

Doggerland

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Doggerland is a name given by archaeologists and geologists to a former landmass in the southern North Sea that connected the island of Great Britain to mainland Europe during and after the last Ice Age, surviving until about 6,500 or 6,200 BCE and then gradually being flooded by rising sea levels. Geological surveys have suggested that Doggerland was a large area of dry land that stretched from Britain's east coast across to the present coast of the Netherlands and the western coasts of Germany and Denmark.^[2] Doggerland was probably a rich habitat with human habitation in the Mesolithic period.^[3]

The archaeological potential of the area had first been discussed in the early 20th century, but interest intensified in 1931 when a commercial trawler operating between the sandbanks and shipping hazards of the Leman Bank and Ower Bank east of the Wash dragged up a barbed antler point that dated to a time when the area was tundra. Later vessels have dragged up mammoth and lion remains, among other remains of land animals, and small numbers of prehistoric tools and weapons that were used by the region's inhabitants.



Map showing hypothetical extent of Doggerland (c. 8,000 BCE), which provided a land bridge between Great Britain and continental Europe

Contents

- 1 Formation
- 2 Disappearance
- 3 Discovery and investigation by archaeologists
- 4 In popular culture
- 5 See also
- 6 Notes
- 7 Further reading
- 8 External links

Formation

Before the first glacial period of the current Pleistocene-Holocene Ice Age the Rhine river flowed northwards through the North Sea bed at a time when the North Sea was dry. It is thought that a Cenozoic silt deposit in East Anglia is the bed of an old course of the Rhine. The Weald was twice as long as it is now and stretched across the present Strait of Dover; the modern Boulonnais is a remnant of its east end.

With glaciation, when Scandinavian and Scottish ice first met and formed a giant ice dam, a large proglacial



The red line marks Dogger Bank, which is most likely a moraine formed in the Pleistocene^[1]

lake formed behind it, which received the river drainage and ice melt from much of northern Europe and Baltic drainage through the Baltic River System. The impounded water eventually overflowed over the Weald into the English Channel and cut a deep gap which sea erosion widened gradually into the Strait of Dover.

During the most recent glaciation, the Last Glacial Maximum that ended in this area around 18,000 years ago, the North Sea and almost all of the British Isles were covered with glacial ice and the sea level was about 120 m (390 ft) lower than it is today. After that the climate became warmer and during the Late Glacial Maximum much of the North Sea and English Channel was an expanse of low-lying tundra, extending around 12,000 BCE as far as the modern northern point of Scotland.^[4]

Evidence including the contours of the present seabed shows that after the first main Ice Age the watershed between North Sea drainage and English Channel drainage extended east from East Anglia then southeast to the Hook of Holland, not across the Strait of Dover, and that the Thames, Meuse, Scheldt and Rhine rivers joined and flowed along the English Channel dry bed as a wide slow river which at times flowed far before reaching the Atlantic Ocean.^{[3][4]} At about 8000 BCE, the north-facing coastal area of Doggerland had a coastline of lagoons, saltmarshes, mudflats, and beaches, and inland streams and rivers and marshes, and sometimes lakes. It may have been the richest hunting, fowling and fishing ground in Europe available to the Mesolithic culture of the time.^{[3][5]}

One big river system in Doggerland found by 3D seismic survey was the 'Shotton River', which drained the southeast part of the Dogger Bank hill area into the east end of the Outer Silver Pit lake. It is named after Birmingham geologist Frederick William Shotton.

Disappearance

As sea levels rose after the end of the last glacial period of the current ice age, Doggerland became submerged beneath the North Sea, cutting off what was previously the British peninsula from the European mainland by around 6500 BCE.^[4] The Dogger Bank, which had been an upland area of Doggerland, is believed to have remained as an island until at least 5000 BCE.^[4] Before it flooded completely, Doggerland was a wide undulating plain containing complex meandering river systems, with associated channels and lakes. Key stages are now believed to include the gradual evolution of a large tidal embayment between eastern England and Dogger Bank by 7000 BCE, and rapid sea level rise thereafter, leading to the Dogger Bank becoming an island and Great Britain being finally physically disconnected from the continent.^[6]

A recent hypothesis is that much of the remaining coastal land, already much reduced in size from the original land area, was flooded by a tsunami around 6200 BC (approximately 8200 BP), caused by a submarine landslide off the coast of Norway known as the Storegga Slide. This theory suggests "that the Storegga Slide tsunami would have had a catastrophic impact on the contemporary coastal Mesolithic population... Following the Storegga Slide tsunami, it appears, Britain finally became separated from the continent, and in cultural terms, the Mesolithic there goes its own way."^[6]

Discovery and investigation by archaeologists

The remains of plants brought to the surface from Dogger Bank had been studied as early as 1913 by palaeobiologist Clement Reid and the remains of animals and worked flints from the Neolithic period had been found around the fringes of the area.^[7] In his book *The Antiquity of Man*, published in 1915, anatomist Sir Arthur Keith had discussed the archaeological potential of the area.^[7] In 1931, the trawler *Colinda* hauled up a lump of peat whilst fishing near the Ower Bank, 25 mi (40 km) east of Norfolk. The peat was found to contain a

barbed antler point, possibly used as a harpoon or fish spear, 8.5 in (220 mm) long, later identified to date from between 4,000 and 10,000 BCE, when the area was tundra.^{[3][5]} The tool was exhibited in the Castle Museum in Norwich.^[5]

Interest in the area was reinvigorated in the 1990s by the work of Professor Bryony Coles, who named the area "Doggerland" ("after the great banks in the southern North Sea"^[5]) and produced a series of speculative maps of the area.^{[5][8]} Although she recognised that the current relief of the southern North Sea seabed is not a sound guide to the topography of Doggerland,^[8] the topography of the area has more recently begun to be reconstructed more authoritatively using seismic survey data obtained through petroleum exploration surveys.^{[9][10][11]}

A skull fragment of a Neanderthal, dated at over 40,000 years old, was recovered from material dredged from the Middeldiep, a region of the North Sea some 10 mi (16 km) off the coast of Zeeland, and was exhibited in Leiden in 2009.^[12] In March 2010 it was reported that recognition of the potential archaeological importance of the area could affect the future development of offshore wind farms in the North Sea.^[13]

In July 2012, the results of a fifteen-year study of Doggerland by the universities of St Andrews, Dundee and Aberdeen, including artefacts and analysis of survey results, were displayed at the Royal Academy in London.^[14] Richard Bates of St Andrews University said:^[14]

"We have speculated for years on the lost land's existence from bones dredged by fishermen all over the North Sea, but it's only since working with oil companies in the last few years that we have been able to re-create what this lost land looked like.... We have now been able to model its flora and fauna, build up a picture of the ancient people that lived there and begin to understand some of the dramatic events that subsequently changed the land, including the sea rising and a devastating tsunami."

In popular culture

- The "Mammoth Journey" episode of the BBC television programme *Walking with Beasts* is partly set on the dry bed of the southern North Sea.
- The area featured in the "Britain's Drowned World" episode of the Channel 4 *Time Team* documentary series.^[15]
- The first chapter of Edward Rutherfurd's novel *Sarum* describes the flooding of Doggerland.
- The legend "The Cormorants of Utrøst"^[16] describes a sunken land in the Norwegian Sea (not in the North Sea).
- Science fiction author Stephen Baxter's *Northland* trilogy is set in an alternative timeline in which Doggerland (Northland in the books) is never inundated.

See also

- Brittia
- Maglemosian culture
- Outburst flood
- Viking Bergen Island

Notes

1. ^ Stride, A.H (January 1959). "On the origin of the Dogger Bank, in the North Sea" (<http://geomag.geoscienceworld.org/cgi/content/abstract/96/1/33>) . *Geological magazine* **96** (1): 33–34. <http://geomag.geoscienceworld.org/cgi/content/abstract/96/1/33>. Retrieved 12 January 2010.
2. ^ "The Doggerland Project", University of Exeter Department of Archaeology (<http://humanities.exeter.ac.uk/archaeology/research/projects/title,89282,en.html>)
3. ^ *a b c d* Patterson, W, "Coastal Catastrophe" (paleoclimate research document), University of Saskatchewan (<http://geochemistry.usask.ca/bill/courses/Climate/Coastal%20catastrophe%20prt.pdf>)
4. ^ *a b c d* University of Sussex, School of Life Sciences (<http://www.lifesci.sussex.ac.uk/teaching/C1119/mhe08%20lecture%206.pdf>) , C1119 Modern human evolution, Lecture 6, slide 23
5. ^ *a b c d e* Vincent Gaffney, "Global Warming and the Lost European Country" (http://livebettermagazine.com/eng/magazine/pdf_docs/2008_01/Global_Warming_Gaffney.pdf)
6. ^ *a b* Bernhard Weninger et al., The catastrophic final flooding of Doggerland by the Storegga Slide tsunami, *Documenta Praehistorica XXXV*, 2008 (<http://sprint.clivar.org/soes/staff/ejr/Rohling-papers/2008-Weninger%20et%20al%20Documenta%20Praehistorica.pdf>)
7. ^ *a b* Keith, Arthur (15 Aug 2004). "3" (http://books.google.co.uk/books?id=nCxEDWs8kwgC&pg=PA41&lpg=PA41&dq=submerged+forest+france&source=bl&ots=3AK6QqsMcJ&sig=8UUuf218vEmBnkgnoxNnGefNzi0&hl=en&ei=VmBMS4etKYP24Aazh8HoDQ&sa=X&oi=book_result&ct=result&resnum=4&ved=0CA8Q6AEwAw#v=onepage&q=submerged%20forest%20france&f=false) . *The Antiquity of Man*. Anmol Publications Pvt Ltd. pp. 41. ISBN 81-7041-977-8. http://books.google.co.uk/books?id=nCxEDWs8kwgC&pg=PA41&lpg=PA41&dq=submerged+forest+france&source=bl&ots=3AK6QqsMcJ&sig=8UUuf218vEmBnkgnoxNnGefNzi0&hl=en&ei=VmBMS4etKYP24Aazh8HoDQ&sa=X&oi=book_result&ct=result&resnum=4&ved=0CA8Q6AEwAw#v=onepage&q=submerged%20forest%20france&f=false. Retrieved 12 January 2010.
8. ^ *a b* B.J. Coles. "Doggerland : a speculative survey (Doggerland : une prospection spéculative)", *Proceedings of the Prehistoric Society*, ISSN 0079-497X, 1998, vol. 64, pp. 45-81 (3 p.1/4) (<http://cat.inist.fr/?aModele=afficheN&cpsidt=2023101>)
9. ^ Laura Spinney, "The lost world: Doggerland" (<http://sci.tech-archive.net/Archive/sci.archaeology/2008-07/msg00136.html>)
10. ^ Vincent Gaffney, Kenneth Thomson, Simon Fitch, Mapping Doggerland: The Mesolithic Landscapes of the Southern North Sea, University of Birmingham, 2007 (<http://books.google.co.uk/books?hl=en&lr=&id=SrsrE8oZx44C&oi=fnd&pg=PR11&dq=Doggerland&ots=YzrIXDuQeI&sig=DaeFOytqn6t-JpW1-zBTGqVqQ50#v=onepage&q=&f=false>)
11. ^ Vincent Gaffney, Simon Fitch, David Smith, Europe's Lost World: The rediscovery of Doggerland, University of Birmingham, 2009 (<http://www.britarch.ac.uk/books/Gaffney2009>)
12. ^ Palarch: Spectacular discovery of first-ever Dutch Neanderthal Fossil skull fragment unveiled by Minister Plasterk in National Museum of Antiquities (<http://www.palarch.nl/2009/06/news-first-fossil-of-neanderthal-from-northsea-the-netherlands/>) , 15 June 2009
13. ^ *Stone Age could complicate N.Sea wind farm plans*, Reuters, 23 March 2010 (<http://www.reuters.com/article/idUSLDE62M12020100323>)
14. ^ *a b* BBC News, *Hidden Doggerland underworld uncovered in North Sea*, 3 July 2012 (<http://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-18687504>) . Accessed 4 July 2012
15. ^ "Britain's Drowned World", *Time Team*, Channel 4 Television, 24 April 2007 (http://www.channel4.com/history/microsites/T/timeteam/2007_dogger.html)
16. ^ Marie Lams, tr. "The cormorants of Utrøst" (http://web.tiscalinet.it/sv2001/cormo_tales/cormo_tale3.htm)

Further reading

- *The Rediscovery of Doggerland*, by Vincent Gaffney, Simon Fitch & David Smith, Council for British Archaeology, 2009, ISBN 1-902771-77-X
- *Doggerland: a Speculative Survey*, by B.J. Coles, *Proceedings of the Prehistoric Society*, **64** 1998 pp

45–81.

- *Mapping Doggerland: The Mesolithic Landscapes of the Southern North Sea*, V. Gaffney, K. Thomson and S. Fitch (editors), 2007, Archaeopress.
- Discussed in depth in chapters 2–4 in *Before Scotland: The Story of Scotland Before History*, Alistair Moffat, 2005, Thames & Hudson Inc. ISBN 978-0-500-05133-7
- Spinney, Laura; Robert Clark (photog.); Alexander Maleev (Illus.) (December 2012). "The Lost World of Doggerland" (<http://ngm.nationalgeographic.com/2012/12/doggerland/spinney-text>) . *National Geographic* **222** (6): 132–143. <http://ngm.nationalgeographic.com/2012/12/doggerland/spinney-text>. Retrieved 30 November 2012.

External links

- "The moment Britain became an island" (<http://www.bbc.co.uk/news/magazine-12244964>) , Megan Lane, BBC News, 15 February 2011
- "North Sea Paleolandscapes" (http://www.iaalocal.bham.ac.uk/North_Sea_Palaeolandscapes/index.htm) , Institute for Archaeology and Antiquity, University of Birmingham
- "North Sea Prehistory Research and Management Framework (NSPRMF) 2009" (http://www.english-heritage.org.uk/publications/ns-prehistory-research-manage-framework/10278_North_Sea_Prehistory_web.pdf) , English Heritage, 2009
- "The Doggerland project" (<http://humanities.exeter.ac.uk/archaeology/research/projects/title,89282,en.html>) , Professor Bryony Coles, University of Exeter. Includes hypothesised map of Doggerland in the early Holocene.
- CGI images (2 stills and a movie) (<http://opennature.org/sc-shotton.html>) of a Mesolithic camp beside the Shotton River
- "Das rekonstruierte Doggerland" ("Doggerland reconstructed") (<http://www.spiegel.de/fotostrecke/fotostrecke-34337.html>) , computer generated images of a Doggerland landscape, 19 August 2008, *Der Spiegel* **(German)**
- "Hidden Doggerland underworld uncovered in North Sea" (<http://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-18687504>) , BBC News, 3 July 2012
- "Doggerland lost" (<http://www.q-mag.org/doggerland/index.html>) , Q-mag.org, Feb. 2013

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Categories: Historical geology | North Sea | Ice ages | Continental shelves

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