Current, past and future distribution models of *Algyroides marchi*

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Abstract: The Iberian lizard *Algyroides marchi* is endemic to a small range in the Prebetic Mountains (SE Spain). Current, past and future biogeographic patterns were identified by 1) updating distribution knowledge; 2) calculating models of current potential distribution; and 3) extrapolating these models to past and future climatic scenarios. Climatic variables obtained from the Worldclim series were derived to develop an average model of the species realized niche, from an iterative process with 10 replicates, using the presence-only ecological niche modelling software Maxent. Models were projected to three future scenarios of climatic change (HADCM3, CSIRO, and CCCMA), using two possible economical situations (a2a and b2a) for three years (2020, 2050 and 2080); and two past scenarios (last interglacial and last glacial maximum, the latter with two models). Current distribution models indicate that the species depends on low temperatures and high precipitation. Past models suggest that the species' refuge during the interglacial period was located in the Iberian System, the same area where the species is predicted to be distributed in the future. In contrast the distribution during the last glacial maximum was inferred to be spread in the eastern half of the Iberian Peninsula. In a non-dispersal scenario, the species will be almost extinct in this century due to clime change.