

May 11, 2024

## News and notes

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

## Geopolitics

- Getting full value out of a resource: [Energy Notes from the edge: Premier Smith, forget the feds – build a local Ludwigshafen; The Revenge of the Beige Corolla.](#)
- Demographics is destiny: [East Asia's Coming Population Collapse.](#)
- [Ukraine a 'corrupt s\\*\\*thole' – ex-Boris Johnson adviser.](#)
- [Xi's Grand Chess Game: How China Outplays US in Europe.](#)
- [Nuclear Energy: The New Geopolitical Battleground.](#)

## Research and News

- Online geology textbooks at [LibreTexts Geosciences.](#)
- [May 2024 Edition of \*\*Geology\*\* from the Geological Society of America.](#)
- [Facies models for rocky shorelines and their application to transgressed basement highs in the North Sea.](#)
- Geophysics: [Deep learning for high-resolution seismic imaging.](#)
- [Geologists, biologists unearth the atomic fingerprints of cancer;](#) research paper with indecipherable title [here.](#)
- [Earth shattering Kaboom](#) research: [Platinum, shock-fractured quartz, microspherules, and meltglass widely distributed in Eastern USA at the Younger Dryas onset \(12.8 ka\).](#)
- [Stratigraphy and sequence stratigraphy of the Neoproterozoic \(Cryogenian–Ediacaran\) Stuart Shelf, South Australia.](#)
- Geological history: [Terrestrial records of two hyperthermal events in the Cretaceous-Paleogene boundary suggest different control mechanisms.](#)
- Geochemistry: [Magnesium Isotopes of Carbonate Reveal Seasonal Climate Variation in the Central East Asia During the Middle Eocene.](#)
- [A zone of columnar joints beneath the roof of a granitic pluton: The Okueyama granite, southwestern Japan.](#)

## Plate Tectonics

- [Increasing fault slip rates within the Corinth Rift, Greece: A rapidly localising active rift fault network.](#)
- [A Giant Impact Origin for the First Subduction on Earth](#); Popular Science summary [here](#).
- [Subaerial weathering drove stabilization of continents](#); Phys.org summary [here](#).
- Rifting, from Lehigh University: [Five new hydrothermal vents discovered in the Eastern Tropical Pacific Ocean.](#)
- Plate tectonics and geochemistry: [Garnet stability during crustal melting: Implications for chemical homogeneity and secular change in arc magmatism and continent formation.](#)
- [Constraints on Growth and Stabilization of the Western Superior Craton From Inversion of Magnetotelluric Data.](#)

## Paleontology

- Evolution research: [Evolvability predicts macroevolution under fluctuating selection](#); Phys.org summary [here](#).
- Good news: [‘Magical moment’ as fire-ravaged Brazil museum receives big fossil donation.](#)
- One of life’s little mysteries: [Why do most mammals have 5 fingers?](#)
- [A Tiny Deer With Big Implications: A New Genus \(\*Santuccimeryx\*\) From Badlands National Park Helps Bridge The Gap Between Oligocene And Miocene Leptomerycidae \(Mammalia, Artiodactyla\).](#)
- Australia’s Northern Territory: [Scientists measure the sands of time to age Shirley the \*Diprotodon\* fossil.](#)
- [Chicago Museum Unveils the ‘Most Important Fossil Ever Discovered’: the Feathered Dinosaur \*Archaeopteryx\*](#); the [Field Museum](#) is really worth visiting.
- [On an Early Jurassic theropod. A new name for old bones: A reassessment of Early Jurassic theropod remains from Dorset, England](#); Sci News summary [here](#).
- [Octahedronoides tethysianus n.gen., n.sp., enigmatic clusters of microspheres at the Jurassic-Cretaceous transition.](#)

## Mining and Energy

- Geology of a copper / gold deposit: [Paragenetic and geological setting of the Starra iron oxide copper–gold deposits, Mount Isa Inlier, Queensland, Australia: constraints on IOCG deposit models.](#)

- Geology of a gold deposit: [2730–2670 Ma rifting triggers sagduction prior to the onset of orogenesis at ca 2650 Ma: implications for gold mineralisation, Eastern Goldfields, Western Australia.](#)
- More geology of ore deposits: [Contrasting magma chemistry in the Candelaria IOCG district caused by changing tectonic regimes.](#)
- [B.C. ends jade mining in northwest, all mines to close in 5 years.](#)
- [Platinum set for biggest deficit in a decade in 2024, says Johnson Matthey.](#)
- Fraud: [Red Pine says former CEO tampered with Wawa gold assays.](#)
- [Champion Iron Mines Resurrecting Kami Mine; Project Enters Environmental Assessment Process](#)
- Trade offs: [Proposed volcanic-rock mine divides northern New Brunswick town.](#)
- [Wyoming coal production nosedives, with more trouble ahead.](#)
- [ATCO Energy Systems announces its largest ever energy infrastructure project: Yellowhead Mainline to drive economic growth in Alberta.](#)
- Alleged fraud: [Shell sold millions of carbon credits for carbon that was never captured, report finds.](#)
- [BP's Azerbaijani Oil Field Could Be a Game-Changer for Baku.](#)
- [Drilling into magma: Risky plan takes geothermal to supercritical extremes.](#)
- Solar energy schemes: [Covering the biggest sand desert with solar panels: 173 TWh and the biggest mistake in human history.](#)

## Environmental Geology and Hydrogeology

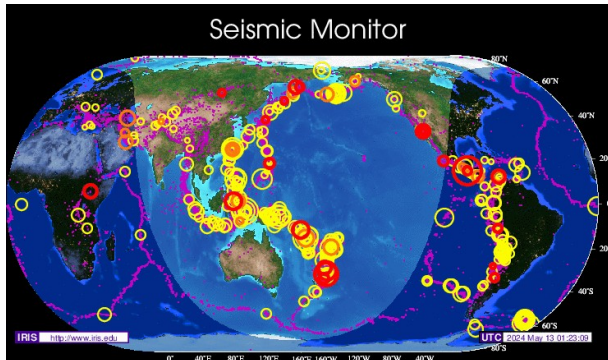
- Common sense prevails: [Plan to pump CO<sub>2</sub> from Millmerran power station into Great Artesian Basin unlikely to get approval.](#)
- Remediation: [Carbon offsetting not possible at Faro mine cleanup in Yukon, feds say.](#)
- [Assessing the Impacts of Landuse-Landcover \(LULC\) Dynamics on Groundwater Depletion in Kabul, Afghanistan's Capital \(2000–2022\): A Geospatial Technology-Driven Investigation.](#)
- Free books from the Groundwater Project: [Darcy's Law in Variable Density Groundwater Systems](#), and [Properties of Organic Contaminants](#); if you download one of the books, be sure to [donate to the Groundwater Project](#).

## Glaciers and Climate Change

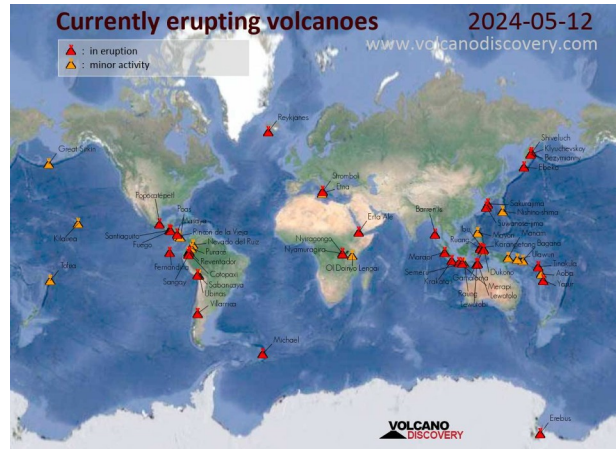
- The [Humboldt Glacier](#) now a mere ice field: [The end of the eternal snows: Integrative mapping of 100 years of glacier retreat in the Venezuelan Andes](#); The Guardian summary [here](#).

- [Ritacuba Blanco: death of a Colombian glacier.](#)
- Bodies coming out of the ice: [A hiker discovered bones, weapons, and money on a thawing glacier. They turned out to be 400 years old and still puzzle archaeologists.](#)
- From Nature: [The importance of distinguishing climate science from climate activism](#); scientists should just tell the truth and let the chips fall where they may.

## Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

- United States Geological Survey (USGS) Volcano Watch: [The blast of the century at Kīlauea.](#)
- USGS Yellowstone Volcano Observatory: [Unpacking the legacy of water chemistry research in Yellowstone National Park, 1883–present](#); related: [A hidden danger lurks beneath Yellowstone.](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- Iceland: Video [Iceland Awaits Next Eruptive Phase as Magma Body Pressurizes: Geologist Analysis.](#)
- Lunar volcanism: [Long-lasting farside volcanism in the Apollo basin: Chang'e-6 landing site](#); Phys.org summary [here](#).
- Volcano research: [Tonga volcano continues to generate research - two years after eruption.](#)
- More volcano research: [Source reservoir controls on the size, frequency, and composition of large-scale volcanic eruptions](#); Phys.org summary [here](#).
- [Euro-Mediterranean Seismological Centre](#)
- [Earthquakes Monitoring Live Worldwide.](#)
- [M5.6, M5.4 earthquakes strike south of Hualien, Taiwan](#); Taiwan's Central Weather Administration summaries [here](#) and [here](#).

- [M6.4 earthquake shakes coast of Mexico, Guatemala](#); USGS summary [here](#).
- Earthquake research: [Spatiotemporal characteristics and earthquake statistics of the 2020 and 2022 adjacent earthquake sequences in North Aegean Sea \(Greece\)](#).
- More earthquake research: [The 3D Crustal Structure in the Epicentral Region of the 1980,  \$M\_w\$  6.9, Southern Apennines Earthquake \(Southern Italy\): New Constraints From the Integration of Seismic Exploration Data, Deep Wells, and Local Earthquake Tomography](#).
- Man made earthquakes: [Pore Pressure Diffusion Led to Microseismicity at Illinois Basin Carbon Sequestration Site](#).



**Batagaika Crater Expands**  
**Credit: [NASA Earth Observatory](#), public domain**

- Geohazards, permafrost slumping: [Characterizing Batagay megaslump topography dynamics and matter fluxes at high spatial resolution using a multidisciplinary approach of permafrost field observations, remote sensing and 3D geological modeling](#); behind a paywall, Live Science summary [here](#).
- Geohazards, flooding research: [FloodNet: Low-Cost Ultrasonic Sensors for Real-Time Measurement of Hyperlocal, Street-Level Floods in New York City](#); Phys.org summary [here](#).

## Upcoming Events

- **Registration closes May 14!!!!** [GAC-MAC, Brandon MB, May 19-22, 2024](#).
- [5<sup>th</sup> Iceland Geothermal Conference, May 28-30, Reykjavik, Iceland](#).
- [Bootleggin' Breakfast 2024](#), Calgary, AB, July 9 & 11, 2024.
- [Goldschmidt 2024, August 18-24, Chicago IL](#), organized by the Geochemical Society and the European Association of Geochemistry.
- [Groundwater Week 2024](#), December 10-12 in Las Vegas, Nevada.

May 13, 2024

## Geology and the Fate of Societies – Denmark

This week we will look at the geology and geopolitics of [Denmark](#). Although the [Government of Denmark](#) administers [Faroe Islands](#) and [Greenland](#), we'll look at those places separately in the future.



**Figure 1a – Denmark**

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

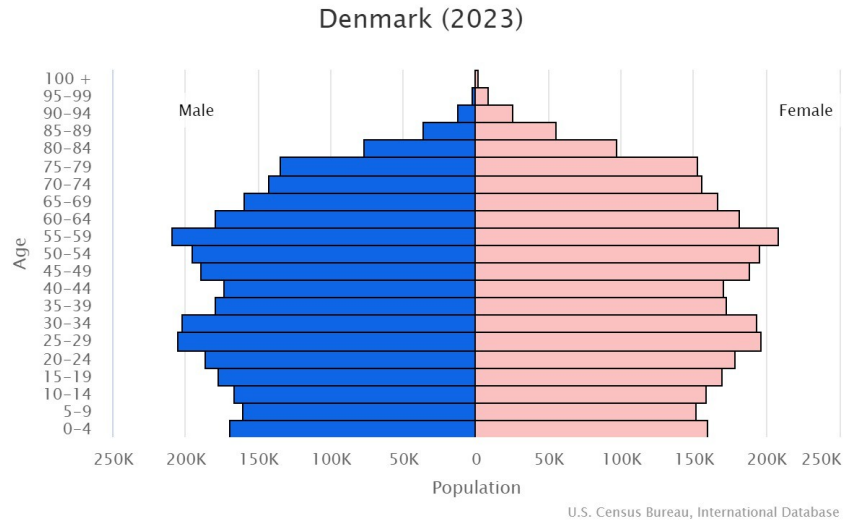
**Figure 1b – Location of Denmark**

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

Denmark is located in [Northern Europe](#). It has a land border with Germany, to the [south](#). East, across the [Kattegat](#), is [Sweden](#); to the north, across the [Skagerrak](#), is [Norway](#). To the west is the [North Sea](#), across which is the [United Kingdom](#). Denmark is a constitutionally [unitary state](#) and is a parliamentary [constitutional monarchy](#). The King is [Frederik X](#) and his Prime Minister is [Mette Frederiksen](#). The Capital and largest city is [Copenhagen](#) (pop. 2,135,634 in the metropolitan area)

According to the [Central Intelligence Agency \(CIA\) World Factbook on Denmark](#), the country has a total area of 43,094 square kilometres (km<sup>2</sup>) of which 42,434 km<sup>2</sup> is land and 660 km<sup>2</sup> is water. (This includes metropolitan Denmark: the [Jutland](#) Peninsula, and the major islands of [Sjælland](#), [Fyn](#), and the island of Bornholm in the [Baltic Sea](#), but excludes the Faroe Islands and Greenland).

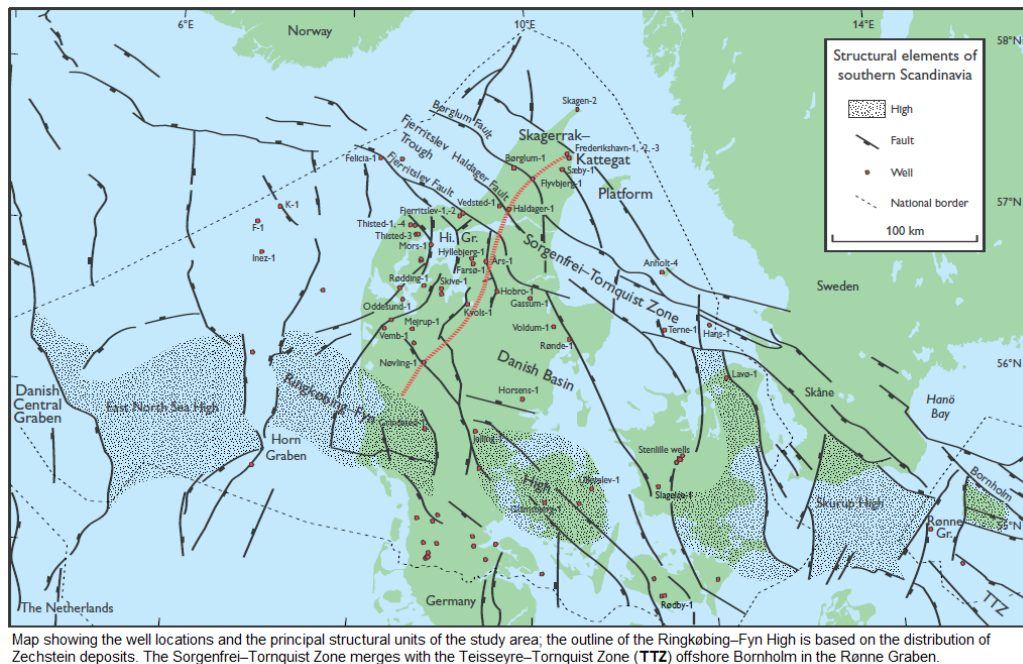
Also according to the CIA World Factbook, 5,973,136 people live in Denmark. Of that almost 6 million, 86.11% are considered to be [Danes](#) and the remaining 13.89% are [others](#). These others include [Turks](#), [Poles](#), [Romanians](#), [Syrians](#), [Ukrainians](#), [Germans](#), and [Iraqis](#). [Danish](#) is the official language; other languages spoken include [Faroese](#), [Greenlandic](#), [German](#) and [English](#) (commonly a second language). In Denmark, [Evangelical Lutheran](#) is the official religion, nominally followed by 71.4% of the population. Among the rest 4.3% are [Muslim](#) and 24.3% are other/none/unspecified.



**Figure 2 – Demographic Profile of Denmark**  
**Credit: U.S. Census Bureau International Database – Denmark, public domain**

The [demographic profile](#) for Denmark shows a fairly stable profile with a tendency for middle age. The median age for both sexes is 42.2 years; the life expectancy at birth for both sexes is 81.9 years; the total fertility rate 1.77 births per woman (below the replacement rate of 2.1) and the annual growth rate is 0.4%.

## Geology



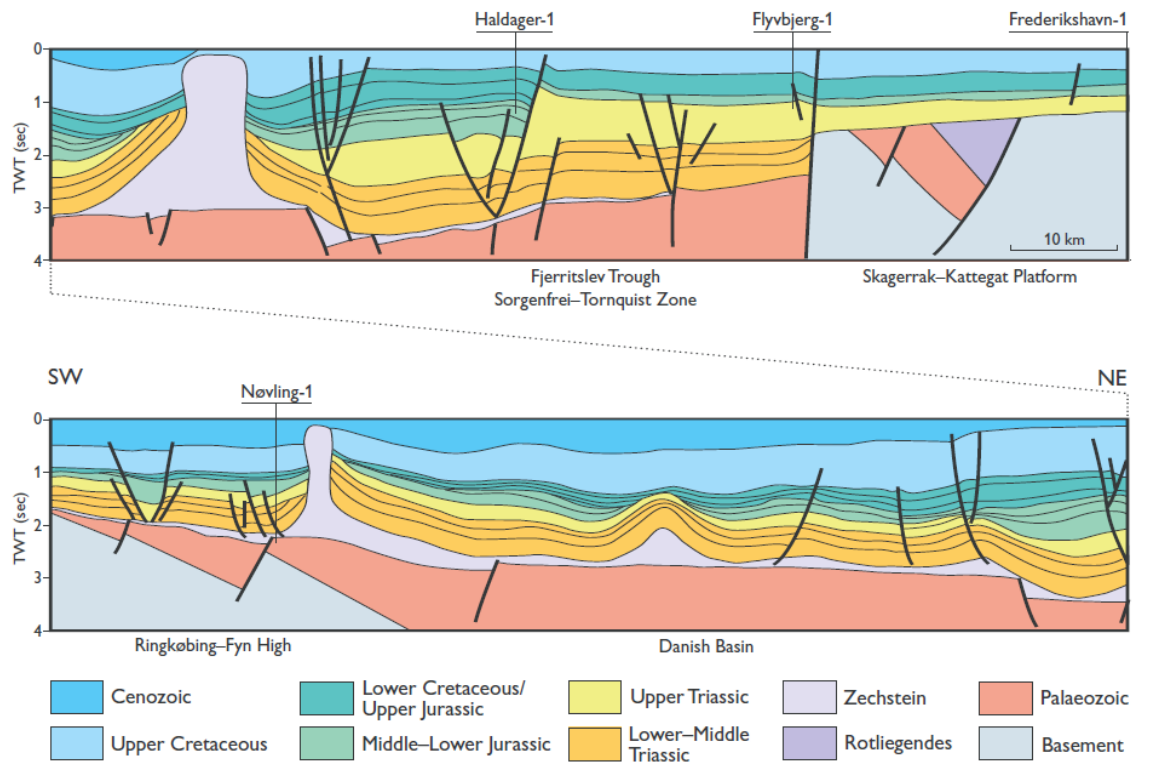
**Figure 3 – Tectonic Structure of Denmark**  
**Credit: Figure 1 in Nielsen, 2003**

The [geology of Denmark](#) consists of a thick cover of sedimentary rocks, Late [Palaeozoic](#) to [Cenozoic](#) in age. The main structural unit is the [Danish Basin](#) which stretches from [Bornholm](#) in the east to the main islands of Denmark and then further west, where the Danish Basin combines with the [North Sea Basin](#).

North of the Danish Basin is the [Sorgenfrei–Tornquist Zone](#), north of which is the [Skagerrak–Kattegat Platform](#). North and east of these units is the [Fennoscandian Shield](#). South of the Danish Basin is the [North German Basin](#).

The sedimentary succession in the Danish Basin is up to 10 kilometres thick. These sedimentary formations are made up of [clastic sediments](#) that eroded off the Fennoscandian Shield. The basement rock underlying the Danish Basin are also part of the Fennoscandian Shield.

Figure 4 is a cross-section through the Danish Basin along the red line in Figure 1.



A regional SW-NE geosection through the Danish Basin and the Fennoscandian Border Zone.

**Figure 4 - Cross-Section Through the Danish Basin**

**[Credit: Figure 2 in Nielsen, 2003](#)**

For more information on the geology of Denmark, follow up on the links provided. A really good link on the geology of Denmark is from the [Geological Survey of Denmark and Greenland](#) and their [Nordic CCS Competence Centre](#).

Figure 5 shows an overall geological map of Denmark.

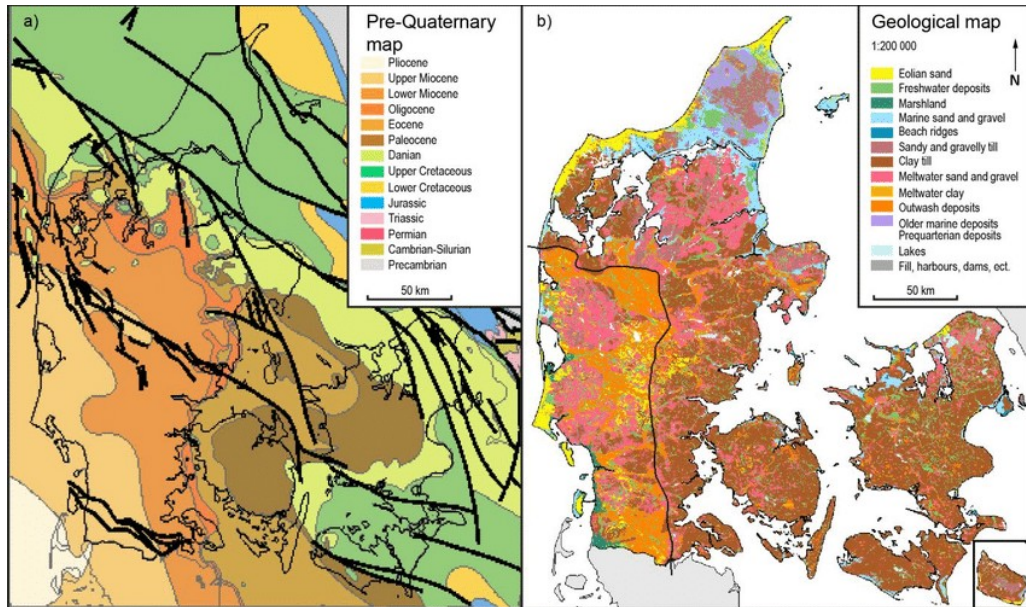


Figure 5 – Pre-Quaternary and Geological Maps of Denmark

Credit: [Figure 2 in Barfod et al, 2016, Creative Commons Attribution 4.0 International](#)

## Resources

### Agriculture



Figure 6 – Farm and Fields on [Neksøl](#), Denmark

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

According to the CIA World Factbook on Denmark, 63.4% of the land in the country is agricultural (58.9% [arable land](#), 0.1% [permanent crops](#), and 4.4% [permanent pasture](#)). Of the remaining, 12.9% is forest and 23.7% has other use.

[Agriculture in Denmark](#) is important. Much of the agricultural is for livestock production: [cattle](#), [pigs](#), and [poultry](#) for meat together with [dairy products](#). [Cereal](#) production is largely for animal feed. Denmark produces more food than they can eat and about 22% of all Danish exports are food products. The [European Unions agricultural policies](#) have been a great benefit to Danish farmers in encouraging production and providing a market for the goods.



**Figure 7 – Two beached fishing vessels, [Nørre Vorupør](#), Denmark**  
**Credit: [Slaunger](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license**

[Commercial fishing](#) and [fish farming](#) also contributes to food production in Denmark, with a commercial fishery fleet of 2,700 fishing vessels and around 239 fish farms. Species caught in the commercial fishery include [herring](#), [mackerel](#), [cod](#), [hake](#), [haddock](#), [whiting](#), [saithe](#), [sole](#), [plaice](#), [flounder](#), [blue mussel](#), [lobster](#), and [deepwater prawn](#). Fish farms species include [rainbow trout](#), [European eel](#), [salmon](#), and [pike-perch](#).

Statistics on Danish agriculture production from the [United Nations Food and Agriculture Organization](#) can be found [here](#).

Food insecurity is rare in Denmark – it is a wealthy country with an [extensive social safety net](#) – but it does exist. According to the FAO, moderate or severe food insecurity affects [6.8% of the total Danish population](#).

One Danish agricultural product that used be available where I live, in Canada, was [Tulip Brand Canned Bacon](#), which is no longer available on the [Tulip product list](#).

## Forestry



**Figure 8 – Oak Forest at [Langå](#), Jutland**

**Credit: [Sten Porse](#), [Creative Commons Attribution-Share Alike 3.0 Unported](#) license**

As noted above, the CIA World Factbook says that 12.9% of the land in Denmark is forest. However, the [The Danish Environmental Protection Agency](#), says that 14.9% of the Danish land area, 640,835 hectares, is forest. Types of forest in Denmark include 35% [conifers](#), 44% [deciduous](#) trees (such as [oak](#) and [beech](#)), and 11% mixed forest. The native forest of Denmark was predominately oak and beech trees in pre-modern times. Conifer species such as [Norway spruce](#), [Sitka spruce](#) and [Douglas fir](#) have been imported over past 200-300 years with Norway spruce being the most common tree species in the country. Statistics on timber production from the FAO can be found [here](#).



An [interesting story](#) about forest management comes from the aftermath of the [Napoleonic Wars](#). The Danes were allied with the [French](#) in 1807. The Danish Navy was considered a big threat to the [English](#) who dispatched expeditionary forces in [1801](#) and again in [1807](#) to destroy and/or steal the Danish Navy. Afterwards, the Danes went all out to plant new oaks to replace the approximately 90,000 mature oak trees lost in the destruction of the Danish Navy by the British. 217 years later those Naval Oaks planted in 1807 [have been re-purposed](#), modern ships no longer requiring large number of oak trees.

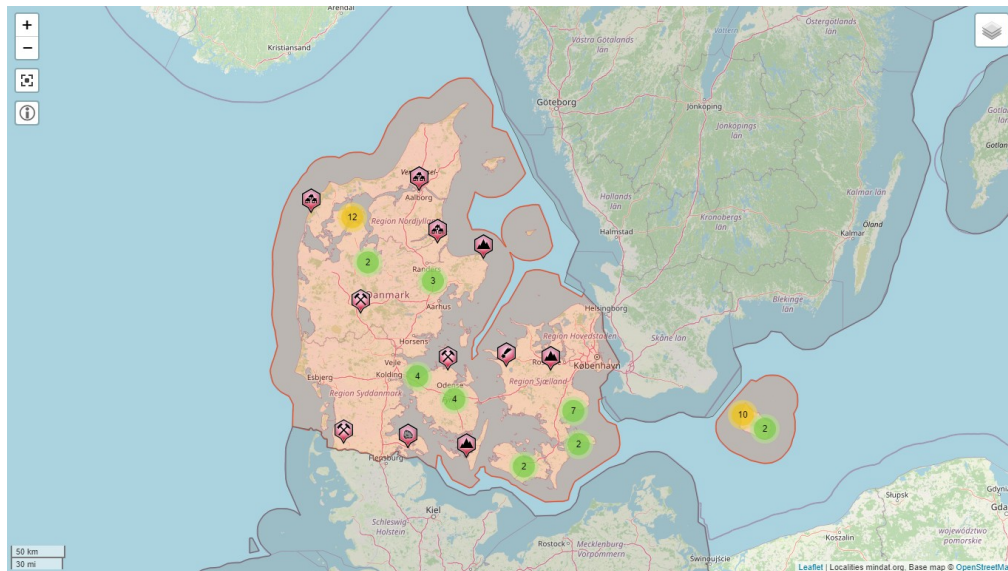
**Figure 9 – The Round Chair, Re-purposed Naval Oak**

**Credit: [JoeNomi 1961](#), [Creative Commons Attribution-Share Alike 3.0 Unported](#) license**

## Mineral Resources

[Mineral production](#) in Denmark consists of two main sectors: industrial minerals, and energy minerals. [Industrial minerals](#) include: [chalk](#), [diatomite](#), [lime](#) and [salt](#).

Figure 10, below leads to an interactive map of mines, quarries, and mineral occurrences in Denmark.



**Figure 10 – Interactive Map of Mines, Quarries, and Mineral Occurrences in Denmark**  
[Credit: Minedat.org](#)

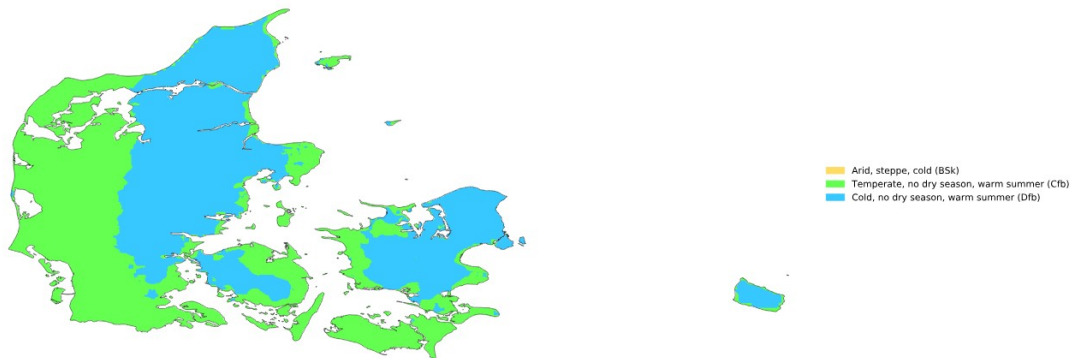
Energy minerals extracted in Denmark are mostly off shore oil and gas production. Natural gas is produced at the [Tyra Gas Field](#) and petroleum is produced at the [Siri Area](#), [South Arne](#), [Solsort](#), [Hejre](#), and [Ravn](#) fields. There were lignite mines in [Herning](#), but they are no longer in production and the old mine is now a [museum](#).



**Figure 11 – Tyra East Production Platform ca. 2006**  
[Credit: tom jervis, Creative Commons Attribution 2.0 Generic license](#)

## Climate

Köppen-Geiger climate classification map for Denmark (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 12 – Köppen-Geiger Climate Classification for Denmark**

**Credit: [Beck et al, 2018](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license**

Denmark has a temperate climate, often humid and overcast with mild, windy winters and cool summers. There are two main Köppen-Geiger climate zone: temperate oceanic climate ([Cfb](#)) and warm-summer humid continental climate ([Dfb](#)).

Denmark looks like [a pleasant place to visit](#), it is an advanced industrial country with all the modern amenities. However, recent travel advisories ([here](#) and [here](#)) caution that the country is a target for terrorism and that there have been incidents of gang related violence. If you still plan to go to visit, check out the [Climate to Travel](#) and [Lonely Planet](#) websites.

## History and Geopolitics

### History



**Figure 13 – Viking Longship, [Roskilde](#)**

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

The [history of Denmark](#) goes back to the end of the [Pleistocene](#), when, with the retreat of the [Weichsel glaciation](#), the country became habitable. Archaeological studies show the hard lives of people living in Denmark during the [Neolithic](#), [Nordic Stone Age](#), and [Nordic Bronze Age](#). During the [Nordic Iron Age](#), the country began to [make contact](#) with the nearby [Roman Empire](#). The lives of the people of Denmark at that time is preserved in the epic poem [Beowulf](#).

Following the [end of the Western Roman Empire](#), around 476 AD, people from tribes such as the [Jutes](#) (from Jutland) and the [Angles](#) (from the [Anglia Peninsula](#) in southern Denmark) together with [Saxons](#) from Germany and [Frisians](#) from the [Netherlands](#) took to their ships, invaded, and conquered much of [Great Britain](#). Eventually, these emigres from the east side of the North Sea coalesced into the [Anglo-Saxons](#), the ancestors of the modern [English](#).

Three hundred years later, during the [Viking Age](#), Danish adventurers also crossed the North Sea to ravage, pillage and generally [cause mayhem in Great Britain](#). Later, many of them settled down in the part of England called the [Danelaw](#). Danish adventurers also went east into the lands around the Baltic Sea and carried on with the same [fun times](#). To be fair, we should point out that the Vikings were not just violent adventurers, but also [astute merchants and gifted craftsmen](#).

By 965 the Danes were united and became [officially Christian](#) under the leadership of [Harald Bluetooth](#). One of the effects of the Danish expansion across the North Sea was the creation of a [North Sea Empire](#), first under the leadership of [Sweyn Forkbeard](#) and later his son [Knut](#). The North Sea Empire eventually broke up, but the Danish kept control of Norway as well as nominally ruling the Norse colonies of the Faroe Islands, Greenland and [Iceland](#). Iceland remained in the domain of the Danish crown until 1944.

[Medieval Denmark](#) was fairly [chaotic](#) with lots of strife between the crown and the nobles. Things never really settled down. ([See this site for a complete list of the wars fought by the Danes](#)). In 1536, the Danes [converted to Protestantism](#).

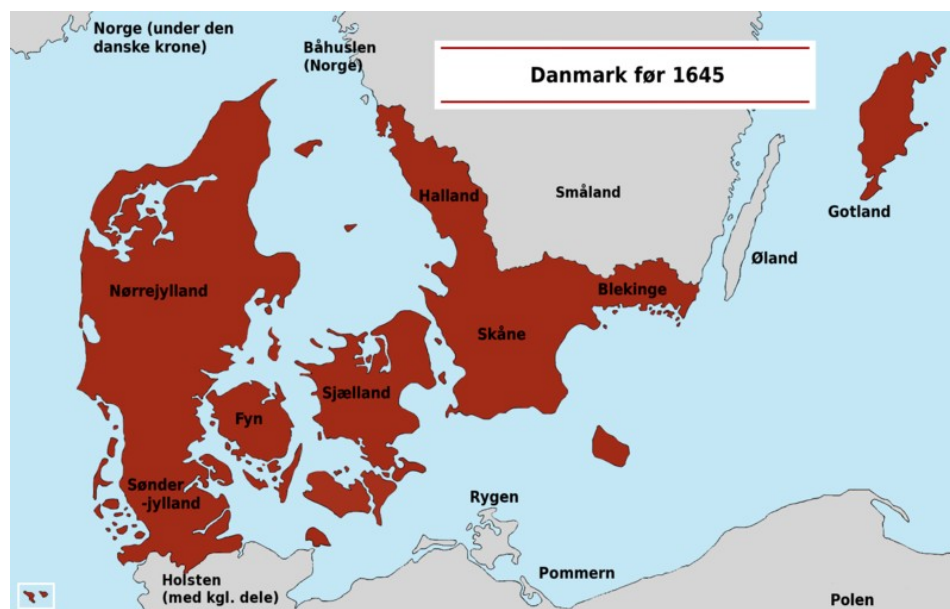


Figure 14 – Denmark, just before [Torstenson's War](#) (1643-1645)

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

[Danish holdings in the Baltic](#) were gradually lost to Sweden and other powers through a series of wars including [Torstenson's War](#) (1643-1645), the [Second Northern War](#) (1655-1660) and the [Great Northern War](#) (1700-1721), after which Denmark generally enjoyed a period of peace during which they even [engaged in colonization adventures in the Americas](#).

As noted above, Denmark became disastrously involved in the Napoleonic Wars after which they entered into what has been called the [Danish Golden Age](#). In 1864, the Danish state lost [Schleswig-Holstein](#) to Germany in the [Second Schleswig War](#).

From 1864 to 1940 Denmark concentrated on [industrial expansion](#), generally staying out of great power politics. However, their luck ran out in 1940 when [National Socialist Germany](#) decided that they needed Norway, and that they might as well take over Denmark along the way. Denmark was [occupied](#) by the Germans until the end of the [Second World War](#) in 1945. Denmark was [liberated by British troops](#) in May 1945 and [Canadian troops prevented the Red Army from adding Denmark to the Soviet sphere of influence](#).

After WW2, Denmark settled down to building a [social democratic society](#). The aim of their program was providing practical help to the Danes in the form of health care, education, and help for the needy. Denmark became part of the [North Atlantic Treaty Organization](#) at its founding in 1949 and the [European Union](#) (EU) in 1973.

### *Geopolitics*



**Figure 15 – Copenhagen, View from Christiansborg Castle**  
**Credit: [Pudelek](#), [Creative Commons Attribution-Share Alike 4.0 International](#) license**

[Modern Denmark is a successful industrial state](#), with a national policy of improving the lives of their citizens. The development of the Danish [welfare state](#) was made possible by the history of the Danish state, the Danish people and the [social contract](#) they developed:

1. Danes people are a fairly homogeneous group, most of whom share a common ancestry with the ancient Danish tribes;
2. The wars of the Danish state created a strong central government and a strong sense of social unity; and
3. The Danes built a modern industrial economy and expected all who could to contribute to the common welfare.

This social contract has stood well until recent times. The [current challenge](#) of maintaining this welfare state has been the recent influx of immigrants, few of whom share a commitment to the Danish state and people. Many Danes are concerned with the [effects of immigration on Denmark](#) and have [turned against allowing further immigration](#). The current Prime Minister, Mette Frederiksen, [made her political career off of anti-immigrant sentiment](#). Personally, I am optimistic that the Danes will find a way to integrate most of the new immigrants and assimilate their children into the Danish people. They will do this through [tough policies](#) towards newcomers and [deporting those who refuse to comply](#). The usual bunch will complain, but the Danes know who they are and want to remain that way.



**Figure 16 – Don't Piss Off the Neighbours, Nelson Forcing the Passage of the Sound, 30 March 1801**  
**Credit: [Robert Dodd](#) (1748–1815), [Royal Museums Greenwich](#), public domain**

As shown in their history, Danish relationships with the outside world have not always been peaceful. Currently, the reality of Danish geopolitics is defined by three main outside relations: their relationship with the EU and its common market; their membership in [NATO](#); and the influence of [Russia](#) on Western Europe in general and Denmark in particular.

Danish membership in the EU has [overall been of benefit to them](#). While some [Danes are exploring means to improve the relationship](#), for now it works fairly well. The biggest economic benefit to Denmark is access to the wider European market for Danish goods, especially to Germany. The Danes would have to think long and hard before jeopardizing this profitable relationship.

The relationship of Denmark with the rest of the EU nations is enhanced by their common membership in NATO. Overall, this system of collective security is generally of benefit to Denmark. The downside of NATO is that it is the [centrepiece of American military policy](#) in Europe. So if the Americans get into a dust-up with anyone in the European neighbourhood, such as Russia, the Danes could be dragged into it whether they like it or not. Frankly, I can't see the Danes being enthusiastic about being part of a ~~missing~~ [Great Power Struggle](#) between Russia and the [USA](#).

If the Americans ever decide to leave NATO, as at least one [American politician](#) is proposing to do, the Danes have already stated that they will [join in on a common EU defence policy](#). Such a development would change the geopolitical landscape of all Western Europe.

The Danish, and EU, relationship with Russia has been strained by the [Ukrainian War](#). Many in Western Europe are weary of the war and [fear being dragged into it](#). Others want to expand [West European involvement in the war](#). A lot will depend on [how the Ukrainian War plays](#) out and what follows. As a member of NATO and the EU, Denmark is part of this trouble, whether they like it or not.

Also, one other player may become involved in European geopolitics in general, and Danish concerns in particular, is [China](#). As noted in today's [news section](#), China is becoming more interested in European affairs. [China is allied with Russia](#) and carries on a [great deal of trade with Europe](#). Whether they like it or not, the Danes are caught up in this [Great Game](#).

That winds up this terribly short look at Denmark. Follow up on the links if any of this interests you

### **Standard Caveat**

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.