

November 10, 2025

News and notes



First Snow of the Season – November 7, 2025

This week, before going on to discuss the geology and mineral resources of Moldova, we will first look at some news items I thought were interesting. If you enjoy my blogs, bookmark the site and check on Monday afternoon rather than relying on social media postings which can get lost in the shuffle.

Comments

If anyone has comments on any of my postings, please leave a comment on the LinkedIn page for the posting or email me at raymondreichelt@gmail.com.

Geopolitics

- [China lifts export ban on gallium, germanium and antimony to US](#); related: [USGS officially adds copper, silver to critical minerals list](#).
- [Trump hails Central Asian leaders after White House meeting to forge critical mineral ties](#).
- Sea bed mining: [Japan-U.S. Deep-Sea Alliance: Mining Mud for the Future](#).
- Drumbeats: [Moscow Just Gave Venezuela Air Defenses, Not Ruling Out Strike Missiles: Russian Official](#); related: [oil reserves in Venezuela](#).

- [Saudi Crown Prince bin Salman will visit Trump on Nov 18, White House official says; related: Saudi oil reserves.](#)
- Zirconium: [Australia supplying China with critical mineral vital for hypersonic missiles and its nuclear program.](#)

Research and News

- [U-Pb calcite age dating of fossil eggshell as an accurate deep time geochronometer.](#)
- [Dedolomitization-driven karstification and speleogenesis in central Slovenia: Mineralogical and geochemical insights.](#)
- [Oceanography: Major terrestrial contribution to the dissolved organic carbon budget in the Arctic Ocean.](#)
- [Sedimentary Dynamics of the Bay of Béago in Yopougon \(Abidjan, Côte d'Ivoire\): Morpho-Bathymetric, Lithological, and Morphoscopic Approaches.](#)
- [Microbial mats and thalassinid shrimp: Spatial and geochemical interactions in a modern intertidal environment.](#)
- [Coral microatoll partial mortality after multi-hour subaerial exposure with implications for relative sea-level studies.](#)
- [Controls on sediment supply to the Holocene Thar Desert: Sr and Nd isotopes with bulk-sediment geochemical constraints.](#)
- [Records of mantle geodynamics and atmospheric escape in Archean quartz.](#)
- [Igneous, hydrothermal, or both? Exploring the origin of pegmatites and aplites at the Amis intrusion, Namibia.](#)
- Planetary geology: [Early thinning, late persistence, diachronous boundaries, and a regional dichotomy in Mars' young sedimentary rocks.](#)
- [Experimental observations of vertical segregation of sands in oscillatory flows.](#)

Mineralogy and Petrology

- [The Contribution of the Petrological Iterative Approach in Reconciling the UHP Natural Data Set With Geodynamic Models in the Continental Western Alps.](#)
- [Apatites from metaluminous to peralkaline high-silica rhyolites in Yunshan Caldera \(SE China\): implications for the evolution of magmatic systems.](#)
- [What Controls Finger-Shaped Transformation Patterns? A Numerical Approach to Eclogitization.](#)
- [Thermodynamic and elastic properties of uvarovite at mantle conditions: Insights from first-principles calculations.](#)

- REE: [From hydroxylbastnäsite to bastnäsite: A crystal chemistry perspective of the incomplete solid solution.](#)
- [Fossil hydrothermal systems theoretically inverted with oxygen isotopes of constituent minerals hydrothermally reequilibrated with internally ¹⁸O-enriched fluids: Cooling and mineralizing implications.](#)
- New mineral!! [Karlditmarite, Cu₉O₄\(PO₄\)₂\(SO₄\)₂, the first copper phosphate-sulfate mineral from the Tolbachik volcano.](#)
- [Fast and Spatially Heterogeneous Cooling Rates at Amphibolite-Facies Conditions in the Lepontine Alps \(Switzerland\).](#)

Plate Tectonics

- [Evolution of the Narooma Accretionary Complex, southeastern Australia: structure and regional significance.](#)
- [Bending the Sierra Madre Oriental: A Paleocene Orocline.](#)
- [Slab Tearing and Recycled Continental Sediments in the Lithospheric Mantle: Geodynamic Insights From Miocene Alkaline Rocks of the Tangra-YumCo Rift, Southern Tibet.](#)
- [Contemporaneous Stress in Taiwan: Evidence for Orogen-Parallel Extension and Lower Crustal Extrusion.](#)
- [Quantifying widespread hydrothermal chimneys on the East Pacific Rise flanks between 9°43' and 57'N.](#)
- [Migrated Teleseismic P Wave Receiver Functions Reveal Intricate Post-Subduction Crust and Upper Mantle Structure of Northern Borneo \(Sabah\), Malaysia.](#)
- [The importance of past rifting in large igneous province development; database of Large Igneous Provinces.](#)
- [The Upper Crustal Structure of the Eifel Volcanic Region \(Southwest Germany\) From Local Earthquake Tomography Using Large-N Seismic Network Data.](#)
- [Ancestral Rocky Mountain deformation in south-central New Mexico, USA: Insights from detrital zircon U–Pb and \(U–Th\)/He dating in the Orogrande Basin.](#)
- [Melting of sulfide-bearing slab beneath the Western Aleutian Arc: Implications for chalcophile element abundances in slab-derived melts and the origin of continental crust.](#)
- [A new graptolite \(Pterobranchia\) from the early Cambrian Xiaoshiba Lagerstätte of China.](#)
- Life, plate tectonics, and the “Boring Billion”: [Mid-Proterozoic expansion of passive margins and reduction in volcanic outgassing supported marine oxygenation and eukaryogenesis; Phys.org summary \[here\]\(#\).](#)

Paleontology

- [Microstructural and geochemical evidence offers a solution to the cephalopod cameral deposits riddle.](#)
- [Reefal regions were biodiversity hotspots throughout the Phanerozoic.](#)
- [Trace fossil evidence for *Osedax* Rouse et al., 2004 exploiting shark tooth dentine on a Pliocene seafloor: broadening our understanding of a major taphonomic agent.](#)
- [Dinosaur Tracks of the Areia do Mastro and Papo-Seco Formations \(Lower Cretaceous, Cabo Espichel\): Paleobiological and Paleoenvironmental Continuities and Discontinuities.](#)
- Rough sex: [Deciphering causes and behaviors: A recurrent pattern of tail injuries in hadrosaurid dinosaurs](#); Phys.org summary [here](#).
- [Remote sensing of lichens with drones for detecting dinosaur bones.](#)

Mining and Energy

- Ore deposit formation: [Metal scavenging by sulfide oxidation in porphyry copper deposit root zones.](#)
- [Three U.S. regions each produce more natural gas than most countries.](#)
- Petroleum deposit geology: [Study on the Depositional Characteristics of Tidal Flat and Barrier Bars in Bohai Oilfield and Reservoir Prediction.](#)
- From USEIA: [Rapid declines from horizontal wells require more drilling to sustain production](#); shale oil depletes rapidly.
- More ore deposit formation: [Hydrothermal rutile as a recorder of fluid evolution and W mineralization: Insights from the Northern Baoshan Block, China.](#)
- [Simandou](#), Guinea: [China's massive African mine threatens to upend iron ore market.](#)
- [North Sea oil field reaches 50th anniversary.](#)

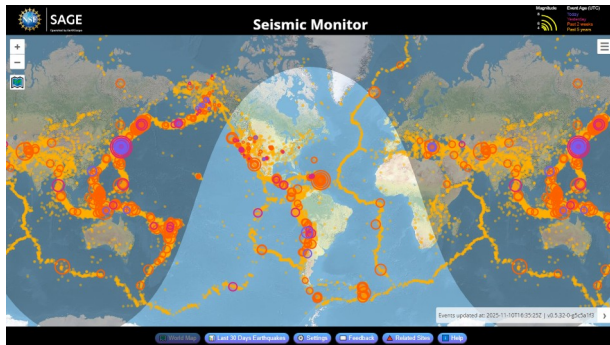
Environmental Geology and Hydrogeology

- [Elon Musk's Boring Company fined nearly \\$500K after it dumped drilling fluids into Las Vegas manholes—then 'feigned compliance' and was caught doing it again.](#)
- [Formation pathways of Zn-spinel nanoparticles in Zn-contaminated soils and sediments.](#)
- [EPA Finalizes Groundwater Cleanup Plan for New York Superfund Site.](#)
- [Intermittently Bubbling Well With He-Rich N₂-Bubbles Constrain the Possibility of Atmospheric and Biogenic N₂ Exsolution and the History of He-Rich Groundwater From Basement to Surface.](#)

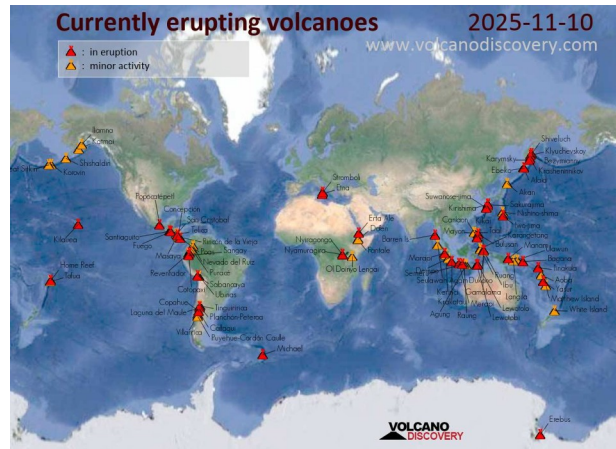
Glaciers and Climate Change

- [Antarctic ice-shelf collapse in Holocene driven by meltwater release feedbacks](#); Phys.org summary [here](#).
- [Prolonged drought on Rapa Nui during the decline of megalithic monument construction](#); Phys.org summary [here](#).

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

- [Smithsonian / USGS Weekly Volcanic Activity Report](#).
- [Cascades Volcano Observatory Weekly Update](#).
- [Carbonatite volcano: Evidence of isotopically heavy carbon in the mantle source beneath Oldoinyo Lengai volcano, Tanzania](#).

Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\)](#).
- [Earthquakes Monitoring Live Worldwide](#).
- [M6.8 earthquake offshore Japan preceded by upward cascade of foreshocks](#); Japan Meteorological Agency summary [here](#)
- [Turning undersea cables into a global monitoring system for seismic and environmental hazards](#).
- [Earthquake rupture velocity and stress drop interaction in the Campi Flegrei volcanic caldera](#).
- [Aftershock-induced surface ruptures overshadow the 2024 Mw 7.0 Wushi mainshock, China](#).
- [The Evolution of Fault Networks During Multiphase Triaxial and Biaxial Strain: An Analogue Modeling Approach](#).

- [New research highlights significant earthquake potential in Indonesia's capital city.](#)

Geohazards

- 11/09 [Super typhoon makes landfall in Philippines as nearly a million evacuated.](#)

Free Geology Books and Other Stuff

Free geology books can be downloaded from these sites:

- [OreZone Readers and Experts Telegram Channel](#); the Ore Zone channel also shows employment opportunities for geologists.
- [The Groundwater Project](#) has many groundwater geology books for free download; also they now have a [Free Online Learning Module: Pumping Test Analysis](#).
- Free Groundwater Modeling Course – [HydroGeoCenter](#).
- From Western Australia: [Carbonatite, lamprophyre and host rocks in the northern Aileron Province](#).
- Two volumes of Geology of Indonesia now can be accessed for [FREE/GRATIS](#). The books can be accessed from: vol 1 <https://lnkd.in/eH6Gcka4>; vol 2 <https://lnkd.in/egTYmpjk>.
- Brett Davis' book on veins in a deforming rock mass: "[The Veining Bible](#)"; also at [this site](#).
- From the Mineralogical Society of America: [Handbook of Mineralogy](#).

Upcoming Events

- [Saskatchewan Geological Open House, December 1 to 3, 2025, Delta Bessborough Hotel, Saskatoon](#); Registration for the 2025 Conference now open.
- [Groundwater Week 2025, December 9-11, 2025 in New Orleans](#).
- [Feb. 16-18, 2026, Inaugural Mineralogical Society of America Annual Meeting, Tuscon AZ](#)
- [GAC-MAC 2026 St. John's NL, St. John's Convention Center, May 25-28, 2026](#).
- [14-18 September 2026 , IAH 2026, 53rd Congress of the International Association of Hydrogeologists; Budapest Congress Center](#).
- [Society of Petroleum Engineers Distinguished Lecturer Schedule](#).
- [American Geophysical Union List of Upcoming Meetings](#).
- The Geological Society: [Events & Courses](#).
- [International Union of Geological Sciences calendar of geoscience events](#).
- ["Geology Hour" Online](#), evenings on the 3rd Monday of the Month from the Geological Society of the Oregon Country.
- [Canadian Energy Geoscience Association Upcoming Events](#).

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Geology and Mineral Resources – Moldova

Introduction



Figure 1a – Moldova

Credit: [CIA World Factbook](#), public domain



Figure 1b – Location of Moldova

Credit: [CIA World Factbook](#), public domain

A member of the former [Soviet Union](#) until [1991](#), the [Republic of Moldova](#) is a landlocked country of 3,599,528 people in [Eastern Europe](#). The country has an area of 33,851 square kilometres and borders on [Ukraine](#) and [Romania](#).

Moldova is a middle income economy with a per capita [GDP \(PPP\)](#) of \$19,591 and a high [Human Development Index](#) of 0.785. The main economic activities are services, manufacturing, and agriculture with [wine](#) being the most important agricultural product.

For more details on the country, check out the [CIA World Factbook on Moldova](#) as well as the [Wikipedia](#) and [Grokopedia](#) articles.

Geology

Most of Moldova is underlain by the [Ukrainian Shield](#). Towards the south of the country are the [Dobrogea Orogen and Foreland](#), while towards the southwest is the [Carpathian-Balkanian Basin](#). Overlying the [Proterozoic](#) aged [basement rocks](#) are deposits ranging in age from the [Cambrian](#) to [Quaternary](#) periods. Figure 2, below, shows the [Geologic Map of Moldova](#) and cross-sections of the [country's geology](#).

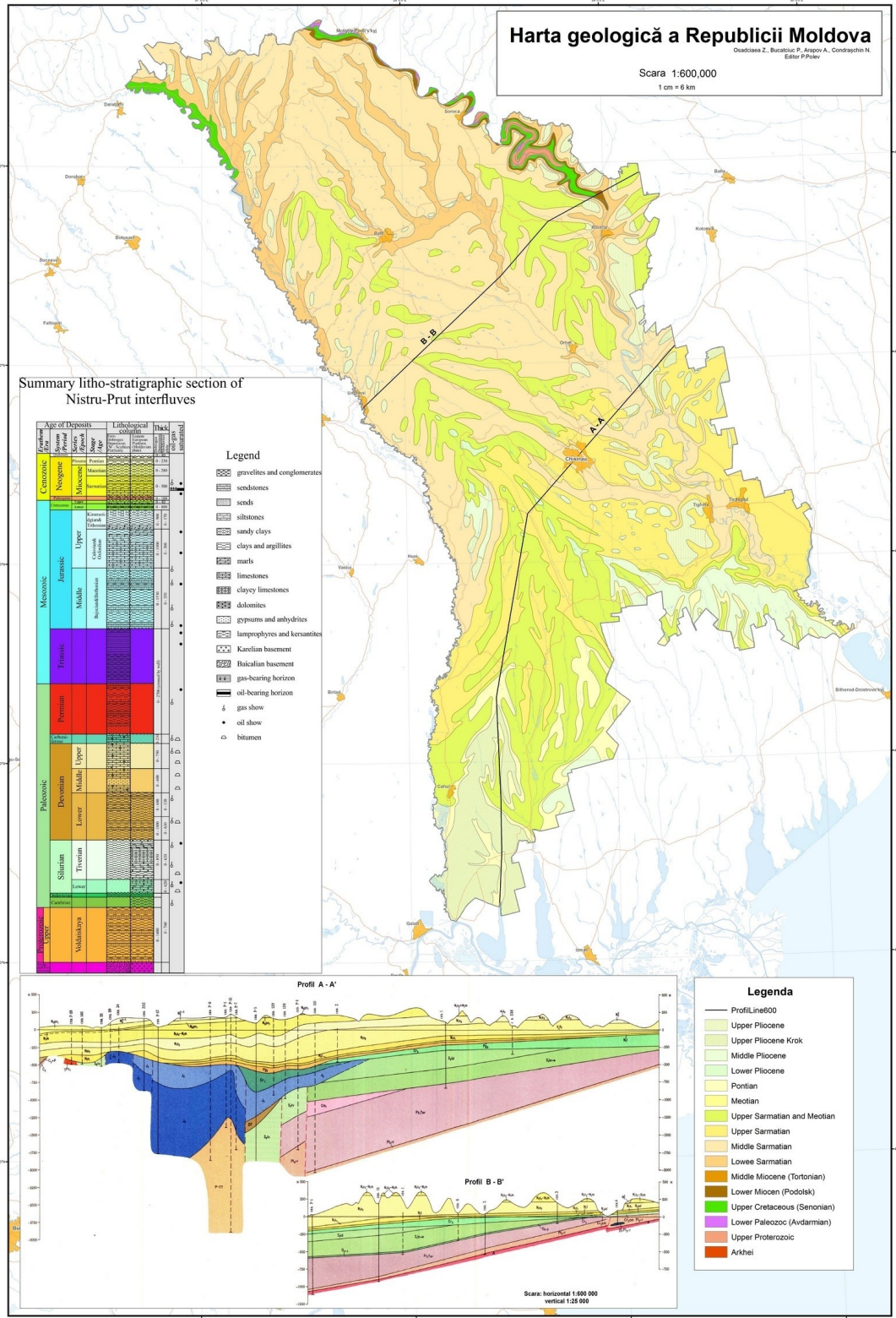


Figure 2 – Geologic Map of Moldova
 Credit: [Agentia pentru Geologie și Resurse Minerale](#)

Mineral Resources



Figure 3 - [Gabbronorite](#), discovered in the sandstone and granite outcrop at [Cosăuți](#), Moldova
Credit: [Gikü](#), [Creative Commons CC0 1.0 Universal Public Domain Dedication](#)

The [USGS Minerals Yearbook for Moldova](#) indicates that the mineral industry in the country is largely limited to industrial minerals for construction: cement, sand & gravel, crushed stone, and dimension stone ([especially granite](#)). Iron and steel are processed in Moldova, but there are no local sources of iron ore. All fuel minerals – coal, oil, and gas – are [imported into Moldova](#), mostly from Russia. This [dependency](#) has led to recent energy shortages due to [political disputes between Moldova and Russia](#).

Moldova borders on the oil producing geologic province of the [Carpathian–Balkanian Basin](#) and there have been attempts to develop oil and gas resources in the country. [ROMGAZ](#), a Romanian company, has been [exploring for natural gas](#) in Moldova, off and on, since 1997. [Frontera](#), a Canadian/American company, began projects to [explore for oil and gas in 2016](#) in the [Cantemir](#) and [Cahul](#) regions. However, there does not appear to be any current activity; the exploration [licences expired in 2024](#).

The most current production statistics on mineral production in Moldova from the USGS are [here](#). Figure 4, below, links to an interactive [mineral occurrence map of Moldova](#).

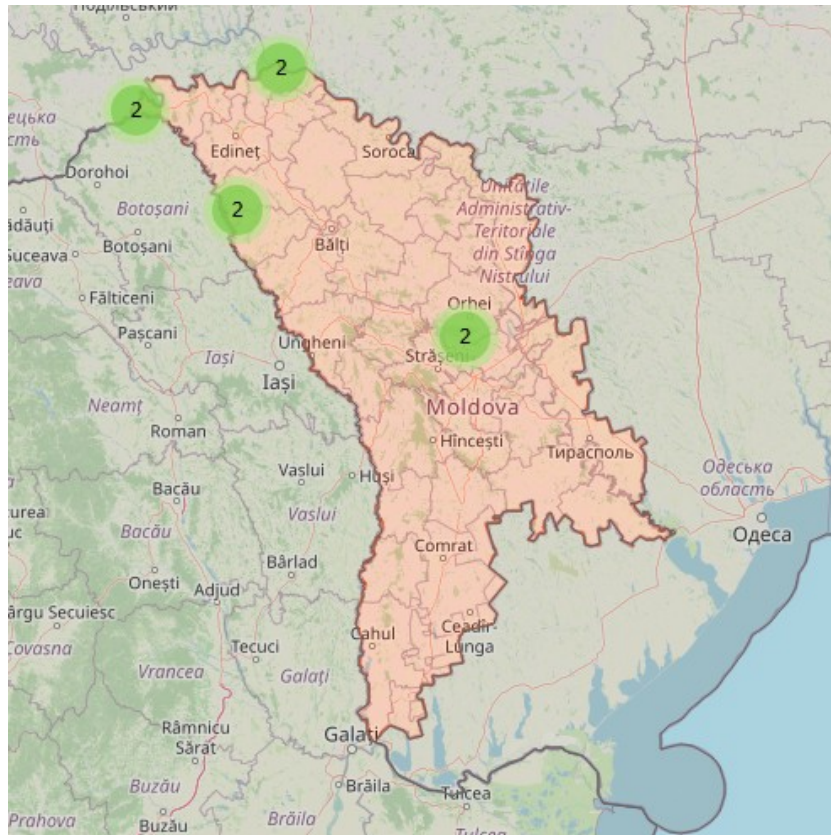


Figure 5 – Interactive Mineral Occurrence Map of Moldova
 Credit: ©Mindat.org

Summary



Figure 5 - La Castel Landscape Reserve near Gordinești, Edineț District
 Credit: Alex Prodan md, [Creative Commons Attribution-Share Alike 4.0 International](https://creativecommons.org/licenses/by-sa/4.0/) license

Moldova does not appear to be a promising place for mineral exploration. There may be ore deposits under the [Phanerozoic](#) cover over the Ukrainian Shield, but these may be inaccessible. As for oil and gas, repeated exploration attempts have come to naught. Besides the geological difficulties, the geopolitical uncertainties of the country revolving around Moldova's problems with its [Russian minority in Transnistria](#) are likely to make any future mineral exploration programs too risky to pursue.

That wraps up this short look at Moldova. It would be nice to be optimistic about the country, but it is in a dangerous part of the world and has its own internal problems.

Standard Caveat

[J. Robert Oppenheimer on freedom and scientific inquiry](#)

The purpose of my weblog postings is to spark people's curiosity in geology. Don't entirely believe me until you've done your own research and checked the evidence. If I have sparked your curiosity in the subject of this posting, follow up with some of the links provided here. If you want to, go out into the field and examine some rocks on your own with the help of a good field guide. Follow the evidence and make up your own mind.

In science, the only authority is the evidence.