

# Cities, Ecology, and Evolution



SPRING 2022

3 Credits

Instructor: Marina Alberti  
Urban Design & Planning

URBDP 498/598 - Tue-Thu 8:30-9:50 am

**Description:** Cities are complex ecological systems dominated by humans. Urbanization is not only causing loss of biodiversity. Humans are selectively determining which species can live in cities and causing organisms to undergo rapid evolutionary change. Some organisms go extinct. Many are adapting to the new environment by changing their physiology, morphology, and behaviors. In this course we explore the nature and dynamic of cities as hybrid ecosystems—the products of co-evolving human and natural systems. We will examine how the complex interactions and feedbacks between the human, natural, and technological components generate novel ecosystem functions and eco-evolutionary change. By focusing on examples of observed species' traits change driven by urbanization, students will work in teams around three questions: What are the potential urban eco-evolutionary feedback that might impact ecosystems and human wellbeing? How can understanding of urban eco-evolutionary dynamic can inform urban resilient design and planning? What citizen science projects can be developed to monitor rapid evolution and expand urban ecological understanding?

**Students:** This course is open to undergraduate and graduate students from any department or program with an interest in urban ecology, eco-evolution, and environmental planning. The course will be suitable for both students without previous coursework in the field who are highly motivated and open to expand their perspective on urban design and city planning and advanced graduate students who are engaged in research in the field of urban ecology.

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