water stress.





Metals extraction and refining accounts for 40% of all industrial greenhouse gas emissions and 10% of global energy consumption.

40%

In 1920, global average copper grade was 1.6%. In 2019, the average copper grade was approximately 0.5%.

0.5%

The world's top 10 largest mines are iron ore, copper, diamond, and coal mines.

Top 10

Tailings and waste rock from metals mining is approximately 20 times larger in volume than the total amount of metals extracted from ore.

20x

The number of active, inactive, and closed tailings storage facilities bigger than 280 billion metric tons, worldwide.

8,500

Mining activity causes nearly 10 percent of Amazon deforestation.

10%

The number of new mines worldwide that will begin operation in 2024. The largest of these will extract iron, gold, and copper.

100

The scale of mining for “clean technologies” at a glance

Mining and processing the rare earth metals now common in most wind turbines produces significant toxic waste. Many rare earth metals are bound up in ore deposits that contain thorium and uranium, both of which are radioactive. One ton of radioactive waste is produced for every ton of mined rare earth metals. Rare earth metal processing for wind turbines already generates as much radioactive waste as the nuclear industry.

— Megan K. Seibert and William E. Rees, [*Through the Eye of a Needle: An Eco-Heterodox Perspective on the Renewable Energy Transition.*](#)

For every kilogram of battery, 50–100 kg of ore needs to be mined, transported, and processed. Constructing enough lithium batteries to store only 12 hours worth of daily power consumption would require 18 months worth of global primary energy production and the entire global supply of several minerals.

— Megan K. Seibert and William E. Rees, [*Through the Eye of a Needle: An Eco-Heterodox Perspective on the Renewable Energy Transition.*](#)





Photo of used wind turbine blades being landfilled, with permission of photographer [Benjamin Rasmussen](#).

The International Energy Agency (IEA) estimates that reaching “net zero” globally by 2050 would require six times the amount of mineral resources used today. This would entail a quantity of metal production over the next 15 years roughly equal to that from the start of humanity until 2013.

— Megan K. Seibert and William E. Rees, [Through the Eye of a Needle: An Eco-Heterodox Perspective on the Renewable Energy Transition](#).

To phase out fossil fuels, 4,575,523,674 tons of copper will be needed to produce one generation of technology units (wind, solar, batteries, electricity grid lines, etc.), requiring 189.1 years at 2019 rates of production.

— Simon Michaux, [Assessment of the extra capacity requirements of alternative energy electrical power systems to completely replace fossil fuels](#).

Protect Thacker Pass is opposed to all extraction. Fossil fuels, minerals, metals, and other materials used in so-called “clean technologies” are all finite and non-renewable on human time scales. Extracting these materials causes irreparable and permanent damage to the environment, poisons the air, land, and water, and destroys the habitats of natural and human communities.

For ideas for a future without mining and extraction, see our Solutions at protectthackerpass.org/solutions.

Mining is inherently unsustainable.

—Thomas Benson, Vice President of Global Exploration at Lithium Americas and Adjunct Associate Research Professor at Columbia University, [*The key ingredient to millions of EVs is buried under a former volcano — but there's still a lot we don't know*](#), August 30, 2023.

It's not “green” to destroy the land, whether you're mining coal or lithium. If we want to stop global warming, changing what's under the hoods of our cars isn't enough. Reducing emissions and saving our planet means challenging our culture of consumption and growth.

That's the new inconvenient truth.

—Max Wilbert, [*Indigenous Women Are Leading Mass Protests Against Lithium Mining in Argentina*](#), August 12, 2023.

Mining companies lie. They just lie.

—Joan Kuyek, *Unearthing Justice: How to Protect Your Community From The Mining Industry*, 2019.

When the last tree is cut, the last fish is caught, and the last river is polluted; when to breathe the air is sickening, you will realize, too late, that wealth is not in bank accounts and that you can't eat money.

—Alanis Obomsawin, Canadian filmmaker of Abenaki descent

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The Protect Thacker Pass Campaign

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