

Chick condition and reproductive success of great tits *Parus major* along an urban gradient

Project start: 2014

Worldwide urbanization is increasing and it is profoundly changing the world's face (United Nations 2012). In 1900, only 9% of the world's human population lived in urban areas and it is expected that by 2025 that figure will increase to over 66% (United Nations Population Fund 2011). Urbanization impacts on wildlife are well documented (reviewed by McKinney 2008), but whether urban landscapes provide also suitable environments for animal populations that suffer from loss of their natural habitats is still questionable and urges for research.

Our research about the effects of urbanization on fitness will contribute to the body of knowledge. By quantitatively and explicitly defining spatial urban patterns, exemplified at the city of Vienna, we will clearly define an urban gradient and capture urban complexity. This then could be translated to other cities which would facilitate its comparison. In addition, we will link those urban patterns to chick condition and reproductive success, which is scarcely done along urban gradients. By assessing both local and landscape scales in estimating chick condition and reproductive success of a common passerine, we will provide new insights on relevant parameters that affect fitness of great tits that also could be translated to other similar insectivores species in an urban ecosystem. This project will open up new dimensions of landscape and habitat management opportunities in urban areas that the Department of Environmental Protection (MA 22) is eager to receive and will enable nature conservation activities within the city that may include for example urban gardening or citizen science. Finally, setting up a breeding population of great tits in Vienna can be used for further long-term studies on the impact of urbanisation on survival and phenology.

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