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Analysis of regional climate change impacts on European terrestrial wild mammal's living territory in the 21st century based on ENSEMBLES simulations

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Animals tend to occupy geographical regions with climatic conditions, which are optimal to the specific needs of the given species. _Due to the projected global warming and climate change the wild animals' living territory may be reshaped in the future. In this research we aim to estimate the regional impacts of climate change to the European terrestrial mammals. The climate profile indicator of every species was estimated by using the E-OBS database for 1961-1990. The results show that rapid change and significant decline in habitats redraw the wild animals' living territory and make them migrate northward. Applied datasets for regional climate model results using 25 km horizontal resolution are available from the European project ENSEMBLES for 1951-2100 using A1B scenario. For the range datasets the Atlas of European Mammals are analyzed, which was published in 1999 and is now widely used as a reference work. It contains data for the pre-1970 and post-1970 presence of mammal species in Europe. Simultaneous analysis of climate simulations and animal range datasets enables us to evaluate the vulnerability of the European terrestrial mammal species to regional climate change.