A. Martinez, L. Blout, E. Johnson

Holistic Construction: Building Better Landscapes from the Perspective of Zoopsycology

Background

As human settlements grow and expand, animal populations face new challenges due to habitat disruption from urban development.

By approaching construction practices through the lense of human-animal cohabitation, urban growth can be achieved while limiting the physical impact on wildlife.

Research Question

What is the relationship between native animal populations
and urban architecture with respect to animal behavioral patterns?

Evidence

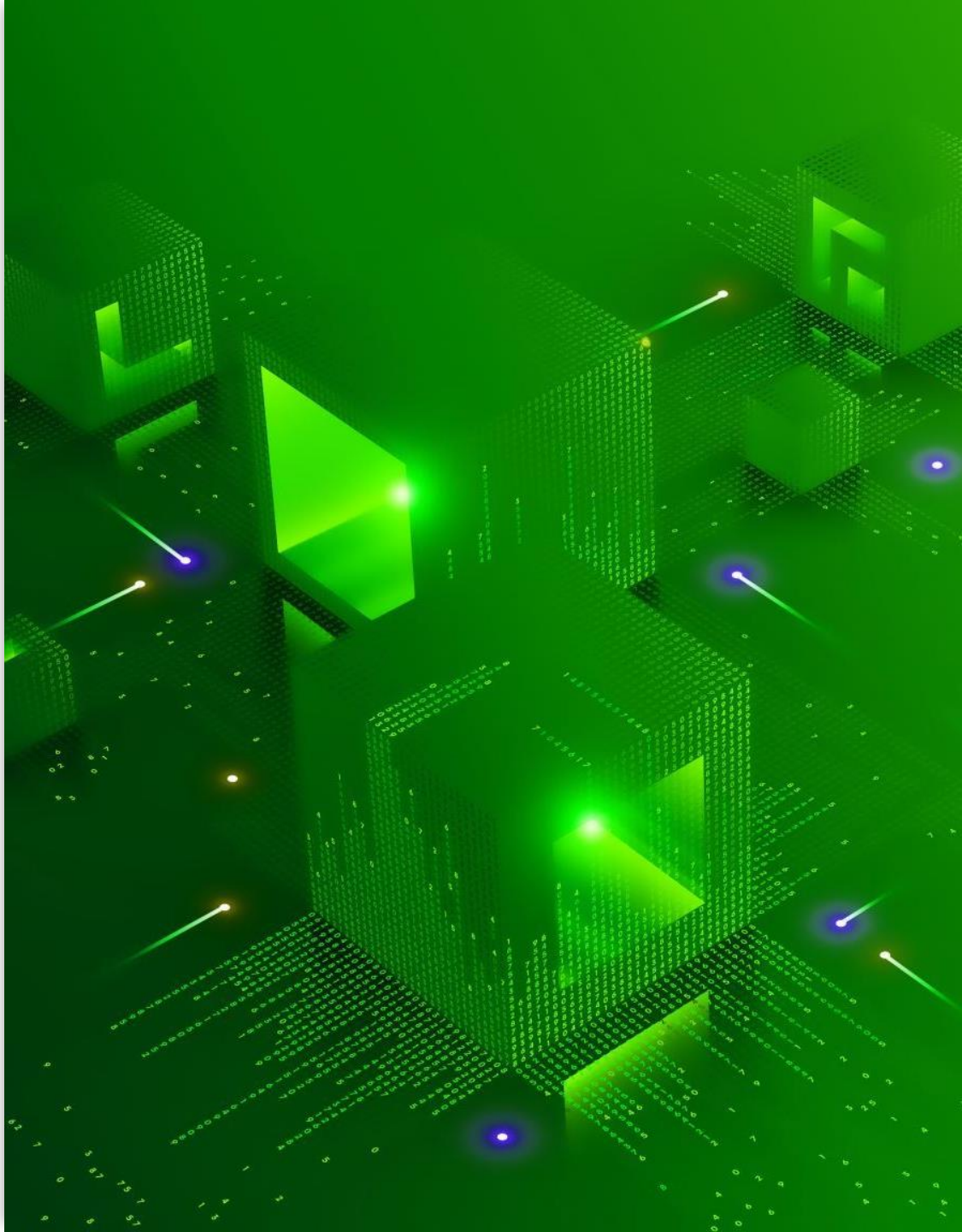
- Urban populations' views on animals are greatly determined by exposure, preferring commonly seen animals such as raccoons and opossums over less seen species like coyotes. (Aronson et al., 2023)
- Forests found within urban centers such as parks, nature preserves, and backyards often struggle with biodiversity and nonnative species intrusion more so than untouched or rural forests. (Schmit et al., 2025)
- Using bio inclusive design practices such as nature bridges, human-animal cohabitation can be achieved without significant impact on either group. (Niesner et al., 2021)

Evidence

- Mamal populations are greatly affected by local environments, as larger mammals and predator species require greater amounts of biomass to be successful. (Hansen et. al.)
- Pollutants, including air, water, soil, and thermal pollution sources, greatly effect the biodiversity of urban habitats. Rodent populations can adapt to these stressors, but other less resilient species cannot. (Yasmine et. al., 2025)

Evidence

- Human settlement patterns have a direct relationship to the evolutionary changes seen in animal populations. Scavenging animals such as rats and crows have adapted to and succeed based on human interference (Gallo & Fidino, 2019)
- Green spaces within cities provide an enclave for animals to retreat to and reproduce within. Green space is essential for animals to live within urban centers such as New York. (Bullard, 2019)



Summary of evidence

Animal-human relationships are a complex topic that vary incredibly by species, public opinion, and the conditions said animals need in order to be successful. Despite this, all animal species benefit from bio inclusive construction, such as green spaces and wildlife bridges.

A balance of human and animal inclusivity is crucial to providing a livable habitat that is unintrusive on human life. Through a holistic approach, both populations can support each other and maintain ecological stability.

Summary of evidence

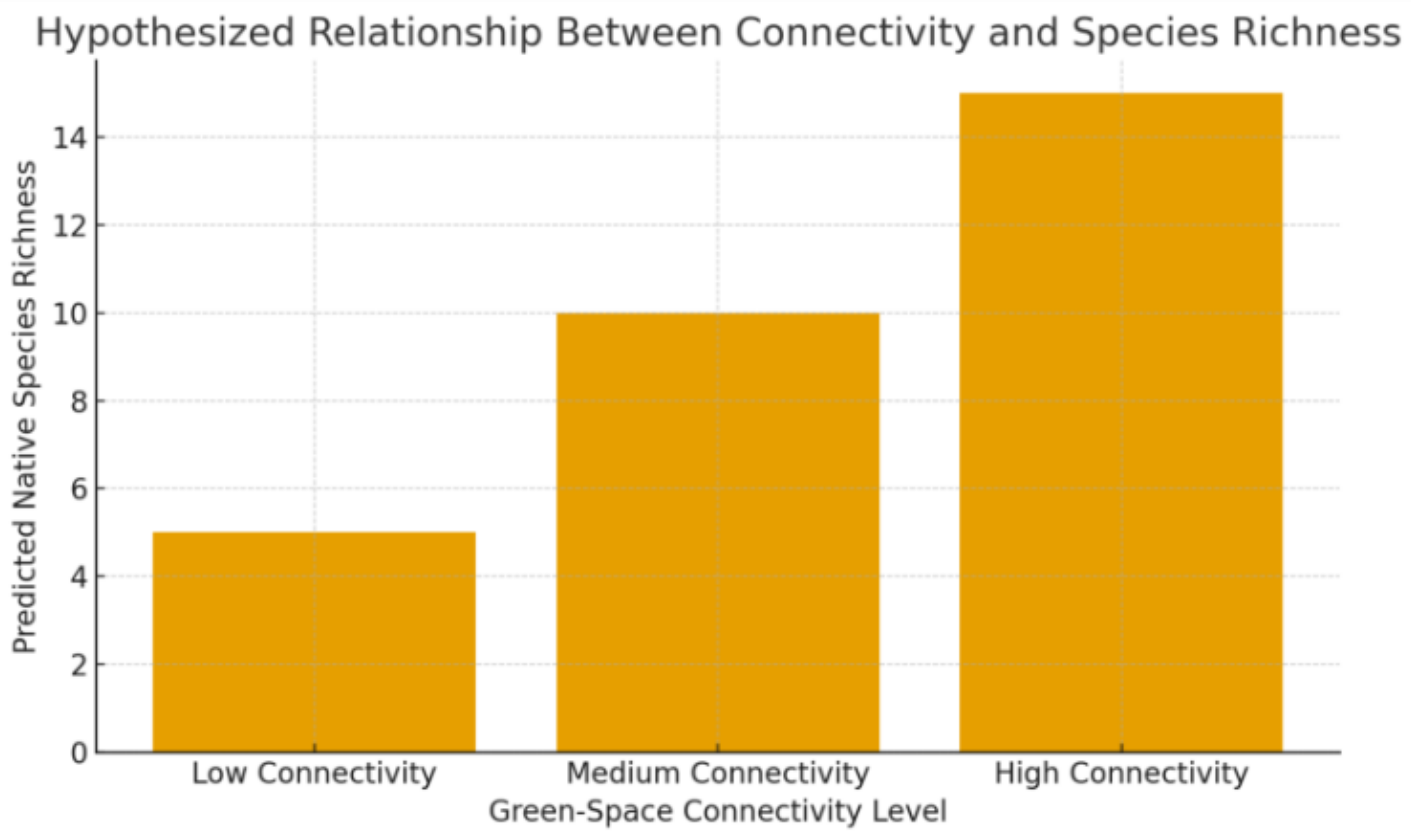
To achieve the greatest levels of success, architects, biologists, and both human and animal behavioral experts must work together; providing expertise within their respective domain to development projects.

Public perception on animal species must be accounted for when constructing urban habitats. Although species such as vultures and coyotes are incredibly important to biodiversity, these animals may be fighting to some people.

Experimental Draft

- **1. Independent Variable**
- The independent variable in this proposed experiment is the **level of green-space connectivity in urban architecture**. This includes how connected parks, native plant patches, and habitat corridors are within an urban area. Sites would be grouped into low, medium, or high connectivity.
- **2. Dependent Variable**
- The dependent variable is **native animal response**, measured through:
  - Species richness
  - Relative abundance
  - Behavioral patterns such as foraging activity and nocturnal vs. diurnal behavior
- These are the outcomes expected to change in response to different levels of connectivity.
- **3. Control**
- A natural peri-urban site (or the lowest-connectivity urban sites) serves as the control. These areas represent minimal architectural influence and provide a baseline for what native wildlife behavior looks like without strong urban modification.
- **4. Proposed Results Figure**
- The graph you see in the next slide represents **hypothesized results**, not real experimental data. The expected trend is that species richness increases from low to medium to high connectivity. This visual predicts that more connected green space allows native animals to move more easily, maintain natural behaviors, and persist in higher numbers.

Hypothesized Data



Summary

To realize the topic of human-animal urban design strategies, a multifaceted and interdisciplinary approach must be taken. By focusing exclusively on one aspect of design is to oversight another, leading to a failed project.

Animals have a right to live and coexist with humans and by limiting our effect we have on their habitats, humanity can grow and develop without harming animal populations.

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