

Abstract

Territories and home-ranges are the smallest spatial units of species' presence in a landscape and they determine in what ways and on what scales animals perceive and use their environments. Their sufficient sizes encompassing enough resources are critical for survival and reproduction of individuals. Processes and factors affecting territory and home-range sizes therefore belong to fundamental ecological issues. Despite its importance, the knowledge of variation in avian territory and home-range size at large spatial scales is poor. So far it has comprised mainly the findings that the used area is determined by individual's energetic demands, dependent on body size and diet type, and by environmental productivity.

Therefore, the aim of this thesis was to use data gathered from available literature to describe the variation in territory and home-range size of birds. I was curious what was the nature of territory and home-range size frequency distribution; whether the sizes were species-specific and whether and how these sizes were affected (beside the body mass and diet type) by various environmental characteristics, such as latitude, temperature, precipitation, seasonality, altitude and habitat type.

I have found that the territory and home-range size frequency distribution is approximately log-normal both at the intra- and interspecific scale and that this kind of distribution within species seems to be universal. Also, territory and home-range sizes are species-specific, although they vary in respect of locality character, and home-ranges are generally larger than territories. Detected slope of increase in home-range size with body mass was 1.51, while 0.87 in case of territories, which are values corresponding with documented range of slopes of this relationship. An interesting finding was that there was a latitudinal trend in territory and home-range sizes, which means the sizes increase towards the equator. According to my results, home-range size increases with altitude, while territory size decreases with seasonality of precipitation. Home-ranges are generally larger than territories.

Results of this work could at least partially contribute to better understanding of avian spatial ecology at macroecological scale.

Key words: territory, home-range, variation, body size, latitude