

February 10, 2025

## News and notes

Before going on to discuss the geology and geopolitics of [Honduras](#), 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](mailto: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](#) has many groundwater geology books for free download.
- 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>.

## Geopolitics

- [US 'will lose the next war very badly' – Musk](#).
- [Why Trump's assault on USAID could change US foreign policy forever](#); related, [here](#).
- [Border Czar "Expects" Kinetic Warfare Between US Troops & Mexican Drug Cartels](#).
- [Syrian Army Invades Lebanese Border Town, Major Clashes Reported](#).
- [DR Congo conflict advances as UN calls for peace](#); related: [More than 150 female inmates raped and burned to death during Goma jailbreak in DRC, UN says](#).
- [Confucius, DeepSeek, and Why China would win a war with the United States](#).
- [Trump set to reimpose 'maximum pressure' on Iran, aims to drive oil exports to zero](#); related: [Strait of Hormuz: the world's most important oil artery](#).
- [Goldman Sachs: U.S. Tariffs Will Have Short-Lived Limited Impact on Oil Prices](#).
- [Panama Backs Out of China's Silk Road Agreement](#).

## Research and News

- [New Evidence of High-Temperature, High-Pressure Processes at the Site of the 1908 Tunguska Event: Implications for Impact and Airburst Phenomena.](#)
- Playing in the dirt for science: [Morphosedimentary Response of Rivers Crossing Multiple Fault-Controlled Subsiding Areas: Field Evidence and Laboratory Experiments.](#)
- [Magnetic Characterization of Sediment Source-To-Sink Processes in the Bengal Fan Since 45 ka.](#)
- Bad science: [Weekend reads: Alzheimer's researcher resigns; bad stats in biology; ethical reasoning in open science.](#)
- [Modelling redox state via V-Sc-Ti-Yb partitioning in mantle derived melts.](#)
- [Thermochronology of the Western Alps \(Pelvoux Massif\) Reveals the Longterm Multiphase Tectonic History of the European Paleomargin.](#)
- [After damage by scientists, Inuit group closes off access to Earth's oldest rocks.](#)
- [Geochemistry, provenance, and tectonic setting of Paleoproterozoic metasedimentary and metavolcanic units of the Estonian Alutaguse region, eastern Fennoscandia.](#)
- Coastal geology: [A huge luxury home is about to fall into the sea and nobody knows what to do with it.](#)
- [Wind-driven hydrodynamic and depositional patterns in shallow lakes: An exploratory modelling approach based on an archetypal case of Lake Hulun.](#)
- [Role of microbial mats in the genesis of soft-sediment deformation structures in a siliciclastic environment.](#)
- Geophysics: [Spatial distribution of the Mohorövicic discontinuity beneath northeastern Mexico based on receiver functions from acceleration and velocity records.](#)
- [Photosynthetic fractionation of carbon: A biological driver for the Neoproterozoic Shuram carbon isotope excursion.](#)
- [GSA Today February 2025 Edition.](#)
- [New geological insights from legacy seismic sections: Decoding the Granada Basin \(Spain\).](#)
- [Exploring Continuous Seismic Data at an Industry Facility Using Unsupervised Machine Learning.](#)
- [The underground weathering of Toarcian black shales from SE France and its paleoenvironmental, taphonomical and biogeochemical consequences.](#)
- [Geochronology of the felsic rocks in Orijärvi, southern Finland – implications for stratigraphy.](#)

## Plate Tectonics

- [How Phase Transitions Impact Changes in Mantle Convection Style Throughout Earth's History: From Stalled Plumes to Surface Dynamics.](#)
- [An asymmetric Late Cretaceous back-arc basin south of Tibet?](#)
- [Lithospheric Thinning of the Northeastern Arabian Margin Revealed by Matrix-Free Teleseismic Traveltime Tomography.](#)
- [Crustal Structure of Northwestern Iran on the Basis of Regional Seismic Tomography Data.](#)
- [Heat flow in an active plate margin: New Zealand's crustal thermal regime from borehole temperatures and numerical modelling.](#)
- [Orogenic unroofing of the Taltson and Thelon orogens depicted through detrital zircon geochronology of the Sosan Group, Great Slave Lake Supergroup \(Northwest Territories, Canada\).](#)

## Paleontology

- [Age and palaeoenvironmental constraints on the earliest dinosaur-bearing strata of the Densuş-Ciula Formation \(Hateg Basin, Romania\): Evidence of their late Campanian-early Maastrichtian syntectonic deposition.](#)
- [Skin, scales, and cells in a Jurassic plesiosaur; New Scientist summary \[here\]\(#\).](#)
- [Extending the diversity of grasping spines in middle Cambrian stem-group Chaetognathifera.](#)
- [Valanginian and Hauterivian bochianitid ammonoids from the Rosa Blanca Formation of Colombia: Palaeobiogeographic implications.](#)
- [Accounting for sampling heterogeneity suggests a low paleolatitude origin for dinosaurs; SciTechDaily summary \[here\]\(#\).](#)

## Mining and Energy

- Deep sea mining: [Geochemistry of REE and Other Critical Elements in Deep-Sea Polymetallic Nodules from Interoceanmetal \(IOM\) Exploration Area in Eastern Part of Clarion–Clipperton Fracture Zone, NE Pacific.](#)
- Review in advance of publication: [Geology, Geochemistry and Formation of Supergene Mineral Deposits in Deeply Weathered Terrain](#); coming out in April 2025 for \$183.59 USD.
- Gas, gas, gas: [Canada's Alberta eyes Japan for new LNG deals amid US tariff threat, minister says](#); related: [Quebec open to rekindled GNL Québec gas facility project amid U.S. tariff threats.](#)
- [America's Electric Grid Is at Risk — And We Need Coal to Save It.](#)
- [A Pinch of Salt Boosts Aluminum Batteries.](#)

- I talked about this site [earlier](#) this year: [Guinea sees maximum Simandou output in second year of operation](#).
- [Largest fusion reactor ever built set to transform global energy production](#).
- [Gates, Bezos-backed KoBold expands lithium and nickel exploration to Namibia](#).
- [The U.S. Has No Viable Alternative to Canadian Crude](#).
- [Canadian Crude Becomes a Bargain for China as US Tariffs Bite](#).
- [Wind goes from 90.5% output in Saskatchewan last week to 0.05% in Alberta on Monday](#).
- [Eric Nuttall: Now is the time to unleash Canada's enormous resource potential](#).
- How to impoverish the U.K.: [Court Quashes Hopes for New Oil, Gas in UK's North Sea](#).
- Opportunities: [Emeralds, Rubies, Gold: Taliban Bets On Afghan Mines Worth Trillion Dollars](#).
- [Column: Nuclear revival puts uranium back in the critical spotlight](#).
- Even more ore deposit geology: [The mineralogical distribution of Ni in mantle rocks controls the fertility of magmatic Ni-sulfide systems](#).

## Ore Deposit Geology

- Copper deposit geology: [Copper deposit development potential on the Qinghai-Xizang Plateau in China based on the pressure-state-response framework](#).
- [Sulfide Textures and Ore Grades in Mineralized Carbonates Depend on Péclet and Damköhler Numbers](#).
- [Detailed characterisation of the fluids responsible for orogenic gold mineralisation at Imonga-Saramabila \(Maniema\) in the Karagwe-Ankole Belt, DR Congo](#).
- [Magmatic characteristics and oxygen fugacity variations in the Eocene Yulong porphyry copper belt](#).

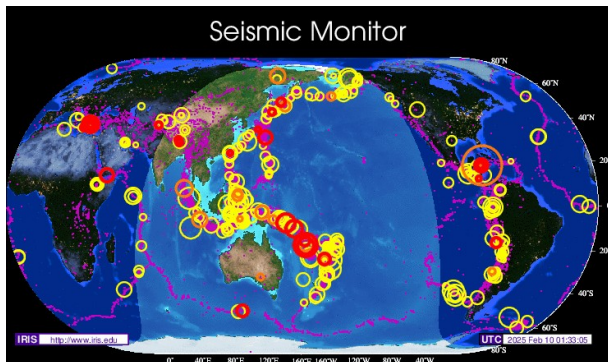
## Environmental Geology and Hydrogeology

- Geoenvironmental: [Report Reveals World's Fourth Largest Lake Now a Deadly Desert](#).
- ["Recycling" Makes Plastic Pollution Worse](#).
- [Clarkson University research team develops treatment for PFAS found in firefighting foam](#).
- [R.W. Gillham and the Role of Capillary Fringe Processes in Shallow Aquifer Behavior](#).
- Columbia: [Illegal Gold Mining Contaminated This Land. Trees and Plants Are Healing It](#).
- [Chemical and isotopic characterization of groundwater and thermal waters from the Campi Flegrei caldera \(southern Italy\)](#).

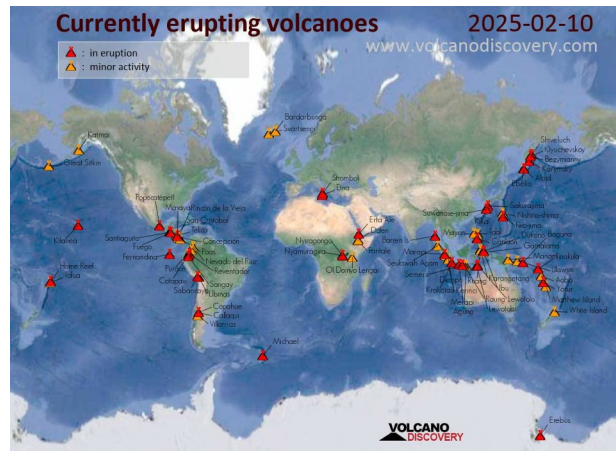
## Glaciers and Climate Change

- [Turbulent heat flux dynamics along the Dotson and Getz ice-shelf fronts \(Amundsen Sea, Antarctica\).](#)
- [Hidden cascades of seismic ice stream deformation](#); Phys.org summary [here](#).
- [N.J. Judge Tosses Climate Suit Against Oil Companies.](#)
- [Greenland ice sheet cracking more rapidly than ever, study shows.](#)

## Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

## Volcanoes

- United States Geological Survey (USGS) Volcano Watch: [An assembly of volcano scientists to gather in Hilo.](#)
- USGS Yellowstone Volcano Observatory: [Yellowstone National Park: Where geology is on display nearly everywhere!](#) Also, microbes in Yellowstone's hot springs: [Respiratory processes of early-evolved hyperthermophiles in sulfidic and low-oxygen geothermal microbial communities.](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- [Evidence of Magma Reservoirs Beneath Volcanoes in Northern Sulawesi and the Molucca Sea From Regional Earthquake Tomography.](#)
- [The Forgotten Volcano That Cooled the Planet and Turned the Sun Green.](#)

## Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\).](#)
- [Earthquakes Monitoring Live Worldwide.](#)

- Earthquake research: [Weak, frictionally unstable input sediments explain shallow seismogenesis at the north Sumatran subduction zone.](#)
- More earthquake research: [The 2023 Mw 7.8–7.7 Kahramanmaraş earthquakes were loosely slip-predictable.](#)
- Santorini:
  - [Week of tremors exposes dangers of Santorini's construction boom;](#)
  - [Update on the seismic swarm in Greece;](#)
  - [Hundreds of tourists flee Santorini after powerful earthquake warning;](#)
  - [Earthquake swarm beneath the Aegean Sea.](#)

### *Landslides*

- [Tools for Predicting Long Runout Landslides.](#)

### **Upcoming Events**

- February 20, 2025 in Delaware, Ohio: [Ohio Geological Society Colloquium, Remediation of Abandoned Underground Mine Working Beneath a Transportation Corridor: State Route 2 – Ottawa County, Ohio – Paul Painter \(ODOT\).](#)
- [Williston Basin Petroleum Conference, April 28-30, Regina Saskatchewan;](#) the last day to book rooms at the [hotel hosting the venue](#) is Wednesday, April 2, 2025
- 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 10, 2025

## Geology and the Fate of Societies – Honduras



**Figure 1a – Honduras**

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



**Figure 1b – Honduras**

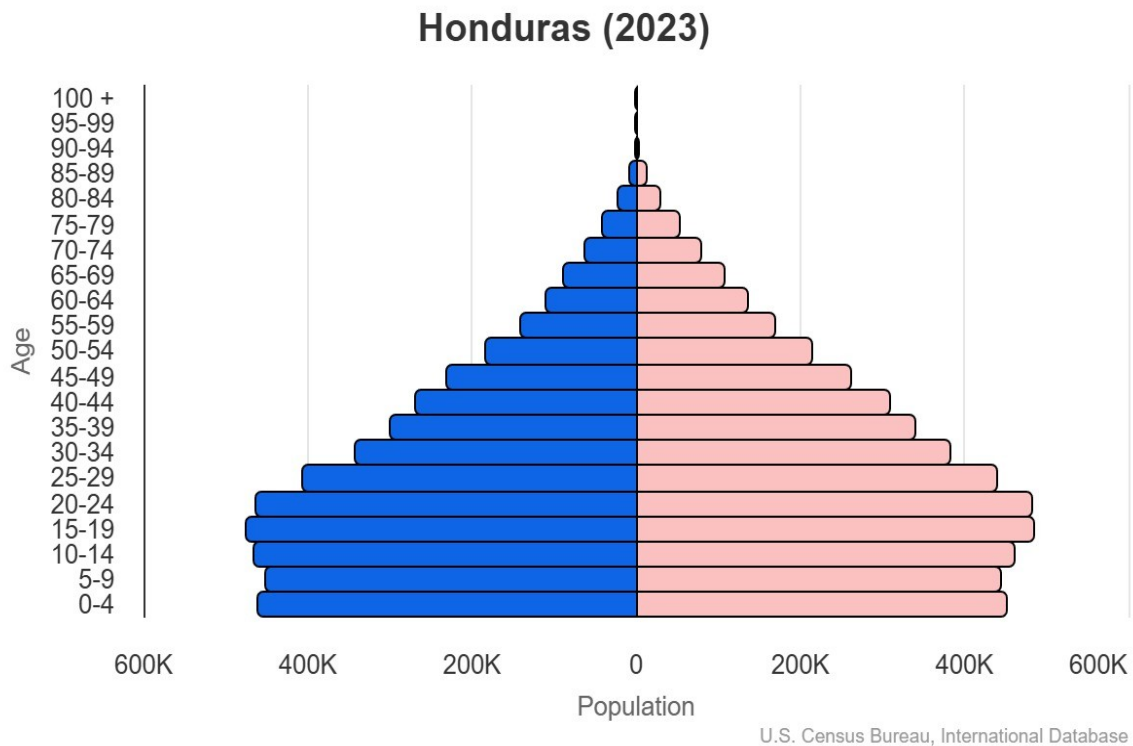
**Credit:** [CIA World Factbook](#), public domain

The [Republic of Honduras](#) is in [Central America](#); on its northern coast is the [Caribbean Sea](#) and, towards the northwest, is the [Gulf of Honduras](#). Across the Gulf of Honduras is [Belize](#) (formerly called [British Honduras](#)). West of Honduras is [Guatemala](#); to the southwest is [El Salvador](#); and to the southeast is [Nicaragua](#). Between El Salvador, Nicaragua; and Honduras is the [Gulf of Fonseca](#) which leads to the [Pacific Ocean](#).

The [Government of Honduras](#) is a unitary [presidential republic](#); the President is [Xiomara Castro](#) and there are two Vice Presidents: [Doris Gutiérrez](#) and [Renato Florentino](#). The country's legislature is the [National Congress](#) whose President (i.e. Speaker) is [Luis Redondo](#). The country's capital, and largest city is [Tegucigalpa](#) (pop. 1,326,460).

According to the [Central Intelligence Agency](#)'s (CIA) [World Factbook on Honduras](#), the country has a total area of 112,090 square kilometres (km<sup>2</sup>) of which 111,890 km<sup>2</sup> is land and 200 km<sup>2</sup> is water. Also according to the World Factbook, 9,529,188 people live in Honduras, 60.2% of whom live in urban areas. Of that approximately 9.5 million Hondurans, 90% are considered [Mestizo](#) (mixed [Indigenous](#) and [European](#)); 7% are considered Indigenous; 2% are of [African descent](#); and 1% are considered [White](#). [Spanish](#) is the official language, although various indigenous languages are also spoken. Most Hondurans are Christians: 55% are [Evangelical Protestants](#); 33.4% are [Roman Catholic](#); 10.1% have no religion; and 1.5% are unspecified. (Interestingly, Wikipedia gives a different breakdown: 46% Catholic and 39% Protestant.) In terms of education, 88.5% of the total population age 15 and over can read and write and most people attend school for ten years.

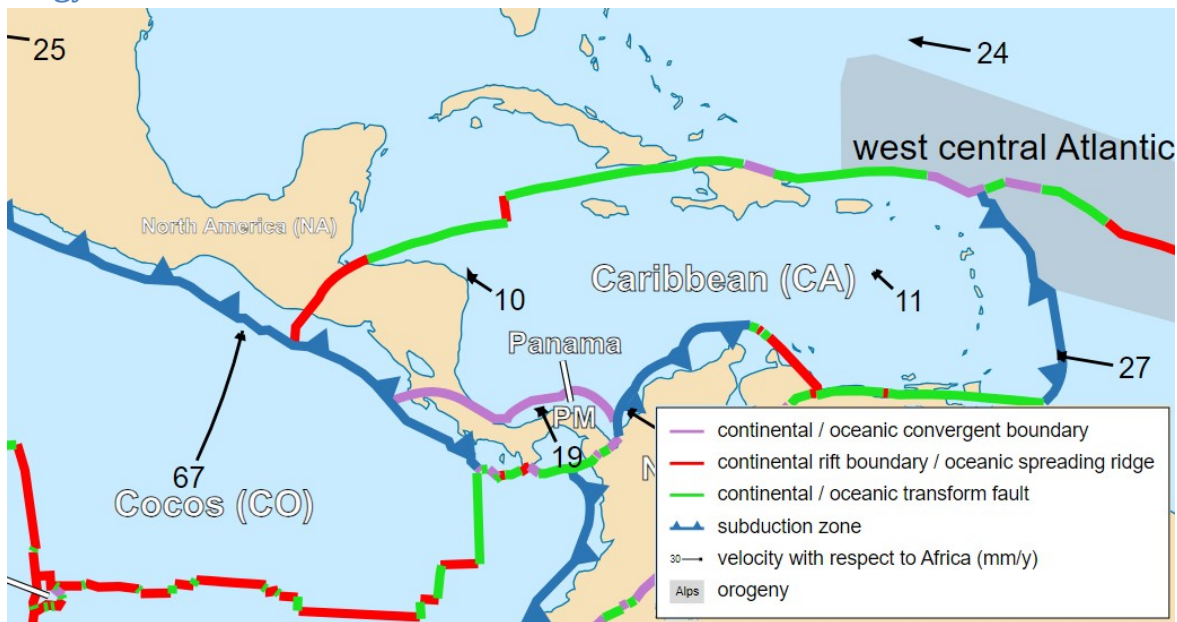
Economically, the per capita [GDP](#) is \$7,162, with remittances from expatriate Hondurans representing about a fifth of GDP. The [Gini](#) coefficient is 52.1 indicating high inequality and the [Human Development Index](#) is medium at 0.624. 73% of the country's population lives in poverty and 53% lives in extreme poverty. [The top exports of Honduras are Knit T-shirts \(\\$2.1B\), Knit Sweaters \(\\$1.57B\), Coffee \(\\$1.46B\), Insulated Wire \(\\$1.15B\), and Palm Oil \(\\$460M\), exporting mostly to United States \(\\$6.31B\), Nicaragua \(\\$1.02B\), El Salvador \(\\$940M\), Guatemala \(\\$596M\), and Germany \(\\$462M\). The top imports of Honduras are Refined Petroleum \(\\$2.19B\), Non-Retail Pure Cotton Yarn \(\\$910M\), Non-Retail Synthetic Staple Fibers Yarn \(\\$570M\), Knit T-shirts \(\\$419M\), and Petroleum Gas \(\\$345M\), importing mostly from United States \(\\$7.54B\), Guatemala \(\\$1.58B\), China \(\\$1.56B\), El Salvador \(\\$1.18B\), and Mexico \(\\$578M\).](#)



**Figure 3 – Demographic Profile of Honduras**  
**Credit: U.S. Census Bureau, International Database, public domain**

The [demographic profile of Honduras](#) shows a young country whose population is stabilizing. 65.7% of the population is between 15 and 64 years old and the median age is 25.7 years. The total fertility rate is 2.37 births per woman, just above replacement rate of 2.1, and the annual population growth rate is 1.28%. The life expectancy at birth for both sexes is 71.9 years. Affecting the population growth is a net migration rate of 1.7 migrants per 1,000 population leaving the country every year and a [high murder rate](#) of 35.09 per 100,000 people (compared to the world's rate of 6.1 per 100,000 people).

## Geology



**Figure 3 – Tectonic Framework of Central America**

**Credit: Eric Gaba (Sting), Creative Commons Attribution-Share Alike 2.5 Generic license**

Tectonically, [Honduras](#) sits on the [Caribbean Plate](#). To the northwest, near the border with Guatemala, is a [continental rift](#) and [transform boundary](#) with the [North American Plate](#). To the west is a [subduction zone](#) where the [Cocos Plate](#) is moving under the Caribbean Plate. To the southeast is a [convergent boundary](#) with the [Panama Plate](#).

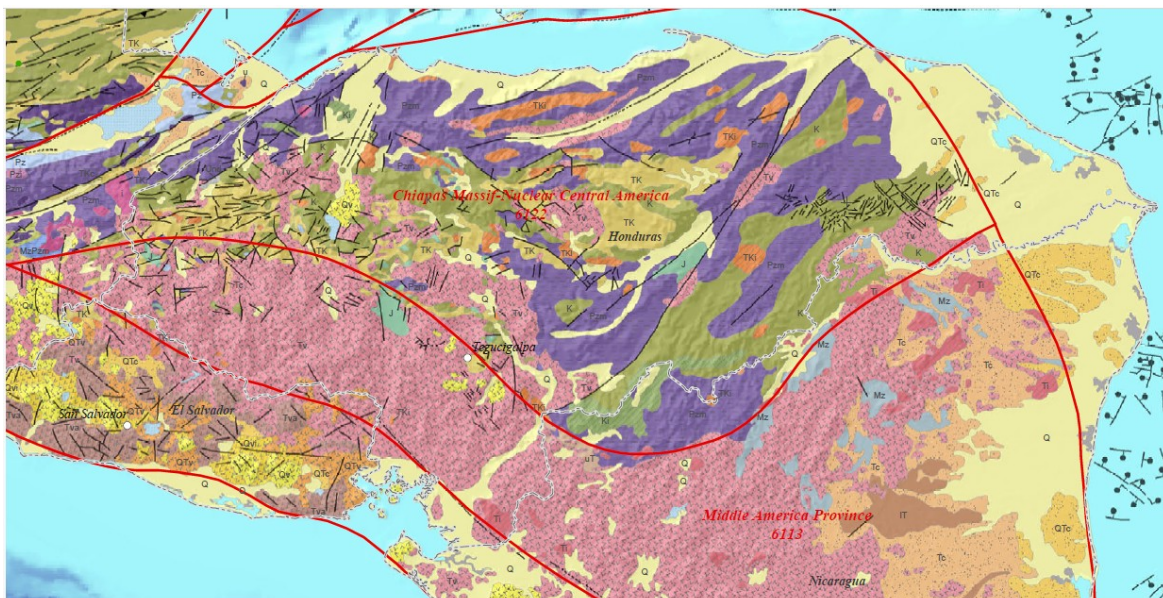
If you guessed that with this amount of tectonic activity, there should be a lot of volcanic activity, you'd be right. There are [nine active volcanoes](#) in Honduras and much of the bedrock is volcanic in origin.

There are two main geological provinces in Honduras, The [Chiapas Massif](#) and the [Middle America Province](#). The named geological formations of Honduras include:

- [Quaternary](#) aged [alluvium](#);
- Quaternary aged [volcanic rocks](#);
- The [Pleistocene](#) aged [Bragman's Bluff Formation](#), composed of [sandstone](#) with interbedded [shale](#);
- The [Miocene](#) aged [Gracias Formation](#), made up of alternating shale, [siltstone](#) and sandstone;
- [Neogene](#) and [Paleogene](#) aged volcanic rocks;
- Neogene, Paleogene and [Cretaceous](#) aged intrusive [plutons](#), mostly [intermediate](#) to [silicic](#);
- The Cretaceous aged [Valle de Ángeles Group](#), consisting of sandstone, [claystone](#), and [conglomerate](#);

- The [Early Cretaceous](#) aged [Yojoa Group](#) that includes the Atima [Limestone](#) and the thin-bedded, marly limestone of the Cantaranas Formation;
- The Cretaceous to [Middle Jurassic](#) aged [Honduras Group](#) composed of the conglomerate, sandstone and shale, units in the Honduras Group include and the Aqua Frias Formation; also in the Middle Jurassic, the sandstones and shales of the [El Plan Formation](#);
- The interbedded conglomerate, sandstone, and shale, with [intercalated](#) volcanic rocks of the early Mesozoic [Todos Santos Formation](#); and
- [Paleozoic](#) and [Precambrian](#) aged [metamorphic](#) rocks including the [Cacaguapa Schist](#), made up of [sericitic](#) and [graphitic schists](#), [phyllites](#), [gneisses](#), [quartzite](#), [marble](#), and thick [quartz](#) veins and lenses.

Figure 4, from the USGS, shows the various geologic units of Honduras



**LEGEND**

**Sedimentary Rocks**

- Q Quaternary alluvium
- QTc Quaternary and Tertiary continental deposits
- Tc Tertiary continental strata
- IT Eocene and/or Paleocene marine strata
- TK Tertiary and Cretaceous marine strata
- K Cretaceous marine strata
- J Jurassic marine and continental strata
- Mz Mesozoic sedimentary and volcanic rocks

**Metamorphic Rocks**

- Pzm Paleozoic and Precambrian metamorphic rocks, undivided
- Und Undetermined

**Volcanic Rocks**

- Qv Quaternary volcanic rocks
- Tv Tertiary volcanic rocks

**Intrusive Rocks**

- TKi Tertiary and Cretaceous plutons, mostly intermediate to silicic
- Ki Cretaceous plutons, mostly intermediate to silicic

Extracted from USGS Open-File Report 97-470-K  
<https://doi.org/10.3133/ofr97470K>

**Figure 4 – Geology of Honduras**  
 Extracted from USGS Open-File Report 97-470-K, public domain

## Resources

### Agriculture



**Figure 5 – Pineapple Field near La Masica**

**Credit: [madmack66](#), [Creative Commons Attribution 2.0 Generic](#) license**

According to the CIA World Factbook, 28.8% of the land in Honduras is used for agriculture. (9.1% arable land, 4% permanent crops, 15.7% permanent pasture). Of the rest, 45.3% is forest and 25.9% is something other. Also according to the CIA, the main crops grown in Honduras include: sugarcane, oil palm fruit, dairy products, corn (maize), bananas, coffee, cantaloupes/melons, chicken, oranges, beans. Agriculture accounts for 14% of the GDP of Honduras.



According to the [United States Department of Agriculture Foreign Agriculture Service](#) (USDA), the top commodities produced in Honduras, in terms of percentage of global production, are coffee (which accounted for 22% of the total Honduran export revenues), palm oil, sugar, beef, corn, rice, sorghum, and pork. Also according to the USDA, the United States [exported \\$1.31 billion](#) worth of corn, soybeans, pork, wheat, rice, dairy products, cotton, beer, and other agricultural products to Honduras in 2023.

**Figure 6 – A Cup of Honduran Coffee**

**Credit: [Solomon203](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license**

Production statistics from the [United Nations Food and Agriculture Organization](#) (FAO) can be found [here](#). The FAO also [indicates](#) that 56% of the population experiences moderate to severe food insecurity. The FAO Country Brief on Honduras can be found [here](#).



Fishing is another important source of food and export income for Honduras and includes artisanal fishing, commercial fishing and sports fishing for tourism.

[Artisanal or traditional fishing](#) in Honduras is an important food source in coastal areas. The main fisheries on the Caribbean coast are for Caribbean spiny lobster, [Panulirus argus](#), and queen conch, [Aliger gigas](#), while the main fishery on the Pacific coast targets western white shrimp, [Litopenaeus occidentalis](#) which breeds in the mangrove swamps (see below).

The commercial fishery is largely concentrated on harvesting shrimp, mostly for export to foreign markets. If you are interested in sports fishing, check out [Trip Advisor](#).

Statistics for fishery production from the FAO can be found [here](#).

**Figure 7 – Fishing Boats in Roatán, Honduras**

**Credit:** [Cory Doctorow](#), [Creative Commons Attribution-Share Alike 2.0 Generic](#) license

### Forestry



**Figure 8 – Forest Outside Tegucigalpa**

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

As noted above, 45.3% of the land in Honduras is covered with forest. The types of forest in Honduras include:

- [Tropical and subtropical moist broadleaf forests](#) which are further subdivided into the [Central American Atlantic moist forests](#) and the [Central American montane forests](#);
- [Tropical and subtropical dry broadleaf forests](#) including the [Central American dry forests](#);
- [Tropical and subtropical coniferous forests](#) such as the [Central American pine–oak forests](#) and the [Miskito pine forests](#); and
- [Mangroves](#); further subdivided into the [Gulf of Fonseca mangroves](#), the [Mosquitia–Nicaraguan Caribbean Coast mangroves](#), and the [Northern Honduras mangroves](#).

There are also timber [plantations, such as those for teak](#).

The [Wikipedia article](#) on the Honduran economy notes that the forestry industry has not been lived up to its potential and has often been hampered by corrupt practices. Production statistics for the Honduran forestry industry from the FAO can be found [here](#).

### *Mineral Resources*



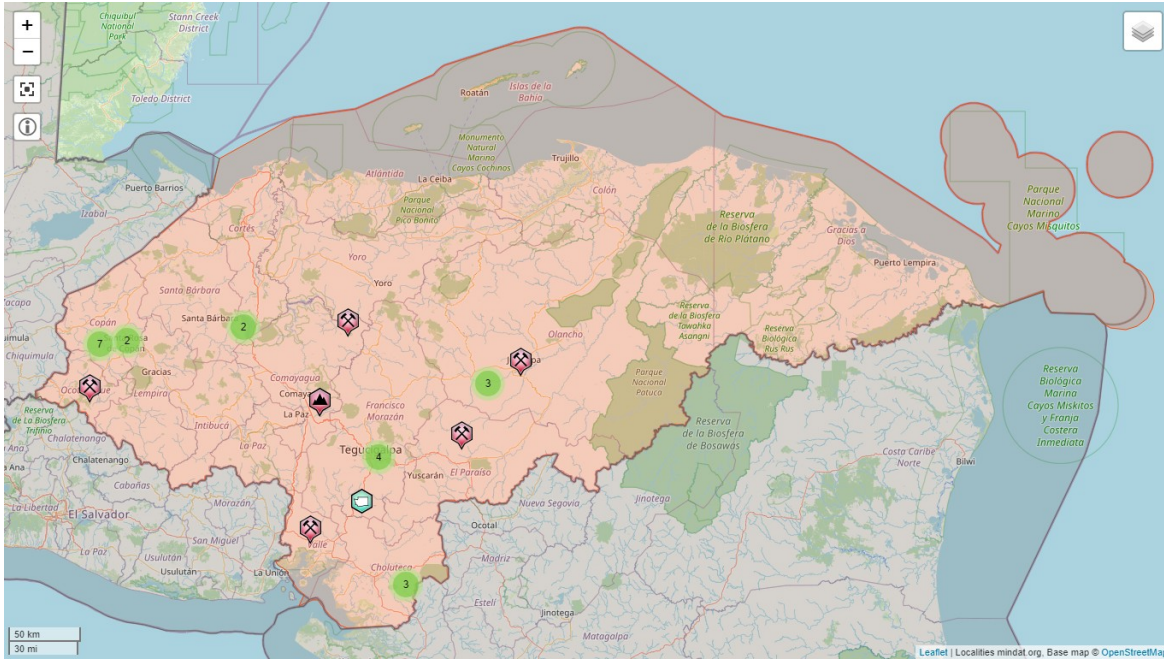
**Figure 9 – Precious Opal in Basalt from the [Tablon Mine](#), Honduras**  
**Credit: [James St. John](#), [Creative Commons Attribution-Share Alike 2.0 Generic](#) license**

According to the [latest USGS report](#) on the [The Mineral Industries of Central America](#), the main mineral products of Honduras are antimony, gold, lead, silver, and zinc. [Opals are also mined](#) in Honduras. Currently, there is no petroleum production in Honduras.

- Antimony is produced by [EcoCanteras de Honduras, S.A.](#);
- Gold is produced at the [Minosa \(San Andrés\) Mine in Copán, Honduras](#) operated by [Aura Minerals Inc.](#);
- Lead, silver, and zinc is produced at the [El Mochito Mine](#) operated by [Tierra Group International, Ltd.](#)

- Opals are mined at the [Tablon Mine](#) which, by [law](#), is operated by local artisanal miners.

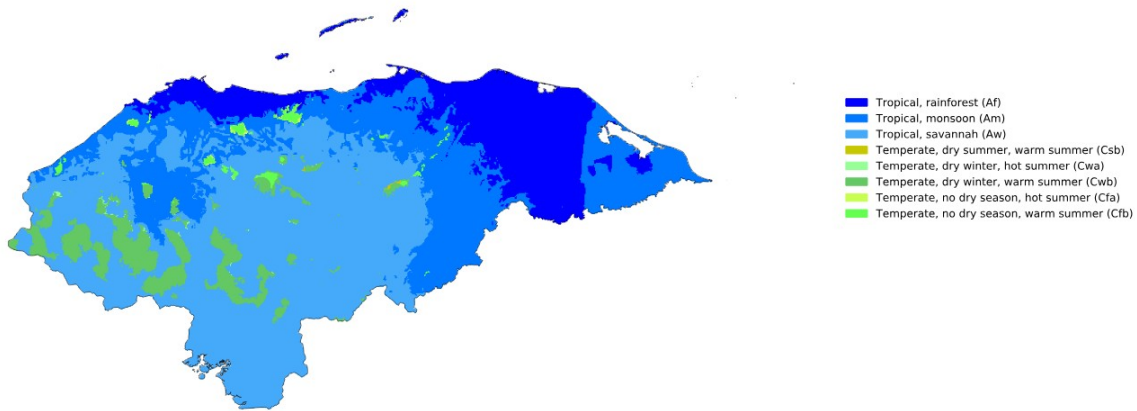
[The Diggings](#) website lists 230 past and present mines in Honduras. Figure 10, below, links to an interactive map of mineral occurrences in Honduras from [Mindat.org](#).



**Figure 10 - Interactive Map of Mineral Occurrences in Honduras**  
**Credit: ©Mindat.org**

## Climate

Köppen-Geiger climate classification map for Honduras (1980-2016)



Source: Beck et al.: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018)

**Figure 11 – Köppen-Geiger Climate Classification Map for Honduras**  
**Credit: Beck et al, 2018, Creative Commons Attribution-Share Alike 4.0 International license**

The CIA World Factbook describes the climate of Honduras as subtropical in lowlands and temperate in mountains. The main [Köppen-Geiger](#) climate zones in Honduras are Tropical ([Af](#), [Am](#), [Aw](#)) and Temperate ([Csb](#), [Cwa](#), [Cfa](#), [Cfb](#)).

Like many tropical countries, Honduras looks like a good place to escape the [winter weather](#) in the Northern Hemisphere. However, there are dangers, as listed in the travel advisories ([here](#) and [here](#)). The main cautions are for crime and tropical diseases. If you want to go, check out [Climates to Travel](#) and [Lonely Planet](#).

## History and Geopolitics

### *History – Mayans, Spaniards, Mestizos, and Wars*



Figure 12 – One of the Pyramids of [Los Naranjos](#)

**Credit:** [Luis Alfredo Romero](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license

Rather than go into the details of the [history of Honduras](#), I'll give links to discussions on the main events in their history, which include:

- The development of indigenous polities in [Pre-Columbian Honduras](#);
- The [history of Honduras to 1838](#) including the [Spanish conquest of Honduras](#) and the abortive [United Provinces of Central America](#);
- The history from [1838–1932](#) including the development of Honduras as a [Banana Republic](#) resulting from the increasing [influence of the United States in Honduran](#) affairs;
- The period from [1932–1982](#) including the [Football War](#) with El Salvador; and

- The history from [1982–present](#) including a long term term [low level civil war against leftists](#) and [an armed dispute with Nicaragua](#) that was resolved through America intervention; 2009 saw the establishment of the present democratic government.



**Figure 13 – Chance-Vought F4U-5N Corsair used during the Football War**  
**Credit: [Bidgee](#), [Creative Commons Attribution-Share Alike 3.0 Australia](#) license**

There were many more armed disputes and wars than apparent in the short summary of the history given above. [Here is a list of the wars](#) that Honduras has been involved in.

### *Geopolitics*



**Figure 14 – Tegucigalpa Skyline at Sunset**  
**Credit: [Luis Alfredo Romero](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license**

One of the common themes of Honduran history is the day to day violence that ranges from the petty thievery at the bottom of society, to the high murder rates throughout Honduran society, and culminating in the regular occurrence of violence in changes of government. This violence is often seen as necessary to either maintain the public order or to oppose an unjust order. Justified or not, this culture of violence is a harsh reality of life in Honduras. One consequence of this culture is that little substantive economic progress can be expected when violence seems to be so casual and human life is so cheap. It is any wonder that many [Hondurans decamp](#) to other countries, especially the United States?

Another problem that affects Honduras, and indeed most Latin American countries, is a lack of transparency and accountability in government. [Transparency International ranks Honduras](#) as 154/180 in terms of corruption, so fairly low down the list but not the worst offender. The main problems with corrupt practices are the institutional dishonesty and the [malinvestment](#) that they represent. Corrupt practices essentially reward people not for their positive contributions but simply for their connections or their ability to extort money from people. As a result, capital is diverted into nonproductive activities, or, worse yet, people simply take their money elsewhere to a more secure jurisdiction. Corruption keeps places like Honduras poor.

The internal culture of violence has extended in the past into relationships with Honduras' neighbours. Fortunately, [Hondurans currently seems to be a peace with their neighbours](#); the last serious dispute was with Nicaragua over their common offshore border that was resolved in 2001.

The big player in Honduran geopolitics is their [relationship with the United States](#). If you read into the history of the relationship, the American government has not been shy to interfere with [Honduran affairs when it suits them](#). This is unlikely to change, although the Hondurans are trying to assert their independence from the USA. The current controversy in the United States over illegal immigration, and President Trump's evident [desire to deport them all](#), will undoubtedly affect Honduras as expatriate Hondurans are forced to return and the consequent loss of their remittances. The historical irony is that [American interference in Honduran affairs](#) has played a role in encouraging migration from Honduras to the USA. Honduras needs to tread carefully, [colour revolutions](#) are well within the realm of possibility when the Americans feel that they are necessary even though the [current re-organization of USAID](#) may temporarily limit America's abilities in that direction.

Other powers that have an interest in Central America in general, and Honduras in particular, include Russia and China. Historic [Russian involvement in Central America](#) includes their support for the left-wing government in Nicaragua via their Cuban allies. More recently, the Russians have been renewing their [diplomatic interests in Central America](#), including outreach to Honduras. This is worth keeping an eye on, especially given that Americans, under President Trump, appears to be [reorienting their foreign policy](#) to concentrate on their "backyard" and there exists a potential for a great power conflict over enforcing America's [Monroe Doctrine](#). Honduras may not come off well in such a scenario.

China has also been [reaching out diplomatically](#) to the various countries of Central America, including developing friendly relations with Honduras once [the Hondurans diplomatically recognized China](#). Prior to 2023, Honduras recognized the [Republic of China, i.e. Taiwan](#), as the legitimate government of China. So the change in [diplomatic recognition](#) served a major Chinese diplomatic goal of reducing the number of countries that recognizes Taiwan as the Republic of China. As with Russian involvement in Central America, China's outreach may lead to great power conflict with the USA. However, for China, such an

outcome would not be a bug, but a feature, since such a conflict in Central America would divert American attention from whatever conflict results over Chinese attempts at reunification with Taiwan. For the Hondurans, being caught in the crossfire may not be so pleasant.

That kind of winds up this short look at Honduras; I am guardedly optimistic for them. If they can establish and maintain internal peace and if they can tackle some of their deficits in human development and government transparency they have a good chance at creating a better future for themselves.

However, there are two great dangers. One is that the return of expatriate Hondurans from North America could trigger internal conflict. The other is that Honduras may get caught up in larger conflicts, such as between the USA and their Chinese and Russian rivals. In either, or both cases, the resulting troubles will be used by various interested parties for their own benefit.

For example, there is the likelihood that the people benefiting from the current state of affairs in Honduras will use those conflicts to justify the internal repression necessary to maintain their positions. On the other hand, people who oppose the current political order in Honduras may instigate some form of armed insurrection to protest political and economic injustice.

The USA, China and Russia almost certainly take advantage of the internal troubles in Honduras to advance their own agendas. The Americans will seek to preserve their investments in Honduras, and will support whoever will help them do that. On the other hand, either China, Russia, or both, will use the troubles as an opportunity to weaken or just divert American power. They will do this by supporting insurgencies and thus stirring up trouble in America's backyard. It could get messy and bloody.

These possible outcomes are entirely consistent with the history and culture of Honduras. Unfortunately, they portend more suffering for the ordinary people of Honduras. Central America in general, and Honduras in particular, are worth keeping an eye on.

## **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.