

October 27, 2025

News and notes



A path in the Bush, Fall 2025

This week, before going on to discuss the geology and mineral resources of [Mauritius](#), we will first look at some news items I thought were interesting. If you enjoy my blogs, bookmark the site and check Monday mornings 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

- What could go wrong? [Chinese Nationals Arrested In Georgia For Attempting To Buy Black Market Uranium](#).
- [Trump strikes deals on trade, critical minerals in Southeast Asia](#).
- [The big winners from the Australia-US critical minerals deal](#).

- [Ukraine Strikes Russia's Fourth-Largest Refinery, Disrupting 80,000 bpd.](#)
- Pipeline to Egypt: [Energean Signs Gas Transmission Deal for Israel's New Pipeline.](#)
- [With new export controls on critical minerals, supply concentration risks become reality.](#)
- Supply chain independence: [China Moves to Break Free from Its Last U.S. Dependencies with a €1.4 Billion High-Purity Quartz Discovery.](#)
- [How China Took Over the World's Rare-Earths Industry.](#)
- [Islamist insurrection, suburban conflagrations, far-right militias... Could civil war break out in France in 2030?](#)

Research and News

- [Drainage Pattern Changes in Southeastern Tibet Inferred from Eocene–Modern Sediment Provenance of the Yanyuan Basin.](#)
- Software and petrology: [Constraining the Impact of Post-Entrapment Crystallization Correction Algorithms on Melt Inclusion Compositions and Petrological Interpretations With MagmaPEC.](#)
- [Influence of deep mantle thermal conductivity on the thermochemical evolution of Earth's mantle and core.](#)
- [U-Pb Zircon Ages of the Knight Peak Outflow Sheet and Lava Sequence, Mogollon-Datil Volcanic Field, New Mexico, USA: Implications for Magmatism and Extension in the Southeastern Basin and Range Province](#) in the October 2025 edition of [New Mexico Geology](#).
- [Extending the western Hudson Bay Lowland Quaternary stratigraphy, in Manitoba Canada, to at least Marine Isotope Stage 10.](#)
- [Unravelling K isotope fractionation in diamondiferous kimberlites: implications for mantle processes and geological evolution.](#)
- Geophysics: [Radial Anisotropy Beneath the Continental U.S. From Surface Wave Phase Velocities.](#)
- [Calcite Marbles as Records of Episodic Deformation During Exhumation of High-Pressure Rocks \(Syros Island, Aegean Region\).](#)
- [Pre-Mesoproterozoic crustal framework and Mesoproterozoic evolution of the SW Angolan Shield: structural, geochemical, and isotopic insights from the Kunene Complex and surrounding basement.](#)
- [Microbially generated ferruginous crusts: A potential biosignature of continental input in coastal settings.](#)
- [Low-Temperature \(100°C–300°C\) Magnetite Production in Variably Serpentinized Lherzolites.](#)

- [Adventurers and hikers can now download the new USGS topographic maps for free.](#)
- [The submarine Cowal Igneous Complex, New South Wales, Australia: embryonic arc volcanism and 20 m.y. of basin evolution at East Gondwana's Cambro-Ordovician margin.](#)
- The magnetosphere is changing: [Core field changes from eleven years of Swarm satellite observations](#); Science Alert summary [here](#).

Planetary Geology

- [Most Nakhlite Martian Meteorites Were Magmas, not Crystal Cumulates.](#)
- [Oxygen isotopic evidence that Gale crater, Mars, was home to an Early Hesperian water reservoir that underwent significant evaporation.](#)

Plate Tectonics

- Geophysics and plate geometry: [A Magnetotelluric Study of Mantle Heterogeneities Beneath the Northeastern United States.](#)
- [Mode of intracontinental mountain building controlled by lower crustal composition and mantle lithosphere depletion.](#)
- Mapping a subduction zone: [Seismic Imaging of the Transition From Normal to Flat Subduction in Southern Peru by Full Waveform Inversion of Teleseismic Waves.](#)
- Wilson cycle: [A Recipe for Exotic Continental Fragment Formation: Key Constraints From Numerical Rift Models.](#)
- [Petrogenesis of the Paleoproterozoic Wulong Gabbros: Insights into the post-collisional evolution of the southern North China Craton.](#)
- [Triassic Intracontinental Crustal Reworking of the Eastern Tianshan: New Insights From Late Triassic Adakitic and Low-Sr/Y Granitoids in the Bogda Range.](#)
- [Symmetry versus asymmetry of rifted margins: The role of mechanical anisotropy.](#)
- [Arc Splitting and Back-Arc Spreading Evolution: The Control of Slab Dehydration and Melting Processes.](#)
- [Subduction Polarity Reversal During Arc-Continent Collision in Taiwan: New Insight From P-Wave Tomography.](#)
- [A 3D Velocity Model for the European Alps: New Insights Into the Crustal Structure.](#)
- [Morphometric Evidence for Cenozoic Intraplate Reactivation in NW Uruguay.](#)
- [Halos of Enhanced Sediment Alteration Above Buried Seamounts Approaching the Cascadia Subduction Zone.](#)

Paleontology

- [First neuroanatomical study of the Paleocene bothremydid turtle *Taphrosphys* \(Pleurodira\), based on a skull of the Moroccan *Taphrosphys ippolitoi*, and implications for the marine lifestyle in *Taphrosphyini*.](#)
- [Central Asian radiation of modern large-mammal faunas in Miocene.](#)
- Geochemistry and paleontology: [Species-Specific Offsets in Manganese Incorporation in Hyaline Foraminiferal Calcite Across a Gradient of Seawater \[Mn\].](#)
- [Geology and Mineral Resources of Some Districts of Pakistan: Recent Found Paleontological Sites and New Titanosaur from Pakistan and First Diplodocid Dinosaur from Indo-Pakistan and Asia.](#)
- [Middle Miocene \(Badenian\) fishes from the north-west of the Fore-Carpathian Basin.](#)
- [Dinosaurs in New Mexico thrived until the very end, study shows; referenced papers \[here\]\(#\) and \[here\]\(#\).](#)
- [An Early Cretaceous Record of the Mawsoniid Coelacanth *Axelrodichthys* from Niger.](#)
- [Small, enigmatic alligatoroid from the Middle Eocene Clarno Formation, John Day Fossil Beds, Oregon.](#)
- [Ancient ‘salt mountains’ in southern Australia once created refuges for early life.](#)
- [Fossilized Skin on Dinosaur ‘Mummies’ Isn’t Skin at All.](#)
- [A global coral phylogeny reveals resilience and vulnerability through deep time.](#)
- [A new insect boring in fossil wood from the Iranian Upper Cretaceous.](#)
- [Ostracods, brachiopods \(*Peregrinella*\) and scolecodonts from the Early Cretaceous cold seeps of Curnier, France.](#)

Ore Deposit and Petroleum Geology

- [Lithofacies Analysis and Petroleum Reservoir Characteristics of the Ordovician Red River Formation, Williston Basin, Southeastern Saskatchewan.](#)
- [Coupling of tectonic evolution and magmatic lithium mineralization: a case study of the Tugeman–Ayage orefield in the Altyn tagh, Northwest China.](#)
- [Zircon as a pathfinder to REE mineralisation.](#)
- [Genesis of the special sellate-bearing orogenic gold deposit at Pianyanzi, western Yangtze Craton: Constraints from fluid inclusions, S-Pb-H-O isotopes, and quartz trace elements.](#)
- [Spatial trace element variations of stibnite in a world-class Sb deposit and their implications for ore genesis and exploration.](#)

- [Prospectivity mapping of high-purity barite mineralization in the Eastern Nigerian basement terrane using generalized algorithm-decoded thermal infrared data.](#)
- [Mineralogy, Geochemistry, and geochronology of the Paleoproterozoic pegmatite in the northern margin of the North China Craton, China: implications for U-Th-Pb-Nb-Ta-REE polymetallic mineralization.](#)
- [Distribution pattern of hydrogenetic cobalt-rich nodules in the Pacific Ocean and peripheral seas.](#)

Mining and Energy

- [Ontario Investing \\$1 Billion to Build Small Modular Reactors at Darlington.](#)
- Annual report: [Australia's Energy Commodity Resources 2025.](#)
- Ooh shiny: [Rare half-pink rough diamond with 'astounding' weight of 37.4 carats discovered in Botswana.](#)
- [Australia's first fluorite mine faces 'deep opposition' from Kimberley traditional owners.](#)
- [Barrick's seized Mali mine restarts under state management.](#)
- Access to export markets: [How One Pipeline Turned Canada Into a Global Energy Power.](#)
- [Canada Nears a Historic Clean-Energy Breakthrough: A Nuclear Reactor That Consumes Its Own Waste.](#)
- Energy: [Canadian Province Moves to Limit AI Power Use, Ban Crypto Mining.](#)
- Falling prices: [Russia's Coal Collapse Marks The End Of Fossil Fuels' Post-War Illusion.](#)
- Australia: ["Earth's biggest iron deposit" : 55-billion-ton find puts remote region in the global spotlight.](#)

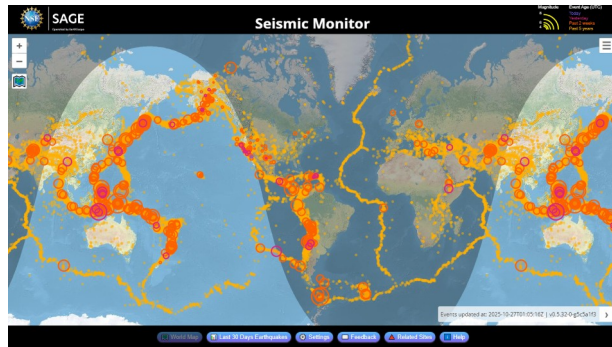
Environmental Geology and Hydrogeology

- [Coastal Hydrogeology in an Age of Rising Seas](#); abstracts from the GSA 2025 conference.
- Groundwater seepage: [Scientists discover hidden underground oases beneath the shrinking Great Salt Lake.](#)
- [Leaked tritium reveals the source of 137Cs from the Fukushima Daiichi Nuclear Power Plant to the ocean](#); Phys.org summary [here](#).

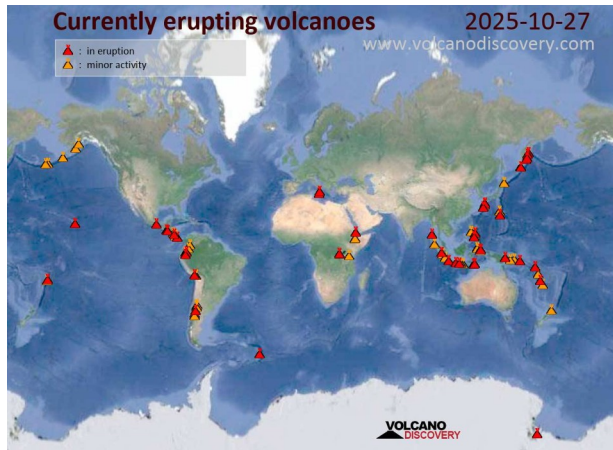
Glaciers and Climate Change

- [Tidewater cycle drives alpine glacial sediment plume geochemistry.](#)
- Ancient climate change: [Late Miocene Arctic warmth and terrestrial climate recorded by North Greenland speleothems.](#)

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

- [Smithsonian / USGS Weekly Volcanic Activity Report](#).
- The United States Geological Survey (USGS) Volcano Observatories are not reporting because of the [US government shutdown](#); there is, however, the [Cascades Volcano Observatory Weekly Update](#).
- [The ice-covered Aurora hydrothermal vent field, Gakkel Ridge, Arctic Ocean: ultramafic-influenced venting at a mafic axial volcano on Earth's slowest spreading center](#).
- [Volcano-Tectonic Crisis of Mayotte \(2018–2022\): A Deformation Model for Geodetic Applications](#).

Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\)](#).
- [Earthquakes Monitoring Live Worldwide](#).
- [Differentiating Frictionally Locked Asperities From Kinematically Coupled Zones](#).
- [3D Dynamic Rupture Modeling of the 2021 Haiti Earthquake Used to Constrain Stress Conditions and Fault System Complexity](#).
- M 5.9: [Costa Rica Shaken by a Quake with No Injuries Reported](#); USGS summary [here](#).
- [Rupture of solidified ancient magma that impeded preceding swarm migrations led to the 2024 Noto earthquake](#); Japan Times summary [here](#).

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

- [2025 Kentucky Geological Survey Geoscience Open House](#); October 28, 2025.
- Free online course: November 4 – 5, [Principles of U-Pb geochronology, Instituto de Geología, UNAM](#); registration deadline November 3.
- November 3 – 4, 2025 [Central Canada Mineral Exploration Convention 2025](#) Victoria Inn Hotel & Convention Centre, 1808 Wellington Avenue, Winnipeg, Manitoba R3H 0G3, Canada.
- [5th International Professional Geology Conference \(IPGC\), November 5 to 7, 2025, Zaragoza, Spain](#).
- [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](#).
- [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](#).

October 27, 2025

Geology and Mineral Resources – Mauritius

Introduction

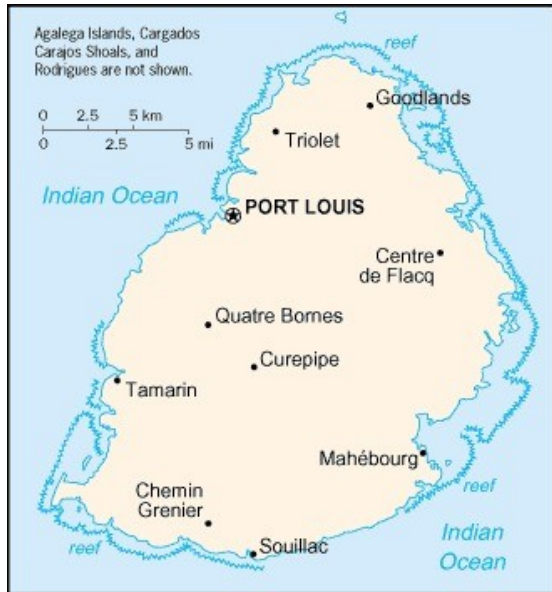


Figure 1a – Mauritius

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



Figure 1b – Location of Mauritius

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

A former [British](#) and [French](#) colony, the [Republic of Mauritius](#) is an island country of 1,310,504 people in the [Indian Ocean](#), east of [Madagascar](#). The country has an total area of 2,040 square kilometres and includes the main island of Mauritius together with [Agalega](#), [Cargados Carajos Shoals](#) (Saint Brandon), and [Rodrigues Island](#). Mauritius, together with its smaller territories, is part of a larger geographic entity, the [Mascarene Islands](#), which also includes the [French Department of Réunion](#).



Figure 2 – Chagos Archipelago and Mauritius

Credit: [Yashveer Poonit](#), [WikiForMen](#), [Creative Commons Attribution-Share Alike 3.0 Unported](#) license

Mauritius also claims the [Chagos Archipelago](#) and has been in a territorial [dispute with the United Kingdom](#) over the Archipelago since 1965. The Chagos Archipelago includes the strategic naval base of [Diego Garcia](#) and, until very recently, the U.K. has been loathe to give up ownership of the islands. However, [as of October 20, 2025](#), the U.K. government has [ceded](#) the Chagos Archipelago to the Republic of Mauritius.

Mauritius enjoys a moderately high standard of living with a per capita [GDP \(PPP\)](#) of \$33,954 and a very high [Human Development Index](#) of 0.806. Mauritius has a [diversified economy](#), based on tourism, textiles, sugar, and financial services. For more details on the country, check out the [CIA World Factbook on Mauritius](#) as well as the [Wikipedia article](#).

Geology

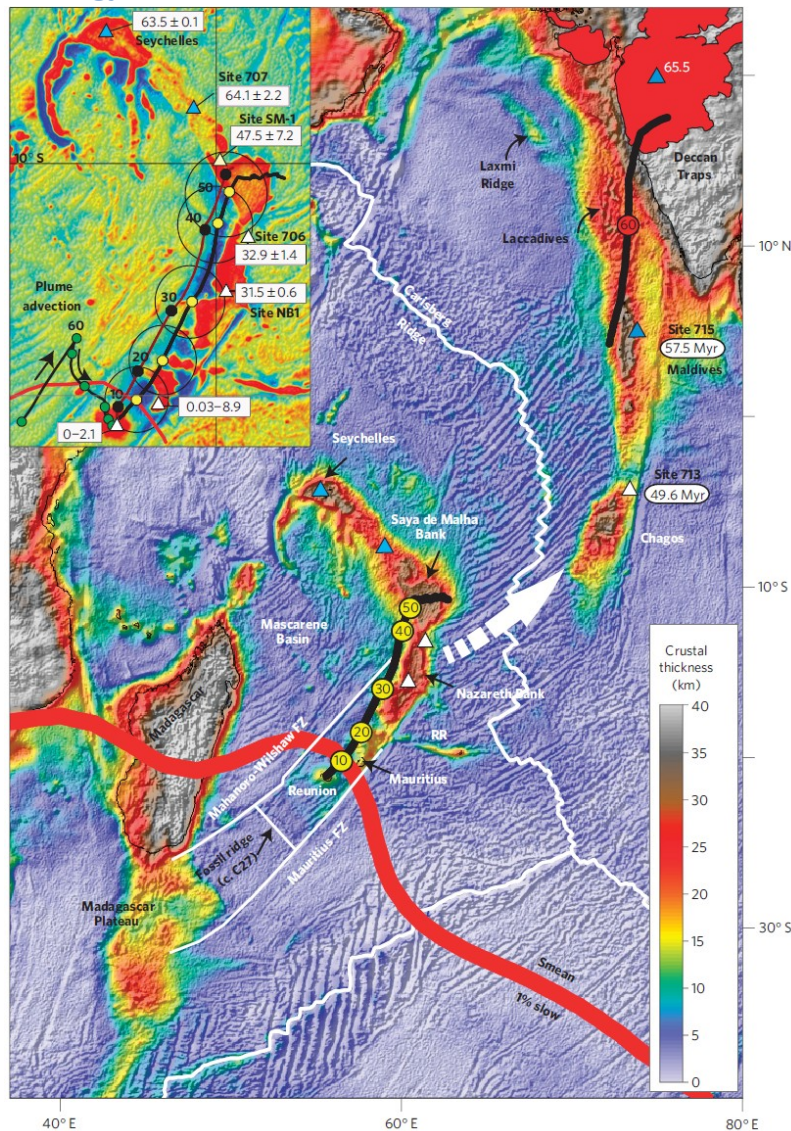


Figure 3 – Track of the Réunion Hotspot Chain, [Credit: Figure 1 in Torsvik et al, 2013](#)

Mauritius is a [volcanic island](#) that owes its origin to the [Réunion Hotspot](#) and the tectonic forces that drove the [Indian subcontinent northeastward](#) from [Gondwana](#) towards the [Eurasian Plate](#) during the [Late Cretaceous Epoch](#) and into the [Eocene Epoch](#). These same tectonic movements are responsible for the

volcanic rocks underlying the [Chagos Archipelago](#), the [Maldive Islands](#) and the [Deccan Traps](#) in India. Overall, the volcanic rocks originating in the Réunion Hotspot form part of the [Deccan Large Igneous Province](#).

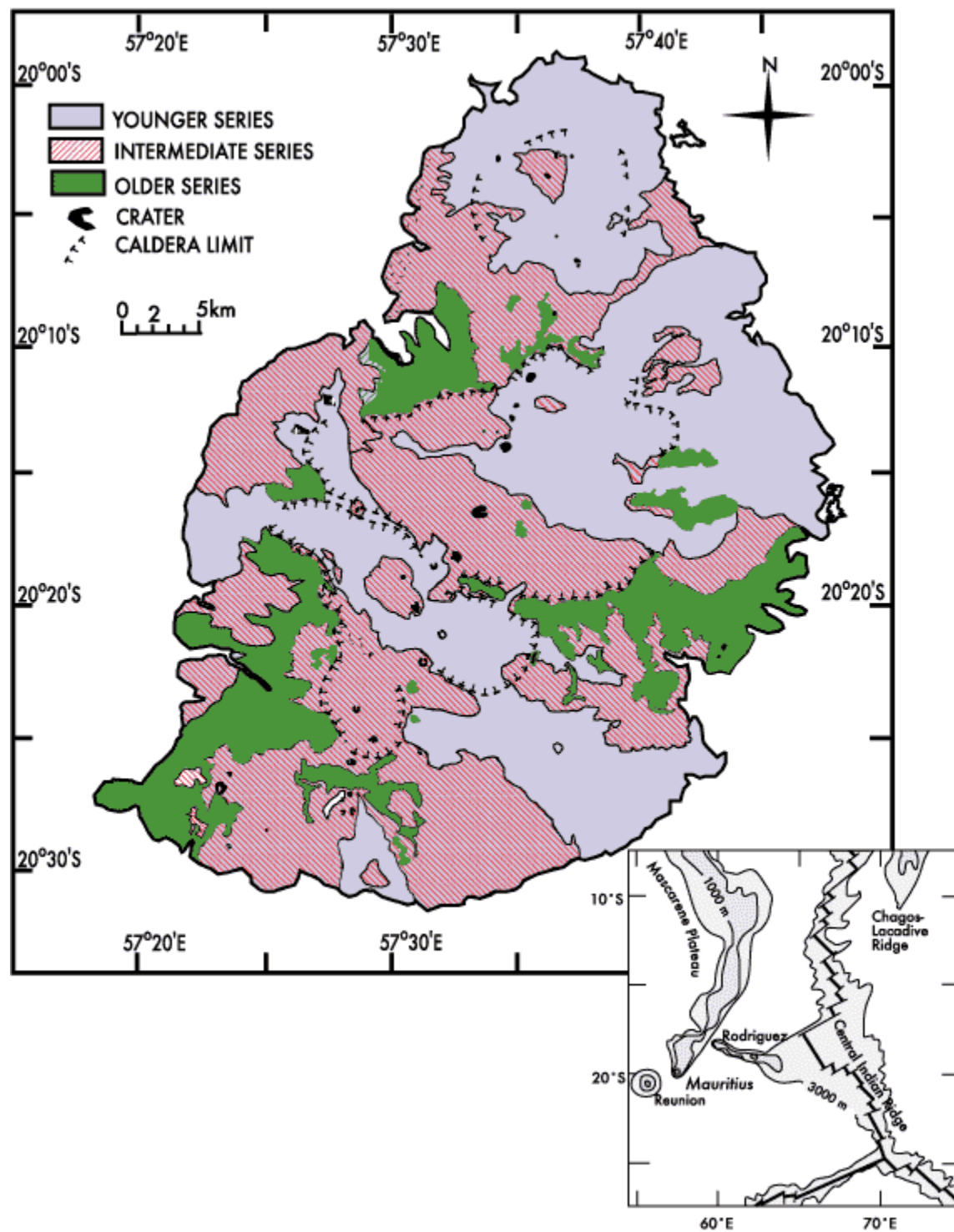


Figure 4 – Geology of Mauritius

Credit: Figure 1 in [Paul, White, & Blichert-Toft, 2005](#)

[Recent studies](#) divide the [volcanic rocks of Mauritius](#) into three categories:

- The Older Series, [dated](#) at 8.9 million years ago (Mya) to 4.7 Mya.
- An Intermediate Series, [dated](#) at 3.5 to 1.9 Mya and,
- A Younger Series, [dated](#) at 113 ± 7 thousand years ago (Kya) to 14 ± 3 Kya.

The [Older Series volcanic rocks](#) in Mauritius were extruded in two phases: a shield-building phase consisting of [picrobasalt](#) flows and [agglomerate](#); and a second stage composed of [feldsparphyric basalt](#), [hawaiiite](#), [mugearite](#), and [trachytic](#) intrusive rocks. The [Intermediate Series](#) consists of [olivine-phyric alkali basalt](#), [basanite](#), and [nephelinite](#) while the [Younger Series](#) consists predominantly of [potassium-poor alkaline olivine basalts](#) with subordinate basanite.

Mineral Resources

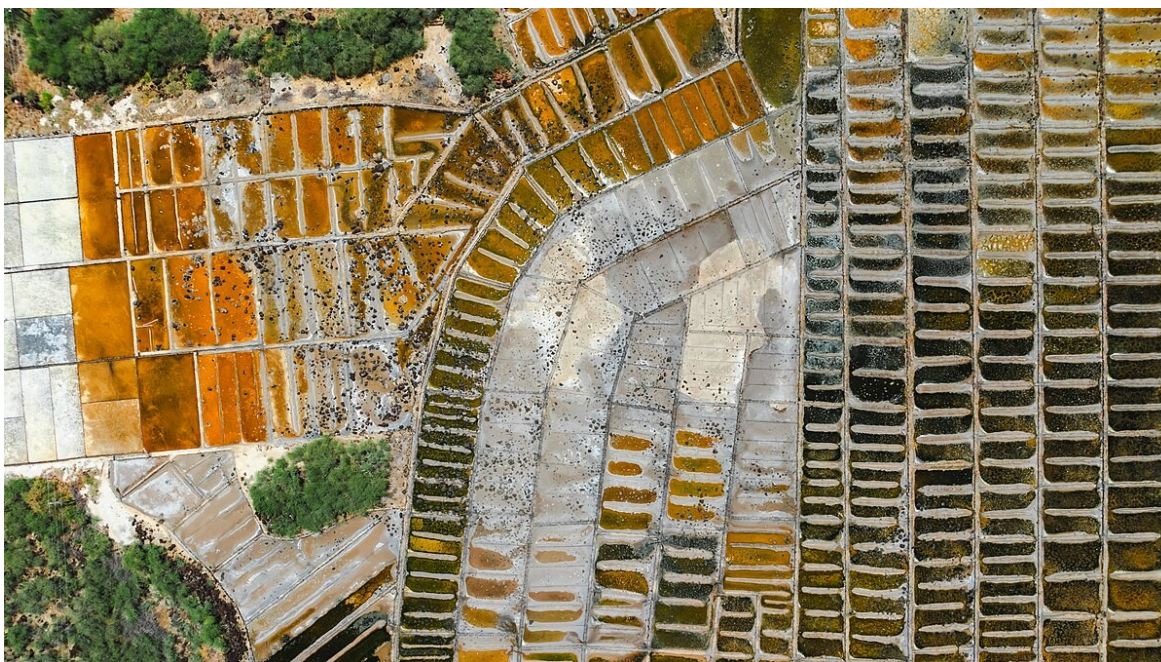


Figure 5 – Salt Production, [Tamarin, Mauritius](#)

Credit: [Arne Müseler](#), [Creative Commons Attribution-Share Alike 3.0 Germany](#) license

The [mineral industry of Mauritius](#) is limited to locally produced building materials – crushed stone, sand and gravel – and sea salt. Sea salt is produced at [evaporation ponds](#) near the west coast town of [Tamarin](#).

The most recent complete USGS report on the mineral industry in Mauritius is from [2014](#). The most recent production statistics on the Mauritian mineral industry are from [2022](#).

While there are few potential mineral deposits to develop onshore Mauritius, there are at least two possible offshore development possibilities: petroleum and polymetallic nodules.

In 2012, the Mauritian government passed a [bill](#) to regulate [petroleum exploration](#) in their economic zone. However, although [Mauritius and the Seychelles](#) have an agreement to regulate their Joint Management Area on the Mascarene Plateau, there has been little actual petroleum exploration. The story about

[polymetallic nodules](#) is similar. While there has been some [discussion](#) on deep-sea mining and the Mauritanian government has [reiterated its claim](#) to the resources within their economic zone, there is no publicly available information on deep-sea mining near Mauritius. As I discussed in my posting on the [Marshall Islands](#), there is little to stop pirate operators from simply dredging up polymetallic nodules and disappearing.

Figure 6, below, links to an interactive mineral occurrence map for Mauritius.



Figure 6 – Interactive Mineral Occurrence Map of Mauritius
Credit: ©Mindat.org

Summary



Figure 7 – Blue Bay, Mauritius
Credit: Z thomas, Creative Commons Attribution-Share Alike 4.0 International license

That winds it up for this look at the geology and mineral industry of Mauritius. The potential for future development seems to be limited. There could be petroleum and/or natural gas offshore of Mauritius, but so far there seems to little interest. Polymetallic nodules from deep-sea mining are another possibility, but it is entirely possible that the extraction of these nodules will do little for the inhabitants of Mauritius.

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.