



CRITICAL MINERALS: A HUNTING AND FISHING PERSPECTIVE





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A NEED FOR SENSIBLE POLICY

Americans rely on critical minerals every day. They are in our cars, cell phones, and airplanes. Some are well-known, such as titanium and aluminum, while others, such as rubidium and samarium, are obscure. They are necessary in wind turbines and solar panels for renewable energy generation. In short, they are critical to achieving carbon emissions reduction goals, addressing climate change, and reducing associated impacts to fish and wildlife.

In 2020, several fishing, hunting, and wildlife conservation groups released [Critical Minerals: A Conservation Perspective](#). Since then, the world has experienced the COVID-19 pandemic and increased global conflict. These events revealed weaknesses and vulnerabilities in numerous areas of the supply chain, including critical mineral imports. Congress and the executive branch have employed numerous policies to meet the demand for critical minerals since 2020. We revised this re-

port in response to those developments. It remains imperative that critical mineral extraction not sacrifice high-quality fish and wildlife habitat or our hunting and fishing heritage. Smart planning can prevent conflicts.

The Energy Act of 2020 defines a critical mineral as a nonfuel mineral essential for use that faces considerable supply chain vulnerabilities. This includes any mineral, element, substance, or material designated

as “critical” by the Secretary of the Interior due to (1) its status as essential to the economic and national security of the U.S., (2) a vulnerable supply chain, and (3) serving an essential function in manufacturing an essential product. The inability to access sufficient quantities of these minerals would have significant consequences on the economic or national security of the U.S.

According to the National Mining Association, of the 50 critical minerals identified in the “2022 Final List of Critical Minerals,” the U.S. was 100% net import-reliant on 12 of them and greater than 50% net import-reliant on an additional 14 minerals.

The countries producing these minerals include places with often unstable governments that lack adequate labor and environmental laws. Some are adversaries to the U.S. It is unacceptable to source minerals from countries that oppose the economic and national interests of our nation, rely on child and slave labor, and/or lack regulations that prevent water, land, and air pollution. Our nation can and should adopt high standards for mineral production to ensure that domestic exploration and development are carried out responsibly, with baseline protections for workers and the environment.



Mining operations, whether on public or private lands, can impact wildlife habitat and diminish recreational opportunities like hunting, fishing, and other outdoor activities if conducted in sensitive locations or without proper safeguards. Irresponsible mining can send toxic sludge down rivers and pollute lakes and watersheds for centuries, if not longer. Consequently, local businesses that depend on healthy lands and recreation can also suffer. And in the past, disadvantaged communities and Tribes have borne the brunt of this pollution. Efforts to remediate and

restore contaminated watersheds cost billions of dollars. Conversely, mining activities carried out in the right places, responsibly and in ways that meaningfully include potentially impacted Tribal and local communities, can be an economic and social asset.

This is why creating sensible public policy addressing critical minerals is so important. It is a complex issue, and we need informed, collaborative solutions to chart a responsible path forward. We present this report as a step in that direction.

WHAT ARE CRITICAL MINERALS?

In 2022, the U.S. Geological Survey (USGS) published the [“Final List of Critical Minerals.”](#) The list reduced the number of official minerals found in the 2018 list from 56 to 50, removing helium, potash, rhenium, and strontium, among others. Nickel and zinc were added, reflecting their growing importance in various technologies and industries. Uranium was also removed, as it is defined as a fuel mineral under the Mineral Policy Act of 1970 and is, therefore, outside the scope of the Energy Act of 2020. As of the date of publication of this report, the 2022 USGS list remains the official list of critical minerals.

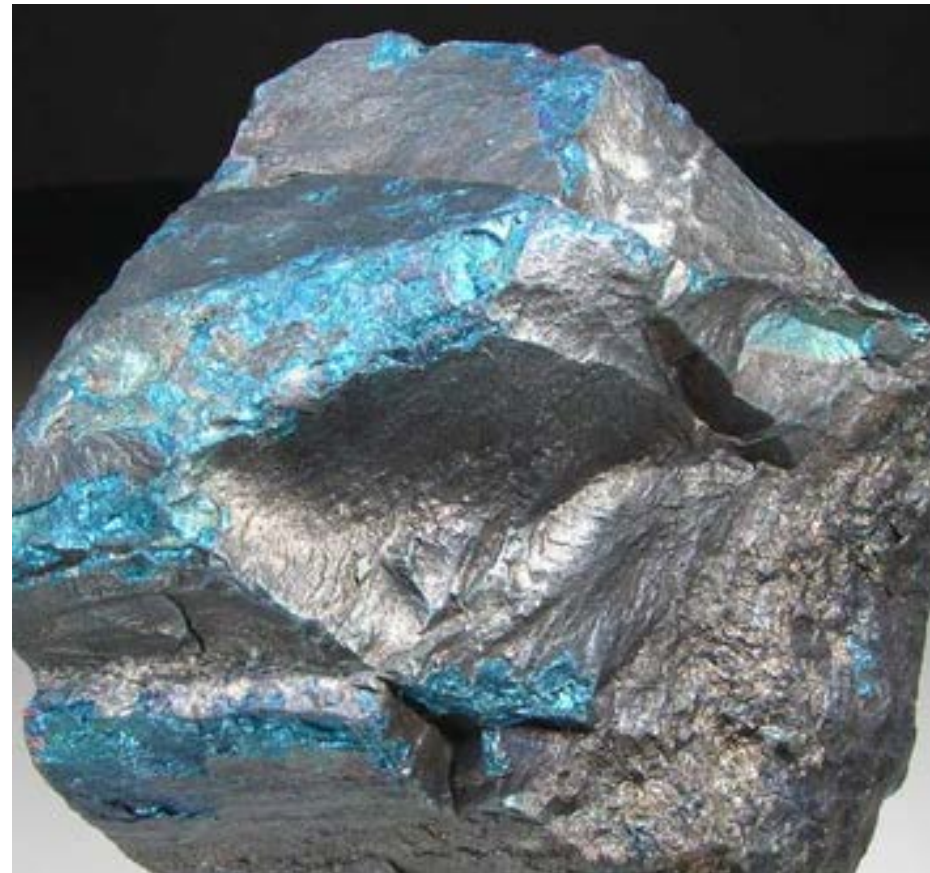
In this section, we highlight the most commonly used and highly sought-after critical minerals on this list, their key applications, and the associated risks of unbalanced mining.

COBALT

What it's for: Cobalt is a critical component of rechargeable lithium-ion batteries found in smartphones, laptops, and electric vehicles (EVs). Cobalt is also used for alloys in airplane engine parts.

Why it's critical: With only a few known cobalt deposits in the U.S., American manufacturers rely almost entirely on imports from places with geopolitical concerns and lax labor and environmental laws, such as China, Russia, and the Democratic Republic of the Congo. Additionally, new, low-cobalt battery technologies being developed can help reduce demand from these nations.

Where it's found in the U.S.: Many known deposits overlap with high-value fish and wildlife habitat, such as the Boundary Waters in Minnesota and the Klamath and Rogue Rivers in California and Oregon. More suitable locations for mining cobalt may exist and necessitate further discussions with affected stakeholders and communities.



NICKEL

What it's for: Nickel is crucial in EV batteries and other renewable energy storage systems. Nickel batteries contain nearly twice the energy density of other viable materials. The mineral's ability to withstand high temperatures and resist corrosion makes it a key component in steel used for everything from wind turbines to solar panels.

Why it's critical: USGS added nickel to the list of critical minerals in 2021 in recognition of its crucial role in EV batteries, coupled with growing demand projections and supply chain vulnerabilities. The addition reflected concerns about the concentration of nickel production in a limited number of countries—more than 50% of the world's nickel deposits are found in Australia, Indonesia, South Africa, Russia, and Canada. More sophisticated processing capabilities are needed to meet the specific requirements of the rapidly expanding EV industry.

Where it's found in the U.S.: Nickel is often found with other sulfide or metallic elements, such as cobalt, iron, copper, and arsenic. Similar to cobalt, known deposits of nickel exist in high-value fishery and wildlife areas in California, Oregon, and Minnesota. Currently, the only operating U.S. nickel mine is in Michigan's Upper Peninsula.

LITHIUM

What it's for: Lithium is a critical component in rechargeable batteries that power everything from smartphones to military technology. This element is also crucial for storing wind and solar-generated energy, as well as for EV batteries. Lithium is both the lightest metal and lightest solid element.

Why it's critical: The current top-producing countries of lithium are Chile, Australia, Argentina, and China. The U.S. is a relatively small producer and, as of 2018, had a net import reliance (as a percentage of consumption) of more than 50%. This concentration of lithium production by a few countries creates significant supply chain vulnerabilities. Disruptions to lithium supply could constrain growth in technology and energy industries.

Where it's found in the U.S.: Lithium is almost everywhere, but few places have large deposits. As of 2022, less than 1% of global lithium production occurred in the U.S. at a single facility located in Silver Peak, Nevada. The Nature Conservancy conducted an [extensive analysis](#) on the potential environmental impacts of lithium mining in the US. They found 72 proposed lithium projects across the country. Most proposed projects occurred in Nevada and California, but extensive reserves are found throughout the country and are found in brines, hard rock, and clays. Lithium is not rare and provides an opportunity for planning to site mines in the lowest impact areas.



RARE EARTH ELEMENTS

What they're for: There are 17 chemical elements within the overarching “rare earth elements” grouping of the periodic table of elements. Rare earth metals (and alloys that contain them) are in many devices that people use every day, like computers, rechargeable batteries, cell phones, catalytic converters, magnets, and fluorescent lighting.

Why they're critical: The U.S. currently imports about 80% of its rare earth elements from other countries, predominantly China. This increases our susceptibility to large swings in global pricing and supply.

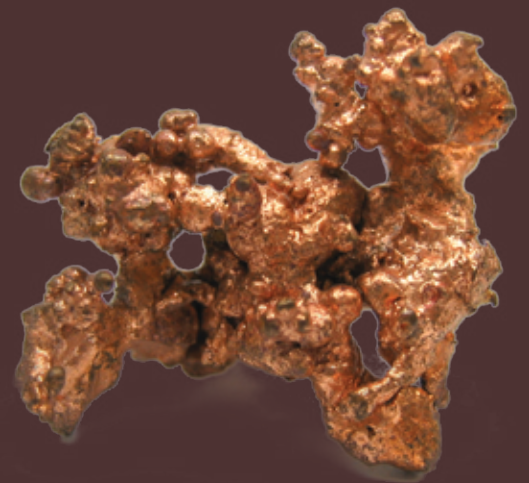
Where they're found: Rare earth elements, contrary to the name, are actually quite common throughout the Earth's crust. The challenge is finding ore in concentrations that are high enough to process efficiently. The Mountain Pass Mine in California, acquired by MP Materials in 2023, contains one of the world's richest deposits of rare earth elements. The mine produced more than 10% of the world's rare earth elements that year. As noted in the Tenets for Responsible Critical Mineral Development in this report, we recommend that federal officials encourage (via statute, executive order, or appropriations) the development of new technologies that could extract rare earth elements from active or abandoned mines, water contaminated with coal ash, and even acid mine drainage at legacy hardrock mines in the western U.S.



COPPER

IMPORTANT BUT NOT “CRITICAL”

Renewable energy and electric vehicles require significant quantities of copper. The USGS did not include copper in its 2022 list of critical minerals because U.S. production and its trade with reliable partners mitigate supply chain vulnerabilities (the second criterion). While we agree with this decision, it's important to recognize that copper still requires the same responsible policies for siting, production, and recycling as critical minerals.



copper ore



NOTABLE CHANGES

U.S. policy on critical minerals and supply chain resilience has changed significantly since 2020, due primarily to COVID-19 supply disruptions and increasing geopolitical tensions. Current policy strongly aligns with recommendations advanced in the Interagency Working Group on Mining Laws, Regulations, and Permitting (IWG) [report](#) on domestic mining and supply chains. Many of the report's stated fundamental principles align with our Tenets for Responsible Critical Mineral Development.

In 2021, the Department of Defense led a 100-day [Supply Chain Review](#) for critical minerals and strategic materials. This effort required the participation of multiple federal agencies, industry

stakeholders, and academic institutions and focused on assessing critical goods, manufacturing capabilities, and potential supply disruptions.

Subsequent investments exemplify efforts to secure a stable domestic supply of critical minerals. These include a \$35 million Department of Defense contract for a rare earth element processing facility at Mountain Pass, California, and multi-billion dollar partnerships for lithium extraction and refining of battery material. In 2021, Congress set aside [\\$140 million](#) to build a demonstration facility for rare earth elements. The facility aims to demonstrate the feasibility of a full-size plant capable of extracting and separating rare earth elements and then refining them. Recent

statutory provisions created tax incentives to consumers and manufacturers that encourage the production and adoption of electric and hybrid vehicles.

In March 2022, under the Defense Production Act, the executive branch promulgated measures to support domestic mining and processing of critical materials essential for renewable energy technologies. This administrative action aimed to stimulate feasibility studies, improve productivity, and ensure sustainability in mineral extraction.

The IWG's report in the following year outlined 65 recommendations across various categories, including mineral exploration planning, stakeholder engagement, and abandoned mine reclamation.

The following IWG recommendations resonate with our organizations' principles and would foster a sustainable domestic supply chain that meets national security goals while conserving fish, wildlife, and recreational opportunities.

1. Improve mineral exploration and development planning and permitting.
2. Authorize federal land managers to withdraw public lands from mineral development unless the claimant commits to heightened, responsible mining practices. Currently, public land managers lack the authority to deny mining permits in inappropriate locations.
3. Obtain fair compensation for taxpayers by imposing a variable 4-8% net royalty on hardrock minerals produced on federal lands. Currently, no royalties are imposed on (lode claim) hardrock minerals extracted from federal lands.
4. Protect taxpayers from the cost of abandoned mine reclamation and pass Good Samaritan legislation to facilitate abandoned mine land remediation, which was enacted in December of 2024.
5. Improved stakeholder engagement, better coordination between permitting authorities, and meaningful, robust, and early government-to-government consultation with Tribes.

MODERNIZING THE 1872 MINING LAW

The IWG concluded that updates to the Mining Law of 1872—the more than 150-year-old law governing access to mineral resources on hundreds of millions of acres of public land—are imperative for achieving the best outcomes for impacted communities and Tribes, meeting the nation's renewable energy and climate goals, while providing certainty for both industry and conservation interests.





A PATH FORWARD

Half of the known critical mineral deposits in the U.S. are located within trout and salmon habitat. One in ten deposits is in currently protected public lands, including wilderness areas and national parks. Many other critical mineral deposits overlap with sensitive sage grouse habitat and big game migration corridors. Critical minerals are important to our future, but we must be careful not to place vital natural areas at an unacceptable risk.

The U.S. cannot simply mine its way out of supply chain challenges. We

need to reduce demand, recycle, and mine carefully. Meeting our critical minerals needs without sacrificing our most valuable and important natural areas requires a responsible, strategic, and thoughtful approach. This will allow us to meet our critical mineral needs without compromising fish and wildlife habitat or jeopardizing the substantial economic activity and value generated by hunting, fishing, and outdoor recreation.

We can develop holistic policies that

create public transparency in planning processes and incorporate the best available science. Together, we can implement stronger natural resource management practices that safeguard sensitive fish and wildlife habitat and ensure the future of our hunting and fishing traditions and the growing outdoor recreation economy. The Tenets for Responsible Critical Mineral Development will ensure that natural resource values are given due consideration when developing critical minerals policy and evaluating mine proposals.



MAPPING

FISH AND WILDLIFE RESOURCES AT RISK

A team of spatial analysis experts mapped and identified areas of critical mineral deposits with a nexus to important fish and wildlife habitats and currently protected public lands. They found that half are within coldwater trout and salmon habitat, and one in ten are currently on

protected public lands. Of the 822 critical mineral deposits in the western U.S. (excluding Alaska), 55 (6.7%) occur within priority big game winter range and migration corridors (as recently identified by states in partnership with the Department of Interior under [Secretarial Order 3362](#)). Thir-

ty—or 3.6%—of these known deposits are within [greater sage-grouse](#) Priority Areas of Conservation identified by the U.S. Fish and Wildlife Service. Seven of the deposits are in priority big game winter range and migration corridors and sage grouse priority areas of conservation.

**WEB MAP
LINK**



Primary critical mineral deposits

- Misc. critical minerals
- Cobalt
- Lithium
- Rare earth minerals
- Rhenium
- Tellurium
- Tin
- Tungsten
- Other
- Protected Areas
- Bureau of Land Management
- Forest Service
- Tribal land

[BIT.LY/CRITICALMINERALSMapping2025](https://bit.ly/criticalmineralsmapping2025)

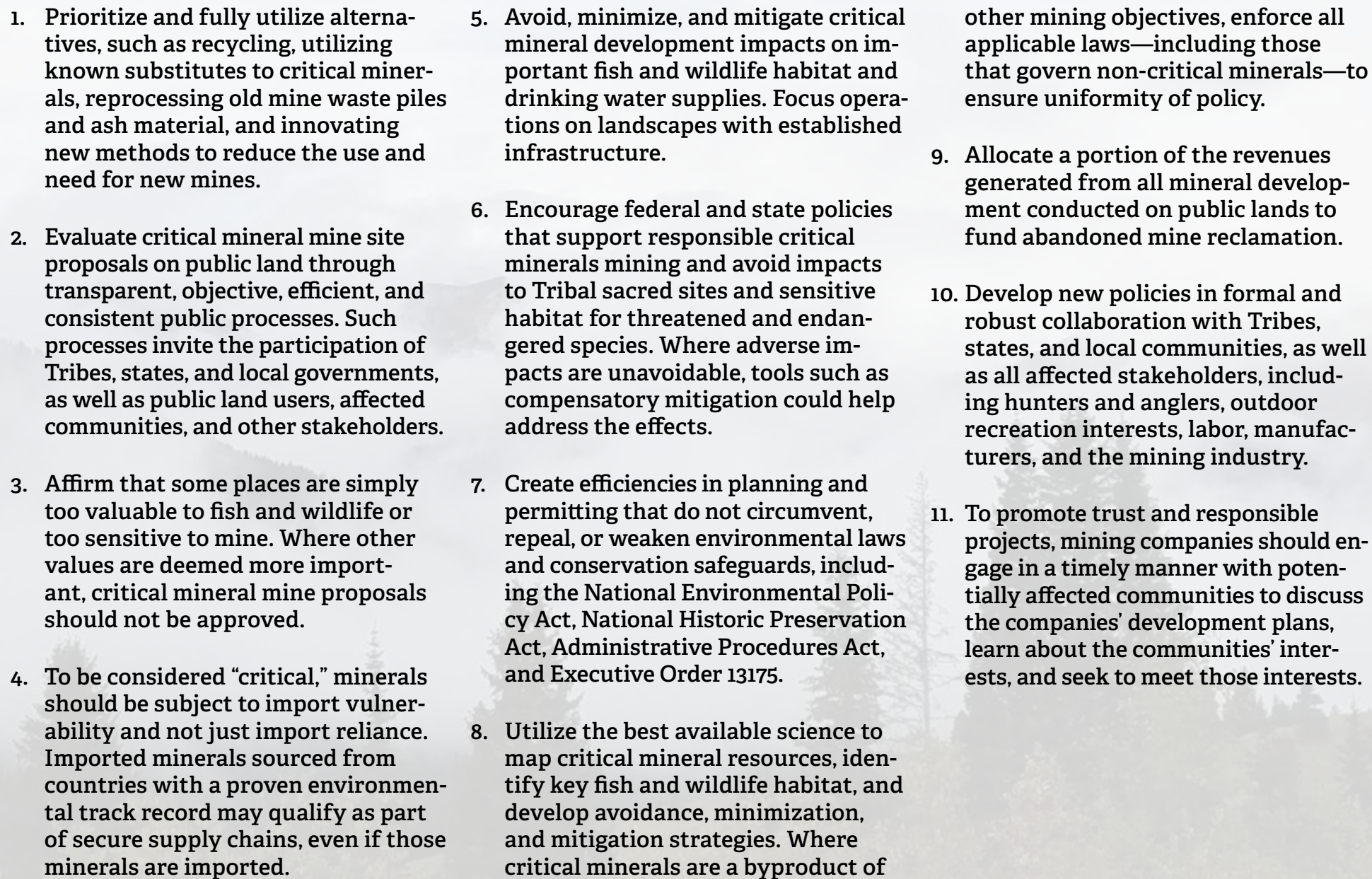


TENETS FOR RESPONSIBLE CRITICAL MINERAL DEVELOPMENT

As a country, we must consider the entire lifecycle of a mine, from discovery and exploration to extraction, processing, and end-of-life options. Too many areas of the U.S. are polluted by poorly planned, hastily built, and ultimately abandoned mines, which were operated before the era of modern mining prac-

tices and strong environmental protection laws. There are at least [500,000 abandoned](#) mine features in the western U.S. alone. Cleanup of these sites could cost taxpayers in excess of \$50 billion. The current demand for critical minerals should not exacerbate an already untenable problem.

These tenets will help prevent avoidable environmental, social, and economic harm as the nation strives to satisfy its critical minerals needs. We intend to work with a wide array of partners and stakeholders to translate these tenets into specific state and federal policy recommendations.

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1. Prioritize and fully utilize alternatives, such as recycling, utilizing known substitutes to critical minerals, reprocessing old mine waste piles and ash material, and innovating new methods to reduce the use and need for new mines.
 2. Evaluate critical mineral mine site proposals on public land through transparent, objective, efficient, and consistent public processes. Such processes invite the participation of Tribes, states, and local governments, as well as public land users, affected communities, and other stakeholders.
 3. Affirm that some places are simply too valuable to fish and wildlife or too sensitive to mine. Where other values are deemed more important, critical mineral mine proposals should not be approved.
 4. To be considered “critical,” minerals should be subject to import vulnerability and not just import reliance. Imported minerals sourced from countries with a proven environmental track record may qualify as part of secure supply chains, even if those minerals are imported.
 5. Avoid, minimize, and mitigate critical mineral development impacts on important fish and wildlife habitat and drinking water supplies. Focus operations on landscapes with established infrastructure.
 6. Encourage federal and state policies that support responsible critical minerals mining and avoid impacts to Tribal sacred sites and sensitive habitat for threatened and endangered species. Where adverse impacts are unavoidable, tools such as compensatory mitigation could help address the effects.
 7. Create efficiencies in planning and permitting that do not circumvent, repeal, or weaken environmental laws and conservation safeguards, including the National Environmental Policy Act, National Historic Preservation Act, Administrative Procedures Act, and Executive Order 13175.
 8. Utilize the best available science to map critical mineral resources, identify key fish and wildlife habitat, and develop avoidance, minimization, and mitigation strategies. Where critical minerals are a byproduct of other mining objectives, enforce all applicable laws—including those that govern non-critical minerals—to ensure uniformity of policy.
 9. Allocate a portion of the revenues generated from all mineral development conducted on public lands to fund abandoned mine reclamation.
 10. Develop new policies in formal and robust collaboration with Tribes, states, and local communities, as well as all affected stakeholders, including hunters and anglers, outdoor recreation interests, labor, manufacturers, and the mining industry.
 11. To promote trust and responsible projects, mining companies should engage in a timely manner with potentially affected communities to discuss the companies’ development plans, learn about the communities’ interests, and seek to meet those interests.



REPROCESSING, RECYCLING, AND REUSE OPPORTUNITIES

Recycling and repurposing critical minerals and rare earth elements (Tenet #1) can be a clean and efficient way to meet much of our nation's growing demand.

For example, the historic mining town of Butte in western Montana is part of the largest Superfund site in the U.S., known as the Berkeley Pit. It also [represents an opportunity](#) to reprocess and extract

critical minerals and rare earth elements from an existing mine. Copper from this former open-pit mine helped bring electricity to the country and win two World Wars. More recently, [research conducted](#) by the Montana Bureau of Mine and Geology and West Virginia University found significant quantities of valuable elements in the Berkeley Pit's water, including zinc, manganese, and rare earth

elements of interest to the Department of Defense. The EPA notes that "Berkeley Pit water offers a promising source for metal recovery." Montana Resources, which operates a nearby mine, saw an opportunity to develop a rare earth and critical element concentrator near the pit's water treatment plant. This is one of the most advanced and fully feasible initiatives in the country, with potential economic

benefits and strategic importance for reducing reliance on foreign supplies.

Companies like Redwood Materials are [partnering with Ford and Volvo](#) to create a “closed-loop” recycling process that reduces electronic waste from lithium-ion batteries and addresses global supply chain vulnerabilities. Recycled critical minerals from old batteries help meet domestic demand and reduce the need to open new, potentially costly mines with the attendant environmental risks.

Aging lithium-ion batteries in devices like electric cars can be reused to serve the same function for someone with lower energy needs. For instance, an electric car battery that doesn't meet one owner's range requirements might be perfect for another driver who travels shorter distances. Such batteries can also be repurposed. That same car battery could find new life by storing energy from solar panels in a home. Both methods extend the battery's useful life, reduce waste, and maximize its remaining power.



SPECIAL PLACES WITH CRITICAL MINERAL OVERLAP

The following are some of the country's most unique landscapes that encompass or exist near known critical mineral deposits. As you read, please consider our tenets to see how they can guide decisions that avoid and mitigate impacts to irreplaceable natural resources while supporting responsible critical minerals mining.

NEVADA

The Silver State's volcanic past has produced some of the richest lithium deposits in the country. At the same time, Nevada is part of the Sagebrush Sea, a vast expanse of blue-green sage that is home to pronghorn, mule deer, greater sage grouse, Lahontan cutthroat trout, and other fish and wildlife. Based on [research](#) conducted by The Nature Conservancy, extraction of these vast lithium deposits could have consequences for wildlife and their habitat if environmental safeguards are not in place.

The [Silver Peak Lithium Project](#) site is in a remote basin in the southwest part of the state, near the border with California. Lithium there is extracted in grid-
ded ponds through solar evaporation.

This process uses large volumes of water, and depending on the deposit, hundreds of thousands of gallons of water are lost through evaporation. In the driest state in the U.S., concerns exist surrounding the sustainability of such operations.

Other concerns surround migratory waterfowl, which are attracted to open water. [High mortality rates of birds](#) have resulted from contact with toxic ponds at operations utilizing toxic substances. A number of the Tenets for Responsible Critical Mineral Development in this report recommend minimizing critical mineral development impacts on important fish and wildlife habitat, including migratory waterfowl. The Silver Peak

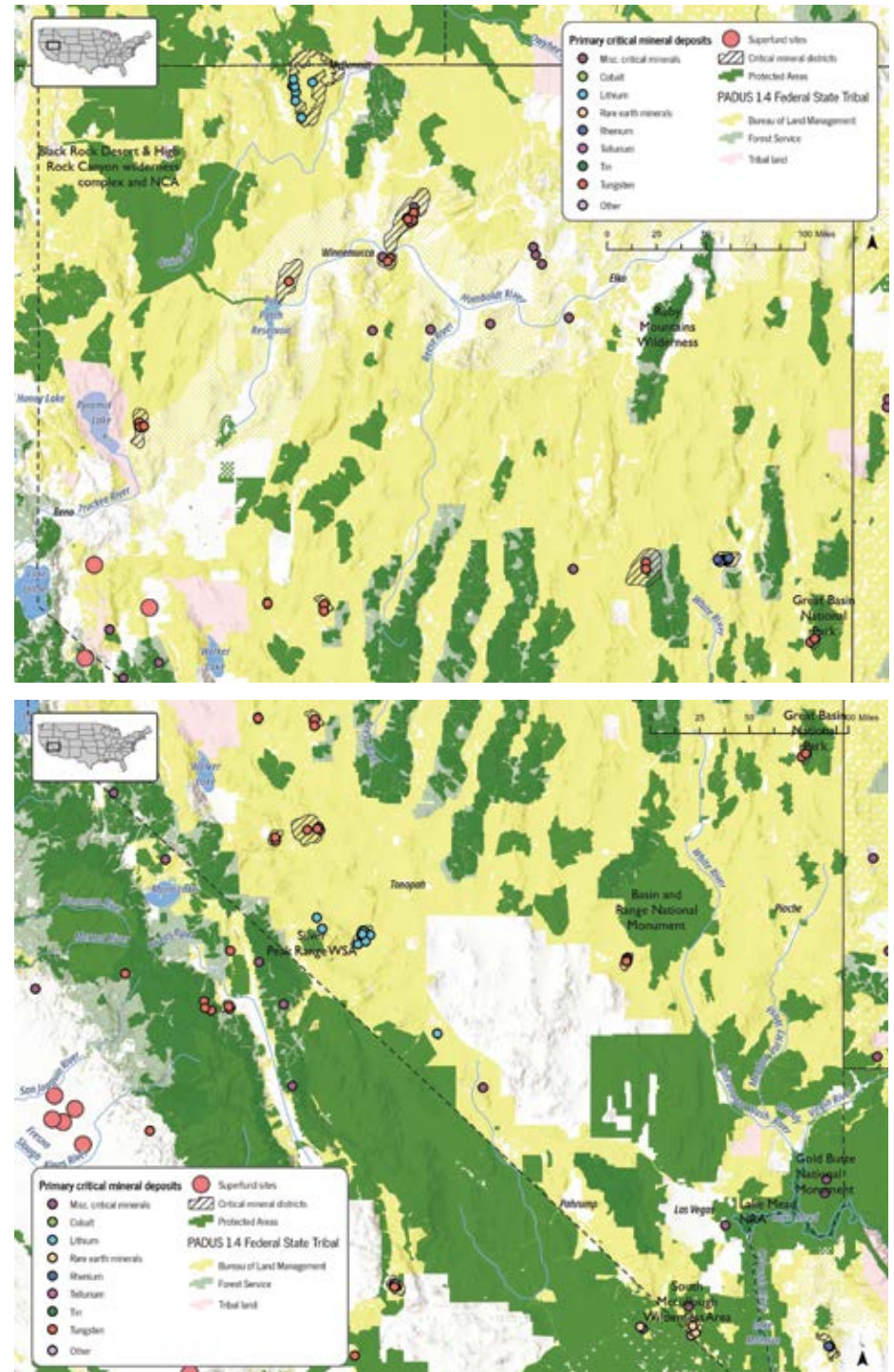


Lithium Project has instituted ongoing data collection, reporting, and analysis regarding waterfowl protection, including installing nets over ponds and pits that keep birds from entering—a mitigation measure recognized by the U.S. Fish and Wildlife Service. Noise machines and chemical detoxification of the ponds can also be used.

The McDermitt Caldera sits in the northern part of the state, straddling the border with Oregon. Part of the same geologic forces that created the unique geothermal features in Yellowstone National Park, the caldera could hold the world's largest lithium deposit with an estimated 20-40 million metric tons. It is also home to intact sagebrush ecosystems where greater sage grouse and pronghorn thrive and drink from streams that hold the threatened Lahontan cutthroat trout.

The [Thacker Pass Lithium Mine](#), a proposed mining project within the caldera, is expected to reach full production capacity by 2028 if the project moves forward as planned. Various interests, including the Summit Lake and Burns Paiute Tribe, Fort McDermitt Paiute Shoshone Tribe, local landowners, and others, have closely tracked the potential implications of the controversial proposal. The mine permitting process must involve stakeholders, including robust, meaningful consultation with Tribes.

While Nevada may be poised to mine the world's largest supply of lithium deposits, it is also seeing investments in recycling plants and technology. Outside Reno, a Tesla co-founder is spearheading a massive “Gigafactory” that breaks down older batteries and battery scrap to use the components and critical minerals in new batteries. The materials don’t degrade and can be used repeatedly. The company, Redwood Materials, recently secured a \$2 billion federal loan to ramp up domestic production. Once fully operational, the factory will supply enough material for one million electric vehicles annually.





CENTRAL IDAHO

One of the longest salmon runs in the world starts near Stanley, Idaho. The anadromous fish travel through the aptly named Salmon River and meander through lowlands before plunging into the [Frank Church River of No Return Wilderness](#). This is the largest contiguous wilderness area in the Lower 48, with jagged, high mountain peaks and rugged, free-flowing rivers.

A dozen critical mineral deposits are along the river's route, including cobalt, rare earth elements, tungsten, and rhenium. There may be no other location in the U.S. where such a cluster of deposits exists. However, of the 90 currently mapped critical mineral deposits in Idaho, including these 12, all except one occur in native trout, salmon, or steelhead watersheds, 14 are in currently protected public lands,

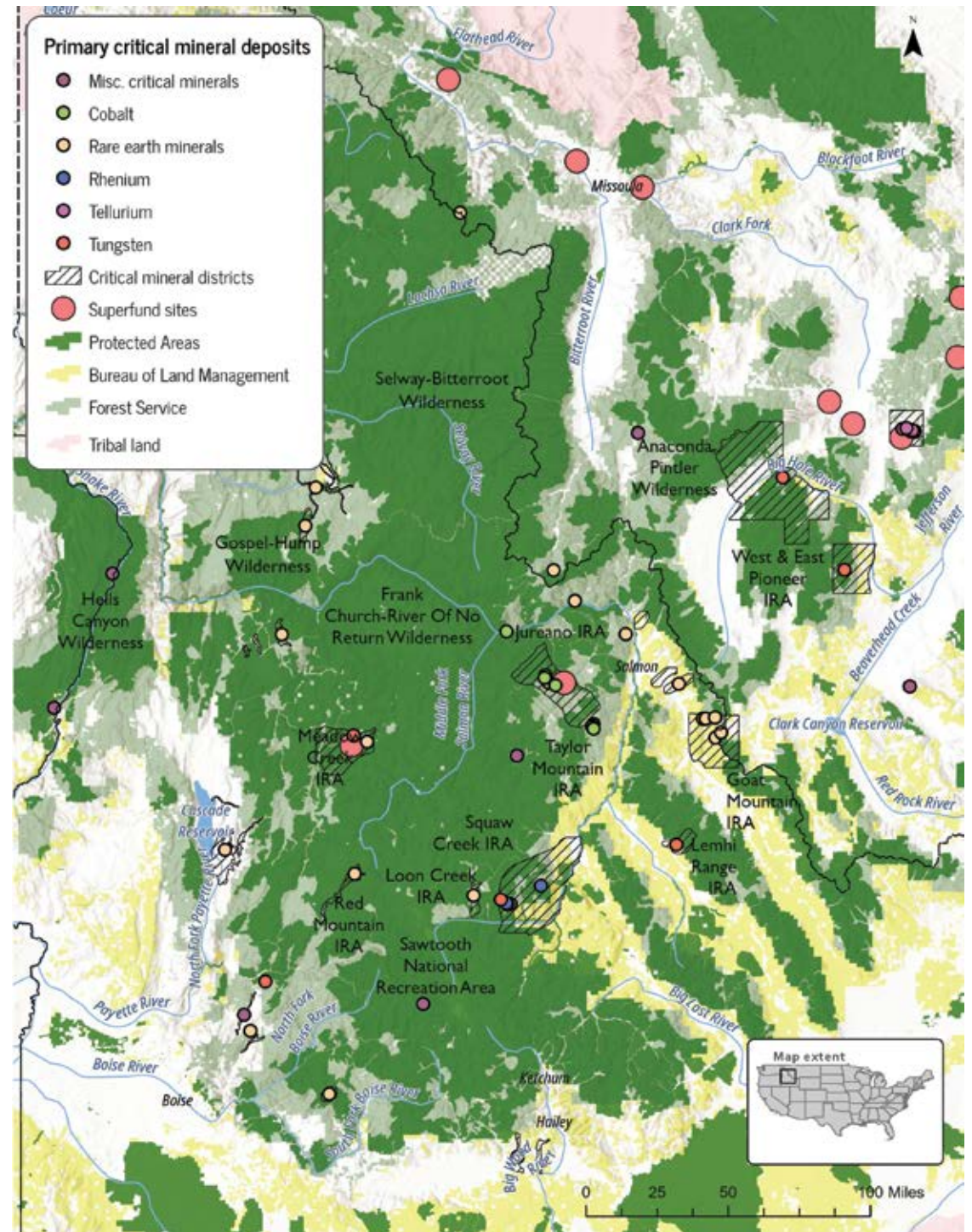
and 26 are within five miles of a stream impaired by previous mining.

These are rugged, remote places. The deposits occur in well-known backcountry areas like the Sawtooth Range with its sheer cliffs and deep glacial valleys, in watersheds protected as Wild and Scenic Rivers, or in areas under special protections for anadromous fish spawning. Chinook,



sockeye, steelhead, bull trout, and westslope cutthroat trout all call central Idaho home. This region of Idaho has a unique diversity of wildlife species, with robust herds of bighorn sheep, mountain goats, elk, and mule deer. The landscape supports important migratory corridors that enable big game species to move between the foothills in the winter and the timbered high country in the summer.

While this region of Idaho has a history of mining activity—including current or proposed Superfund sites—much of it is protected, unique, and too valuable to put at risk. Some sites, like the [Idaho Cobalt Project](#), claim the ability to responsibly produce at a defunct mine site, even cleaning up some of the area's previous impacts in the process. We should focus on development in places with existing infrastructure before opening new lands, fragmenting wildlife habitat and migratory corridors, and polluting lands and waters that could be difficult, if not impossible, to restore or reclaim.





BOUNDARY WATERS, MINNESOTA

The 1.1-million-acre [Boundary Waters Canoe Area Wilderness](#) (BWCAW) is our nation's most visited wilderness area, with over 165,000 visitors annually. The BWCAW spreads across the northeastern tip of Minnesota, embracing over 1,100 lakes, 2,000 designated campsites, hundreds of miles of rivers and streams, and the largest contiguous areas of uncut forest remaining in the eastern U.S.

The three-million-acre Superior National Forest, which includes the BWCAW, contains 20% of all the freshwater in the entire National Forest System.

The BWCAW offers unparalleled fishing, hunting, camping, and paddling opportunities. It is a beloved haven for hunters and anglers who come to the BWCAW to pursue walleye, smallmouth bass, north-

ern pike, whitetail deer, grouse, black bear, and one of the largest self-sustaining populations of native lake trout in the U.S.

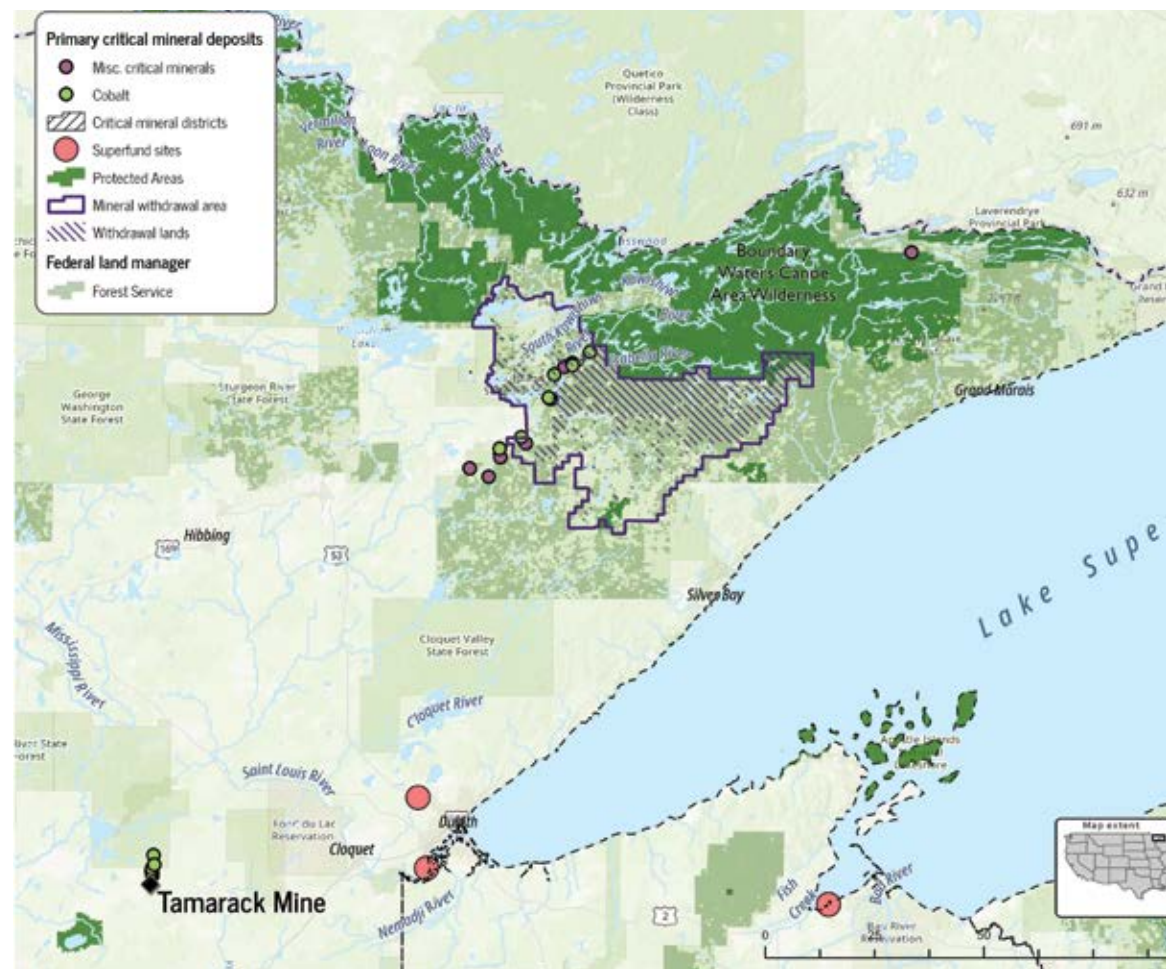
The potential loss of these unique recreational opportunities is a stark reminder of the stakes involved in protecting the BWCAW. Just outside the BWCAW in the Rainy River Watershed, a sulfide-ore



copper mine has been proposed by Twin Metals Minnesota, a subsidiary of the Chilean mining giant Antofagasta. This project, located directly upstream of the BWCAW, poses threats to the environment and regional economy.

In January 2023, the Department of the Interior completed a [withdrawal](#) of approximately 225,504 acres in the Rainy River Watershed from federal mineral leasing for a period of 20 years. This order closed federal hardrock mineral leasing upstream of the BWCAW. This was a monumental step toward permanent protection for the Quetico-Superior Region.

In his autobiography, published in 1969, prominent Minnesota conservationist Sigurd Olson discussed mineral exploration in the area. He wrote, "The world needs metals and men need work, but they also must have wilderness and beauty, and in the years to come will need it even more." These words ring true today, and placing a mine immediately upstream of one of Earth's most hydrologically pristine environments is not a risk worth taking.





BEST PRACTICES FOR RESPONSIBLE MINING

Mining critical minerals is necessary. However, mining must and can be limited to appropriate locations and conducted in a manner that avoids or minimizes harm to fish, wildlife, and the habitat they depend on. This requires smart planning, stakeholder collaboration, and careful

execution. History provides a powerful lesson on what happens when those attributes are absent.

Spurred by the General Mining Act of 1872, anyone with a claim could start a mine without considering how that mine

might affect the environment. This was prior to the National Environmental Policy Act of 1969 and the environmental review process that determines how a mine might affect water quality, for instance. Nevertheless, the impacts of those historic mines are still felt today on rivers like

the Animas in Colorado and the Clark Fork in Montana. Today, we must continue to learn, adapt, and improve to provide the necessary protections for our land, air, and waters.

Mining operators can be more focused on how to limit impacts locally, and throughout the supply chain. We can draw lessons from examples across the globe of responsible mining practices and apply them to future mines to ensure policies balance mining and conserving our environment.

Collecting and sharing data each step of the way is a proven strategy for successful collaboration among mining companies, community stakeholders, and agencies. That means providing data on environmental performance and complying with independent reviews, providing site-level reporting of performance and monitoring water quality, and disclosing environmental incidents so they can be addressed quickly and efficiently.

Responsible mining and the conservation of fish and wildlife means going beyond the baseline protections required by the government. This approach includes working with neighbors to ensure mines protect adjacent private and public land, water, and environmental resources. Early and frequent community meetings with company representatives allow interested people to discuss concerns and prevent



problems related to mining impacts, reclamation, wildlife, and other issues. These open communications can also curb some of the mystery around mines and build trust between stakeholders.

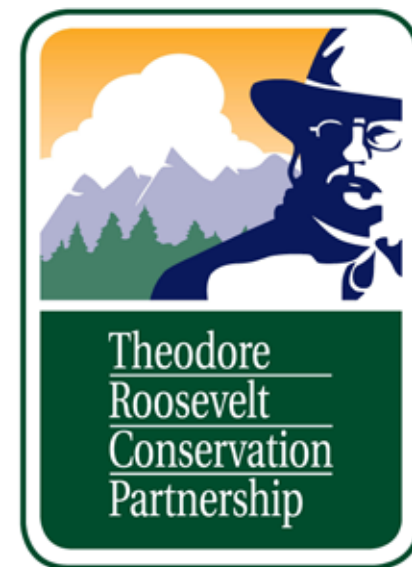
We encourage responsible mines to take extra steps to provide for third-party environmental audits. This can include groundwater monitoring, consistent sampling of surface water, and regular assessments of the area's biological health. Beyond monitoring, mines can source supplies from responsible, local companies when possible. Some mining companies will even take actions that may not make the most fiscal sense but are in the best interests of local communities. It builds an abundance of goodwill and authenticity and doesn't need to be overly onerous or costly.

Lastly, notable mining companies have used their engineering expertise to create inventive and innovative solutions to min-

ing problems, leading to more responsible operations and fewer impacts. Companies have also stepped up with resources and funding to help clean up abandoned mines they had no role in developing.

Irresponsible mining operations that create environmental pollution or shut out public concerns undercutting the public's understanding that new mining projects can be done responsibly. Mining technology in the U.S. has advanced over the past century and a half, and our society increasingly relies upon a wide array of minerals that come from the ground. Mining isn't suitable in all locations, but where mining can be done responsibly, we can build safer mines with more regard for the surrounding environment and affected communities to minimize impacts and maximize benefits for communities. Applying our Tenets for Responsible Critical Mineral Development can help keep us moving in this positive direction.

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