

How to Survive the Ice Age in Sussex

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Currently we are living in an inter-glacial period. These generally last about 20000-30000 years and, as this started about 10000-20000 years ago the next Ice-Age is due soon!



Landscape changes due to the climatic conditions are reflected in the geology and changing geography. The English Channel at the time of the last Ice-Age was the estuary of a river which drained the northern slopes of the Alps. La Cotte de St Brelade, an Ice-Age site in Jersey, possibly 45,000 years old, provides clues for this but the current rise in sea levels is putting it at risk.

A feature of Sussex is the raised and buried beaches typified by the well known Boxgrove site. Changes to the south coast are the result of rising sea levels, the effect of the 'bounce back' after the weight of ice has been removed from the earth's crust plus a shunt from tectonic plates. During the interglacial periods, the vegetation would have been similar to today. As the Ice-Age progressed, the vegetation decreased leaving the soil liable to erosion and then as temperatures in summer began to rise, the effect of repeated freeze/thaw cycles resulted in mud slides which buried the beaches. An example is Black Rock, Brighton, which is not a true cliff but is a massive Ice-Age slump.

Another sign of the Ice-Age are 'erratics', foreign boulders carried down to the beach by icebergs. The implication here is that although the Ice-Age has ended, the sea remains cold and ocean currents may have been very different early in the interglacial period. Also in Sussex, the dry valleys on the Weald are thought to be due to peri-glacial warming causing flushes of water as the climate warms.

Despite current fears about global warming, the inter-glacial periods tend to be short (in terms of geological time). So what will we see happening in a new cold snap?

A reduction in sea levels by up to 150 metres

Increase in aridity (drying/desertification) leading to dust storms

Increase in ice sheets (glaciation)

Increase in the permafrost zone. This can be a problem for buildings.

The probable effects on humankind will be acute. It is likely that all urban populations north of 40° latitude will have to move. There will be a collapse in grain production as well as the infrastructure. Staying put is not an option as provision of adequate shelter, (liquid) water and food will all be problematic. Meat is an essential part of a healthy diet. There is approximately 8 billion kilograms of meat in the U.K. (cow, pig, sheep etc.). However with a lack of suitable food for the animals, this becomes a finite supply. With an individual's needs of approximately 500 calories of meat a day (meat provides approximately 2000 calories/kg) we have sufficient meat to feed our population for only 3-3.5 years.

If populations move south, as they have in previous glacial periods, there will be more problems. The majority of mankind already occupies the equatorial zone – there is no more room!

Overall the world has been cooling for a long time and the effects of this are seen especially in the evolution of flora. For example grasses are relatively recent plants and they have come to dominate the flora world wide. This possibly helped drive the evolution of hominid/human species as they adapted to an omnivorous diet including both meat and grass (corn, wheat etc.).

So it is unlikely we will survive the Ice-Age in Sussex! But some of humankind should survive in warmer areas of the world. We will continue to prosper, unlike earlier fauna, as we are engineers and will adapt to suit our needs.

The current geological epoch has been referred to as the Anthropocene. We are changing the face of the earth and human detritus will be incorporated into new geological layers. But in about 65 million years as the earth's orbit around the sun decays there will be a 'greenhouse earth'. That may test our survival skills to the limit!

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October 2014