To whom it may concern,

We are pleased to submit a manuscript titled “Landscape differences among cities alter species’ responses to urbanization” to be considered for publication as a research article in *Science*.

Most urban ecological studies focus on a single city, which severely limits our understanding of urban areas as ecosystems. Although single-city research can identify ecological responses to local patterns of urban development, these responses cannot be extrapolated to other cities that differ in age, size, climate, or human population density, among other variables. As such, multi-city comparative approaches are therefore necessary to understand whether species’ responses to urbanization are generalizable across cities. Such assessments, however, remain challenging because few coordinated efforts monitor biodiversity in multiple cities.

In this manuscript, we leverage data from the Urban Wildlife Information Network, a systematic multi-city biodiversity monitoring survey, to delineate continent-scale patterns in urban species assemblages of eight widespread North American mammals. We illustrate that landscape-scale differences in greenspace availability and housing density among cities changes the magnitude and direction of species’ responses to urbanization. If we analyzed these data as independent single-city studies, we would infer dissimilar species-specific responses to urbanization. Analyzing them together, as we have done here, allows us to see that these apparent disagreements are explained by landscape-scale differences among cities. Furthermore, we only observed consistent declines in species richness with increasing urbanization in the most densely developed cities. Conversely, species richness either increased, decreased, or stayed the same along the urbanization gradient of less densely built cities. To our knowledge, no studies have explored how landscape-scale variables may explain why such a pattern is observed in one city but not another. As the Earth urbanizes and cities increase in size and population density, our results therefore indicate that larger cities are more likely to observe diversity losses of common species, which may have dramatic consequences on ecosystem function.

We believe this manuscript will appeal to a broad audience for a couple of reasons. First, our results can be used to develop testable predictions for how common urban species are distributed throughout any city they are known to exist or may exist in the future. Second, most people live in cities, and most city dwellers have had interactions with wildlife. All data and code are available upon request. Conditional on acceptance of the manuscript will be made public on GitHub and published in a digital repository (e.g., Dryad). Finally, we affirm that none of the material has been published or is under consideration for publication elsewhere.

On behalf of myself and my coauthors, I thank you for consideration of our manuscript.

Sincerely,

Mason Fidino, PhD

Conservation & Science

Lincoln Park Zoo, Chicago, Illinois, USA