

November 11, 2024

News and notes



November 11 is [Remembrance Day](#) in Canada and many other [Commonwealth](#) countries. It is a day set aside to remember those who served in the Armed Forces of our nation and especially those who died in service to their country.

It is a day to remember, not to glorify war or military force. Those whom we remember deserve much more than we can give them, but we can at least set aside some time to remember them

Vector drawing of poppy used for Canadian remembrance day celebrations

[Credit: Hyacinth45, Creative Commons Attribution-Share Alike 4.0 International license](#)

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

Free Geology Books

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](#).
- [Lithium in Nevada-origins, extent, role in the energy transition, and implications for economic development and national security](#).

I'll add more sites when I find them.

Geopolitics

- [Trump prepares to withdraw from Paris climate agreement, NYT reports](#).
- [Philippine president angers China with new laws to demarcate South China Sea territories](#).
- [Israeli soccer fans were attacked in Amsterdam. The violence was condemned as antisemitic; some are calling it a pogrom](#).
- ['Nobody Talks About It': Jihadi Terrorists Continue to Ravage Africa](#).

- [Mozambique government faces protests over election result.](#)
- [Trump Wins, Sends 'Trumpquake' Through Washington](#); whenever this kind of thing happens, some people threaten to move to Canada; it's amusing because few ever do; related: [Trump Win Brings Windfall for Funds Shorting the Energy Transition.](#)
- [Myanmar rebels seize rare-earth mining hubs, threatening supply chains.](#)

Research and News

- The [Common Descent Podcast](#) has an interesting discussion on the [Messinian Salinity Crisis](#) that occurred during the [Messinian Age](#) of the [Miocene Epoch](#).
- [Relationship between stratigraphic overlap and sedimentary facies evolution of the Junggar Basin, Northwest China.](#)
- Whoops, missed that one: [An asteroid hit Earth just hours after being detected. It was the 3rd 'imminent impactor' of 2024.](#)
- [Sourcing of the Oligocene to Pliocene sediments of the Ningnan Basin: Evidence for Tibetan Plateau growth and local faulting unravelled by detrital apatite fission-track and U–Pb double dating.](#)
- [Linear and nonlinear ultrasound parameters attributed to anisotropy in granite.](#)
- [Uranium-series isotopes as tracers of physical and chemical weathering in glacial sediments from Taylor Valley, Antarctica.](#)
- Geochemistry: [Halogen enrichment on the continental surface: a perspective from loess.](#)
- [Zircon Trace-Element Compositions in Cenozoic Granitoids in Japan: Revised Discrimination Diagrams for Zircons in I-Type, S-Type, and A-Type Granites.](#)
- [Enhanced metamorphic CO₂ release on the Proterozoic Earth](#); Phys.org summary [here](#).

Bad Science

- [Complaint from engineering software company prompts two retractions.](#)
- [Another Springer Nature journal has retracted over 300 papers since July.](#)

Planetary Geology

- [Dating recent aqueous activity on Mars.](#)
- [Haastse-baad Tessera Ring Complex: A Valhalla-Type Impact Structure on Venus?](#) Phys.org summary [here](#).

Plate Tectonics

- [Earth's longest preserved linear volcanic ridge generated by a moving Kerguelen hotspot.](#)

- [Did plate tectonics give rise to life? Groundbreaking new research could crack Earth's deepest mystery.](#)
- [India–Eurasia convergence speed-up by passive-margin sediment subduction.](#)
- [Nitrogen \(N\) and its isotopes in serpentinized forearc wedges and implications for N cycling across subduction zones.](#)
- [When did plate tectonics begin?](#)
- [Solid Earth Carbon Degassing and Sequestration Since 1 Billion Years Ago](#); Phys.org summary [here](#).
- Plate tectonics and mass extinction: [Climate extremes likely to drive land mammal extinction during next supercontinent assembly](#); Earth.com summary [here](#).

Paleontology

- [Transport of 'Nama'-type biota in sediment gravity and combined flows: Implications for terminal Ediacaran palaeoecology.](#)
- [Coprolites filling *Tubulichnium mediterraneis* burrows from the upper Oligocene Sub-Numidian Claystone of Algeria.](#)
- [Romaleodelphis pollerspoecki, gen. et sp. nov., an archaic dolphin from the Central Paratethys \(Early Miocene, Austria\)](#); Phys.org summary [here](#).
- [The largest Eagle in the world that went extinct 500 years ago.](#)
- [Oligocene vertebrate footprints from the Lower Red Formation, Central Iran.](#)
- [Extremely rapid, yet non-catastrophic preservation of the flattened-feathered and 3D dinosaurs of the early Cretaceous of China](#); Phys.org summary [here](#).
- [Fossil of huge terror bird offers new information about wildlife in South America 12 million years ago](#); referenced paper [here](#) (you can't copy the title).
- [Rethinking the four-wing problem in plesiosaur swimming using bio-inspired decentralized control](#); Phys.org summary [here](#).

Petroleum and Ore Deposit Geology

- [Comparative Analysis of Shale Gas Enrichment and High Yield Geological Conditions of Wufeng–Longmaxi Formation and Qiongzhusi Formation in Southern Sichuan Basin.](#)
- [Methods of Division of Development Unit for Thick Carbonate Reservoir—A Case Study of the Mishrif Formation, A Oilfield, Middle East.](#)
- [Pyrite geochemistry and its implications for ore formation in reduced copper skarn systems: A case study of the Saibo deposit, Northwest China.](#)

- [Delineation of the reservoir petrophysical parameters from well logs validated by the core samples case study Sitra field, Western Desert, Egypt.](#)

Mining and Energy

- Falling demand for Australian iron: [\\$2.1 trillion China warning as Australia's iron ore ice age intensifies: 'No save'.](#)
- British Columbia: [Osisko Development's Cariboo gold project faces legal threat as Xat'sull demands consent.](#)
- Northwest Territories: [Pine Point Mine Ltd. and Town of Hay River sign agreement in hopes of restarting mining project.](#)
- Newfoundland & Labrador: [NL's Critical Minerals Grabbing Global Attention, Federal Funding.](#)
- [Albemarle loses more than \\$1 billion on falling lithium prices.](#)
- Geothermal energy: [Indonesia has just learned to control magma: It's producing clean energy.](#)
- Market glutted: [World's biggest cobalt miner is gloomy on the EV metal's future.](#)
- [Red Canyon drilling confirms Kendal copper-moly discovery in British Columbia.](#)
- [Australia's Rare Earth Supply Chain Faces Major Disruptions.](#)
- [Magna discovers new high-grade copper zone at Shakespeare in Ontario.](#)
- Norway House MB: [Mining agreement could bring hundreds of jobs to Manitoba; related: Manitoba 'has what the world needs,' minister says while outlining new critical mineral strategy.](#)
- Fuel cell technology: [Ballard Power stock jumps over 9% on hydrogen bus engine order.](#)
- [Lithium-ion batteries have ruled for decades. Now they have a challenger.](#)
- Geothermal: [Iceland discovers the "Mother of all renewables": 4600 GWh in the snow.](#)
- [US approves game-changing technology that turns used nuclear waste into fuel: 'A critical step'.](#)
- [China is tightening its grip on the world's minerals.](#)
- [Comprehensive Screening of Plasma-Facing Materials for Nuclear Fusion; Phys.org summary here.](#)

Environmental Geology and Hydrogeology

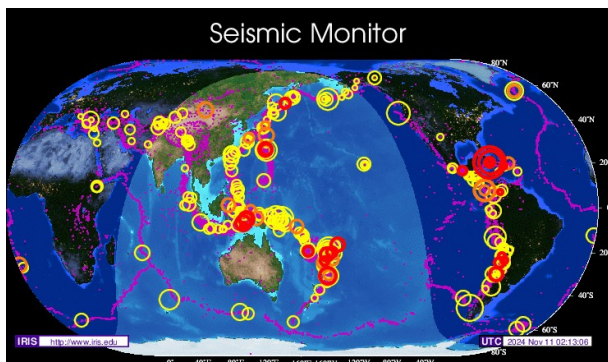
- [A creek near the Eagle Gold mine in Yukon sees mercury levels spike.](#)
- Remediation research: [Mineral-associated organic matter is heterogeneous and structured by hydrophobic, charged, and polar interactions.](#)
- [For second year in a row, Alberta oil and gas companies spend more than required on cleanup.](#)

- Carbon capture: [New powerful reactor sucks CO2 from factory smoke without using extra heat.](#)
- Natural carbon capture: [Additive impact on early-stage magnesium carbonate mineralisation.](#)
- Remediation: [Majestic ‘8th continent’ collects and recycles plastic from the ocean.](#)
- [Decontamination of landfill waste leads to increase in toxic chemicals, says study.](#)
- [Up to 3.2M in Michigan may be getting water from PFAS-tainted aquifers.](#)

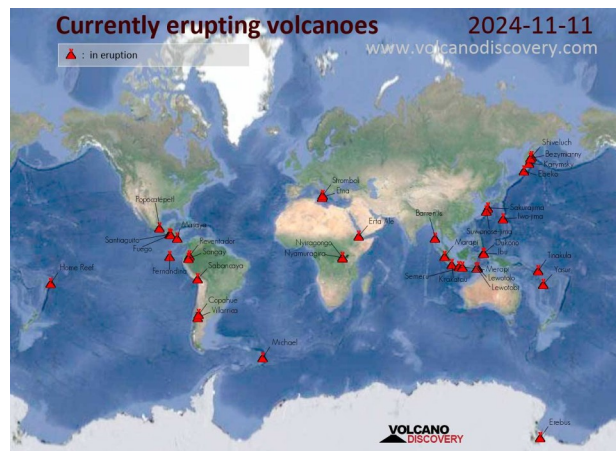
Glaciers and Climate Change

- Pleistocene glaciation: [Vertical Displacements and Sea-Level Changes in Eastern North America Driven by Glacial Isostatic Adjustment: An Ensemble Modeling Approach](#); Phys.org summary [here](#).
- Miocene climate change: [North Pacific warmth synchronous with the Miocene Climatic Optimum.](#)
- Antarctica: [Ross Ice Shelf frontal zone subjected to increasing melting by ocean surface waters](#); Phys.org summary [here](#).
- [Revisiting the mid-Pleistocene transition ocean circulation crisis](#); Phys.org summary [here](#).

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

- United States Geological Survey (USGS) Volcano Watch: [The Art and Science of Geologic Mapping.](#)
- USGS Yellowstone Volcano Observatory: [So, when will the next eruption at Yellowstone happen?](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)

- [The world's biggest volcano expected to erupt – and it's not Yellowstone.](#)
- [A new volcano-like structure has been found in the Arctic Ocean near Alaska.](#)
- [Deadly Ashfall: Over 10,000 Impacted by Mount Lewotobi's Explosive Eruption.](#)
- Mexico City: [Popocatepetl's Persistent Eruptions Pose Ongoing Threat to Millions.](#)

Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\).](#)
- [Earthquakes Monitoring Live Worldwide.](#)
- [Cuba, already reeling from hurricane and power outage, struck by powerful M6.8 earthquake;](#) USGS summary [here](#).
- [Mw6.2 offshore of southern Chile;](#) USGS summary [here](#).
- Earthquake research: [Mapping normal faults on the outer slope of the western Kuril Trench based on recent seismic reflection and bathymetric data.](#)
- More earthquake research: [Multidisciplinary high resolution Geophysical Imaging of Pantano Ripa Rossa Segment of the Irpinia Fault \(Southern Italy\).](#)
- Large seafloor rupture caused by the 1956 Amorgos tsunamigenic earthquake, Greece.

Other Geohazards

- Wildfires in [California](#) and [New Jersey](#).
- Video: [Worst Flood in Spanish History.](#)

Upcoming Events

- This week: [GeoFutures: Planetary Geoscience Conference](#), 14-15 November 2024, hybrid meeting.
- [The Saskatchewan Geological Open House, December 2 to 4, Delta Bessborough Hotel, Saskatoon;](#) the Bessborough Hotel is the most beautiful building in Saskatoon.
- [Groundwater Week 2024](#), December 10-12 in Las Vegas, Nevada; related video [here](#).
- European Geosciences Union: [EGU General Assembly 2025, Vienna, Austria & Online 27 April–2 May 2025](#)
- [Copper to the World Conference, Tuesday 26 – Wednesday 27 August 2025](#), in Adelaide, Australia; report on 2024 conference [here](#).
- 2024-2025 [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.](#)

November 11, 2024

Geology and the Fate of Societies – Germany



Figure 1a – Germany

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



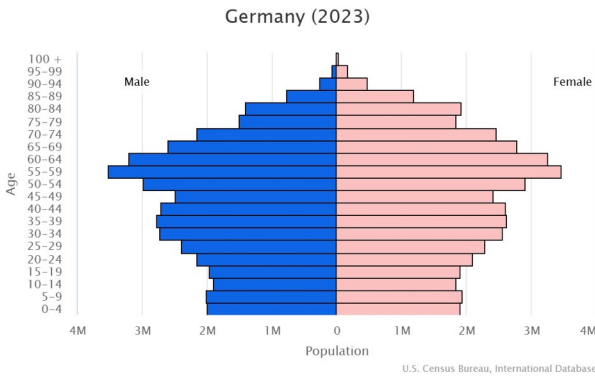
Figure 1b – Location of Germany

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

The [Federal Republic of Germany](#) is located in [Central Europe](#); its neighbours are: to the north, [Denmark](#); to the east, [Poland](#) and [Czechia](#); to the south, [Austria](#) and [Switzerland](#), and to the west, [France](#), [Luxembourg](#), [Belgium](#), and the [Netherlands](#). Germany is a [Federal parliamentary republic](#). The President is [Frank-Walter Steinmeier](#) and the [Chancellor](#) is [Olaf Scholz](#). The German legislature is a bicameral, the one chamber, appointed by and representing the states or [Länder](#), is the [Bundesrat](#). The other chamber, the [Bundestag](#), is directly elected by the people. The Chancellor sits in the Bundestag. The Capital of Germany and its largest city is [Berlin](#) (pop. 4,768,142 in the urban area).

According to the [Central Intelligence Agency](#) (CIA) [World Factbook on Germany](#), the country has a total area of 357,022 square kilometres (km²); of that total, 348,672 km² is land and 8,350 km² is water. Also according to the CIA World Factbook, 84,119,100 people live in Germany of which 85.4% are ethnic [Germans](#). Of the rest: 1.8% are [Turks](#); 1.4% are [Ukrainian](#); 1.1% are [Syrian](#); 1% [Romanian](#); 1% are [Polish](#); and the remaining 8.3% are something other. [German](#) is the official language. [Danish](#), [Frisian](#), [Sorbian](#), and [Romani](#) are official minority languages. Recognized regional languages are [Low German](#), Danish, [North Frisian](#), [Sater Frisian](#), [Lower Sorbian](#), [Upper Sorbian](#), and Romani. Like much of the [European Union](#), [English](#) is widely spoke as a second language. In terms of religion, the largest group, 43.8% are those who indicate that they have no religion. Of the remaining 24.8% are [Roman Catholic](#); 22.6% are [Protestant](#); 3.7% are [Muslim](#) and 5.1% are something other. Germans are well educated, school life expectancy (primary to tertiary education) is 17 years for both sexes. Germans are also fairly

wealthy, per capita [GDP](#) is \$70,930; the [Gini](#) coefficient is 29.4, indicating low inequality; and the [human development index](#) (HDI) is very high at 0.950.



The demographic profile of Germany shows a country getting old, the median age is 46.8 years and the largest group, 62.5%, are those who are 15-64 years old. The total fertility rate is 1.58 births per woman, below replacement rate (2.1) and, as a result, the population is shrinking at 0.1% per year despite [immigration](#). Life expectancy at birth for both sexes is 81.7.

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

Geology

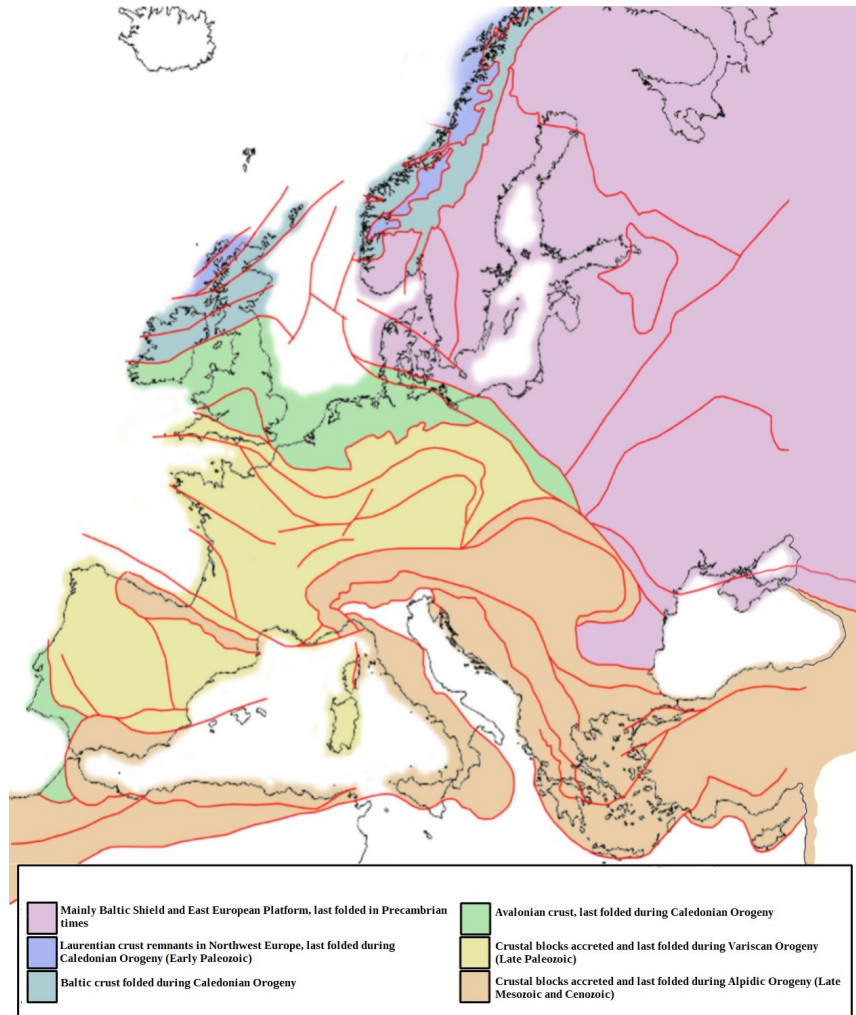


Figure 3 – Tectonic Map of Europe
[Credit: Woudloper, public domain](#)

Tectonically, four main [orogenies](#) made up the [geology of Germany](#). From the oldest to the most recent the geological units that display these orogenies are:

- To the north and east, the rocks of the [East European Craton](#), that were last deformed during the [Archaean](#) and early [Proterozoic](#);
- In much of northern Germany, the [basement rocks](#) underlying much of the [North German Plain](#) are [Avalonian](#) rocks that were deformed during the [Caledonian Orogeny](#) of the early [Paleozoic Eon](#) (i.e. during the [Cambrian](#), [Ordovician](#), [Silurian](#) and [Devonian](#) Periods);
- South of the Avalonian basement are another series of basement rocks that were deformed during the Late Paleozoic Eon (i.e. the [Carboniferous](#) and [Permian](#) Periods) during the [Variscan Orogeny](#); and
- In southern Germany, in the Alps, are rocks deformed during the [Alpine Orogeny](#) that began during the Late [Mesozoic Eon](#) (i.e. during the [Jurassic](#) and [Cretaceous](#) Periods) and continues to the present [Cenozoic Eon](#).

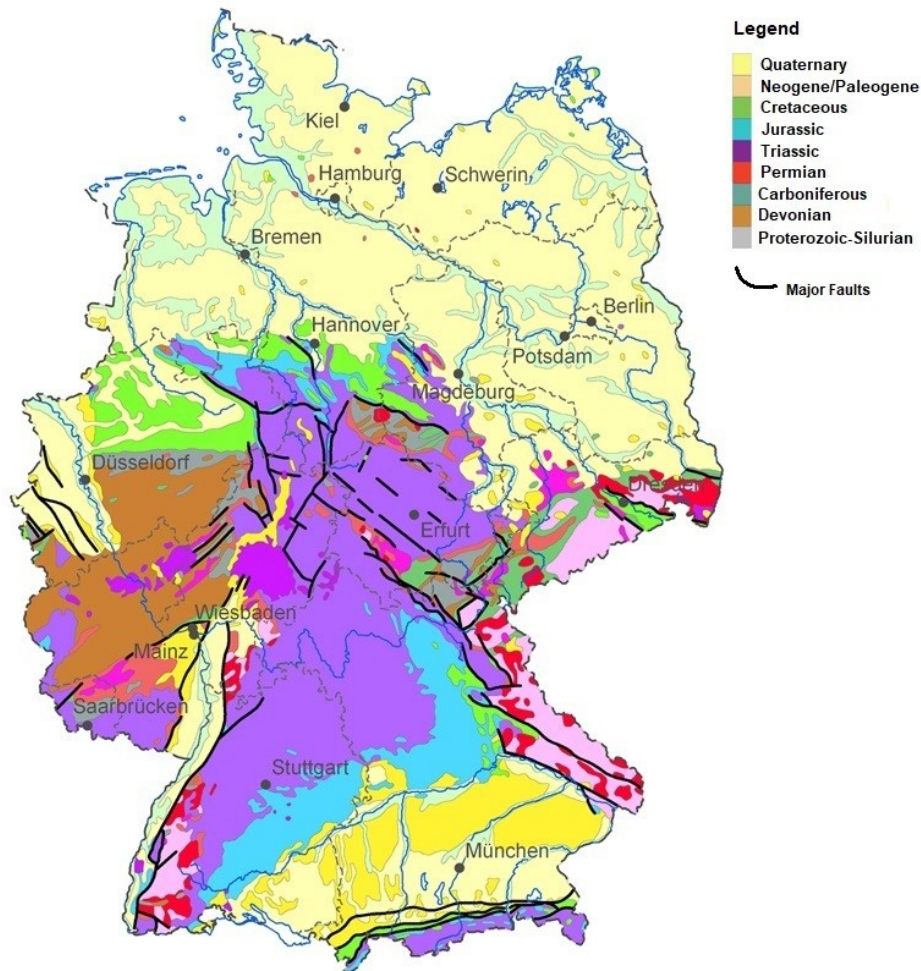


Figure 4 – Generalized Geology of Germany

Credit: [Bundesanstalt für Geowissenschaften und Rohstoffe \(BGR\)](#), [public domain](#)

Its complex tectonic history makes the [geology of Germany](#) fairly complicated. Figure 4, above, is a very generalized geologic map showing the ages of deposits in Germany. The surface geology ranges in age from Proterozoic (the oldest) to [Quaternary](#) (the youngest). For more information on the geology of Germany you can look at the [Geoportal](#) from the Bundesanstalt für Geowissenschaften und Rohstoffe (Federal Institute for Geosciences and Natural Resources).

Resources

Agriculture and Fisheries



Figure 5 – Historic Farm in [Kirchspiel, Dülmen, North Rhine-Westphalia](#)
Credit: [Dietmar Rabich, Creative Commons Attribution-Share Alike 4.0 International](#) license

According to the CIA World Factbook, 48% of the land in Germany is agricultural land (34.1% arable land, 0.6% permanent crops, 13.3% permanent pasture). Of the remaining 31.8% is forest and 20.2% has other uses. Germany is a [major agricultural producer](#); almost 900,000 people work in the agriculture and production is worth more than 75 billion euros per year. Major crops include: [sugar beets](#), [wheat](#), [barley](#), [potato](#), [rapeseed](#), [rye](#), [triticale](#), [grapes](#), [apples](#), [maize](#), [cabbage](#), [carrots](#), [oats](#), and [onions](#). Production from livestock includes [beef](#), [pork](#), and [poultry](#) together with [dairy products](#).



Figure 6 – German Beer
Credit: [Nemracc, Creative Commons Attribution-Share Alike 4.0 International](#) license



Figure 7 – German Wine
Credit: [Tellus2010, Creative Commons Attribution-Share Alike 4.0 International](#) license

Two of the most famous agricultural products from Germany are [wine](#) and [beer](#). According to the CIA World Factbook, total per capita alcohol consumption in Germany is equivalent to 10.56 litres of pure alcohol of which 5.57 litres is from beer, 3.02 litres is from wine, and the remainder is from [spirits](#). For beer production, there are about 1,300 breweries in Germany, [675 in Bavaria alone](#). Wine is produced at [15,151 vineyards](#) in the country. Clearly, Germans love their beer and wine.

Germany is part of the [European Union's Common Agricultural Policy](#), a program that [greatly benefits German farmers](#) and ensures abundant food in German supermarkets. Statistics on agriculture production in Germany from the [United Nations Food and Agriculture Organization](#) (FAO) can be found [here](#). Other select indicators on food production in Germany, also from the FAO, can be found [here](#).



Figure 8 – Fishing Boat at [Greetsiel](#), Germany
Credit: [Michael Pereckas](#), [Creative Commons Attribution 2.0 Generic](#) license

The [German fishing industry includes](#): fishing fleet (deep-sea as well as cutter and offshore fishing); fish processing industry; inland fisheries and aquaculture. The German fishing industry supplies only [20% of the national demand](#) for sea food. Germany is part of the [European Union's Common Fisheries Policy](#).

[According to the FAO](#), species caught on the high seas by Germans include herring, mackerel, blue whiting, horse mackerel / Greenland halibut, Sebastes redfish, saithe, and cod. Species harvested from the North Sea include Crangon shrimp, mussels, saithe, flat fish and many others. Herring, cod, flounder, sprat are caught in the Baltic Sea. Inland fisheries are a small scale operation,, mostly open boats with one or two operators in lakes and rivers. Freshwater aquaculture is done in natural or artificial ponds and lakes. Saltwater aquaculture includes shellfish (blue mussels, oysters) that are cultivated in the North Sea. Statistics on German fishing production can be found [here](#).

Forestry



Figure 9 – View of the Black Forest
Credit: Taxiarchos228, Free Art License.

According to the CIA World Factbook, 31.8% of the land in Germany is forest. Germany has an extensive system for [managing its forests](#) not only for timber production but also for recreation and carbon capture. [Germans love their forests](#). 43% of forests in Germany are privately owned, the rest are state owned. Statistics on forestry production can be found [here](#) and [here](#).

Mineral Resources



Figure 10 – Tagebau Garzweiler Lignite Mine, North Rhine-Westphalia
Credit: Martin Falbisoner, Creative Commons Attribution-Share Alike 4.0 International license

According to the [USGS report on the mineral industry in Germany](#), mining in Germany consists primarily of industrial minerals, coal, lignite, and peat. While metallic minerals such as aluminium, iron, etc. are extensively processed in Germany, these factories import much of their raw materials – the locally sourced inputs are from recycled metals. Aside from coal and lignite, most mineral fuels, e.g. oil and natural gas, are imported although there is some local production. Statistics from the USGS on the

mineral industry in Germany can be found [here](#). A list of both operating and closed mineral in Germany can be found [here](#). Table 2 in [this document](#) from the USGS lists more production facilities, including oil and gas producers. Mindat.org does not have an interactive map of mineral occurrences in Germany, but their [site on the country](#) does give a list these occurrences.

Climate

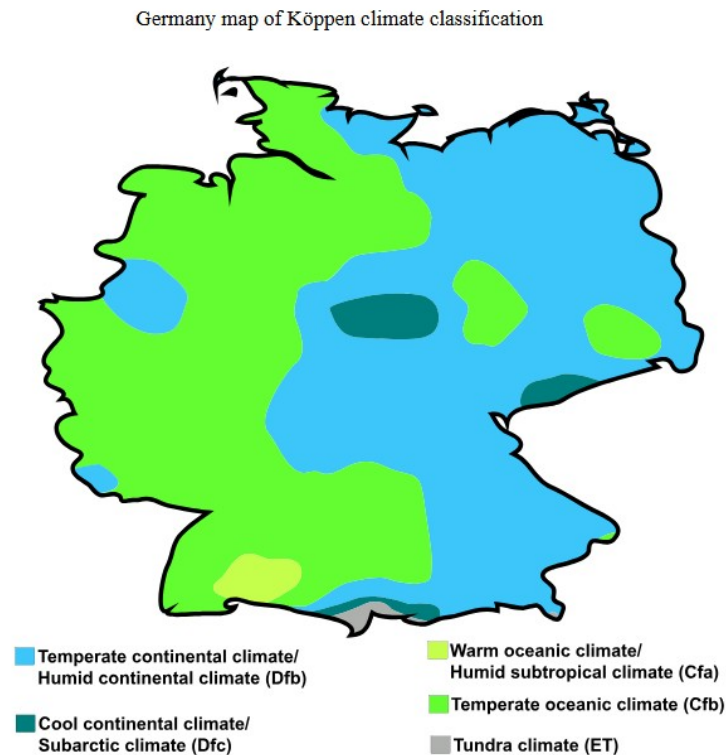


Figure 11 – Köppen Climate Classification – Germany

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

The CIA World Factbook describes the German climate as: temperate and marine; cool, cloudy, wet winters and summers; occasional warm mountain ([foehn](#)) wind. In general, climate in Germany varies with elevation and distance from the sea. Climate zones include:

- Humid subtropical climate ([Cfa](#)) in the south;
- Temperate oceanic climate ([Cfb](#)) over much of the western part of the county;
- Temperate and cool continental/subarctic climate ([Dfb](#) and [Dfc](#)) in the east of the country; and
- Tundra conditions ([ET](#)) in the alpine highlands.

Germany is a pleasant place to visit; my family and I went there in 2019 and we were very impressed. It is a modern, very well organized place (Germans like things [neat and orderly](#)). Before you go, check the news for [civil disorder/demonstrations](#) (Germans are not always orderly) and travel advisories [here](#) and [here](#). You can also check out [Climates to Travel](#) and [Lonely Planet](#).

History and Geopolitics

History Casts A Long Shadow



Figure 12 – Otto von Bismarck, 1873, Father of Modern Germany
Credit: [Evert Duykinck](#), public domain

The [history of Germany](#) is fairly long and if you like immersing yourself in the details, you can begin by checking out the link at the beginning of this sentence, or by reading the [Wikipedia entry here](#). If the wars involving Germany interest you, [here is a list of those events](#). For the purposes of this blog, I'll do for Germany what I did for [France](#) and go over the main themes of German history.

The main theme of German history has been the fluctuation between periods of multiple states and attempts to create a unified polity encompassing all, or most, German speaking people. In antiquity, various [Germanic tribes](#) inhabited Central Europe. Their lifestyle involved frequent conflict with their neighbours and they got quite good at killing one another. When the [Western Roman Empire](#) fell in 476 AD, it was at the hands of Germanic speaking tribes who set up their [own kingdoms](#) in the rubble. These kingdoms continued their violent folkways and in 814, one of these tribes, the [Franks](#), led by [Charlemagne](#) established the [Holy Roman Empire](#), (a.k.a. the First Reich) an entity that provided off and on unity to the German states in Central Europe until it was finally abolished 1806. In 1870, under the leadership of [Prussia](#), most of the German speaking people in Northern and Central Europe were united into one state following the [Franco-Prussian War](#) in 1870. [Otto von Bismarck](#), the Prussian Chancellor, can largely be credited with the creation of the [German Empire](#) (a.k.a. Second Reich) through war and

diplomatic machinations. The rise of [Adolph Hitler](#) following the [collapse of the German Empire following World War I](#) and the forcible [incorporation of Austria](#) in 1938 created an even bigger German empire (a.k.a. [the Third Reich](#)). The violent destruction of the Third Reich in [World War II](#) (butchers bill [70–85 million dead people](#)) resulted in the breakup [Gross Deutschland](#) into its constituent nations: [Austria](#), [East Germany](#) and [West Germany](#) and the freeing of other nations (Belgium, [Czechoslovakia](#), Denmark, Netherlands, [Norway](#), Poland) conquered by the [Nazi regime](#). In 1990, [East and West Germany reunited](#) into today's German state. In recent news: [Tens of thousands gather to celebrate fall of Berlin Wall 35 years ago](#).

Another important theme in German history is touched on above, is the influence of war on the country. Charlemagne, of course, united his empire through a series of wars, especially against the then pagan [Saxons](#). Later, during the [Middle Ages](#), German warriors, under the cover of the so-called [Northern Crusades](#), conquered and assimilated pagan [Slavic](#) and [Baltic](#) tribes. The Slavic tribes moved into Central Europe after the Germanic tribes that had formerly lived there had [run off into the collapsing Roman Empire](#); the Balts lived along the Baltic Sea. Sometimes also called the [Drang nach Osten](#), this process of conquest and assimilation was seminal in the creation of German national consciousness (see [Turchin, P.](#), 2007, [War and Peace and War](#), Plume – Penguin Group, New York, pp 189-194). Also significant in the creation of Germany were the [Wars of Religion](#) and especially the [Thirty Years War](#) that nearly depopulated Central Europe. The result of these wars was the division of Germany into a Protestant north and a Catholic south. Another result of the Thirty Years War was the creation of modern international law in the [Peace of Westphalia](#). Finally, modern Germany is also a product of the Bismarck's settlement of the Franco-Prussian War together with the consequences of the wars of the 20th Century.

The final theme in German history has been [industrialization](#) and [modernity](#). Beginning around 1835, and building on the knowledge acquired by the British during their [industrialization](#), Germany rapidly became a powerful modern industrial power. You can thank the [Prussian schoolmasters](#) for developing an educated nation capable of this effort. You can also thank our old buddy Bismarck for introducing [social welfare legislation](#) to ameliorate the less than desirable effects of industrialization. [Modris Eksteins](#), in his 2000 book [Rites Of Spring: The Great War and the Birth of the Modern Age](#), credits Germany with being the leading nation in promoting modernity.

Geopolitics – Stuck in Mitteleuropa With You

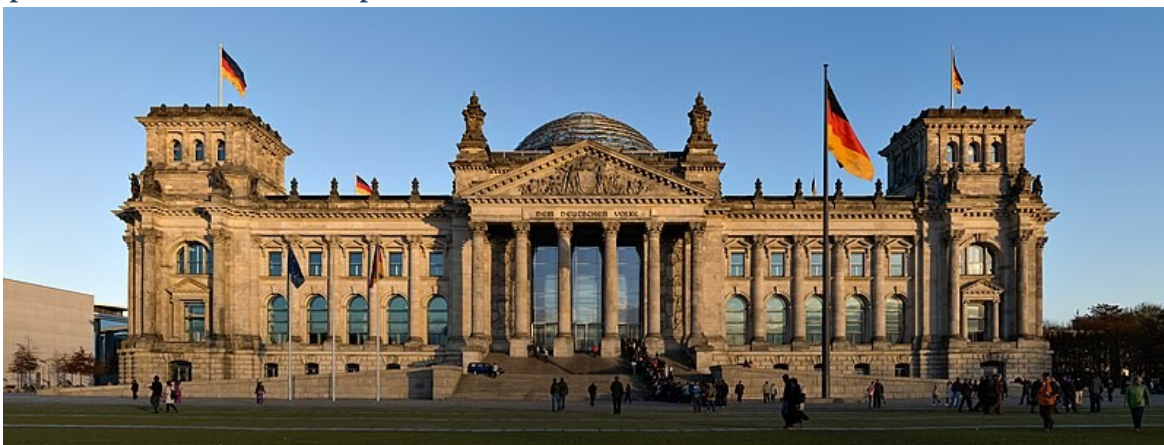


Figure 13 – Reichstag Building in Berlin

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

Based upon the general situation you would think that Germans were fat and happy. Certainly fat, according to the CIA World Factbook, 22.3% of Germans are considered obese – blame it on their [excellent cuisine](#). (For comparison [29.4%](#) of Canadians are considered obese, so we shouldn't condemn the Germans.) However, Germans are far from happy, here are a few of their concerns:

- **Immigration.** For centuries Germany exported surplus population both west, to [America](#), and east, to [Eastern Europe](#) and [Russia](#). However, this has changed recently as migrants fleeing conflict in [Syria](#), [Ukraine](#), and [Africa](#) have [moved to Germany](#). It is a safe and prosperous country, so who can blame the migrants from wanting to move to Germany? When they come to Germany, the migrants have to deal with Germany's well [organized government](#). However, many Germans [are not happy, to say the least](#), with this crowd of disorderly foreigners that have moved into their country. One of the beneficiaries of this unrest is the [Alternative für Deutschland](#) (Afd) who have tapped into much of this unhappiness. The Afd party has done well in recent state elections in [Thuringia](#) and [Brandenburg](#), with the immigration issue often being at the forefront of the campaigns.
- **Economic Troubles.** Ever since the sabotage of the [Nord Stream](#) natural gas pipeline from Russia, the German economy has been in bad shape. The price of energy for homes and factories has gone up, as have [factory closures and unemployment](#). It doesn't help that Germany shut down its [nuclear reactors](#) and are back to burning lignite coal for electricity generation. However, they are trying [some innovative solutions](#). Again, the Germans are none too happy with their decline in living standards.
- **Political Instability.** Recently, the German governing coalition [has fallen apart](#). This political instability can be laid at the feet of the troubles with immigration and the economy. Most of the main parties in the [Bundestag](#) despise the Afd and refuse to allow them into the governing coalition. The result has been political deadlock. Maybe they can resolve it in the next election, likely to come soon.
- **Social Bifurcation.** The rise of the Afd is a symptom of a deeper split in society, sometimes called the division between the snobs and the slobs. Now, Europe has a long history of aristocratic rulers who looked on the lower classes with some disdain. However, the old aristocracy, with its sense of Christian duty, was swept away in the rise of modernity, of which Germany was the leader. The old aristocrats have been replaced by a secular, in many cases amoral, [managerial class](#). Ordinary people have noticed the rise of this class of self-anointed experts and are willing to take the managers to task for their manifest failure to deliver the prosperity that they thought was their birthright. The managerial class, on the other hand, seem to be concerned with grand schemes to manage the economy and the environment and have little, if any, concern for the effect of these policies on the slobs. This division is not unique to Germany and will likely cause more trouble in the future.

Internationally, Germany's most important relations with allies are through two major institutions: the [European Union](#) (EU) and the [North Atlantic Treaty Organization](#) (NATO). Germany is one of the [founding members](#) of the EU, and together with France, is able to dominate the economic agenda of Europe, often in its favour. Are there problems? Of course, not everyone is happy with EU rules and regulations, especially [farmers](#). However, the EU has been a great benefit to Germany overall. One of

the supreme ironies of history is that, through the EU, Germany was able to achieve European leadership, peacefully, having been unable to achieve this hegemony through force of arms in the wars of the 20th Century.

Germany's other important international alliance has been with NATO. In this alliance, the European powers, including Germany, take leadership from the [United States](#). However, Germany and its [army](#), has played an important part in NATO and still does, although there are [concerns](#) with its combat readiness. This could become important pretty soon if the Ukraine War expands to include direct participation by NATO forces. Also, the next President of the USA may be [re-considering](#) American commitment to NATO. There is a possibility that Germany and France, who have the two largest armies in the EU, may have to ally to form an exclusively European military alliance; the EU already has a [Common Security and Defence Policy](#). In recent news: [Von der Leyen to prepare EU for war – defense commission nominee](#).

Germany's relationship with [Russia](#) is complicated. On one hand, Germany is opposed to Russian actions in the Ukraine and is currently [committed](#) to helping the Ukrainian government. On the other, Germany is hurting badly due to the loss of cheap Russian energy. You can see that many Germans would happily throw the Ukrainians under the bus if it means better living standards at home.

That kind of wraps up this short look at Germany. Provided that the Ukraine War doesn't get out of hand, I expect the Germans to find a way to restore their prosperity and expel the worst troublemakers among the recent migrants so that they can live the orderly existence they crave. However, we should expect some surprises, watch the German situation closely.

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.