
Beachy Head Cave

[TQ 579 953]

Highlights

Beachy Head Cave is the longest and best example in Britain of a phreatic conduit developed in chalk.

Introduction

Beachy Head Cave is entered from an opening close to the foot of the cliffs 400 m west of Beachy Head, East Sussex (Figure 7.1). The cave is formed in the lower beds of the Senonian Upper Chalk, which locally dips very gently to the west. It lies immediately above a tabular flint band 20 mm thick. There is no apparent relationship between passage orientation and surface topography. The cave was described by Reeve (1980), and cave development in chalk has been reviewed by Lowe (1992a).

Description

The opening to the cave is on a ledge 4 m above the base of the cliff, where marine erosion has caused cliff retreat to intersect a remnant phreatic cave passage (Figure 7.9). Most of the cave comprises a phreatic tube about a metre in diameter but there are a few phreatic domes and small avens. The cave is close to horizontal, as it follows the one bedding horizon, but it changes level to follow this horizon across some small faults.

The passage north-east from the entrance extends for about 180 m, obliquely away from the cliff face, to where a static sump has prevented further exploration. Several smaller passages branch off at various points and a small cluster of botryoidal stalactites is present near the end. The western passage extends almost parallel with the cliff face, for about 145 m to a clay choke. Daylight can be seen at several places where small branch passages open to the cliff face. One short stretch of passage is aligned on a fault, and has well-developed phreatic domes in the roof.

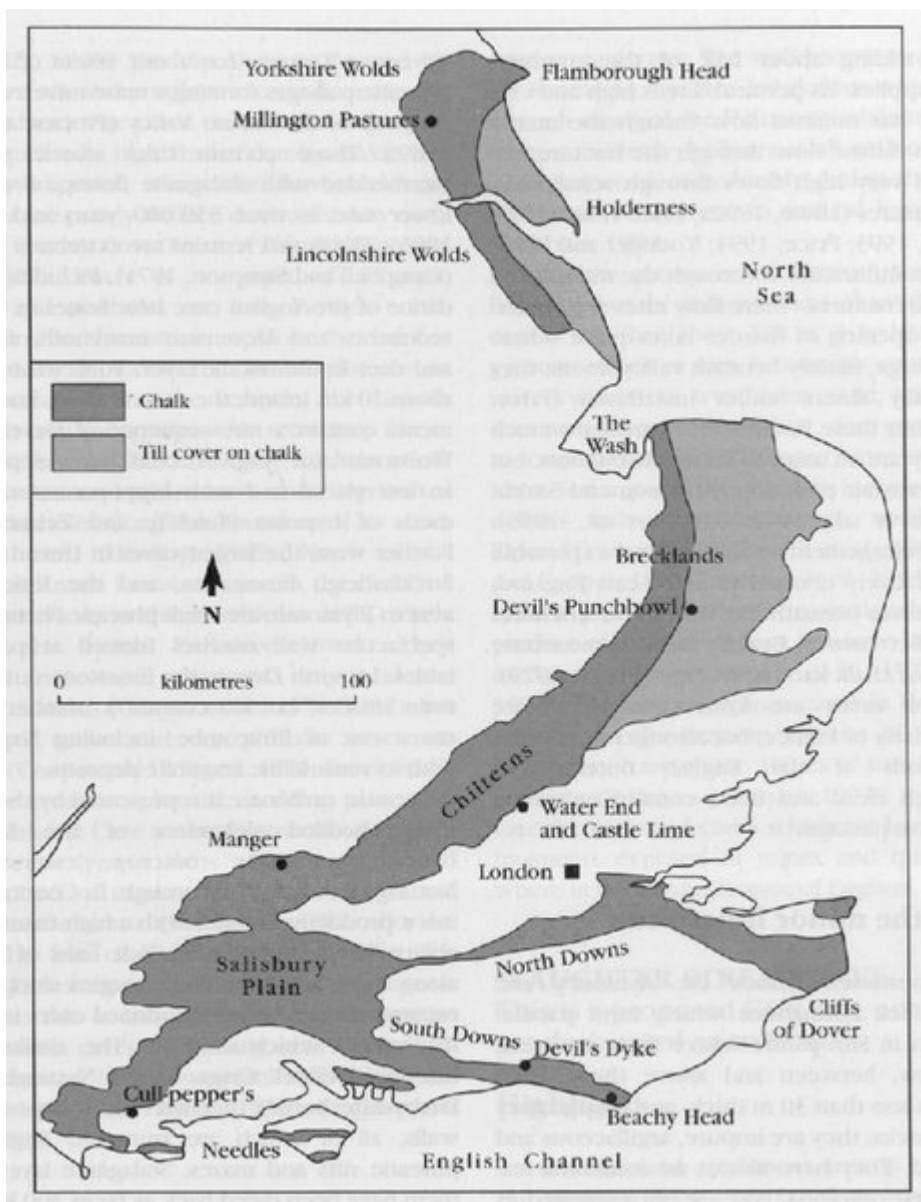
Interpretation

The development of Beachy Head Cave appears to have been entirely phreatic; there is no evidence of vadose modification. The thin tabular flint band which floors the passage appears to have played a fundamental role in cave development. It may have acted as an aquiclude which prevented downward migration of water, and initiating cave development immediately above; alternatively its chemical contrast may have created a favourable inception horizon. The cave is phreatic, and its altitude means that it predates at least 5 m of water-table lowering. It may be much older, and it now carries no drainage flow; it is unrelated to the present topography, but its depth of over 100 m below the South Downs surface renders this of little significance. Beachy Head Cave may represent a relict example of the type of passage that must extend below currently active sinks in chalk, such as those at Water End in Hertfordshire (Walsh and Ockenden, 1982).

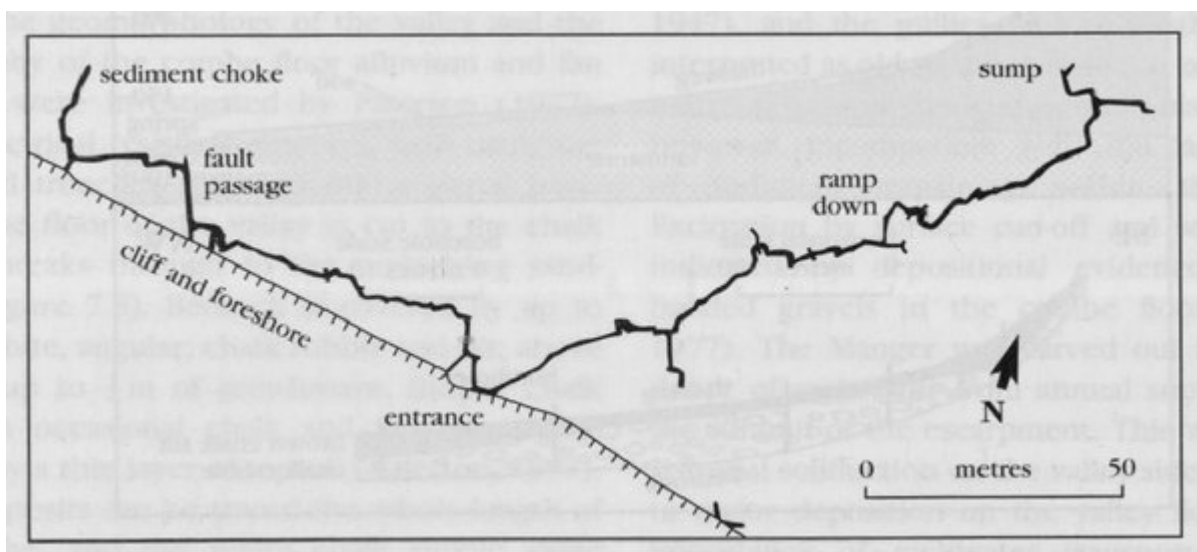
Conclusion

The cave is the only one in British chalk with any significant amount of accessible passage, and is therefore an important demonstration of the existence of conduits and the role of conduit flow in the heavily exploited chalk aquifer.

[References](#)



(Figure 7.1) Outline map of the chalk karst of England, with locations documented in the text. Superficial deposits occur on many parts of the Chalk outcrop; only the large areas of glacial till are distinguished on this map, as they mask most topographic expression of the karst.



(Figure 7.9) Outline map of Beachy Head Cave (from survey by Chelsea Speleological Society).