“Investigating Doggerland”

Talk by Dr Andy Emery, November 2023

Our second talk of the 2023/24 season and the first on “Zoom” was by Dr Andy Emery, Principal Marine Geoscientist from Wessex Archaeology, concerning recent investigations on Doggerland, in the North Sea.

It has been known for many years that the, now-submerged, Doggerland contains human artefacts as well as animal remains, with hand axes and other Palaeolithic tools up to 250,000 years old being dredged up, a clear indication that it was once part of a massive landmass. In recent years the area has been the subject of intense investigation for the suitability of offshore wind farms, where foundation depths up to 50 metres are required. This has led to an in-depth understanding of the underlying geography.

The last Ice Age, beginning about 100,000 years ago, saw a large ice sheet descend over most of Northern Britain where it flowed into the North Sea and met ice from Scandinavia. When the ice sheet retreated animals and plants returned followed by hunter-gathering humans. Around 10,000 years ago Doggerland was occupied by humans and plenty of animals. Bones of mammoth, hyenas and rhinos as well as other animals have been discovered.

Dogger Bank, an upland area within Doggerland, now lies at a depth of around 25 to 50 metres, about half of what is typical for the North Sea. Wind farms are currently under construction on Dogger Bank, leading to intensive investigations of the underlying archaeology. Geophysical techniques have been employed using sound that travels through sediments to work out different levels. “Vibrocores” are used to collect core samples and show what sediments are present; sand giving much more resistance than clay. Through these techniques we can understand something of the very complex history of the site.

Dogger Bank is very large – about 100 km wide and has a very complex stratigraphy, formed during the advance and retreat of the ice sheet. The ice sheet greatly disturbed previous sediments, pushing them up and creating a complicated geography. Rivers and channels developed over time as the ice retreated. This was an arid period with little rainfall. Then humidity rose with more rainfall, leading to the development of marsh land; conditions that suited humans and animals.

Eventually Dogger Bank met the fate of the rest of Doggerland and was submerged. There were two stages of coastal barriers on Dogger Bank, each one submerged as sea levels rose.

The “Storegga Tsunami” caused by a massive landslip off the coast of Norway around 8,200 years ago is sometimes seen as the final straw for Dogger Bank, although it is noted that in the case of a tsunami, the waves do recede. However, it appears that by 8,700 years ago, Doggerland was already largely submerged so the tsunami wouldn’t have affected humans as they would have already left.

The investigations provide a poignant reminder of how climates change over many centuries and by helping us to understand the past, may help us to understand the future. Food for thought indeed!

Alan Sandford

December 2023


Continental Europe above sea level
16,000 B.C.
8000 B.C.
7000 B.C.
Land area today
BRITISH ISLES
ATLANTIC OCEAN
Ice sheet 16,000 B.C.
DOGGERLAND
North Sea (today)
NORWEGIAN TRENCH
DENMARK
Tybrind Vig
Tweed
Howick
UNITED KINGDOM
DOGGER BANK (today)
IRELAND
Outer Silver Pit Lake
Wismar Bay
ENGLAND
WALES
Ouse
Goldcliff
Severn
London
Thames
NETHERLANDS
Rhine
BELGIUM
GERMANY