**Fast climate change drives pronounced changes in species’ genetic diversity**

Numerous species responded to past climate change by tracking suitable environmental conditions and consequently, altered their genetic make-up 1,2. Future climate change velocities will likely outpace species dispersal abilities 3, leading to further changes in the distribution of genetic diversity 4, local extirpations (REFS, e.g. Bellard, C. et al (2012) Impacts of climate change on the future of biodiversity. Ecology letters 15: 365-377 & Parmesan, C. (2006) Ecological and evolutionary responses to recent climate change. Annual review of Ecology, Evolution and Systematics 37: 637-669) and ultimately to extinctions (REFS e.g. the same as previous). Under different forecasted climate change scenarios species lacking genetic variability to survive in remnant isolated populations will appear particularly threatened 5. It is expected that species under stable climatic conditions (slow climate change velocity) reach stationary demographic conditions and stable levels of genetic diversity (REFS). Counterintuitively, it is also expected that fast range contractions better preserve species levels of genetic diversity 6. These opposite expectations hinder our ability to predict responses of genetic diversity to future changes in climate and thus, have only been investigated to a very small extent. For this reason, analyses of the differences in the response of species’ genetic diversity to slow and fast climate changes are of the critical importance.

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