



Dynamic landscapes in human evolution and dispersal

Maud Devès (1), Geoffrey King (1), Geoffrey Bailey (2), Robyn Inglis (2), Matthew Williams (2), and Isabelle Winder (2)

(1) Institut de Physique du Globe de Paris, France (deves@ipgp.fr), (2) University of York, UK

Archaeological studies of human settlement in its wider landscape setting usually focus on climate change as the principal environmental driver of change in the physical features of the landscape, even on the long time scales of early human evolution. We emphasize that landscapes evolve dynamically due to an interplay of processes occurring over different timescales. Tectonic deformation, volcanism, sea level changes, by acting on the topography, the lithology and on the patterns of erosion-deposition in a given area, can moderate or amplify the influence of climate at the regional and local scale. These processes impose or alleviate physical barriers to movement, and modify the distribution and accessibility of plant and animal resources in ways critical to human ecological and evolutionary success (King and Bailey, *JHE* 2006; Bailey and King, *Antiquity* 2011, Winder et al. *Antiquity* in press). The DISPERSE project, an ERC-funded collaboration between the University of York and the Institut de Physique du Globe de Paris, aims to develop systematic methods for reconstructing landscapes associated with active tectonics, volcanism and sea level change at a variety of scales in order to study their potential impact on patterns of human evolution and dispersal. Examples are shown to illustrate the ways in which changes of significance to human settlement can occur at a range of geographical scales and on time scales that range from lifetimes to tens of millennia, creating and sustaining attractive conditions for human settlement and exercising powerful selective pressures on human development.