

UC Agriculture & Natural Resources

Proceedings of the Vertebrate Pest Conference

Title

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Permalink

<https://escholarship.org/uc/item/2r03s38j>

Journal

Proceedings of the Vertebrate Pest Conference, 30(30)

ISSN

0507-6773

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Publication Date

2022

Wildlife Affordances of Urban Infrastructure: A Framework to Understand Human-Wildlife Space Use (Abstract)

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ABSTRACT: Landscape affordances, what the environment offers an animal, are inherently species-specific to the extent that each taxon has unique needs and responses to landscape characteristics. Wildlife responses to landscape features range on a continuum from avoidance to attraction, and quantifying these habits are the backbone of wildlife movement ecology. In anthropogenically modified landscapes, many taxa do not occupy areas heavily influenced by humans, while some species seem to flourish, such as coyotes (*Canis latrans*) and pigeons (*Columba livia*). Sufficient overlap in landscapes designed for human purposes (e.g., freeway underpasses, channelized waterways, and cemeteries) but which are also suitable for wildlife (e.g., by providing sources of food, shelter, and refuge) underlies wildlife persistence in urban areas and is increasingly important in the world's largest metropolises. Studying these overlapping worlds of humans and wildlife in cities provides a rich foundation for broadening human perceptions of cities as ecosystems that exhibit emergent hybridity, whereby certain anthropogenic features of urban landscapes can be used by wildlife even as they maintain their utility for humans. By examining scaling dynamics of the infrastructural signature, the phenomena of urban wildlife movement patterns conforming to the shapes of human infrastructural forms, we hope to expand on prior research in wildlife landscape ecology by stressing the importance of understanding the overlapping worlds of humans and wildlife. Further knowledge of the urban ecological commons is necessary to better design cities where emergent hybridity is leveraged toward the management goals of reducing human wildlife conflict and promoting biodiversity.

KEY WORDS: affordance, emergent hybridity, infrastructural signature, infrastructure, urban biodiversity, urban ecological commons, urban ecology, wildlife management

Proceedings, 30th Vertebrate Pest Conference (D. M. Woods, Ed.)

Paper No. 3. Published December 12, 2022. 1 p.

This paper was published elsewhere as follows:

Niesner, C. A., R. V. Blakey, D. T. Blumstein, and E. S. Abelson. 2021. Wildlife affordances of urban infrastructure: a framework to understand human-wildlife space use. *Frontiers in Conservation Science* 2:774137.