CODE 220
Draft Outline of Project Ideas
Group # _____ Names: _____

General Project Theme: Biodiversity as a Measure of Urban Environmental Health

Project Idea 1: Measuring Urban Health Through Native Wildlife Populations

Proposed Research Question: What is the relationship between native animal Populations and environmental health within urban landscapes

Proposed Hypotheses: The Prevalences of native wildlife has a direct correlation with positive health outcomes.

Keywords: Biodiversity, Habitat, Native Species, environmental health, and unban ecosystem

Found Review Articles: Garden, Jenni, Clive McAlpine, Ann Peterson, Darryl Jones, and Hugh Possingham. "Review of the Ecology of Australian Urban Fauna: A Focus on Spatially Explicit Processes." ***Austral Ecology*****, vol. 31, no. 2, 2006, pp. 126–148. Wiley.**

The article explains that urban biodiversity, particularly in Australian cities, is influenced by habitat size, edges, and the connectivity of green spaces. Instead of seeing cities as simply "built versus nature," it highlights how species respond along gradients of urbanization. This shows that biodiversity can be a strong measure of urban environmental health, since patterns of species richness and distribution reveal the quality and structure of habitats, not just how many animals are present.

Found Research Articles: Tarsitano, Elvira. "Interaction between the Environment and Animals in Urban Settings: Integrated and Participatory Planning." ***Environmental Management*****, vol. 38, no. 5, 2006, pp. 799–809. Springer.**

Urban biodiversity is shaped by habitat size, edges, and connectivity, showing that cities aren't just "built vs. nature" but gradients where species respond differently to urbanization (Garden et al., 2006).

This makes biodiversity a strong measure of urban health, since changes in species richness and distribution reflect habitat quality. Tarsitano (2006) adds that ignoring animal populations in urban planning leads to unbalanced ecosystems and poor health outcomes, while integrating them into planning highlights their role as key indicators of ecological stability. Together, these studies show that native animal populations directly reflect the environmental health of urban landscapes.

Found SciComm: Articles: Johnson, Marc TJ, and Jason Munshi-South. "Evolution of life in urban environments." *Science* 358.6363 (2017): eaam8327.

The article looks at how urban environments are shaping the evolution of animals, plants, and even microbes. Some native species are adapting quickly to city life, while others struggle or decline. These changes show that native populations aren't just living in the city—they're reacting to it, and how they do reflect the health of urban ecosystems. Basically, if species are adapting and surviving, it signals a more resilient, healthier environment; if they're disappearing or turning into pests, it's a warning that the city's ecological balance is off.

CODE 220
Draft Outline of Project Ideas
Group # _____ Names: _____

General Project Theme:
Urban forestry and the impacts of transplanted/non-native trees.

Project Idea 2:
The good and bad sides of using transplanted (non-native) trees in urban environments

Proposed Research Question: (stated as a testable question)
In what ways do transplant trees (trees planted for astatic purposes) benefit human populations and what are the Potential downsides to the proliferation of nonnative trees?

Proposed Hypotheses: (stated as mutually exclusive answers to your research question)
People are more likely spend recreational time in astatic tree populations and said tree populations may

Keywords:
Choke
out native plant Species
Bradford Pear, greenspace, architecture, urban Planning, biodiversity, Cultural geography.

Found Review Articles: (list the citation and what it says about your topic)
Tartaglia, E. S & Aronson, M. F J. (2024) . Plant native: comparing biodiversity benefits, ecosystem services provisioning, and plant performance of native and non-native plants in urban horticulture.

This review article looked at a ton of studies and found that native plants support more wildlife and ecosystems service than non-native plants in cities. That means they help the environment (ex. Birds, bugs, air and plants) grow better. even though some non-native plants can get job done, natives are better all around. According to article non-native trees can still provide shade and help clean the air but they often do not support as many insects, bugs, and other small animals like squirrels. Native trees keep ecosystems, because they strengthen local food webs and help protect nature long-term in cities.

Found Research Articles: (list the citation and what it says about your topic)

Jensen, C., Persson, A. S., & Isaksson, C. (2022). Contrasting effects of tree origin and urbanization on invertebrate abundance and tree phenology. Ecological Applications

A study by Jensen, Persson, and Isaksson) found that non-native trees in city parks had fewer insects and bloomed later than native trees. This mismatch makes it harder for insects to survive, which lowers biodiversity. The research showed that planting non-native trees can harm local ecosystems more than the city environment itself.

CODE 220
Draft Outline of Project Ideas
Group # _____ Names: _____

Found SciComm Articles: (list the citation and what it says about your topic)
Earth.com. (2019). Non-Native trees have enormous value in urban areas.

This article explains that even though many of the trees in cities are non-native, they still help people, they reduce noise, cool the area, clean the air and create places for animals to live. But it also says non-native trees can cause problems by harming local ecosystems if they spread too much. Meaning they might grow too fast and push out local native plants that wildlife depends on. Saying this can harm ecosystems by reducing biodiversity