

September 15, 2025

## News and notes



Oak Trees (*Quercus macrocarpa*) by Crescent Lake – September 12, 2025

This week, before going on to discuss the geology and mineral resources of Malaysia, 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](mailto:raymondreichelt@gmail.com).

### Geopolitics

- U.S. Magnesium: [Critical American manufacturing giant files Chapter 11 bankruptcy](#).

- [Trump Calls on G7 to Slap Tariffs on China and India for Importing Russian Oil.](#)
- Video: [Why Is NEPAL on Fire? The TRUTH BEHIND THE CHAOS](#); related: [Protests against Nepal's social-media ban grow more violent as demonstrators set buildings on fire.](#)
- Whiskey's for drinking, water's for fighting: [Africa's largest hydropower dam launched \(VIDEO\).](#)
- [A climate of conflict: How the little ice age sparked rebellions and revolutions across Europe.](#)

## Research and News

- Structural geology: [Effect of mutual interaction on the geometry of folds in a layered system.](#)
- Geochemistry of meteorites: [High field strength elements in chondrites and their refractory components.](#)
- [40,000 People Flock Each Year to See This Mine, Which Holds the Record for the World's Largest Collection of Fluorescent Rocks.](#)
- [Taken with a grain of salt: Resolving evaporite stratigraphy through accessory mineral geochronology.](#)
- [Oxygen isotopes in cherts record paleo-heat flow on Shatsky Rise \(western Pacific Ocean\).](#)
- [Evidence for Distal Bolide Impact and Tsunami Deposits in the Upper Atlantic Coastal Plain of Moore County \(North Carolina, USA\) generated by the Eocene Chesapeake Bay Bolide Impact; Earth.com summary \[here\]\(#\).](#)

## Mineralogy

- [Crystal chemistry and stability of wuyanzhiite, a new mineral dimorphous with chalcocite from the Bofang Copper Mine, Hunan, China.](#)
- Laboratory technique: [Deep-UV micro-Raman spectroscopy estimates of peak metamorphic temperatures using rock chips bearing carbonaceous material.](#)
- [Myrmekite and antiperthite formation in deformed granite: Chemical and crystallographic constraints on formation mechanisms.](#)
- Clay minerals: [Selective Adsorption of Magnesium Ions and Structural Reconstruction in Acidified Palygorskite.](#)
- [Dating of marine authigenic minerals \*via in situ\* Rb-Sr, U-Pb, and Lu-Hf: A case study from the Georgina Basin, Australia.](#)

## Plate Tectonics

- [Interaction Between Transverse and Rift Faults During the Initiation of Orogenic Extension: The Case of Sant'Anna Pelago \(Northern Apennines, Italy\).](#)

- [Multi-Stage Crustal Thickening, Surface Uplift, and Collision in the Western Himalaya-Karakoram-Tibet Orogen Revealed by Chemical Mohometry.](#)
- [Integrated acoustic identification of a petit-spot volcanic field in the oldest Pacific plate.](#)
- [Paired metamorphic belts in the Usagaran Orogen of Tanzania: evidence for one-sided oceanic subduction in the Palaeoproterozoic.](#)
- Book announcement: [New Tectonic Geodynamics Textbook Bridges Scientific Disciplines.](#)

## Paleontology

- Obituary: [Mark Norell, 68, Discoverer of Links Between Dinosaurs and Birds, Dies.](#)
- [A new leatherback marine turtle from the lower Oligocene of North America and a phylogenetic nomenclature for Dermochelyidae;](#) News release from the McWane Science Center [here.](#)
- [Cambrian reef complexes and pelmatozoan-rhynchonelliformean meadows from the Alborz Mountains, northern Iran: A reassessment of the Miaolingian–Furongian paucity of metazoan reefs paradigm.](#)
- [Re-assessment of a large archosaur dentary from the Late Triassic of South Wales, United Kingdom;](#) SciNews summary [here.](#)
- [Geological age of the Yuyang dinosaur eggs revealed by in-situ carbonate U-Pb dating and its scientific implications;](#) Phys.org summary [here.](#)
- [Impact of wildfires on Gondwanan flora during the Permian–Triassic transition;](#) they burned?
- Ichthyosaurs that ate vampire squids: [Vampyromorph coleoid predation by an ichthyosaurian from the Early Jurassic Lagerstätte of Bascharage, Luxembourg.](#)
- [Coelacanthiform fishes of the British Rhaetian;](#) SciNews summary [here.](#)
- [Columbian mammoth mitogenomes from Mexico uncover the species' complex evolutionary history;](#) Phys.org summary [here.](#)

## Mining and Energy

- [Recycling pioneers race to close the rare earths scrap gap.](#)
- [The world's fourth largest gold producer you've never heard of.](#)
- From the USGS: [Point locations for rare earth element leachate collection and precipitation tanks from ion-adsorption clay deposits in Burma \(Myanmar\) and China identified from satellite imagery between 2010 and 2025;](#) Rare Earth Exchanges summary [here.](#)
- [Brazil prosecutors call for halt on lithium mining in Minas Gerais.](#)
- Coal mining: [Study on the evolution and transport pattern of overburden fracture induced by mining in cave mines.](#)

- [California's Biggest Inland Oil Pipe On Course to Shut.](#)
- Ore geology: [Source-oxidized and \(super-\)wet magmas explain porphyry copper fertility vectors: A thermodynamic modeling approach.](#)
- [Barrick Sells Its Last Gold Mine in Canada for \\$1.1 Billion.](#)
- [Job Cuts Rock Global Oil and Gas Sector.](#)
- [From Oil Shocks to Magnet Wars: Why the 1970s Playbook Won't Save Rare Earths.](#)
- [Energy Fuels rises on rare earth magnet production breakthrough.](#)
- [Growing natural gas deficit leads Egypt to ramp up natural gas imports.](#)
- Geothermal: [Lombard Odier's cool new HQ is a champion of geothermal tech.](#)
- Drilling technology: [Geothermal is too expensive, but Dig Energy's impossibly small drill rig might fix that.](#)
- [Introduction to special issue on gold subsequent to the Gold24 symposium, Perth.](#)
- [Team discovers hidden structures, invisible in traditional seismic scans, that block the pumping of oil; referenced papers \[here\]\(#\) and \[here\]\(#\).](#)
- [James Bay gold explorer inks First Nation collaboration agreement.](#)
- Peak oil: [Plans to 'maximise extraction' of North Sea oil and gas would soon run into geological limits.](#)

## Environmental Geology and Hydrogeology

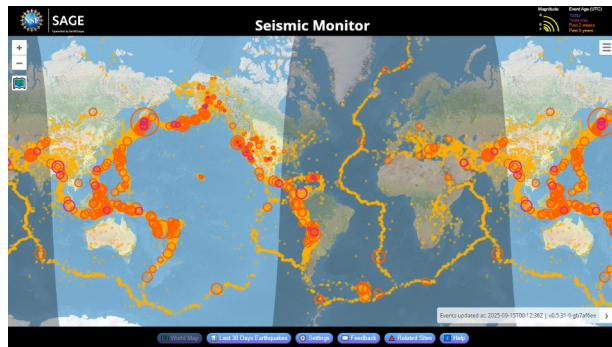
- [Carbon capture – the get-out-of-jail-free card that does not actually work.](#)
- [What solutions are there for decontaminating PFAS in soil and groundwater?](#) En Français, use Google Translate if your browser doesn't do it automatically.
- [A Global Dataset of Aquifer Typologies and Groundwater Resources : The Hidden Wealth of Nations.](#)
- 09/08 More on PFAS: [Investigation pulls back curtain on decades-old deceit campaign led by multibillion-dollar company: 'It knew they contained toxic substances'.](#)
- France: [Groundwater tables as of September 1, 2025;](#) also en Français.
- Microplastics: [Pennsylvania plastics pollution settlement could set a national precedent for control of pellets.](#)

## Glaciers and Climate Change

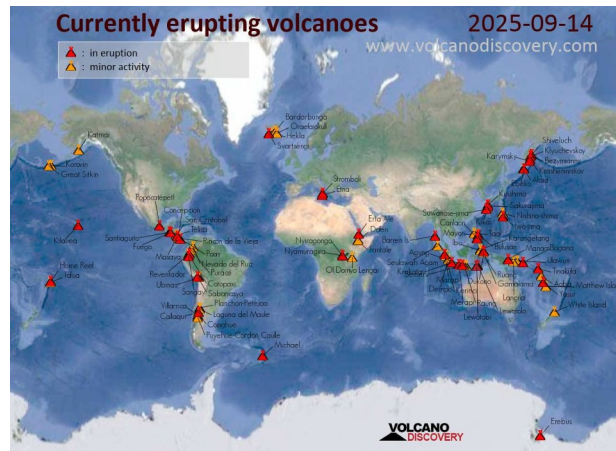
- [Atmospheric carbon dioxide mineralisation in anthropogenically-derived carbonate deposits.](#)

- [A radiometric timescale challenges the chronology of the iconic 1992 Guliya ice core.](#)
- Climate science: [Neglecting land–atmosphere feedbacks overestimates climate-driven increases in evapotranspiration.](#)
- 09/10 [Pleistocene terrestrial warming trend in East Asia linked to Antarctic ice sheets growth.](#)
- [Enhanced West Antarctic ice loss triggered by polynya response to meridional winds;](#) Phys.org summary [here.](#)
- [How Climate Model Developers Deal With Bugs;](#) Phys.org summary [here.](#)
- [Safeguarding the polar regions from dangerous geoengineering: a critical assessment of proposed concepts and future prospects;](#) Phys.org summary [here.](#)
- [Warming temperatures affect glaciers’ ability to store meltwater, contributing to rising sea levels.](#)

## Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

### Volcanoes

- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- United States Geological Survey (USGS) Volcano Observatories:
  - [Cascades Volcano Observatory Weekly Update.](#)
  - Volcano Watch – [The long way to cross Kāwili Street: Waiākea grad joins University of Hawai‘i at Hilo.](#)
  - Yellowstone Caldera Chronicles: [Hydrothermal hats and visitor safety: Walking in the boots of the Yellowstone National Park Geology Team.](#)
- [Exploring the heart of underwater volcanoes.](#)

- [A massive eruption 74,000 years ago affected the whole planet – archaeologists use volcanic glass to figure out how people survived.](#)
- [On Steam-Driven Thermal Anomalies at Active Volcanoes Through Laboratory and Numerical Experiments.](#)
- [RNN-DAS: A New Deep Learning Approach for Detection and Real-Time Monitoring of Volcano-Tectonic Events Using Distributed Acoustic Sensing.](#)
- [3D quantification of nanolites using X-ray ptychography reveals syn-eruptive nanocrystallisation impacts magma rheology: Phys.org summary \[here\]\(#\).](#)

### ***Earthquakes***

- [Euro-Mediterranean Seismological Centre \(EMSC\).](#)
- [Earthquakes Monitoring Live Worldwide.](#)
- [M7.4 earthquake shakes Kamchatka: largest aftershock of the M8.8 earthquake; USGS summary \[here\]\(#\).](#)
- [Role of Slabs in Postseismic Deformation Following Deep Earthquakes.](#)
- [Updates on the deadly Afghanistan earthquakes.](#)
- [Real-Time Earthquake Monitoring with Deep Learning: A Case Study of the 2025 6.4 M<sub>L</sub> Dapu Earthquake and Its Fault System in Southwestern Taiwan.](#)
- [Paleoseismic evidence of directivity for the 1976 Mw 7.5 Motagua earthquake, Guatemala.](#)
- Quakes on Mars: [Martian Crustal Structure Revealed by Surface Waves from Cerberus Fossae Marsquakes.](#)
- [Seafloor geodesy unveils seismogenesis of large subduction earthquakes in Mexico.](#)
- [Estimating Magnitude Completeness in Earthquake Catalogs: A Comparative Study of Catalog-Based Methods.](#)
- [Far from West Coast, UTA team tracks California quakes.](#)
- Research: [Seismic Response of Rock Towers at the Trona Pinnacles \(U.S.A.\) to the 2019 Ridgecrest Earthquake Sequence: Theory, Observations, and Models.](#)

## Wildfires and Other Geohazards



**Interactive Wildfire Map September 11, 2025**  
**Credit: ©Canadian Wildland Fire Information System**

- [Canadian wildfire smoke linked to over 82,000 deaths.](#)
- [A pollution paradox: Wildfires in the western United States may improve air quality](#); research papers [here](#) and [here](#).
- [NASA's GUARDIAN tsunami detection tech catches a wave in real time.](#)
- Indonesia: [Catastrophic Flash Floods Leave 15 Dead, 10 Missing and Trigger Landslides as Rescue Efforts Continue.](#)
- [Increasing wildfires drive demand for De Havilland Canada's new waterbomber.](#)

## 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](#). New book: [Conjunctive Water Management by Dr. Richard Evans and Randall Hanson](#).
- 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

- On now: [The 52nd Congress of the International Association of Hydrogeologists, 15-19 September 2025, Melbourne Australia](#).
- [GeoManitoba 2025 78th Annual Canadian Geotechnical Society Conference & 9th Canadian Permafrost Conference, RBC Convention Centre, Winnipeg, Manitoba, September 21 – 24, 2025](#).
- "[The Art of Inquiry – Art Meets Science Showcase](#)"; Monday, September 22nd, 5:00 PM; [Astrogeology building, USGS Flagstaff Science Campus, 2255 N. Gemini Dr., Flagstaff, AZ; free and open to the public](#).
- [29 September – 1 October 2025, Stuttgart, Germany, Nature Conference on Advancing Perovskite-Based Photovoltaics](#).
- [Thursday 2<sup>nd</sup> October 2025, Early Career Hydrogeology Conference 2025, Leeds U.K.](#)
- Australia: [12–18 October 2025, Earth Science Week](#).
- November 3 – 4, 2025 [Central Canada Mineral Exploration Convention 2025](#) Victoria Inn Hotel & Convention Centre, 1808 Wellington Avenue, Winnipeg, Manitoba R3H 0G3, Canada, Early Bird pricing is in effect until midnight October 1.
- [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](#).
- 2025 [Society of Petroleum Engineers Distinguished Lecturer Schedule](#).
- [List of geoscience events in 2025 from the International Union of Geological Sciences](#).
- [American Geophysical Union List of Upcoming Meetings](#).
- The Geological Society: [Events & Courses](#).
- "[Geology Hour](#)" [Online](#), evenings on the 3rd Monday of the Month from the Geological Society of the Oregon Country.

September 15, 2025

## Geology and Mineral Resources – Malaysia

### Introduction



**Figure 1a – Malaysia**

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



**Figure 1b – Location of Malaysia**

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

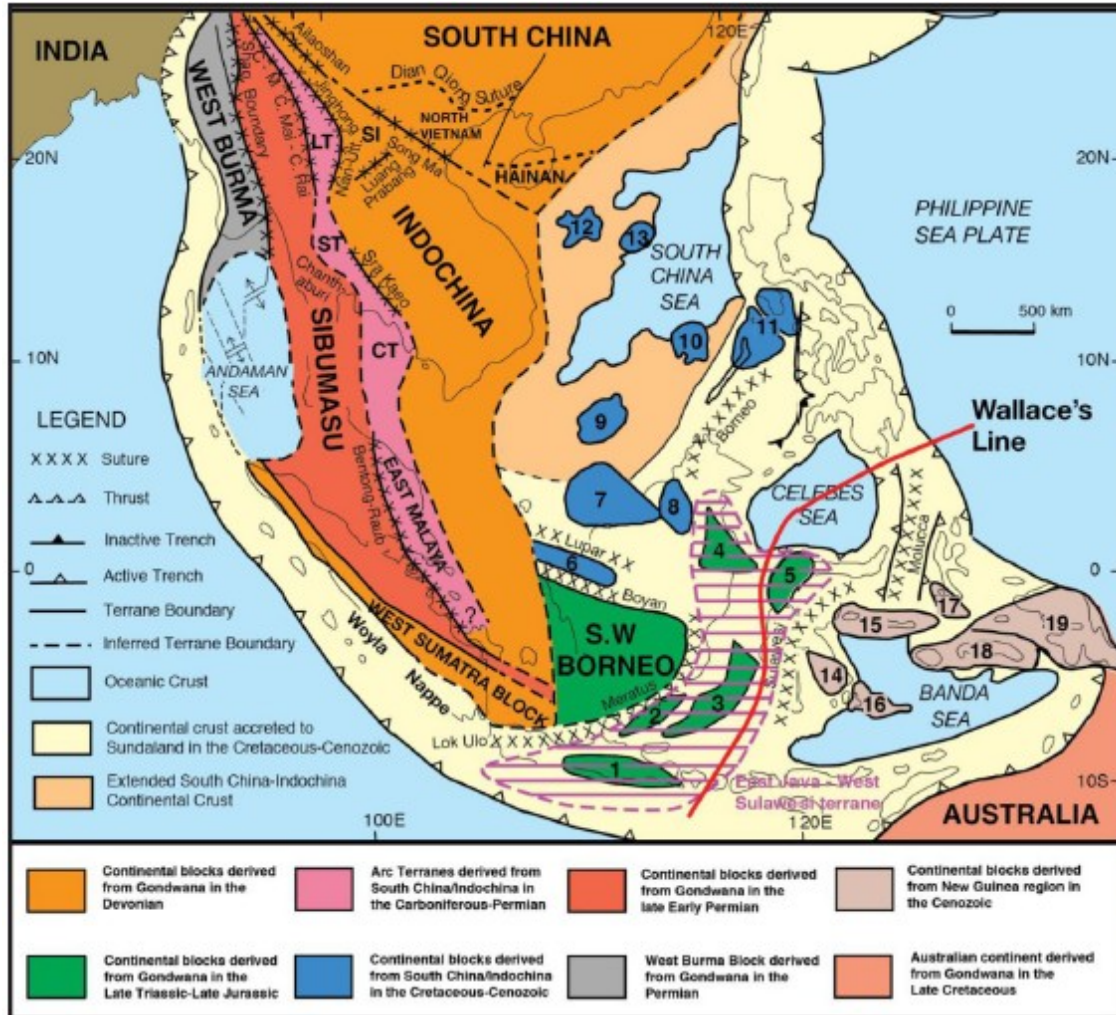
[Malaysia](#) is a country of 34,564,810 people in Southeast Asia. The country has an area of 329,847 square kilometres including [Peninsular Malaysia](#) and [East Malaysia](#) on the northern one-third of the island of [Borneo](#). Malaysia lies on the [South China Sea](#); it has land borders with [Thailand](#), [Indonesia](#), and [Brunei](#). Malaysia also has maritime borders with [Singapore](#), Indonesia, the [Philippines](#), and [Vietnam](#).

Malaysia also claims part of the [Spratly Islands](#), to the northwest of East Malaysia. This collection of over 100 islands, coral atolls, reefs are also claimed, in part, by Indonesia, the Philippines, Brunei, and Vietnam. Some of the Spratly Islands are also occupied by [Taiwan](#) and [China](#). The [dispute over the Spratly Islands](#) is complicated by the fact that the islands neighbour actual and [potential oil and gas deposits](#).

Malaysia is a fairly prosperous country with a per capita [GDP \(PPP\)](#) of \$43,470 and a very high [Human Development Index](#) of 0.819.

For more details on the country, check out the [CIA World Factbook on Malaysia](#) as well as the [Wikipedia article](#).

## Geology



Numbered micro-continental blocks, 1. East Java 2. Bawean 3. Paternoster 4. Mangkalihat 5. West Sulawesi 6. Semitau 7. Luconia 8. Kelabit-Longbowan 9. Spratly Islands-Dangerous Ground 10. Reed Bank 11. North Palawan 12. Paracel Islands 13. Macclesfield Bank 14. East Sulawesi 15. Banggai-Sula 16. Buton 17. Obi-Bacan 18. BuruSeram 19. West Irian Jaya. LT = Lincang Terrane, ST = Sukhothai Terrane and CT = Chanthaburi Terrane. C-M = ChangningMenglian Suture, C-Mai-C. Rai = Chiang Mai-Chiang Rai Suture, and Nan-Utt. = Nan-Uttaradit Suture.

**Figure 2 – Tectonic Structure of Sundaland**  
 Credit: Figure 3 in Metcalfe, 2017

Malaysia sits on the [Sunda Plate](#), also called Sundaland. To the east of the Sunda Plate are the [Philippine Mobile Belt](#), the [Molucca Sea Collision Zone](#), the [Molucca Sea Plate](#), the [Banda Sea Plate](#) and the [Timor Plate](#). South and west of the Sunda Plate is the [Australian Plate](#). To the north are the [Burma Plate](#), the [Eurasian Plate](#), and the [Yangtze Plate](#). The boundary between the Sunda and Australian plates is a [subduction zone](#) where the [Indo-Australian Plate](#) dips beneath the Sunda plate along the [Sunda Trench](#) - a source of frequent earthquakes and tsunamis.

The Sundaland [craton](#) is the geological core of Southeast Asia. Like most cratons, Sundaland is itself a collection of [continental blocks](#) and [volcanic arcs](#). Between the blocks and arcs are narrow [suture zones](#) that are the remnants of ancient [ocean basins](#).

The tectonic history of the Sunda Plate is complex, and what follows is a very brief summary of Ian Metcalfe's 2017 paper [Tectonic evolution of Sundaland](#) published in the [Bulletin of the Geological Society of Malaysia, Volume 63, June 2017](#), pp. 27 – 60.

The continental blocks of Sundaland were all derived, either directly or indirectly, from the Arabia-India–Australia margin of eastern [Gondwana](#) and by the opening and closing of three iterations of the [Tethys Ocean](#):

- The [Paleo-Tethys Ocean](#), between the [Devonian](#) and [Triassic](#) periods;
- The [Meso-Tethys Ocean](#), between the [Permian](#) and [Cretaceous](#) periods; and
- The [Ceno-Tethys Ocean](#) that existed from the [Jurassic](#) to Cretaceous periods.

The core of Sundaland is made up of a western [Sibumasu Block](#) and an eastern [Indochina–East Malaya Block](#). In between these two blocks is an island arc terrane, the [Sukhothai Island Arc](#).

The [Changning–Menglian](#), [Chiang Mai–Chiang Rai](#), [Chanthaburi](#) and [Bentong–Raub](#) suture zones that form the boundary between Sibumasu and the Sukhothai Arc are probably the remnants of the former Paleo-Tethys Ocean.

The Indochina Block was derived from Gondwana when the Paleo-Tethys Ocean opened up during the Devonian. During the Carboniferous, the Sukhothai Arc formed on the margin of Indochina. [Back-arc spreading](#) in the Permian then separated the Arc, creating the [Jinghong, Nan–Uttaradit and Sra Kaeo](#) sutures.

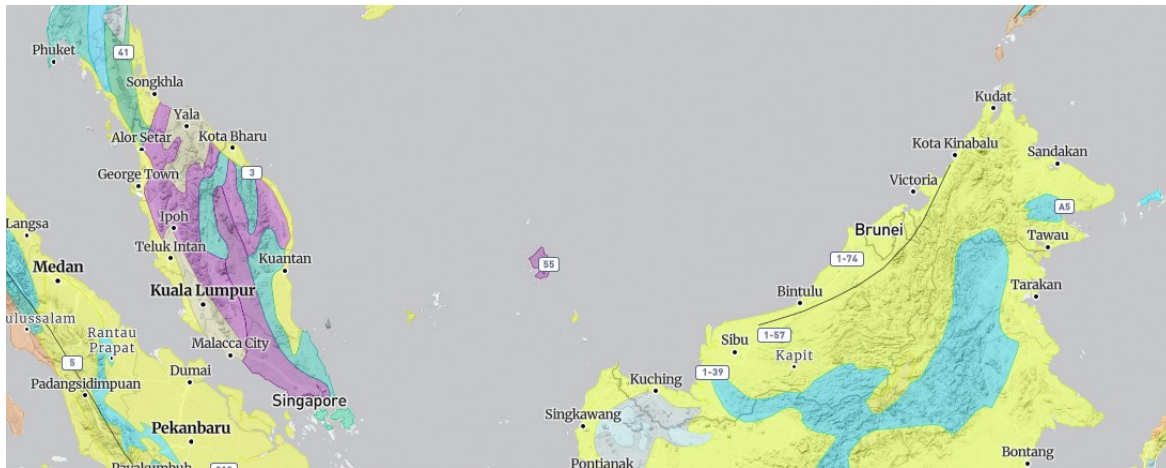
In the late [Early Permian](#), the [Sibumasu Terrane](#) separated from Gondwana when the Meso-Tethys opened up. Then, in the [Middle-Late Triassic](#), the Sibumasu Terrane collided with the Sukhothai Arc and Indochina Block.

The [West Sumatra Block](#) was part of the [Cathaysian](#) microcontinent. It may represent a part of the Sukhothai Arc and that was emplaced by [strike-slip tectonics](#) outboard of Sibumasu during the Triassic.

Before the Late Triassic, the [West Burma Block](#) was already probably already attached to Sundaland. Most likely it is a disrupted part of the Sibumasu Terrane.

In Metcalfe's analysis East Java–West Sulawesi and South West Borneo are tentatively identified as the missing "[Argoland](#)" and "[Banda](#)" blocks. These two blocks appear to have separated from northwest Australia in the Jurassic and subsequently accreted onto southeast Sundaland during the Cretaceous.

Figure 3, below, links to an interactive bedrock geology map of Malaysia from [Macrostrat](#).



**Figure 3 – Interactive Geology Map of Malaysia**

**Credit: Macrostrat, [Creative Commons Attribution-Share Alike 4.0 International](https://creativecommons.org/licenses/by-sa/4.0/) license**

The oldest rocks shown on the geology map in Figure 3 are Middle [Paleozoic](#) ([Silurian](#) and [Devonian](#)) shear or [mylonite](#) zones. Next older are Late Paleozoic shear or mylonite zones.

Next in are Triassic sedimentary rocks and shear or mylonite zones. Also are [Mesozoic](#) aged igneous intrusive and sedimentary rocks. Finally, there are [Cenozoic](#) aged [carbonate-sandstone-conglomerate](#) in the [Barito Basin](#) of Borneo and the Late Cenozoic ([Neogene](#) and [Quaternary](#)) sedimentary rocks on the east and west shore of the Malay Peninsula.

This is only a very brief description of the Malaysian geology. For further information, check out:

- C.S. Hutchison & D. N. K. Tan (ed.), 2009, [Geology of Peninsular Malaysia](#), Geological Society of Malaysia
- Allagu Balaguru & Robert Hall, 2009, [Tectonic Evolution and Sedimentation of Sabah, North Borneo, Malaysia](#), AAPG
- C.S. Hutchison, 2005, [Geology of North-West Borneo](#), Elsevier B.V.
- Bazliah, B & Sahari, Syaakiirroh & Shah, A. A. & Syafiqah, Nurul & M Batmanathan, Navakanesh, 2020, [Tectonic Geomorphology of NW Borneo, Malaysia](#), Proceedings of the 5th International YES Congress.

## Mineral Resources

The [mineral industry in Malaysia](#) includes: metallic minerals, industrial minerals and energy minerals:

### Metallic Minerals

- **Bauxite:** is mined at mines in [Sarawak](#), [Johor](#) and [Trengganu](#).
- **Copper** deposits are mined in [Sabah](#) and [Trengganu](#)
- **Gold** is mined at the [Selinsing](#) gold field and the [Penjom Mine](#).



Figure 4 – Open Pit Tin Mine near Kuala Lumpur, Malaysia  
Credit: [Urbain J. Kinet](#), Flickr's [The Commons](#)

- **Iron ore** is mined at mines in [Pahang](#), [Sabah](#), and [Trengganu](#).
- **Manganese** is mined at [two mines in Pahang](#).
- **Tin** mines [in Malaysia](#) include about 11 mines in [Johor](#), [Kuala Lumpur](#), and [Negeri Sembilan](#).
- **Titanium** is mined in [Perak](#) and [Sarawak](#).

#### *Industrial Minerals*

- There are approximately 18 **cement plants in Malaysia**.
- **Kaolin clay** and **mica** are [mined](#) at a [quarry in Bidor, Perak](#).
- **Feldspar** is mined by multiple producers: 2 mines in [Kelantan](#), 2 mines in [Negeri Sembilan](#), and 1 mine in [Pahang](#).
- [CVM Minerals Limited](#) produces **magnesium** at the Perak Magnesium Smelter near [Kamunting](#), extracting the metal from [dolomite](#).
- **Rare-earth compounds** are produced at [Kuantan](#).

Figure 5 links to an [interactive map](#) of mineral occurrences in Malaysia.

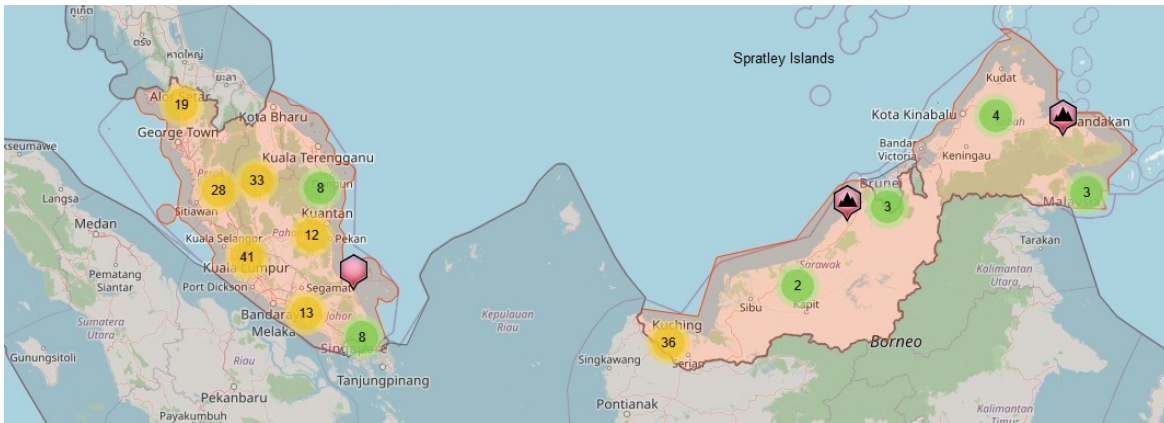


Figure 5 – Interactive Mineral Occurrence Map of Malaysia

Credit: ©Mindat.org

### Energy Minerals and Associated Products

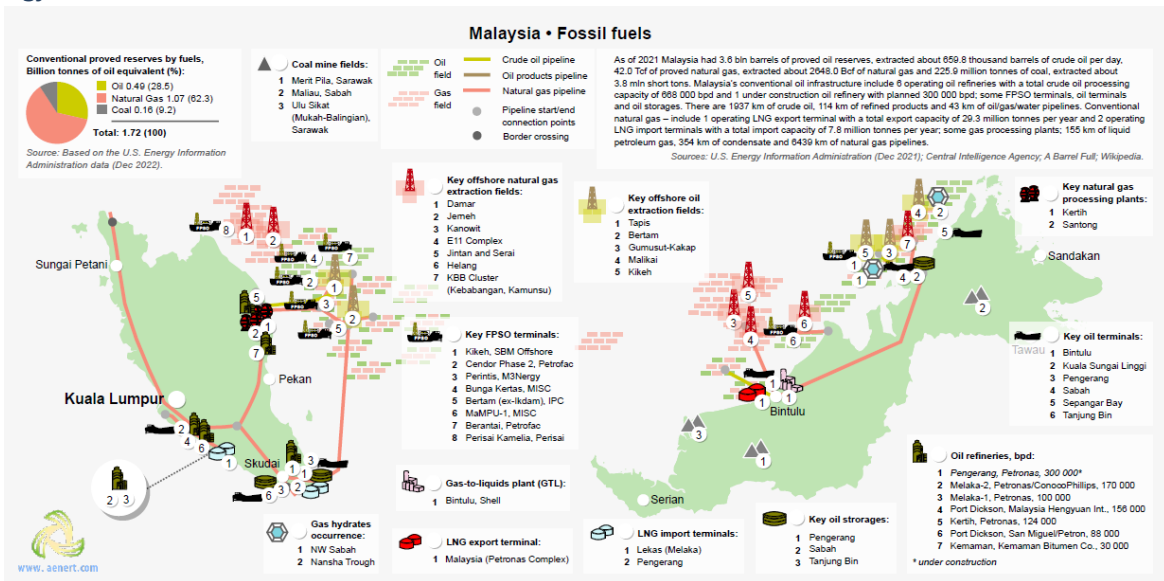


Figure 6 – Energy Industry in Malaysia

Credit: Advanced Energy Technologies

The USGS and EIA analysis of Malaysia's energy industry is [here](#).

- **Ammonia fertilizer** is produced from natural gas at plants in [Bintulu, Sarawak](#); [Kerteh, Terengganu](#); and [Gurun, Kedah](#).
- **Coal** is produced at the [Ulu Sikat, \(Mukah-Balingian\)](#) project in Sarawak; cancelled coal production projects include: [Merit Pila, Sarawak](#) and [Maliau, Sabah](#).
- **Natural gas** is produced from offshore platforms; key production sites are the: [Damar](#), [Jerneh](#), [Kanowit](#), [E11 Complex](#), [Jintan & Serai](#), [Helang](#), and [Kebabangan](#) fields.
- **Petroleum** is also produced from offshore platforms; key production sites are the: [Tapis](#), [Bertam](#), [Gumusut-Kakap](#), [Malikai](#), and [Kikeh](#) fields.

The most recent production statistics from the USGS for the Malaysian mineral industry can be found [here](#).

## Summary



**Figure 7 - Panoramic hilltop view from Lesser [Perhentian Island](#) at dusk**

**Credit: Chamberlain of Nilai, [Creative Commons Attribution-Share Alike 4.0 International](#) license**

Malaysia has a complex geological history, an equally complex geology, and many mineral resources. There are lot's of opportunities here for a young geologist. There are, however, significant geopolitical risks with off-shore oil and gas development in the South China Sea given China's evident wish to dominate the area.

## 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.