



## Where did the flint come from?

Flint is an Old English word from the North Germanic *vlint* or *flins*, first recorded in writing by the monk, Ælfric of Eynsham, Oxfordshire (c950–1010). It describes a hard greyish-black fine-grained quartz mineral composed of silicon dioxide ( $\text{SiO}_2$ ) and is found in chalk. Chert is an often inferior version of flint with larger crystals and more impurities. It is found in limestone.

In England, flint was laid down in White Chalk during the Cretaceous period 85,000,000 to 65,000,000 years ago. Decomposition of dead siliceous organisms formed layers of flint nodules within the chalk (figure 1). The Alpine orogeny (formation of the Alps by tectonic movement of continental plates) caused uplift and exposure of chalk bedrock in southern England, Norfolk, Lincolnshire, northern France and Denmark later exploited by man.

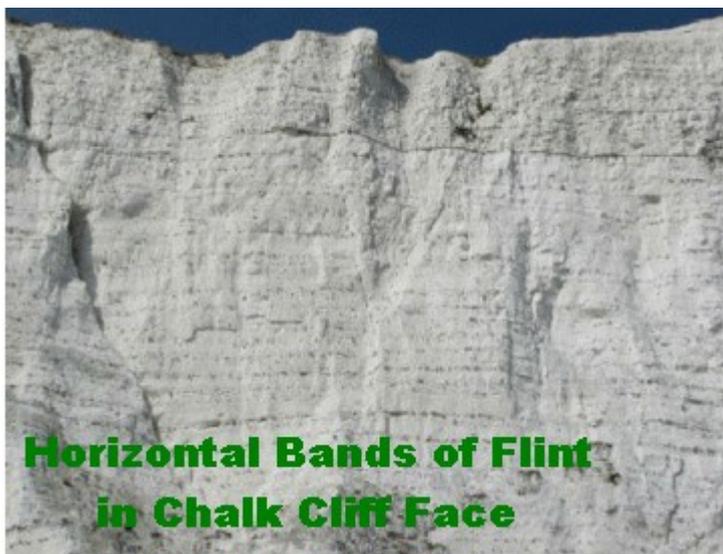


Figure 1 – The origin & use of flint.

## Human use of flint

Humans have used flint for approximately 2 million years, because of its property of fracturing into sharp flakes, which make blades and other tools essential for survival; it also had a sculptural use (figure 2).



Figure 2 – Examples of worked flint producing blades & art Creswell point © 2000 Creswell Heritage Trust

### Sources of quality raw material

High quality raw material is essential for tool production and comes from only limited areas in northern Europe (figure 3). Too many fossils or flaws interfere with knapping. The upper layer of flint is the least filtered and so contains more fossils than the lower, more filtered flint layers (Turner 2013). The bottom layer of flint is what is ideally needed for tool manufacture. Hence, the later development of flint mines like Grime's Graves, Norfolk.

Figure 3 – Red geological areas predict a reasonable potential for producing quality material for tools (Duke & Steele 2009).

In the Upper Palaeolithic, hunter-gatherer groups made special-purpose trips to procure flints. The typical transfer distance for flint assemblages is 50 to 100km, but could extend to 300km (Duke & Steele 2009, Elburg & van der Kroft 2003). This gives a very rough idea of regional movement of hunter-gatherer clans; two thirds moved perhaps within a 100km distance of a flint source in Western Europe.

The White Chalk in Lincolnshire, Norfolk and southern England offered abundant flint, but how could people from mainland Europe reach it?

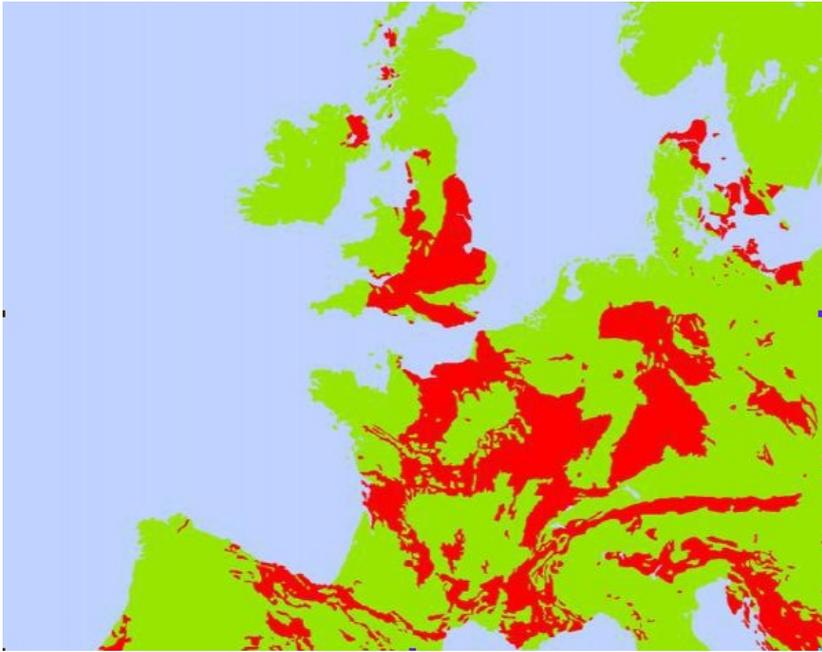


Figure 4 – Doggerland – The Europe That Was (McNulty & Cookson 2012)



## Migration

A population rise in the Late Alleröd 13,200-12,700 BP due to warming temperatures may have promoted migration. The path across Doggerland would bring migrants to the quality flint of the Lincolnshire Wolds and Norfolk, before they trekked on 70km and 140km respectively, to the killing fields of Farndon. Trace element analysis of 13 flint artefacts from Farndon supports these two areas as raw material sources (figure 5, Pettitt et al 2012).

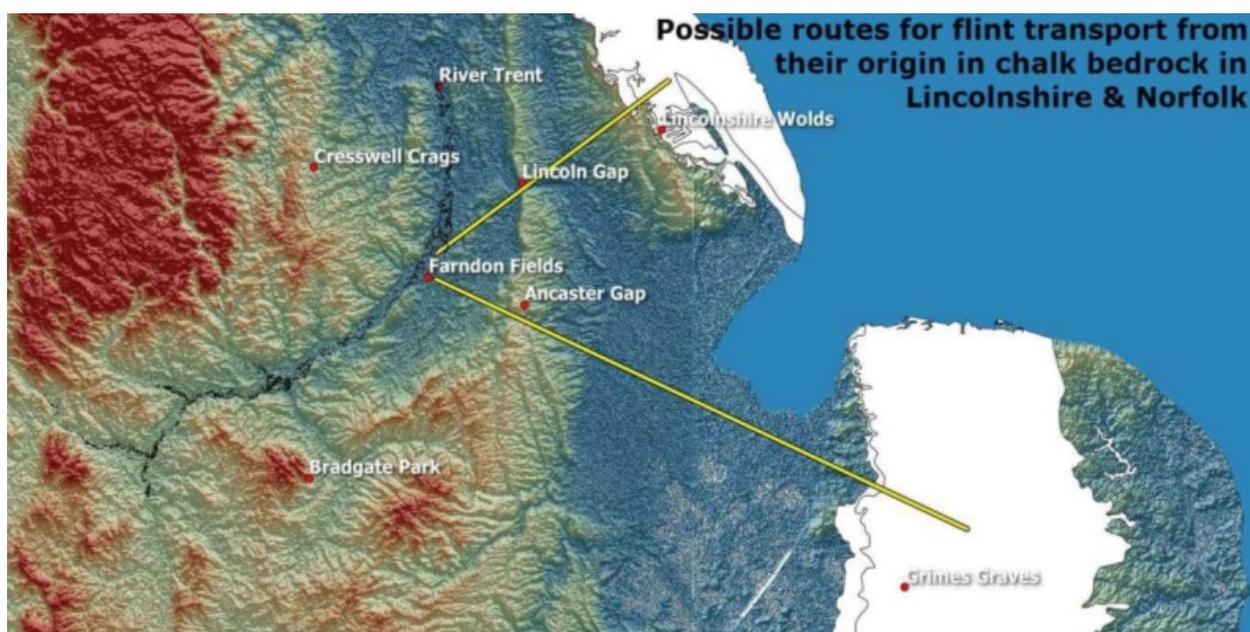
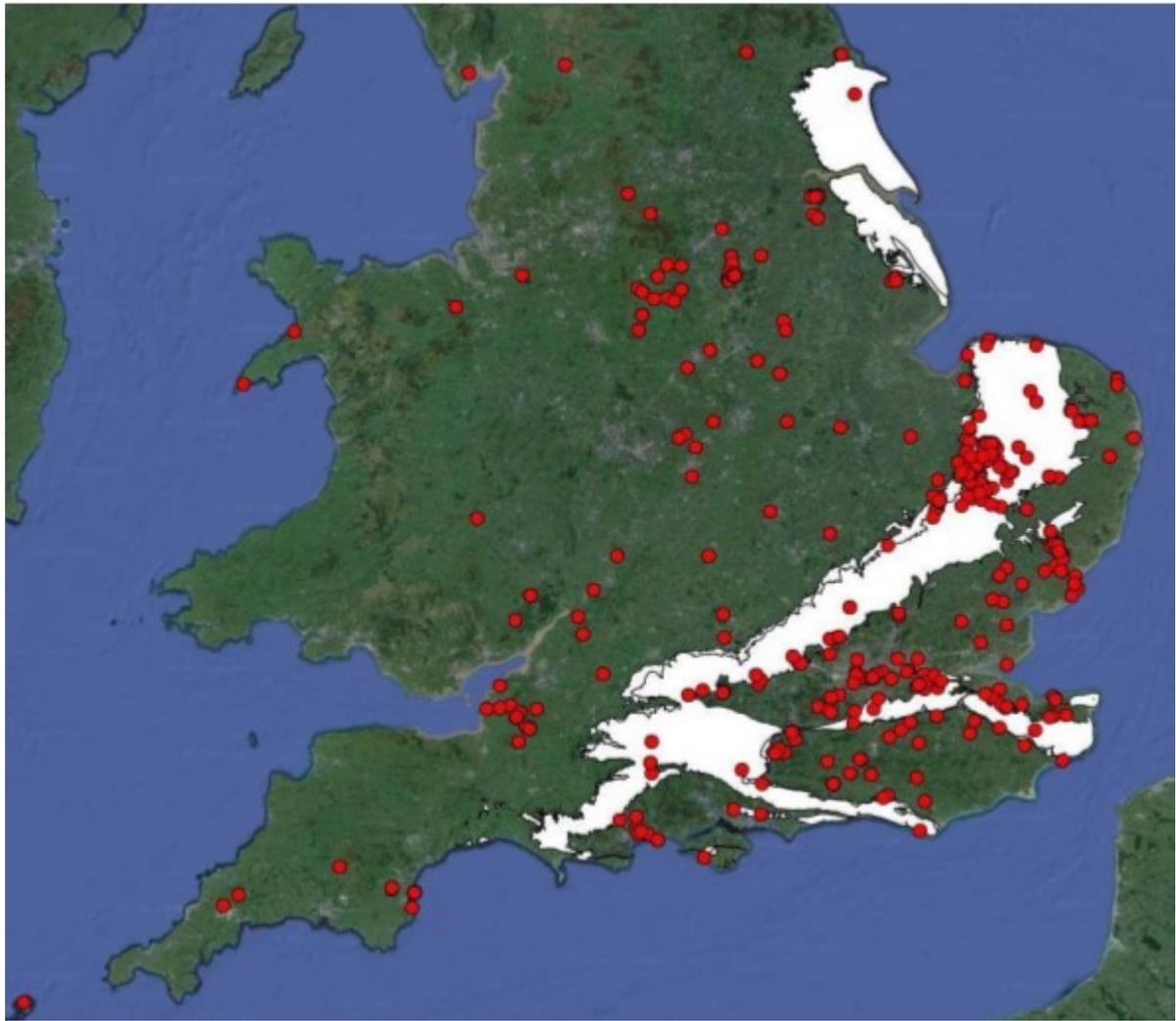


Figure 5 – How flint may have reached Farndon Fields.

## Upper Paleolithic flint finds in Britain

British Upper Palaeolithic flint finds cluster in the vicinity of the White Chalk (figure 6). This suggests that people remained generally within 'easy' reach of flint sources. However, they were prepared to move much further afield. But why come to Farndon? To be continued...



**Figure 6 – Distribution of Late Palaeolithic finds across Britain. White areas flint-bearing chalk outcrops, red markers Palaeolithic finds. Based on the Jacobi Archive held by Wessex Archaeology Ltd.**

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2. Elburg R. & van der Kroft P. (2003) *FlintSource.NET*
3. McNulty W.E & Cookson J. N., *National Geographic Magazine*
4. Pettitt P. et al (2012) The British Final Magdalenian: Society, settlement and raw material movements revealed through LA-ICP-MS trace element analysis of diagnostic artefacts *Quaternary International* 272–273, 275-287.

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