94th Annual ESA Meeting

OOS 37-4 Reconnecting people and nature: Incorporating Earthwatch volunteers into wildlife research in the New York metropolitan region

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Grand Pavillion VI, Hyatt

Catherine E. Burns *, Department of Wildlife Ecology, University of Maine, Orono, ME*

Background/Question/Methods

Habitat loss and alteration due to increasing urban- and suburbanization is a growing concern for the conservation of biodiversity across the planet. Consequently, building an environment where people and nature can sustainably coexist means understanding how plants and animals respond to increasing urbanization, and reconnecting people with the natural environment that sustains them. This project aims to investigate the ecological impacts of urbanization by bringing together collaborative teams of academic scientists, managers and citizen scientists. We aim to quantify the abundance and diversity of mammalian, avian, amphibian and plant communities found within a suite of protected areas spanning the urbanization gradient in the New York metropolitan area to address the following questions: 1) How is biodiversity impacted by increasing urbanization? 2) Are there thresholds of urbanization and land use change beyond which certain species cannot exist? 3) Do amphibians, birds, mammals and plants respond differently to urbanization? and 4) Are there specific features of protected areas within urban regions that are particularly important for supporting biodiversity? Together with project staff, citizen scientists—matched with the project through the Earthwatch Institute—have gathered data using a variety of methods specific to the sampling of each group, including mammal tracking and camera-trapping, amphibian dip-netting and egg mass surveys, breeding bird point-surveys, and plant community surveys.

Results/Conclusions

Over fifty citizen scientists have contributed to data collection at each of 16 study sites during the first two years of this study. This represents over 4,000 person-hours contributed to the project by citizen scientists alone. Though many participants were residents of the New York metropolitan region, others came from around the country and from the UK, France and Japan, to participate in the project. Answering the questions above requires data collection across multiple taxonomic groups and across wide geographic areas; this would be nearly impossible without the participation of citizen scientists. While fully answering the study questions requires additional years of study, data collected during the first two field seasons identified intriguing patterns. We observed strong negative impacts of increasing urbanization on some wildlife species, particularly amphibians, yet positive impacts on others (e.g. small mammals, several avian species, and non-native plants), revealing the complexities awaiting urban-area conservation. Once completed, we hope that this research will inform management of natural and developing areas in metropolitan regions around the world, and will further conservation efforts in urban areas by reconnecting people with the natural environment.