

Climate change and the distribution of suitable habitat for Caucasian Tur in the Greater Caucasus

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Abstract

In a world increasingly affected by climate change, the habitat of montane species is especially threatened. Higher temperatures lead habitat to shift upslope leaving less and less area for species to persist. This leads to a destabilisation of ecosystems. Large mammals face an especially high extinction risk but play an important role in ecosystem functioning. By the means of species distribution modelling, this study is looking at Caucasian Turs in the Greater Caucasus mountain range and how their habitat will be affected by global warming. Species distribution modelling uses environmental variables to predict and analyse where suitable habitat can be expected. Suitable habitat was mapped with two different sets of predictor variables.

Through this the environmental conditions which influence turs the most were identified. The distribution model was projected into the future for all four RCP scenarios. The results found that habitat will shrink under all warming scenarios, but patches of suitable habitat will persist. Habitat fragmentation will increase, and the individual fragments will likely not be able to support large populations. These results can assist conservation efforts when looking to establish or expand protected areas by highlighting areas for further investigation.