

Climate change, ecological change and birds – the Palaeartic-African panorama of the last 120 thousand years with special reference to the Strait of Gibraltar and bird migration

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Our understanding of the evolution of the Palaeartic-African bird migration patterns that we observe today is dependent on a sound knowledge of the changes in climate and vegetation across the Palaeartic, the Sahara and tropical Africa during the Pleistocene and the Pliocene. Much progress has been made in the decades since Moreau's seminal work with regard to the climate-forced ecological changes that affected the Palaeartic and Africa. The aim of the first part of this presentation will be to provide an up-to-date overview of our state of knowledge of rapid ecological turnover during the Pleistocene and to review Moreau's interpretations on the evolution of the Palaeartic-African bird migration systems in the light of evidence accumulated since his day. Recent work has brought to light the ecological significance of the region of the Strait of Gibraltar as a climatic refugium for many species of plants and animals. Deep sea marine cores are also providing a unique picture of the local conditions in the Strait of Gibraltar and its proximities. The unique fossil record from Gibraltar's caves, the subject of ongoing work since 1991, provides a current database of 141 species of birds for the period of the last glacial cycle (125 kyr-10 kyr) along with a rich database of vegetation and other vertebrates. The second part of the presentation discusses the available data and sets it in the context of bird migration in the Strait of Gibraltar during the last 125 kyr.