

February 3, 2025

News and notes

Before going on to discuss the geology and geopolitics of [Haiti](#), here are some news items I thought were interesting.

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.

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](#): new upload available, [Basic Hydrogeology – An Introduction to the Fundamentals of Groundwater Science](#).
- Free Groundwater Modeling Course – [HydroGeoCenter](#).
- From Western Australia: [Carbonatite, lamprophyre and host rocks in the northern Aileron Province](#).

Geopolitics

- [Canada announces \\$155B tariff package in response to unjustified U.S. tariffs](#); related: [Why Canadian oil is so important to the United States](#).
- Resetting the rules: [How two former employees are driving Mali's hardball talks with Barrick](#).
- From the Visual Capitalist: [Charted: The Current State of the World's Nuclear Arsenal](#).
- [How China's Rare Earth Minerals End Up in Russia's Advanced Weaponry](#).
- [EU considering return to Russian gas – FT](#).
- [A Third Congo War](#).
- [Ray Dalio Warns Of Brutal AI War Between U.S. And China: 'No Country Can Lose'](#).
- [China funnelled \\$57 billion to control critical mineral supply chain](#).
- From Nomi Prins: [The AI – Energy Revolution: Fueled by the White House and Rare Earth Metals](#).
- Halford Mackinder and geopolitics: [Russia and China Are Facts of Life, by Robert Gore](#).
- [Denmark Changes Tune, Allows Russia's Gazprom To Do Work On Damaged NS2 Pipeline](#).

- [Greenland Not For Sale, But Open to U.S. Partnership](#); related stories [here](#), [here](#), [here](#), and [here](#).
- [The Resource Curse: How Ukraine Lost Trillions-Worth of West-Coveted Natural Wealth](#).

Research and News

- Geophysics: [Spatial distribution of the Mohorövicic discontinuity beneath northeastern Mexico based on receiver functions from acceleration and velocity record](#).
- [Oxygen Driving Hydrogen Into the Inner Core: Implications for the Earth's Core Composition](#).
- [In-situ observation of nanoscale transformations in dehydrating lizardite](#).
- [A simple method to create mineral mounts in thin section for teaching optical mineralogy](#).
- Turbidite flows: [Earthquake-triggered submarine canyon flushing transfers young terrestrial and marine organic carbon into the deep sea](#).
- [Upheaval Dome: Utah's 'belly button' that has divided scientists since its discovery](#).
- [Formation of Structurally Bound Carbonate in Silicate Melts on the Top of the Mantle Transition Zone](#).
- [Temporal and spatial evolution of explosive silicic peralkaline eruptions at the Olkaria Volcanic Complex and Longonot volcano in the Southern Kenya Rift](#).
- [Palaeomagnetic study of the Lorne Plateau Lavas, Scottish Caledonides: two emplacement episodes of normal polarity during the Pridoli-Lochkovian and a precisely dated Siluro-Devonian pole position](#).
- Melting rock for fun and science: [Flow- and Fracture-Driven Bubble Throat Growth Rates and Dynamic Permeability in Crystallizing Magma](#).
- [Orogenic lamproites from Italy formed by mixing of highly potassic and shoshonitic melts](#).
- [Origin of Ultrapotassic, Ultracalcic, Ultrabasic SiO₂-Undersaturated Magmas: The Case Study of the Pleistocene Cupaello Kamafugite Monogenetic Volcano, Central Italy](#).
- Really neat video: [Full Mediterranean desiccation-and-reflooding](#); Messinian / Zanclean.

Bad Science

- [Weekend reads: 'Invasion of the journal snatchers'; our paper mill investigation; highly cited, highly retracted](#).
- [Sage journal retracts another 400 papers](#).
- ['Stamp out paper mills' - science sleuths on how to fight fake research](#).

Sedimentology

- [Latest Barremian – early Aptian chronostratigraphy and sedimentary evolution of the northwestern Maestrat Basin.](#)
- [February 2025 issue of Sedimentology.](#)
- [Calculating Sedimentation Rates of Oxic Pelagic Clays Using Core Top Thorium Isotopes.](#)

Planetary Geology

- Mars: [These Bizarre Features on Mars are Caused by Carbon Dioxide Geysers](#); Science Alert summary [here](#).
- Lunar geology: [Recent Tectonic Deformation of the Lunar Farside Mare and South Pole-Aitken Basin](#); Phys.org summary [here](#).

Plate Tectonics

- [Paleogene kinematics of the central Catalan Coastal Ranges: temporal constraints from magneto-chronology and provenance analysis in synorogenic deposits in the SE margin of the Ebro Basin \(NE Spain\).](#)
- [Could rear-arc volcanism be driven by mantle instability?](#)
- [Determination of present-day crustal deformation along the Kenyan rift system using InSAR.](#)
- [Complexity of near-surface deformation and subsurface structure of the Chihshang creeping fault-line scarp, eastern Taiwan: insights from integration of geological and geophysical data.](#)

Paleontology

- [Out of Pikermi: The Occurrence of Bohlinia in the Late Miocene of the Central Mediterranean.](#)
- Turtles: [Bioerosional marks in the shells of two sea turtle taxa from the middle Eocene of Belgium.](#)
- [A new Archaeopteryx from the lower Tithonian Mörnsheim Formation at Mühlheim \(Late Jurassic\).](#)
- [Paleontologists Discover Footprints of Large Hadrosaurid Dinosaurs in Gobi Desert.](#)
- [Intricate microbial structures: The enigma of reticulated filaments.](#)
- [A long-handed new ornithomimid dinosaur from the Campanian \(Upper Cretaceous\) Cerro del Pueblo Formation, Coahuila, Mexico.](#)
- [The lost jackals from the Brazilian caves: insights on the taxonomy and paleoecology of Pleistocene bush dog *Speothos pacivorus* \(Carnivora, Canidae\).](#)
- Dendrochronology research: [Blue rings in trees and shrubs as indicators of early and late summer cooling events at the northern treeline](#); Study finds summary [here](#).

- [Evidence for Endogenous Collagen in *Edmontosaurus* Fossil Bone](#); Phys.org summary [here](#).
- [Simulating 500 million years of evolution with a language model](#); Popular Mechanics summary [here](#).

Mining and Energy

- Ore deposit geology: [Investigating the Structure of Detachment Faulting and Its Role in Ore Formation: The Kallintiri Detachment System and the Associated Polymetallic Ore Deposit \(Rhodope, NE Greece\)](#).
- [Value of U.S. production of minerals edged up in 2024](#).
- Deliberately abandoned miners: [South Africa has abandoned civilisation](#).
- Ore deposit geology: [Browns Creek mine, Blayney, NSW—a transtensional strike-slip fault-hosted Au–Cu skarn deposit](#).
- Petroleum prospecting: [Machine learning and AVO class II workflow for hydrocarbon prospectivity in the Messinian offshore Nile Delta Egypt](#).
- [UK losing wind gamble A warning for world](#).
- [28,000 Years of Power: Diamond Batteries That Generate Energy from Nuclear Waste Could Revive the Entire Industry](#).
- [Liberia anticipates new minerals discovery will draw \\$3 billion](#).
- [Perovskite solar cells: Japan reveals the world’s first solar super-panel: Capable of generating more power than 20 nuclear reactors](#).
- [Vale shares shed \\$17 billion as iron ore slump foils turnaround](#).
- [US’s wind and solar will generate more power than coal in 2024](#).
- [Timmins, Ont., gold mine sold to Canadian mineral exploration company](#).
- [Newly released stats show Tesla becoming a global powerhouse in an unexpected industry: 'Will play a huge role in our future'](#).

Environmental Geology and Hydrogeology

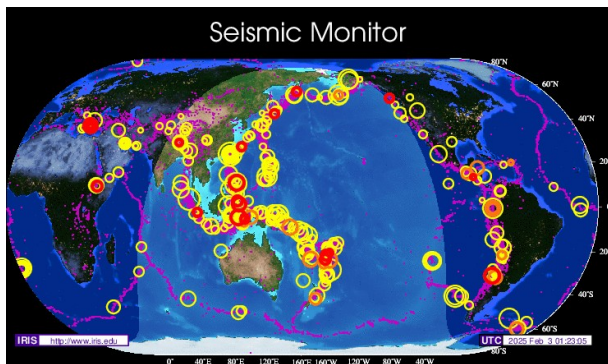
- [Pumping sewage into the sea has long been a Sydney thing – and even \\$32bn won’t change that](#);
- And in the U.K.: [Water industry strategies to manufacture doubt and deflect blame for sewage pollution in England](#); Phys.org summary [here](#).
- From the Kentucky Geological Survey: [Radon](#).
- Nuclear waste disposal: [The role of bentonite in the repository concepts for radioactive waste in Germany: a review](#).

- [PFAS biodegradation by *Labrys portucalensis* F11: Evidence of chain shortening and identification of metabolites of PFOS, 6:2 FTS, and 5:3 FTCA](#); SciTechDaily summary [here](#).

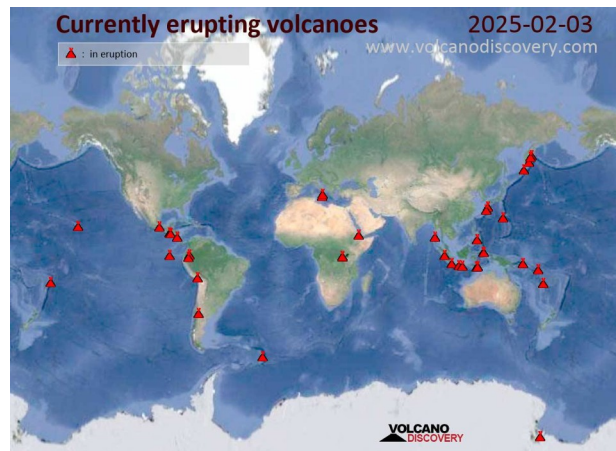
Glaciers and Climate Change

- [The mystery behind an unusual blood waterfall from a glacier.](#)
- From Ugo Bardi: [Gaia is a Capricious Deity: What Conditions for an Ice Age?](#)
- [Double Reflections in Polarized Radar Data Reveal Ice Fabric in the North East Greenland Ice Stream.](#)
- [Ice core samples show West Antarctic ice sheet survived the last interglacial event](#); links to scientific papers [here](#) and [here](#).
- [A 300 kyr record of past hydroclimate change from alluvial fans in the southern Central Andes.](#)

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

- United States Geological Survey (USGS) Volcano Watch: [Announcing 2025 Volcano Awareness Month Art & Poetry Contest Winners.](#)
- USGS Yellowstone Volcano Observatory: [The science of the “X-ray vision” that reveals the magma beneath Yellowstone.](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- Livestream of [Kilauea Volcano, Hawaii \(Halema‘uma‘u crater\).](#)
- Neat video from the BBC: [Glowing lava patterns form on erupting Hawaii volcano.](#)

Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\).](#)

- [Earthquakes Monitoring Live Worldwide](#).
- [Earthquake Damage Susceptibility Analysis in Barapani Shear Zone Using InSAR, Geological, and Geophysical Data](#).
- Research: [Thermal runaway and frictional melting in MORB-composition garnetite at high pressure: Implications for remote triggering of earthquakes in the transition zone](#).
- More research: [Geometric barriers impacted rupture processes and stress releases of the 2023 Kahramanmaraş, Türkiye, earthquake doublet](#).
- [3.8 magnitude earthquake rattles Maine to Boston – and should serve as ‘conversation starter for preparedness,’ expert says](#).

Fires and Landslides

- [Winter Storm Essentially Extinguishes Greater Los Angeles Wildfires](#).
- Los Angeles disaster cycle, first the fires, then the floods, then the landslides: [Flash Flood Warning Issued for Parts of Malibu, Palisades](#).

Upcoming Events

- From the U.K. Mining Remediation Authority: February 4, 5, & 6 [Webinars to shine a light on low-carbon heating from mine water](#)
- [Williston Basin Petroleum Conference, April 28-30, Regina Saskatchewan](#).
- European Geosciences Union: [EGU General Assembly 2025, Vienna, Austria & Online 27 April–2 May 2025](#).
- [The USGS David A. Johnston Cascades Volcano Observatory will be hosting an Open House for the public on May 10, 2025!](#)
- [Sedimentary Geology and the Energy Transition Conference, June 2-5, 2025 – Salt Lake City, UT USA](#).
- [Geoscience Beyond Borders, GAC-MAC-IAH-CNC 2025 Ottawa, Ontario, May 11-14, 2025](#).
- [Society for Sedimentary Geology conference, Mountjoy IV – August 10-13, 2025, in Montreal, Canada](#).
- [Copper to the World Conference, Tuesday 26 – Wednesday 27 August 2025](#), in Adelaide, Australia; report on 2024 conference [here](#).
- 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](#).

February 3, 2025

Geology and the Fate of Societies – Haiti



Figure 1a – Haiti

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



Figure 1b – Location of Haiti

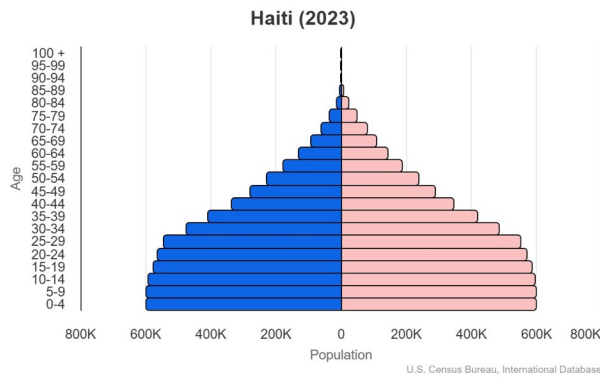
Credit: [CIA World Factbook](#), public domain

Located on the [Island of Hispaniola](#), between the [Caribbean Sea](#) and the [Atlantic Ocean](#) is the [Republic of Haiti](#). Its only land border is with the [Dominican Republic](#), to the east. To the west, across the [Windward Passage](#) is [Cuba](#); to the southwest, in the Caribbean, is [Jamaica](#); and to the north, in the Atlantic, are [The Bahamas](#).

The government of Haiti is best described as chaotic, with no elected government. It is on its way to [becoming a failed state](#), if it isn't already [there](#). Officially a unitary [semi-presidential republic](#), it is currently ruled (sort of) by an [interim government](#). The [Transitional Presidential Council](#) consists of [Leslie Voltaire](#) (Chairman), [Edgard Leblanc Fils](#), [Fritz Jean](#), [Laurent St Cyr](#), [Emmanuel Vertilaire](#), [Smith Augustin](#), Louis Gérald Gilles, with [Alix Didier Fils-Aimé](#) as acting Prime Minister. The capital and largest city is [Port-au-Prince](#) (pop. 2,618,894 in the metropolitan area).

According to the [Central Intelligence Agency](#) (CIA) [World Factbook on Haiti](#), the country has a total area of 27,750 square kilometres (km²) of which 27,560 km² is land and 190 km² is water. Also according to the World Factbook, 11,753,943 people live in Haiti, 59.7% of whom live in urban areas. Of those ~11.8 million people, 95% are of [African descent](#) and the remaining 5% are [mixed race](#) or of [European descent](#). The official language of Haiti are [French](#) and [Haitian Creole](#). In terms of religion, 55% are [Catholics](#); 29% are [Protestant Christians](#); 2.1% practice [Voodoo](#), although many nominal Christians incorporate some elements of Voodoo culture into their spiritual world. The remaining 14.6% are either something other (4.6%) or have no religion (10%). In terms of education, 61.7% of the total population aged 15 and over can read and write.

Economically, the per capita [GDP](#) is \$3,185; the [Gini](#) coefficient is 41, indicating medium inequality; and the [Human Development Index](#) is medium at 0.552. [The top imports of Haiti are Refined Petroleum \(\\$525M\), Rice \(\\$256M\), Other Cotton Fabrics \(\\$142M\), Light Rubberized Knitted Fabric \(\\$133M\), and Palm Oil \(\\$126M\), importing mostly from United States \(\\$1.2B\) and the top exports of Haiti are Knit T-shirts \(\\$529M\), Knit Sweaters \(\\$220M\), Knit Women's Suits \(\\$107M\), Non-Knit Men's Suits \(\\$66.2M\), and Non-Knit Men's Shirts \(\\$43.3M\), exporting mostly to United States \(\\$1.08B\).](#)



The demographic profile of Haiti shows a fairly young population where the average age is 25 and around 30% of the population is under the age of 15. The total fertility rate is 2.49 births per woman and the annual growth rate is 1.23%. Also significant is that 1.6 /1,000 people are migrating from the country each year, mostly to escape the chaotic political and economic situation. Life expectancy is 64.8 years.

Figure 2 – Demographic Profile, Haiti
 Credit: [U.S. Census Bureau, International Database, public domain](#)

Geology

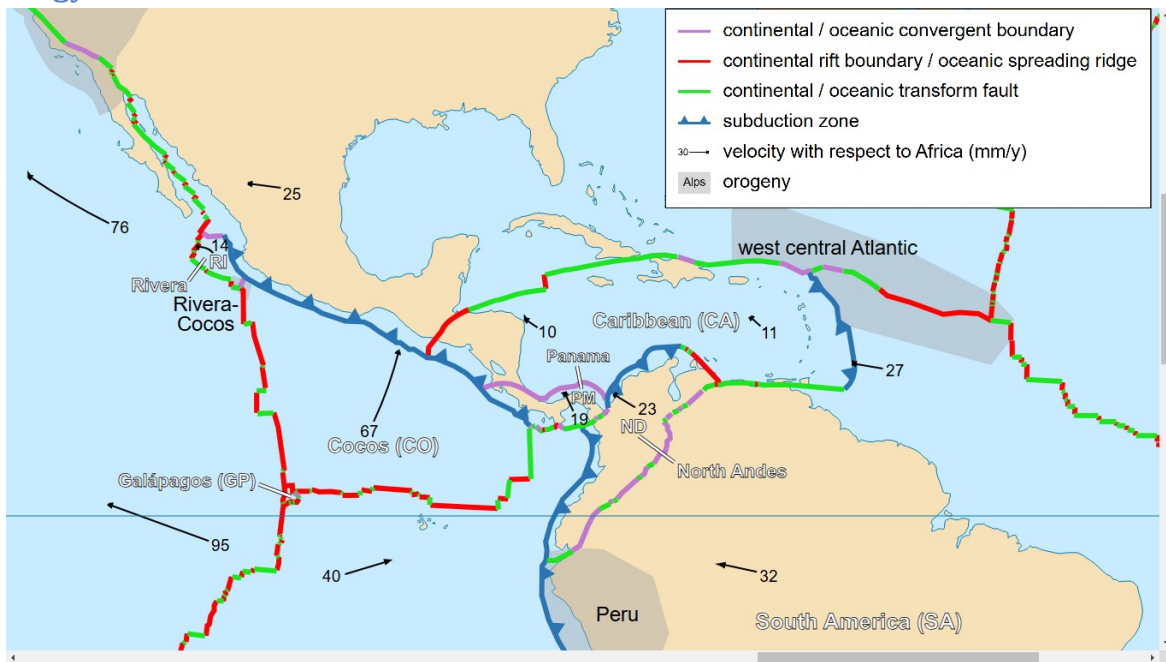
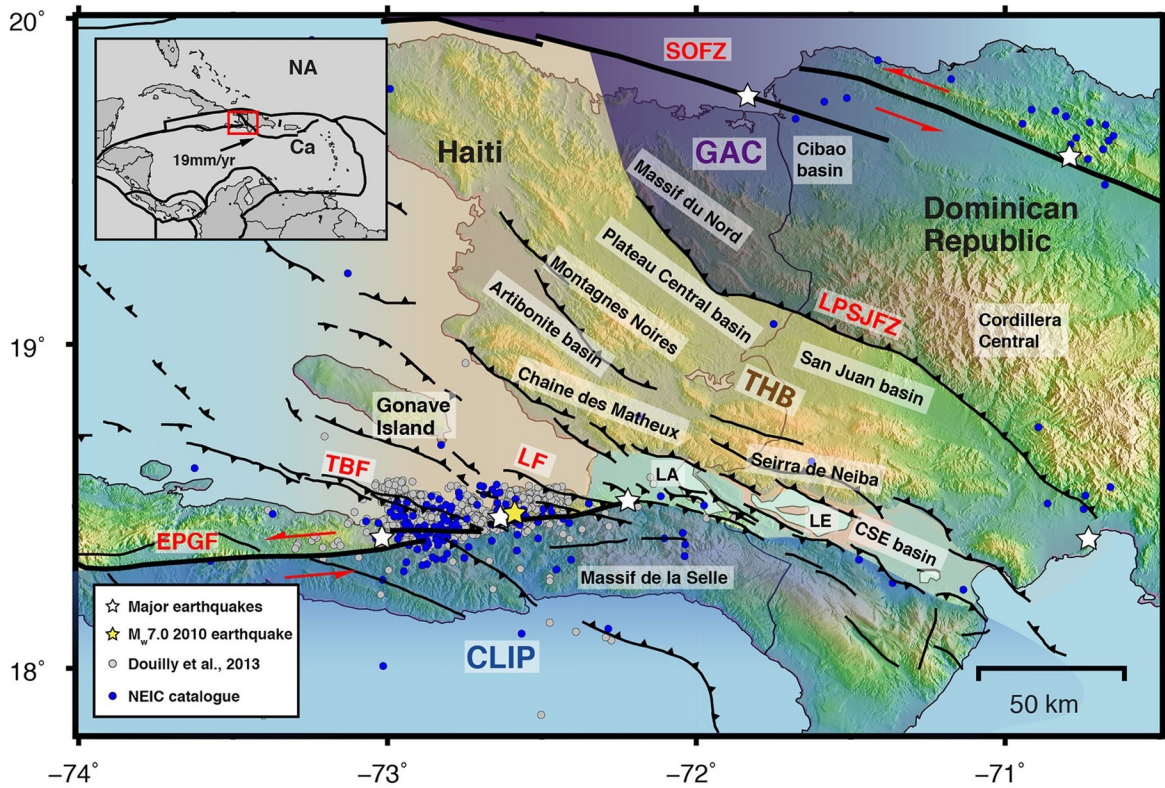


Figure 3 – Tectonic Framework of the Caribbean
 Credit: [Eric Gaba \(Sting\); Creative Commons Attribution-Share Alike 2.5 Generic license](#)

The [geology of Haiti](#) is best understood by first looking at the tectonic framework of the Caribbean region, as in Figure 3. Haiti sits on the [Caribbean Plate](#) which is sandwiched between the [North American Plate](#), to the north; the [Nazca Plate](#) and the [Cocos Plate](#), to the southwest; and the [North Andes](#)

[Plate](#) and [South American Plate](#), to the south and east. Immediately to the north of Haiti is an [oceanic transform fault](#).



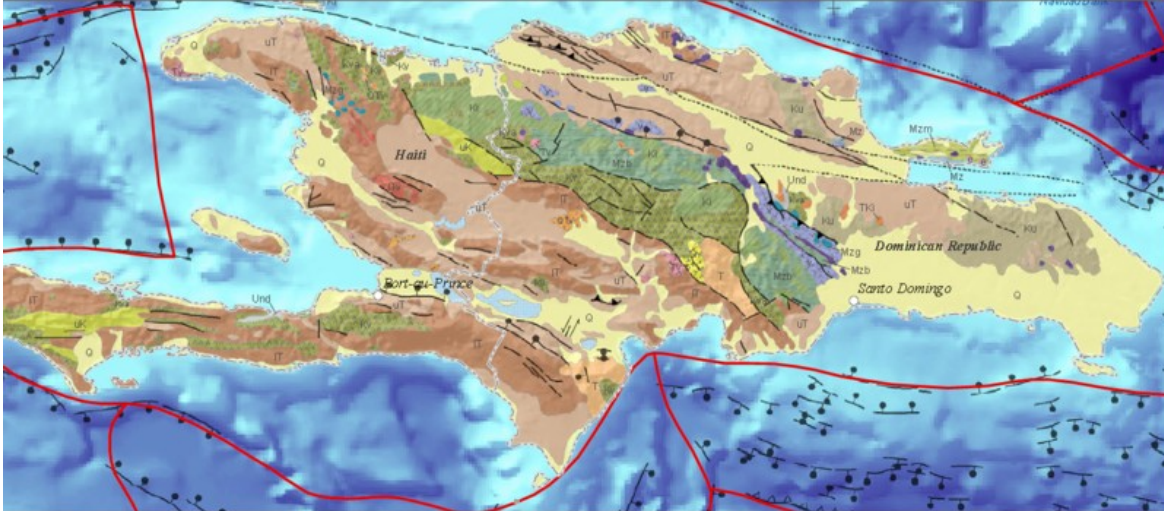
Regional map in top left shows the relative motion of the Caribbean plate (Ca) and North American plate (NA). Circles show previous seismicity catalogs for Haiti: blue = Douilly et al. (2013); gray = National Earthquake Information Centre. Stars represent major historic earthquakes (Bakun et al., 2012; Prentice et al., 2010). Tectonic domains after Corbeau, Rolandone, et al. (2017): CLIP = Caribbean Large Igneous Province (blue); THB = Trans-Haiti deformation belt (brown); GAC = Greater Antilles Arc (purple). CSE = Cul-de-Sac-Enriquillo basin. Black lines show the surface trace of major faults: EPGF = Enriquillo-Plantain Garden fault zone; SOFZ = Septentrional-Oriente fault zone; LPSJFZ = Los Posos-San Juan fault zone; TBF = Trois Baies Fault system; LA = Lake Azuei, LE = Lake Enriquillo.

Figure 4 – Tectonic map of Hispaniola (Haiti and Dominican Republic)

Credit: [Figure 1 in Possee et al, 2019](#)

As shown in Figure 4, the major tectonic domains of Haiti are:

- The [Caribbean Large Igneous Province](#);
- The [Trans-Haiti deformation belt](#);
- The [Greater Antilles Arc](#); and the
- [Cul-de-Sac-Enriquillo Basin](#).



Legend

Mzb are Mesozoic amphibolites and associated metasedimentary rocks, Ki are Cretaceous plutons, Kv are Cretaceous volcanic rocks, uK are Upper Cretaceous marine strata, Ku are Cretaceous sedimentary and volcanic rocks, K are Cretaceous marine strata, IT are Eocene and/or Paleocene marine strata, uT are Post-Eocene marine strata, T are Tertiary marine strata, V are volcanic rocks, and Q are Quaternary alluvium

Figure 5 – Geologic Map of Hispaniola

Credit: Extracted from [French & Schenk, 2004](#), **public domain**

As shown in Figure 5, the major lithologic units of Haiti are, from youngest to oldest to:

- [Quaternary](#) aged [alluvium](#);
- Various aged [volcanic rocks](#);
- [Neogene](#) and [Paleogene](#) (Tertiary) aged marine strata;
- Post-[Eocene](#) marine strata;
- Eocene and/or [Paleocene](#) marine strata;
- [Cretaceous](#) marine strata;
- Cretaceous [sedimentary](#) and volcanic rocks;
- [Upper Cretaceous](#) marine strata;
- Cretaceous volcanic rock;
- Cretaceous [plutons](#); and
- [Mesozoic](#) aged [amphibolites](#) and associated [metasedimentary](#) rocks.

Resources

Agriculture



Figure 6 – A table of fruit at Bas Boan, Haiti.

Credit: [Ben Edwards, USAID](#), public domain

[Agriculture](#) employs about 2/3 of the labour for and accounts for 1/4 of the GDP. According to the CIA World Factbook, 66.4% of the land area is used for agriculture (38.5% arable land, 10.2% permanent crops, 17.7% permanent pasture). 30% of the remainder has other use, and forest covers only 3.6%. Much of the farming is for [subsistence agriculture](#). The main crops grown in Haiti are [sugarcane](#), [cassava](#), [mangoes](#), [guavas](#), [plantains](#), [bananas](#), [maize](#), [avocados](#), and [rice](#), together with other tropical fruits and vegetables. Yields of all crops in Haiti have been declining due to [soil erosion](#) and general social chaos.

Livestock raised in Haiti include [goats](#), [cattle](#), [pigs](#) and [poultry](#). An interesting tale is the destruction of the [indigenous swine breed](#) during the 1970's in an effort to limit swine flu.

Production statistics for Haiti from the [United Nations Food and Agriculture Organization](#) (FAO) can be found [here](#). Also, the FAO indicates that [82.8% of the population](#) suffers from moderate or severe food insecurity (2021-2023). The [Global Information and Early Warning System site for Haiti](#) from the FAO indicates that 5.4 million people in Haiti are acutely food insecure (2024).

There is no commercial fishing industry in Haiti. The [artisanal fishery](#) captures fish for local consumption and harvests a wide variety of species such as [sardines](#), [Bonito](#), [Marlin](#), [Swordfish](#), [Dorado](#), [Wahoo](#), [Sailfish](#), [Mackerel](#), [Snapper](#) and [various species of tuna](#). There are [attempts to improve the fishery in Haiti](#). There are also [initiatives](#) to start fish-farming operations in Haiti.

There is no significant forestry industry in Haiti. Trees are harvested for firewood and charcoal. Haiti suffers from severe [deforestation](#). Someday, someone will likely cut down the last tree to cook dinner.

Mineral Resources



Figure 7 – Rock Outcrop at Dessalines

Credit: André Lachance, [Creative Commons Attribution-Share Alike 3.0 Unported](#) license

The [most recent USGS Minerals Yearbook](#) and [production tables](#) does not list any significant mineral production for Haiti, this is undoubtedly do to the political chaos in the country. Also, Haiti does not produce any petroleum and [imports all their petroleum requirements](#).

[The Diggings](#) website indicates that there are 61 identified mines in Haiti in the following locations:

- [Lartibonite](#) (27 Total Mines)
- [Nord](#) (8 Total Mines)
- [Nord-Est](#) (7 Total Mines)
- [Ouest](#) (7 Total Mines)
- [Sud-Est](#) (4 Total Mines)

The Diggings site lists the major mineral commodities from Haiti as [gold](#), [copper](#), and [manganese](#).

Figure 8 links to an interactive mineral occurrence map for Haiti.

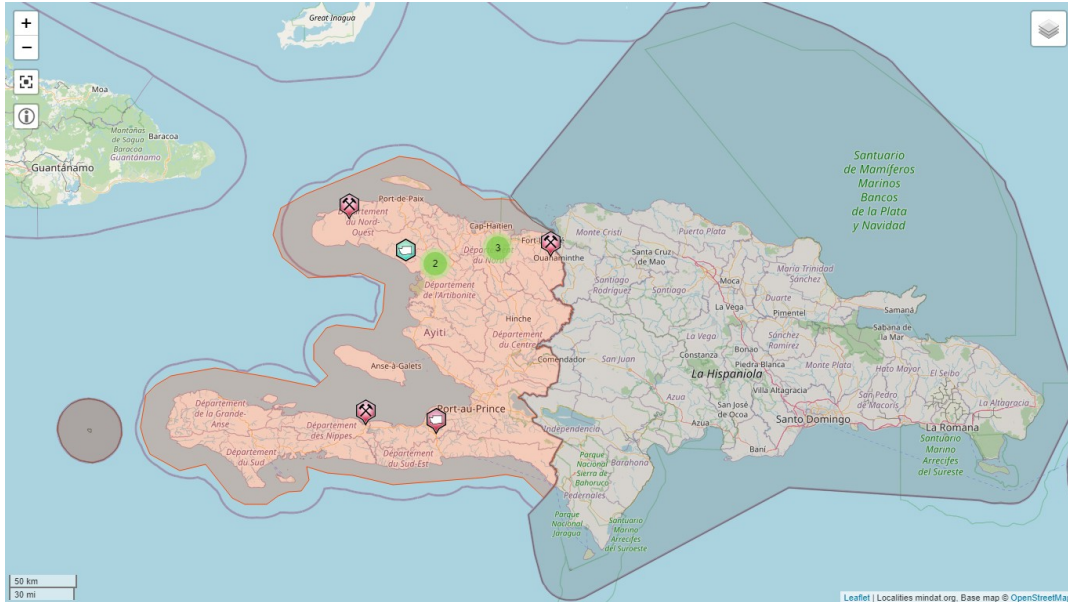
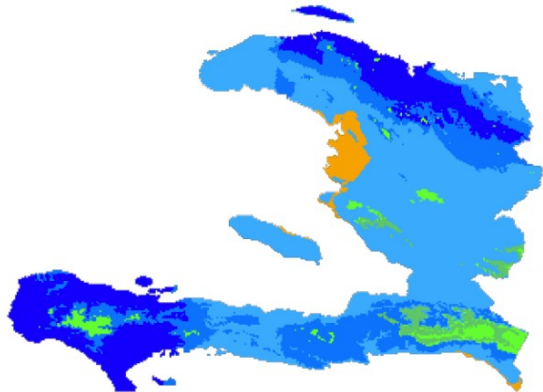


Figure 8 - Interactive Mineral Occurrence Map for Haiti
 Credit: ©Mindat.com

Climate

Köppen climate types of Haiti



Köppen climate type

■ Af (Rainforest)	■ Am (Monsoon)	■ BSh (Hot semi-arid)	■ Cw (Subtropical highland)	■ Cfb (Oceanic)
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*Isotherm used to separate temperate (C) and continental (D) climates is -3°C
 Data source: Climate types calculated from data from WorldClim.org

The World Factbook describes the climate of Haiti as tropical and semiarid where mountains in east cut off trade winds.

The main climate types in Haiti are:

- Rainforest (Af),
- Monsoon (Am),
- Savanna (Aw),
- Hot, semi arid (Bsh),
- Subtropical highland (Cwb), and
- Oceanic (Cfb).

Figure 9 – Köppen Climate Types, Haiti
 Credit: Adam Peterson, Creative Commons Attribution-Share Alike 4.0 International license

Usually at this point I discuss the desirability of a country for travel. My advice for Haiti is: don't go, the people who live there are trying to get out for a reason. Check out the travel advisories [here](#) and [here](#).

History and Geopolitics

An Unfortunate History



Figure 10 – Haitians Defeat French Forces

Credit: [January Suchodolski \(1797-1875\)](#), public domain

Rather than go into detail in the [History of Haiti](#), I will list the main events in Haitian history.

- [Pre-Columbian Haiti \(before 1492\)](#);
- Spanish rule under the [Captaincy General of Santo Domingo \(1492–1625\)](#) including the [genocide of the Taíno](#);
- French rule as [Saint-Domingue \(1625–1804\)](#) which ended with the Haitian Revolution;
- [First Empire of Haiti \(1804–1806\)](#) including the [1804 Haiti massacre](#) and the [Siege of Santo Domingo](#);
- (1806–1820) The division of Haiti into North Haiti (see [State of Haiti](#) and the [Kingdom of Haiti](#)) and South Haiti (see the [First Republic of Haiti](#));
- The [Republic of Haiti \(1820–1849\)](#) including the [Unification of Hispaniola](#);
- The [Second Empire of Haiti \(1849–1859\)](#) including the [Haitian-Dominican Wars](#);
- The [Republic of Haiti \(1859–1957\)](#) which culminated in the [United States occupation of Haiti](#);

- The rule of the [Duvalier dynasty](#) ([Papa Doc](#) and [Baby Doc Duvalier](#), 1957–1986) which led to a successful revolt by an [Anti-Duvalier protest movement](#);
- [Republic of Haiti](#) (1986–present) which included such notable events as the [1991 Haitian coup d'état](#); [Operation Uphold Democracy](#); [2004 Haitian coup d'état](#); the [2010 Haiti earthquake](#); the [United Nations Stabilisation Mission in Haiti](#); the [Assassination of Jovenel Moïse](#); and the [2021 Haiti earthquake](#) that led to the present chaos.

The present chaos began in [2022](#) with [gang warfare](#) characterized by [massive clashes](#) between two rival gangs in [Cité Soleil](#), a suburb of Port-au-Prince. Soon thereafter, the government attempted to stabilize the situation and [received armoured fighting vehicles](#) from Canada and United States. On March 2, 2024 gangs [attacked two prisons](#) in Haiti, including the country's largest penitentiary, with the aim of freeing prisoners and, ultimately, overthrowing the government. A couple of days later, March 4, the gangs attacked the country's main airport and got into a major firefight with the police and the Haitian Army. On March 12, [Ariel Henry](#) agreed to resign as Acting Prime Minister, the resignation coming into effect when the current Transitional Presidential Council took over in April 2024.

Overall, a pretty sad history.

Geopolitics of Chaos

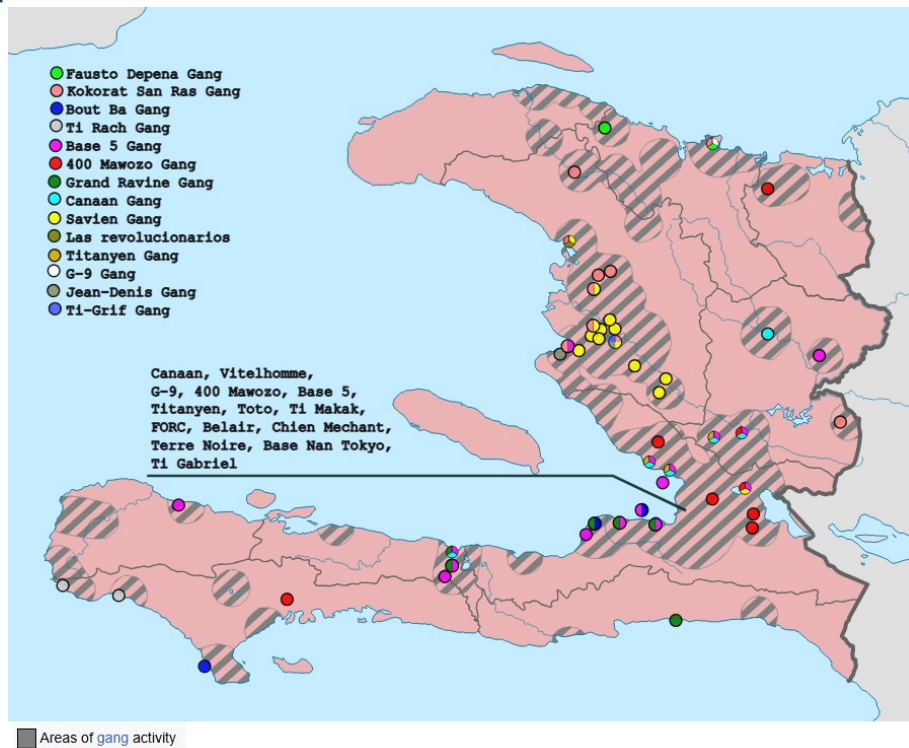


Figure 11 – Areas of gang activity between 2023–2024

Credit: [Clyde H. Mapping](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license

Haiti's biggest challenge is restoring law and order. This could prove difficult as the various gangs will be unlikely to want to give up the power and privileges they have acquired. Expect a bloody showdown between the central government and the gangs sometime in the near future.

In the meantime, [people are fleeing Haiti](#), for safety and a better life. This is the major geopolitical reality for Haiti, as a source of desperate people seeking refuge.

The refugees are not always welcome. The Dominican Republic has barred further Haitian migrants and is [expelling those that](#) are already in the country. In North America, although the [Canadian](#) and [American](#) governments have given refuge to Haitian refugees, the unfortunate refugees are not always welcome in those two countries, as in this [quote by the Governor of Florida](#) and this statement by the [Canadian immigration minister](#). During the recent American election, Haitian migrants [were accused of killing](#) pets for food or ritual sacrifice. True, or not, the claim outlines a [profound ambivalence towards Haitians](#). Many Haitian refugees don't help their own case by showing little or [no respect](#) for the countries giving them refuge i.e. by acting in criminal ways. It should be noted that these criminal behaviours are those that are necessary for survival in Haiti, but are unwelcome in more orderly societies.

It is hard to be optimistic about Haiti. The country is desperately poor and there is little hope for the kind of stability that could lead to a better life for its inhabitants. We can only await events to see how the situation plays out for the unfortunate inhabitants of Haiti.

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.