

## Quaternary Rivers and Glaciers in Midland and Eastern England – conflicting views and observable evidence

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Studies of the glacial and river history of Midland England have generated numerous models and much controversy. This lecture attempts to outline the 'story' and, most important, present the evidence. The two topics are very closely interlinked because glaciers changed the patterns of the rivers and river terraces hold some evidence of glacial presence. The river 'story' begins with a very simple pattern of large rivers flowing from uplands in the west to the North Sea in the east, as relatively low energy systems, and operating on a timescale over which the upland areas are rising and the North Sea basin is subsiding. The main catchments of this time were the Thames, Bytham and Ancaster. It is proposed that glaciation first reached lowland England in MIS 16 and modified the Ancaster and Bytham, but the main changes in the landscape occurred during MIS 12 (Anglian Glaciation), which totally rearranged the landscape by glacial erosion and sedimentation. The Ancaster and Bytham were eliminated entirely and the Thames was diverted southwards. Following this, the region was drained by small catchments with a shape determined by Anglian glacial erosion. Subsequently these changed only slightly, the main changes being in the River Trent, again due to glacial action. The glacial history following the Anglian is more complex, and a case will be presented for ice reaching Midland England during MIS 10, MIS 8, MIS 6 and the Last Glaciation (MIS 2). An attempt will be made to verify all these proposals by observable evidence, and justify them against alternative views that the Bytham river did not exist and that Midland England has only been glaciated during the Anglian (MIS 12), Wolstonian (whatever that may be) and the Devensian (MIS 2).

