# Grand Canyon Region Uranium Mining MYTHS VS. FACTS

Setting the record straight about uranium mining in the Grand Canyon region.



MYTH: We can't ban uranium mining near the Grand Canyon; uranium is a "critical mineral" necessary for national security.

**FACT:** The Grand Canyon region holds only 0.2 percent of identified uranium resource areas<sup>1</sup> in the United States. The Trump administration added uranium to the list of critical minerals, but, according to experts, it doesn't belong there.

Uranium was controversially listed as a critical mineral for the first time in history by former Interior Secretary Ryan Zinke in 2018. However, uranium neither qualifies under the definition of a "critical mineral," nor is the Grand Canyon region necessary—let alone any sort of linchpin—for U.S. uranium supplies, since it holds just 0.2 percent<sup>2</sup> of identified uranium resource areas in the country. Uranium companies themselves have acknowledged that the entire state of Arizona holds a little more than 2 percent of domestic "reasonably assured resources" (RAR), which is anything mineable at or below \$100 per pound.<sup>3</sup> The federal government defines a critical mineral as a non-fuel mineral or mineral material that serves essential economic or national-security functions and is vulnerable to supply-chain disruption. Experts have explained why that is not the case for uranium. One reason is that uranium is not considered a non-fuel mineral, and even if the U.S. government were to focus only on the non-fuel uses of uranium, those uses especially are not currently vulnerable to supply-chain disruptions. For a thorough explanation, read national security expert Sharon Squassoni's 2019 testimony<sup>4</sup> on the Uranium Classification Act of 2019 before the House Energy and Minerals Subcommittee.

"Classifying uranium as a non-fuel mineral is a departure from precedent...uranium has been classified as mineral fuel since the 1970 Mining and Minerals Policy Act."

> ---Sharon Squassoni, Research Professor, George Washington University



Total Annual Uranium Demand by Supplier

Data Source: EIA Uranium Marketing Annual Reports, Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 1994–2019 and Contracted purchases of uranium by owners and operators of U.S. civilian nuclear power reactors, signed in 2019, by delivery year, 2020–2029

## **MYTH:** The mining ban undermines national security by limiting uranium supplies.

## FACT: The U.S. already has access to enough uranium to meet its national security and energy security needs.

The U.S. has access to enough already mined uranium to meet the nation's defense needs, supply its electrical grid, and insulate itself from disruptions in the supply chain.<sup>5</sup> U.S. nuclear power companies have said that "buy American" requirements for uranium will drive up costs and force the closure of nuclear power plants.<sup>6</sup> According to more than 15 national security experts, including a former nuclear regulatory commissioner, using national security as an excuse to intervene in uranium markets in fact raises unintended national security risks.<sup>7</sup> Uranium deposits are common throughout the world, and the Grand Canyon region holds just 0.2 percent of identified U.S. uranium resource areas.

MYTH: The U.S. imports most of its uranium from foreign countries like Russia. The ban will make the nation reliant on unfriendly foreign governments to supply our domestic uranium needs.

# **FACT:** The U.S. imports most of its uranium from stable ally countries like Canada and Australia. This uranium is lower cost and higher quality than uranium found in the U.S.

Objectively, uranium mined from anywhere in the U.S. is of lower quality and therefore more energy intensive and expensive to produce than in other countries. Average weighted prices for U.S. uranium were 20 percent higher than foreign uranium prices in 2018.8 According to national security experts, U.S. utilities have relied on foreign uranium for over three decades without incident, purchasing the bulk of annual requirements from Canada and Australia where the ore quality is much higher, and through contracts with vendors in many of the other 16 countries that mine uranium. Diversifying resources is the smart and secure approach according to experts; a nationalistic attachment to domestic production is not. Still, the U.S. obtains the majority of the uranium it needs from suppliers in the U.S., Canada, and Australia. National-security experts also say the U.S. already has enough enriched uranium stockpiled to meet military needs until 2060. Subsidizing short-term, more expensive U.S. uranium production will only pad the pockets of the U.S. uranium industry while putting long-term public health, livelihoods, and tax dollars at risk.



MYTH: Mining uranium removes it from "the environment" and actually makes the Grand Canyon and its waters safer.

FACT: Natural deposits of uranium, particularly those rich enough to be of interest to mining companies, exist precisely because they are stable where they are. For uranium to become mobilized in air, surface water, or groundwater, it must be exposed to oxygen, which is precisely what mining does.

Uranium is one of the most common elements in the Earth's crust, but it must be found in concentrated deposits to be mineable. Concentrated deposits near the Grand Canyon formed over millions of years as trace amounts of uranium in oxygenated groundwater reached a point, usually hundreds of feet underground, where oxygen became unavailable. Because uranium is only soluble in water where oxygen is present, the uranium started to mineralize (i.e., stick to the rock it was flowing through). What was at first trace amounts of uranium, over thousands and millions of years, became concentrated deposits of uranium. These deposits, untouched by oxygen or oxygenated water, are stable where they are. But when a mining company digs down to the deposit, piercing groundwater aquifers along the way,<sup>9</sup> it exposes that concentrated uranium deposit to both oxygen and water, inviting high concentrations of uranium, arsenic, and other dangerous minerals into the environment.

MYTH: The Grand Canyon Protection Act is a land grab. The act would cost Arizona schools millions by locking up land belonging to the Arizona State Land Department for the benefit of Arizona's school children.

#### **FACT:** The act only affects public lands already managed by the federal government; uranium mines don't pay federal royalties anyway thanks to the 1872 Mining Law.

In 2012, the secretary of the interior instituted a 20-year mineral withdrawal, temporarily banning new mining claims on about 1 million acres of federal public lands bordering Grand Canyon National Park. The ban affects federal lands only-mostly national forest and lands managed by the Bureau of Land Management. State lands and private inholdings within the withdrawal area are not affected by the ban. The Grand Canyon Protection Act simply makes that 2012 withdrawal permanent. It does not transfer ownership of any lands to the federal government. The antiquated 1872 Mining Law allows for hardrock mines, like uranium mines, to extract minerals from public lands royalty-free. This is unlike minerals that are leased, like oil, gas, and coal, where the federal government collects a percentage in royalties and splits the proceeds with the state where extraction occurs. Those dollars can go to assist with school funding and other public services. But because of a century-and-a-half-old law that the mining industry lobbies hard to keep intact, in the case of uranium mining, any mining that is prevented by the mineral withdrawal would not be contributing to the federal tax base anyway.



## MYTH: The act would block off roads and close lands to hunters, campers, and off-road vehicles.

#### FACT: Mining is the only activity the act affects.

The act would not affect other existing uses, including: Hunting,<sup>10</sup> grazing, camping, hiking, mountain biking, and permitted use of off-road vehicles. One rumor has been that the act would close roads to off-road vehicle users and prevent future off-road-vehicle road construction. The only roads the act would stop from being built are roads leading to new mines and mining claims. The act aims to prevent one and only one activity around the Grand Canyon: mining.

## **MYTH: Extremist environmentalists are behind the** mining ban.

## FACT: There is broad<sup>11</sup> bipartisan public support for the ban.

Tribes, local governments, small businesses, nonprofit organizations, and average Americans across the political spectrum want a permanent mining ban near the Grand Canyon. A 2020 poll by Colorado College<sup>12</sup> found that 77 percent of Arizonans oppose uranium mining next to the Grand Canyon. This isn't a fluke. In August 2018, a bipartisan poll<sup>13</sup> found that 63 percent of Arizonans supported continuing the existing ban on new uranium mines near the Grand Canyon, including the majority of Democrats, Republicans, and independents. Seventy-three percent of Arizonans polled in 2018 said outdoor recreation and visitors to national parks and other public lands are more important to the future of Arizona's economy than mining uranium and other minerals.

Native American tribes and nations for whom the Grand Canyon is an ancestral—and, for some, current—home have led the push to permanently ban uranium mining in the region. Native nations have disproportionately suffered from the environmental injustice and human health impacts of past uranium extraction in the U.S.

For copies of tribal and local government resolutions and letters of support for a permanent Grand Canyon mining ban sent to members of Congress since 2019 email Amber Reimondo at areimondo@grandcanyontrust.org.



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## MYTH: The Grand Canyon mining ban kills jobs and hurts the economy.

## FACT: The mining ban protects thousands of jobs and the northern Arizona economy.

Uranium mining around the Grand Canyon has never been, and never could be, a significant driver of the regional economy.<sup>14</sup> That's because breccia pipe uranium mines—the sort near the Grand Canyon—are depleted relatively quickly and employ relatively few people. The operator of Canyon Mine (recently renamed Pinyon Plain Mine) near the South Rim, for instance, estimates that the mine will be depleted<sup>15</sup> in under 10 years and expects to employ approximately 60 people during peak operation. In the 2000s, including in 2007, when the price of uranium spiked to an all-time high, extraction of minerals including oil, gas, coal, nickel, zinc, copper, stone, iron, and uranium together provided an annual average of just 545 jobs<sup>16</sup> in northern Arizona. Compare that to the 11,800 jobs supported by Grand Canyon National Park<sup>17</sup> in 2019 alone, jobs which depend on a safe, uncontaminated Grand Canyon.

Finally, uranium mining is regulated under the antiquated General Mining Law of 1872, which means that while uraniummining companies still have to pay business taxes like any other business in the state of Arizona, they do not pay federal royalties on uranium extracted from public lands.

## MYTH: Modern uranium mines aren't like mines of the past.

#### **FACT:** Modern uranium mines have contaminated land and water around the Grand Canyon.

Mining has left a toxic legacy in the Grand Canyon region that is still impacting human health and the environment today. Even more recent mines have experienced problems,<sup>18</sup> demonstrating the dangerous lack of understanding about the complex interconnectivity of nearby groundwater and the Grand Canyon itself.

To make matters worse, the temporary mining ban of 2012 was meant to allow time for more research to better understand the risks to groundwater, land, plants, animals, and people in and around the Grand Canyon. But that research has been severely underfunded by Congress,<sup>19</sup> and what research has been done shows that there is potential for critical groundwater sources to be contaminated by mining. The Grand Canyon Protection Act protects the Grand Canyon and those who depend upon it from the risk of contamination by new uranium mining, forever.

#### MYTH: It's a violation of past agreements. The Arizona Wilderness Act of 1984 allowed uranium mining in this area in exchange for land protections.

## **FACT:** The Arizona Wilderness Act of 1984 in no way precludes efforts to protect the Grand Canyon region from uranium mining.

The Arizona Wilderness Act of 1984 was designed to protect wilderness around the Grand Canyon. Protecting the region and its waters from mining contamination has been a separate but ongoing struggle. Mark Trautwein, a former staffer for the House Subcommittee on National Parks, Forests, and Public Lands who was directly involved with the passage of the 1984 Arizona Wilderness Act, has testified before the same committee<sup>20</sup> that the Arizona Wilderness resources and values were protected." His testimony also states that the committee's former chairman, Mo Udall, "hoped for nothing less" than that others might someday add to his conservation legacy with legislation such as a bill that would permanently ban mining in the region.

#### **LEARN MORE**



Too Precious to Mine (9:36). Watch this short film for free on Vimeo: <u>https://vimeo.com/241576331</u>



Read more about the issue in a comprehensive report at: grandcanyontrust.org/uraniummining-grand-canyon-region



#### **End Notes**

<sup>1</sup>U.S. Geological Survey. "Figure of Uranium Resources of the United States." January 2017. <u>https://www.usgs.gov/media/images/figure-uranium-resources-united-states</u>. Accessed March 29, 2021.; U.S. Energy Information Administration. "Uranium - Identified Resource Areas." U.S. Energy Atlas. October 21, 2020. https://atlas.eia.gov/datasets/uranium-identified-resourceareas?geometry=-117.613%2C34.740%2C-103.551%2C37.839. Accessed March 26, 2021. <sup>2</sup>Smith, Stephanie. "Identified Uranium Resources in the United States Map." Grand Canyon Trust. <u>https://www.grandcanyontrust.org/identified-uranium-resources-united-states-map</u>. Accessed February 25, 2021.

<sup>3</sup>Energy Fuels Resources (USA) Inc. and Ur-Energy USA Inc. "Petition for Relief Under Section 232 of the Trade Expansion Act of 1962 from Imports of Uranium Productions that Threaten National Security." January 16, 2018. p. 33-34. <u>https://filecache.investorroom.com/mr5ircnw</u> <u>energyfuels/364/2017.01.16-Signed-Petition.pdf</u>. Accessed March 26, 2021.

<sup>4</sup> "Critical Minerals: Why is Uranium on the List? Statement Prepared for Hearing on Uranium Mining: Contamination and Criticality," before the Subcommittee on Energy and Mineral Sources Committee on Natural Resources, 116th Congress, U.S. House of Representatives. June 25, 2019. (Sharon Squassoni, Research Professor of the Practice of International Affairs, George Washington University.)

https://docs.house.gov/meetings/ll/ll06/20190625/109694/HHRG-116-ll06-Wstate-SquassoniS-20190625.pdf. Accessed March 2, 2021.

<sup>5</sup>Reimondo, Amber. "Uranium Mining in the Grand Canyon Region." Grand Canyon Trust. p. 17. <u>https://www.grandcanyontrust.org/sites/default/files/resources/Uranium\_Mining\_Grand\_</u> <u>Canyon\_Region\_2019.pdf</u>. Accessed March 4, 2021.

<sup>6</sup>Patterson, Aaron and Huntowski, Frank. "The Market Impact of Proposed US Uranium Import Quotas on the U.S. Nuclear Power Industry." The NorthBridge Group. July 2018. p. 2. <u>https://www.nei.org/CorporateSite/media/filefolder/resources/reports-and-briefs/northbridge-uraniumquota-201807.pdf</u>. Accessed March 4, 2021.

<sup>7</sup>Bradford, Peter et al. "Letter to Robert C. O'Brien and Lawrence A. Kudlow." October 9, 2019. p. 2. <u>https://naturalresources.house.gov/imo/media/doc/Nuclear%20and%20National%20</u> <u>Security%20Experts%20Letter%20to%20Nuclear%20Fuel%20Working%20Group.pdf</u>. Accessed March 4, 2021.

<sup>8</sup> Ibid., p. 1-2.

<sup>9</sup> Carstensen, Joan. "History of Flooding at Canyon Mine." Grand Canyon Trust. <u>https://www.grandcanyontrust.org/history-flooding-canyon-mine</u>. Accessed March 2, 2021.

<sup>10</sup>"Legislation Will Finally End Uncertainty Around Grand Canyon Mineral Withdrawal." Grand Canyon Trust. <u>https://www.nwf.org/Home/Latest-News/Press-Releases/2019/02-23-19-Grand-Canyon-Mineral-Withdrawal</u>. Accessed March 2, 2021.

<sup>11</sup>"Key Findings of Survey of Arizona Voters, August 2018." Grand Canyon Trust. <u>https://www.grandcanyontrust.org/sites/default/files/resources/Grand\_Canyon\_Arizona\_Poll\_Key\_Findings\_Aug\_2018.pdf</u>. Accessed March 2, 2021.

<sup>12</sup>"2020 Conservation in the West Poll: Arizona." Colorado College's State of the Rockies Project. <u>https://www.coloradocollege.edu/other/stateoftherockies/conservationinthewest/2020/2020-conservation-in-the-west-poll-data/2020\_SotR\_StateFactSheets\_AZ.pdf</u>. Accessed March 2, 2021.

<sup>13</sup>"Key Findings of Survey of Arizona Voters, August 2018." Grand Canyon Trust. <u>https://www.grandcanyontrust.org/sites/default/files/resources/Grand\_Canyon\_Arizona\_Poll\_Key\_Findings\_Aug\_2018.pdf</u>. p. 7. Accessed March 2, 2021.

<sup>14</sup> Reimondo, Amber. "Uranium Mining in the Grand Canyon Region." Grand Canyon Trust. p. 14. <u>https://www.grandcanyontrust.org/sites/default/files/resources/Uranium\_Mining\_Grand\_Canyon\_Region\_2019.pdf</u>. Accessed March 2, 2021.

<sup>15</sup>Ibid.

 <sup>16</sup>U.S. Department of the Interior. "Northern Arizona Proposed Withdrawal Final Environmental Impact Statement." October 2011. <u>https://www.grandcanyontrust.org/sites/default/files/</u>
<u>resources/gc\_FEIS\_Northern\_Arizona\_Proposed\_Withdrawal.pdf</u>. Accessed March 4, 2021.
<sup>17</sup>National Park Service. " 2019 Visitor Spending Effects - Economic Contributions of National Park Visitor Spending." <u>https://www.nps.gov/subjects/socialscience/vse.htm</u>. Accessed March 4, 2021.
<sup>18</sup>Reimondo, Amber. "Uranium Mining in the Grand Canyon Region." Grand Canyon Trust. p. 10-14. <u>https://www.grandcanyontrust.org/sites/default/files/resources/Uranium\_Mining\_Grand\_Canyon Region\_2019.pdf</u>. Accessed March 2, 2021.

<sup>19</sup>Ibid, p. 8.

<sup>20</sup>"Testimony of Mark Trautwein Before the House Subcommittee on National Parks, Forests And Public Lands Re: H.R. 644, Grand Canyon Watersheds Protection Act." 111th Congress, U.S. House of Representatives. July 21, 2009. <u>https://www.grandcanyontrust.org/sites/default/files/</u> <u>resources/Trautwein\_Testimony\_HR\_644\_resource.pdf</u>. Accessed March 2, 2021.