

LOCAL GEOLOGICAL SITES

CASTLE POINT DISTRICT



CptG2 Hadleigh Castle Landslip

Site location: Hadleigh Castle, Hadleigh, Essex

Grid Reference: TQ 810 860

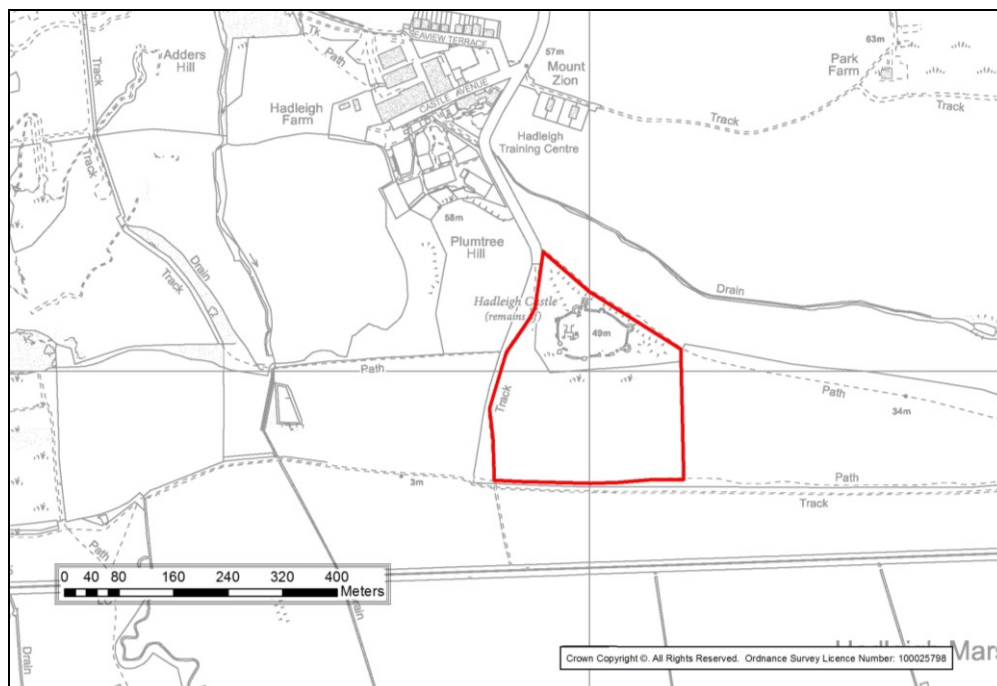
Status: Accessible at all reasonable times

Summary of the geological interest:

Hadleigh Castle is situated on the edge of an ancient cliff of London Clay which was cut by the Thames about 27,000 years ago, during one of the coldest periods of the Ice Age. The cliff was abandoned by the river at least 10,000 years ago and since then there have been a considerable number of landslips as the ground attempts to regain a stable slope.

The abandoned cliff line stretches all the way from South Benfleet to Leigh-on-Sea and forms the southern edge of the high ground of the Rayleigh Hills. Landslips occur at a number of places, but they are most visible at Hadleigh Castle, where the severe effects on the medieval castle can be clearly seen. The ground is still actively slipping (the largest slide in historical times occurred in the late 19th century) and it may be at least another 10,000 years before it reaches an angle of stability.

Hadleigh Castle therefore provides an excellent example of landslipped ground, in an impressive setting overlooking the Thames estuary. It provides a vivid reminder of one of the processes that have shaped, and continue to shape, the surface of the Earth.



Site Assessment. Local Geological Sites (LoGS) in Essex are assessed using criteria based on DEFRA guidance. An assessment form is used which asks key questions under four value categories: scientific, educational, historical and aesthetic. This site has been assessed and qualifies under these criteria.

Scientific interest and site importance

The castle is situated on a cliff line which was formed during two phases of river erosion, tentatively assigned to the Middle Devensian (c. 27,000 years B.P.) and the Late Devensian (c. 17,000 years B.P.). Weaker erosion may have continued to the end of the Devensian (c. 10,000 years B.P.) since when the cliff has been essentially abandoned. Study of the clay layers mantling the cliff has revealed several major phases of landslipping. The first occurred under periglacial conditions shortly after the cliff was abandoned. Temperate slipping occurred from 7,000 to 6,500 and from 2,100 to 2,000 years B.P. in response to climate conditions throughout Europe. Most recently, there has been a phase that started with a major rotational slip in Victorian times, around 1890.

The degraded part of the cliff has an average inclination of over 12° and is still actively slipping. This indicates that the total time required after abandonment for the cliff to reach the ultimate angle of stability (about 8°) could be several times that which has elapsed so far. Open tension cracks in the ground are evidence of continued movement.

The solid geology of Hadleigh cliff is London Clay which, a short distance away, is overlain by Claygate Beds and Bagshot Sand. The cliff complements the actively eroding London Clay cliffs of Sheppey on the opposite side of the estuary.

The geomorphological interest, combined with the historical and landscape value, make this site of great educational importance. There is also geological interest in the building materials used for construction of the castle (Reigate stone, Kentish ragstone and flint).

Other information

Hadleigh Castle, a scheduled ancient monument, was built in 1230. After a period of neglect, major rebuilding was carried out between 1360 and 1370. In 1551 the castle was sold by the Crown and by the seventeenth century it had become a ruin. Despite the landslipping the curtain wall and two towers survive today almost to their full height. There are fine views from here across Hadleigh Marshes and the Thames estuary.

The castle remains are in the guardianship of English Heritage. Access is available at any reasonable time. Hadleigh Country Park (Essex County Council) is nearby. The site is owned by the Salvation Army, which operates an adjacent farm and visitor centre.

References

Hutchinson, J.N. and Gostelow, T.P. 1976. **The development of an abandoned cliff in London Clay at Hadleigh, Essex.** Phil. Trans. R. Soc. London. A. Vol. 283, pages 557-604.



An aerial view of Hadleigh Castle and its famous landslip.

Clearly visible is the large rotational slip which occupies the uppermost part of the slope and has encroached on the south curtain wall of the castle.

Photo: © Essex County Council