



STATE NEWS RELEASE

USGS invests \$3.4 million in Bipartisan Infrastructure Law funding to map critical mineral resources in western Texas

By [Earth Mapping Resources Initiative \(Earth MRI\)](#)

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RESTON, Va. – The U.S. Geological Survey has announced it will invest approximately \$3.4 million in Bipartisan Infrastructure Law funding to collect high-resolution geophysical data focused on areas with potential for critical mineral resources in western Texas.

The data collection will be conducted through the [USGS Earth Mapping Resources Initiative \(Earth MRI\)](#), a partnership between the USGS and state geological surveys that is revolutionizing our understanding of the nation's geology and critical mineral resources, which are vital to the U.S. economy, national security, and clean energy technology.

“Earth MRI data provides a fuller picture of our nation's mineral and other geologic resources and is focusing in on areas with potential critical and industrial minerals,” said **David Applegate, USGS director**.

The survey's focus will cover a portion of a geologic feature known as the North American Cordilleran Alkaline Igneous Belt, which stretches from the eastern edge of Alaska down through the Rocky Mountains and into Mexico. The unique igneous rocks that make up this portion of the belt contain historic prospects and deposits of rare earth elements (REE), fluor spar, beryllium, niobium, zinc, tungsten, tantalum, and other critical minerals associated with ancient faults.

Daniel Scheirer, the lead USGS geophysicist for this survey, explained that the new high-resolution geophysical survey has the potential to reveal more igneous rocks and faults under cover.

“The forthcoming data will provide a complete view into the surface and subsurface geology of a very complicated and important region,” said Scheirer. “Not only can we leverage those insights for a better understanding of the subsurface, but also apply them to other disciplines of earth sciences.”

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Brent Elliott, an economic geologist from the Texas Bureau of Economic Geology at the University of Texas at Austin, explained the surveys will greatly benefit his organization's mapping efforts by pinpointing areas of interest.

"These geophysical surveys allow us to cover so much area and tells us that there's something there that needs to be investigated further on the ground. It's a much more efficient method than trying to map it on foot and hoping to run across something," said Elliot.

This specific Earth MRI survey will also be the first modern look at the regional subsurface. A patchwork of steep canyons and mesas, the area has not been geologically explored since the late 19th century, when prospective gold miners headed west.

"The data collected by Earth MRI surveys are a treasure trove of information when it comes to understanding known mineral systems in the alkaline belt, as well as discovering potential new mineral systems we didn't realize were there," said **Callum Walter, a USGS geophysicist assisting with the survey**.

The airborne geophysical surveys will collect a combination of magnetic and radiometric data. These data can be used to map rocks from just beneath vegetation and shallow sediment cover down to several miles underground. Magnetic data can be used to identify inactive faults, lava flows, other geologic features and potentially the signatures of mineral deposits. Radiometric data indicate the relative amounts of potassium, uranium and thorium in shallow rocks and soil.

Scientists use this information to help map rocks that may contain mineral deposits, faults that may rupture during an earthquake, areas that may be prone to increased radon, and geologic features that affect groundwater or energy resources.

This Texas survey complements a similar Earth MRI geophysical survey currently being conducted over the [New Mexico](#) portion of the alkaline igneous belt. Both these surveys adjoin an intervening Earth MRI survey in the Trans-Pecos region that has already been completed.

The initial airborne geophysical survey may be followed by additional investments, including new geologic maps, geochemical sampling, and other techniques to better understand the region's geology.

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Since 2021, the [Bipartisan Infrastructure Law](#) has advanced scientific innovation through a \$320 million investment for the USGS to better map the Nation's mineral resources, both still in the ground and in mine wastes, and to preserve historical geologic data and samples. Through the end of fiscal year 2024, more than \$160 million has been obligated for Earth MRI initiatives, propelling efforts to make “once-in-a-generation” advancements in the nation's geologic and geophysical data collections and mapping.

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