

Interactions between glaciers and rivers in the Pleistocene Mediterranean

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Our understanding of Pleistocene glaciation in the Mediterranean mountains has been transformed over the last decade through the use of various dating methods allied to detailed field mapping. Recent research in Greece and Montenegro has highlighted striking contrasts between the extents of Pleistocene glaciation in different glacial stages. In some regions, the Middle Pleistocene glaciations of MIS 12 and MIS 6, for example, were much larger than those of the last cold stage and this has important implications for human use of the uplands in the Middle Palaeolithic. In many regions, rivers fed by glacial meltwater were an important influence on the delivery of water and sediment to the coastal zone. The local Last Glacial Maximum (LGM) in southern Europe was several thousand years earlier than the global LGM. Forest expansion from local refugia was very rapid at the end of glacial stages when the climate became wetter and warmer. Mediterranean mountain river basins therefore shifted very quickly from glacial to interglacial states - from systems dominated by glacial meltwater floods to ones dominated by rainfall-generated floods under ice free conditions with forested headwaters. At the end of the last cold stage, these rapid changes had important impacts upon resource availability for Late Upper Palaeolithic humans in the region. The high sediment production that characterized the glacial stages was curtailed abruptly by the very rapid expansion of dense forests which stabilised moraines, hillslopes, and valley floors. The paraglacial phase in the Mediterranean mountains was not only very brief, but it was over before deglaciation had begun in the river catchments of northern Europe. The latest work on the marine sediment record in the western Mediterranean has confirmed the rapidity of this transition.

