

LANDSCAPE VISUALISATION & PALAEOCHANNEL MODELLING

The LiDAR DEM/DTM for the WRM project forms a key element in all the methods of landscape analysis (see Paleofluvial/Hydrogeological modelling, Geophysical Survey at Catholme, and Field GIS Assessment: Wychnor Pilot Project reports), and also serves as the basis for the GIS (see below). It was also used as the source for mapping palaeochannels outside of the focus area (the focus area and immediate surrounding landscape also making use of multiple years' orthophotographs for identification). Due to the high density of points small changes in the landscape, or micro contours, can be visualised very effectively. This enables subtle changes, often not viable with the naked eye or in aerial photographs, to be brought to light. Height changes and channels that may have been obscured by vegetation can also be picked up in the DTM due to LiDAR's ability to penetrate vegetation cover.

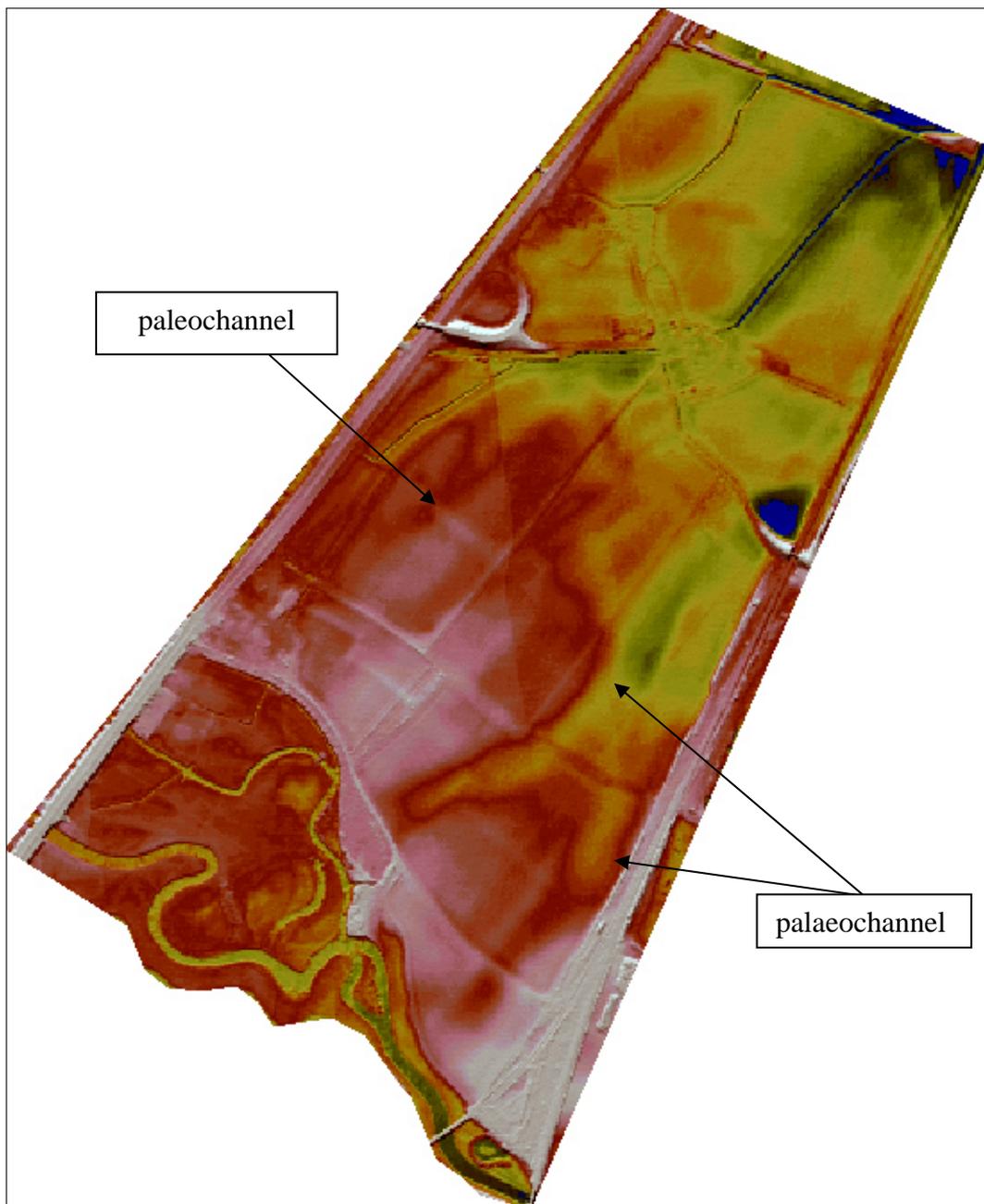


Figure 11: False coloured DTM of focus area showing previously undetected palaeochannels

In figure 11 the focus area, a very flat surface to the eye, has been false coloured with 32 different classes. As the landscape dips ever so slightly where the palaeochannels occur the classification differs from the surrounding area.

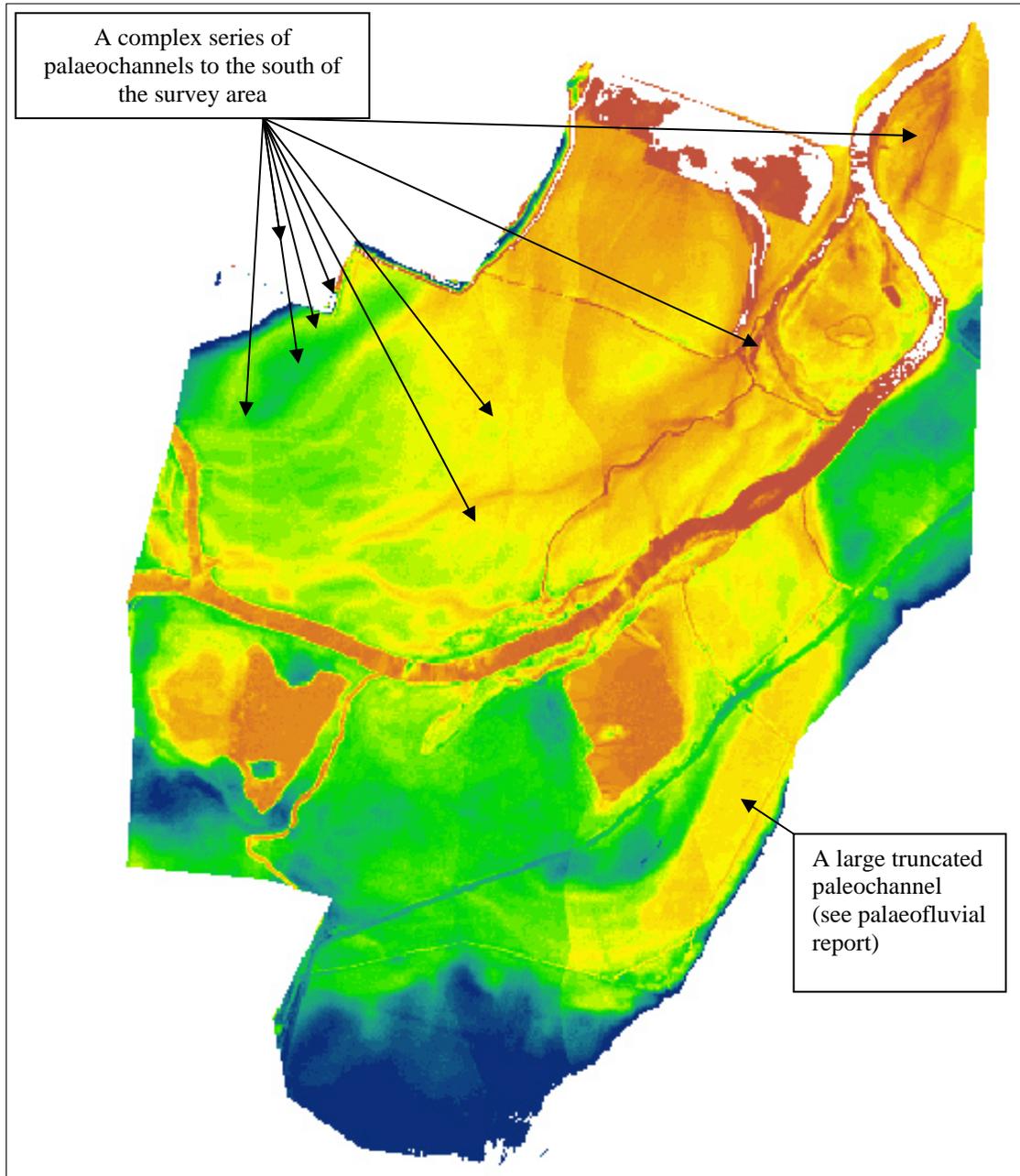


Figure 12: A complex series of palaeochannels to the south of the focus area

The investigation of the palaeochannels in the focus area specifically is dealt in more detail in the Palaeofluvial/Hydrogeological report. However the LiDAR has been used to identify main palaeochannels in the project area as a whole. The following are some examples showing the build up of possible palaeochannels in the project area and gravel islands. A full image catalogue of the river valley from the whole project area is to be found in appendix A.

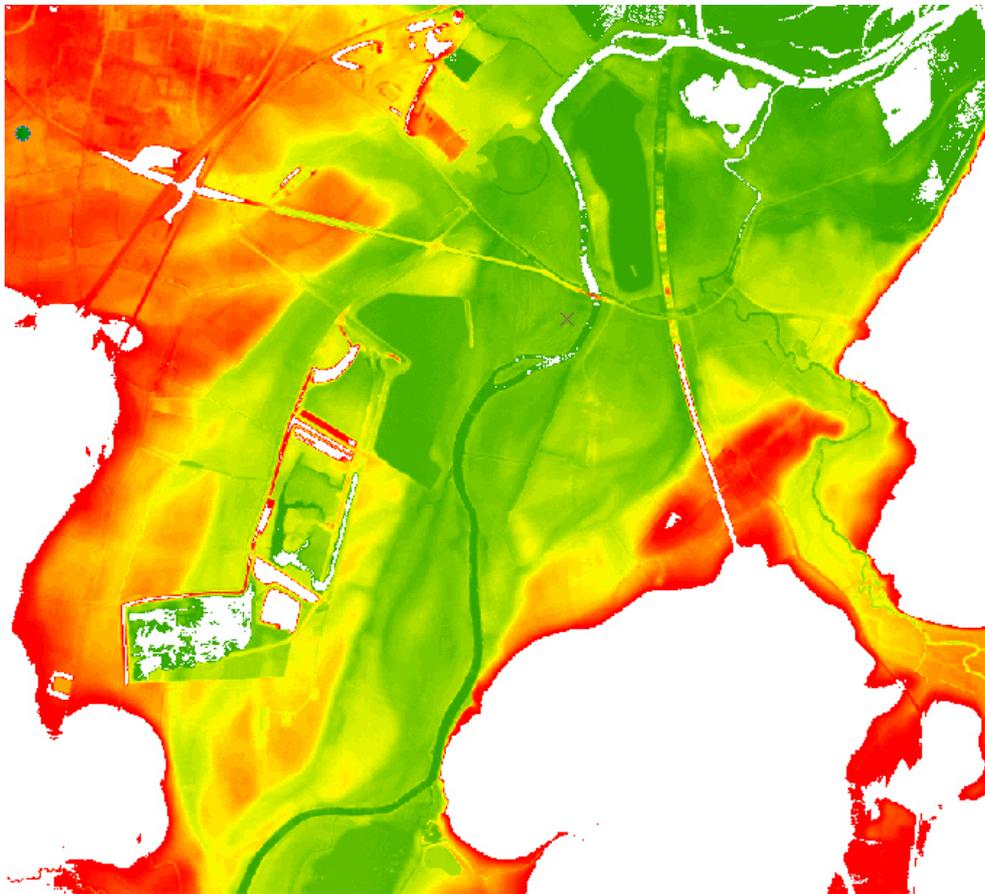


Figure 13: False colour DTM of part of the river valley showing palaeochannels

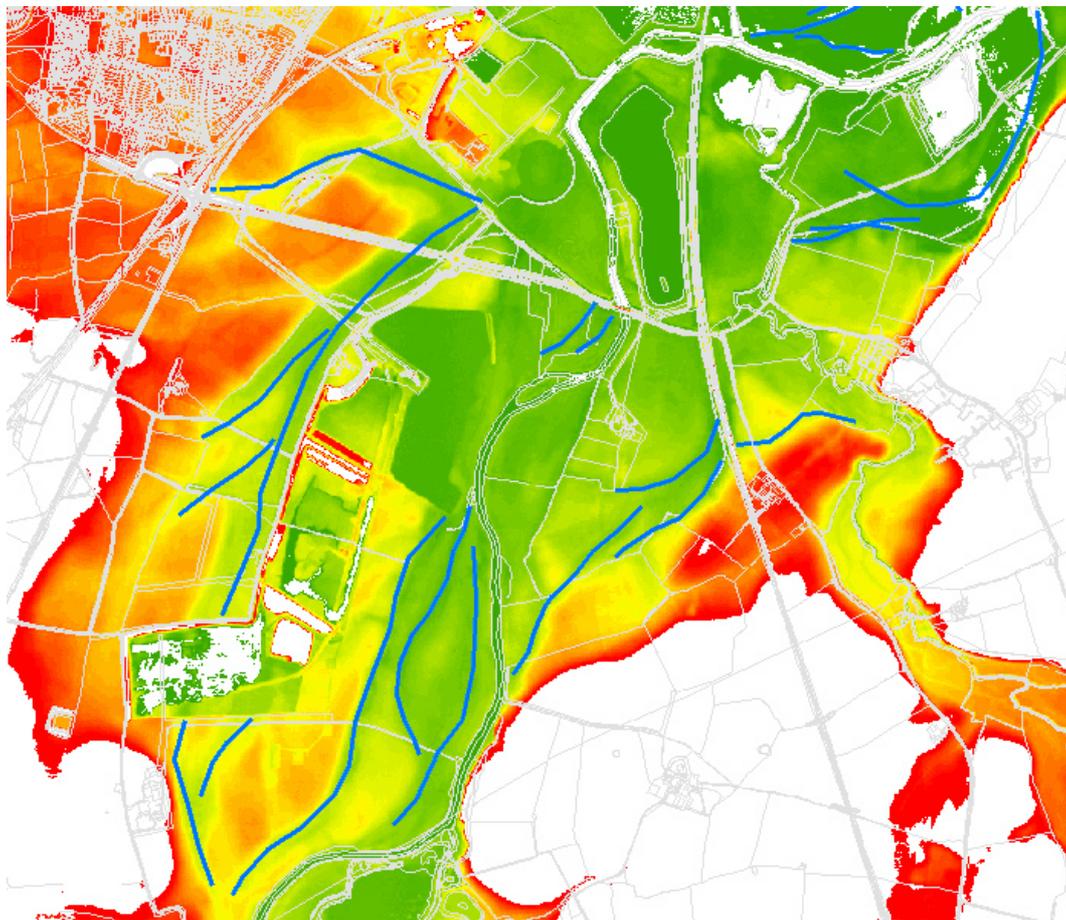


Figure 14: Vector lines digitised over possible channels in ArcGIS