BES Quarterly Science Meeting Agenda: Wildlife/Organismal Biology & Baltimore Communities

8:30 Coffee, Snacks, and Hellos

9:00   Introductions

Christopher M. Swan - Dept. of Geography & Environmental Systems
University of Maryland, Baltimore County

9:10   Intersection of social systems, research, and ecological health

Land cover and socio-economic patterns together explain urban mammal occupancy
Colin Studds - Associate Prof. UMBC - Population Ecologist
Mammal habitat occupancy is often explained by land cover patterns. We found that occurrence of five of six mammals species in Baltimore forests was best predicted by models that had a combination of land cover and Socio-economic variables.

Less volunteered biodiversity sampling occurs in formerly redlined areas
Dexter Locke - Research Geographer. USDA Forest Service, Northern Research Station - Baltimore Field Station
This talk shows how ~12 million volunteer-collected bird data points (in Baltimore and 194 other metropolitan areas) are distributed with respect to redlining, and how those patterns have changed over time. Citizen science data has rapidly gained influence in urban ecology and conservation planning, but with limited understanding of how such data reflects social, economic, and political conditions and legacies. At the same time, it has been proposed that race-based zoning policies and practices plausibly have a legacy of creating entirely different food webs and interactions among organisms in urban areas. In order to harness the power of vast quantities of spatially-explicit citizen science data, to address issues of segregation and its link to biodiversity today, it is important to first understand how spatial sampling bias co-occurs along socioeconomic gradients.

(Re)connecting people to nature via wildlife monitoring
Ela Carpenter, Urban Wildlife Biologist, U.S. Fish and Wildlife Service
Ela will present on her work as US Fish and Wildlife Service urban wildlife biologist merging wildlife research with community engagement. She will discuss how she ties conservation work to people's lives, demonstrating how conservation can be a tool to help improve people's lives, and how a recent course on Co-designing conservation is helping her re-frame her work as a biologist. Ela will share some current projects where public participation is welcome (gathering wildlife data using trail cameras, a new urban bird banding station, Ask a Bumblebee, the upcoming City Nature Challenge), and the value of apps like iNaturalist, eBird, EchoMeter Touch Pro bat detectors.

Discussion 1

9:55   Human effects on ecosystem health

Loss of Phylogenetic Diversity under Landscape Change
Christopher M. Swan - Dept. of Geography & Environmental Systems
University of Maryland, Baltimore County
Habitat alteration and destruction are primary drivers of biodiversity loss. However, the evolutionary dimensions of biodiversity loss remain largely unexplored in many systems. Using a long-term dataset of a globally, ecologically important guild of invertebrate consumers, stream leaf "shredders," we created a phylogenetic tree of the taxa in the regional species pool, calculated mean phylogenetic distinctiveness for >1000 communities spanning >10 year period, and related species richness, phylogenetic diversity, and distinctiveness to watershed-scale impervious cover. Using a combination of changepoint and compositional analyses, we learned that increasing impervious cover produced marked reductions in all three measures of diversity.

Autumn leaf litter removal reduces moth emergence in suburban yards
Max Ferlauto PhD Candidate , Karin Burghardt Assistant Professor - University of Maryland
This study examines the effects of suburban leaf litter removal on overwintering Lepidoptera and parasitic wasp populations. We used emergence traps to compare litter maintenance techniques within areas of different yard care intensities in suburban Maryland homes.

Using Mussels and Barnacles to Reduce Algae Blooms in Baltimore's Inner Harbor
Ally Kido PhD Candidate University of Maryland
Phytoplankton filtering capabilities of sessile organisms in urban waterways around Baltimore have untapped potential for ecosystem services. Species such as the dark false mussel and the bay barnacle readily grow on hard surfaces in Baltimore's Inner Harbor and hold promise as providers of beneficial ecosystem services. Understanding the natural diets and filtering capabilities of these sessile suspension feeders is crucial in determining the extent of the ecosystem services and for supporting best management practices to mitigate urban runoff in these areas

Discussion 2

10:40   Break

10:55   Connecting Science, People, Stewardship
Baltimore City - Cities Connecting Children to Nature Program
Abby Cocke - City Planner II Baltimore City Office of Sustainability
Spending time in nature is incredibly beneficial to the mental, physical, and emotional health of children, however too many of our children have little to no access to nature and the outdoors. In 2018, Baltimore joined a cohort of 18 cities participating in the [Cities Connecting Children to Nature (CCCN)](#) initiative with support from the [National League of Cities](#) and the [Children & Nature Network](#). Abby will provide an overview of the City of Baltimore's vision and strategies, major partnerships, and resources for increasing equitable access to nature for Baltimore's youth and families

Birds of Baltimore Forest Patches

Eric Fishel, Forest Program Manager - Baltimore Green Space

Ericl will discuss how Baltimore's forest patches support the diverse bird communities found throughout the city.

Bird-Friendly Baltimore & Latine Community Partnerships

Susie Creamer, Center Director at Patterson Park Audubon Center

Susie will share her decades-long collaboration with Baltimore's Latine communities around bird conservation, how partnerships were created, why they are successful, and how they meet our shared goals.

Ask A Bumblebee Community Science Project

Jenan El-Hifnawi - Ask A Bumble Bee coordinator /Lab Manager/rising grad student in Anahi Espinola's lab at College Park

AABB is a highly-accessible community science project seeking to determine the best bumblebee food plants in the Northeast US. While many people presume that we already know this, most existing studies only consider flowers that are visited and ignore ones that are not visited, presenting an incomplete perspective on floral preference. In this study, participants "ask" bumblebees what flowers they prefer by wandering in any location of their choosing for 30 minutes while photographing all blooming flower species they pass, and tallying bumble and carpenter bee visitation.

11:35   Final Discussion

12:00   Wrap Up