Climate change and nest losses of hole-breeding passerines caused by the Edible Dormouse (*Glis glis*)

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The data used for this study were obtained from a long-term monitoring scheme focusing on hole-breeding passerines carried out at the Ökologische Forschungsstation Schlüchtern e. V. (= Ecological Research Centre Schluechtern) since the early 1970s. The analysis focuses on nestbox competition between the Edible or Fat Dormouse (*Glis glis*) and the hole-breeding passerine species European Nuthatch (*Sitta europea*), Great Tit (*Parus major*) and Blue Tit (*Cyanistes caeruleus*, syn. *Parus caeruleus*) in warm and in temperate springs.

Two woodland study areas with a total of 161 nestboxes near the cities of Bad Soden-Salmünster (50°17'N, 9°22'O) und Steinau a. d. Straße (50°19'N, 9°27'O), Hesse, Germany were chosen. Regular weekly nestbox checks were carried out throughout the breeding season of the birds from early April until June. Parameters used in this study were clutch size, state of clutch (cold/warm), number of juveniles and predation events caused by Edible Dormouse. For both sample areas, representative (consecutive) years with one temperate (2004, 2010) and one notably warm (2003, 2011) spring were selected. Data on the local temperature (daily means) obtained from the air temperature monitoring station Spessart were provided by the Hessisches Landesamt für Umwelt und Geologie (= Hessian Agency for the Environment and Geology).

In both sample areas, dormice appeared earlier in the nestboxes and could be found in more nestboxes during the selected warm springs: In sample area one, dormice were found in 25 % of all nestboxes in the warm spring 2003 versus 7 % in 2004 (temperate spring), in the other sample area, dormice were found in 48 % of the nestboxes during the warm spring 2011 versus 33 % in the temperate spring 2010. Both the advancement of appearance and the extended nestbox use of dormice led to an increased competition resulting in more destroyed clutches, dead nestlings and/or dead adult birds in warm springs (26 – 31 % of all broods).