

Mass changes of six migratory passerine species during stopover at a small, isolated urban patch.



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Introduction

For the successful completion of migration, Nearctic-Neotropical birds require stopover habitats to replenish spent energy. The availability of stopovers can be limited along the Atlantic coast which is the most urbanized region of North America and its remaining woodland is highly fragmented. It has been established that migrants use forest fragments within large city parks as stopovers. However, the argument for effective conservation of urban habitat for migrants is still not well established, since potential urban stopovers might be overlooked due to their relatively small size.

▪ The objective of this study is to determine if a small, isolated urban green patch functions as a suitable stopover for migratory birds.

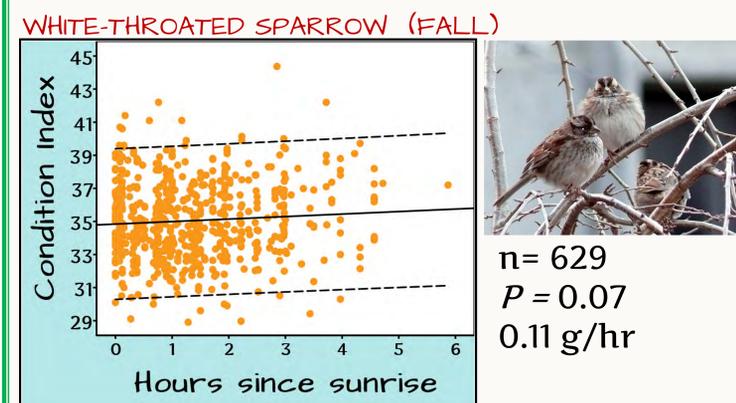
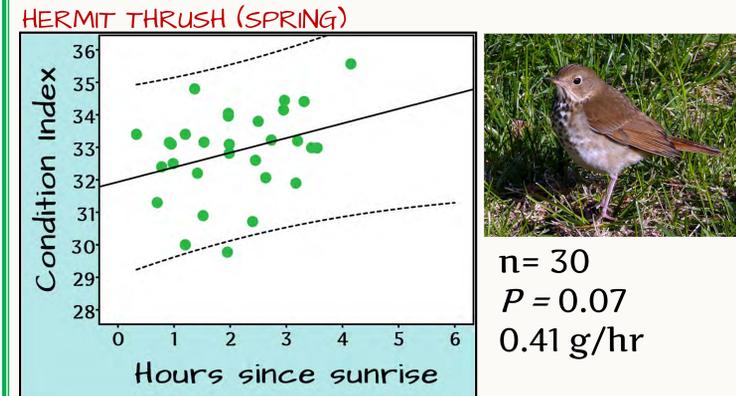
While the site appears to be selected as a stopover; the benefit gained by selecting this particular urban stopover seems to vary among foraging guilds.

Focal Species



COYE: Common Yellowthroat (*Geothlypis trichas*)
 GRCA: Gray Catbird (*Dumetella carolinensis*)
 HETH: Hermit Thrush (*Catharus guttatus*)
 OVEN: Ovenbird (*Seiurus aurocapillus*)
 SWSP: Swamp Sparrow (*Melospiza georgiana*)
 WTSP: White-throated Sparrow (*Zonotrichia albicollis*)

Results



Methods

Site description

Data collection was conducted in a 0.3-acre wooded plot located within the urban campus of Rutgers-Newark, NJ. The plot is dominated by mixed oak, pine, and plum tree canopy layer, dense shrub layer, and sections of herbaceous ground layer.

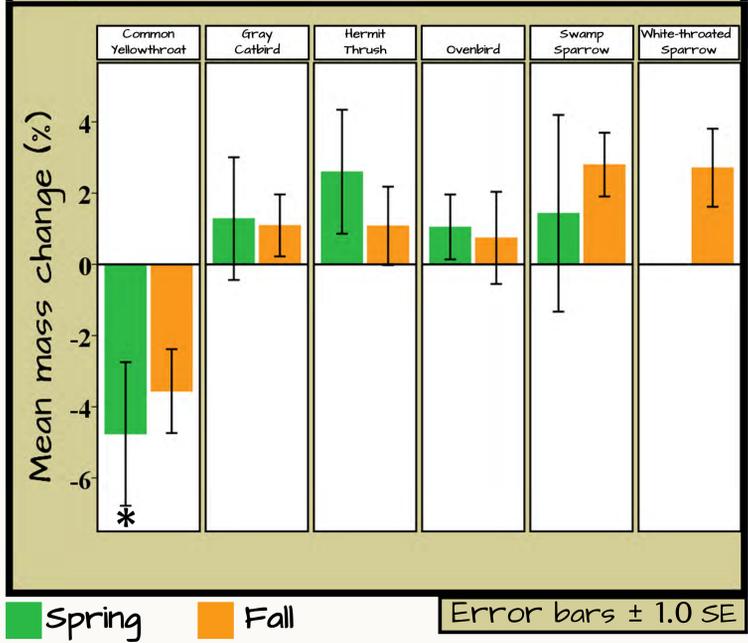
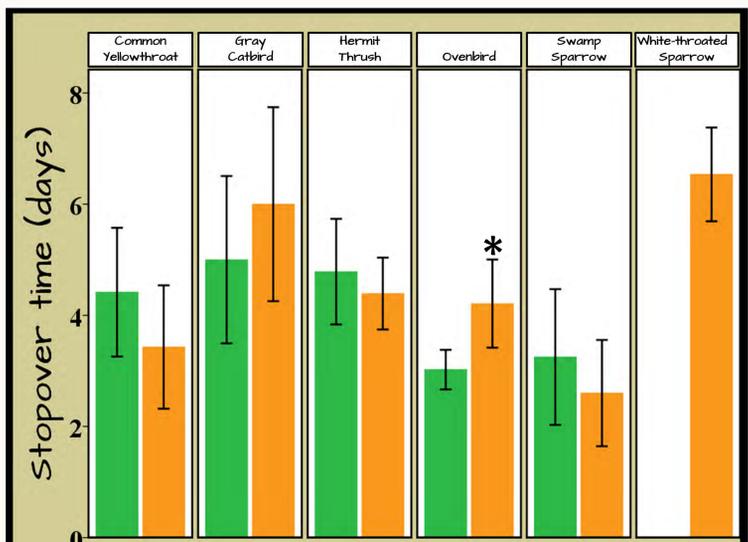


Data Collection

- The study was conducted from 2010 to 2013 during peak bird migrations (spring: April-May, and fall: September-October).
- Birds were captured in mist nets.
- Each bird was weighed, banded, and wing length was measured. Bird were classified to age/gender when possible



Results



Condition Index (CI)

A conventional method to assess stopover quality relies on the relationship between body mass of single-capture birds and the time of capture. The slope of the regression provides a numeric value of the rate of change in condition.

Mass changes

The relationship between mass and stopover day was significant ($P < 0.05$) for GRCA (spring) OVEN (spring), SWSP (spring & fall), WTSP (fall) and nearly significant for OVEN in the fall ($P = 0.08$). Slopes were positive for most of the regressions showing a range of mass gain of 0.1 to 1.7 % of initial body mass/day.

Conclusions

- Recapture rates (5-47 %) and estimated stopover time indicate that the site is used as a stopover during migration.
- Ground-foragers displayed positive mass changes but the gains vary throughout duration of stopover and season.
- Common Yellowthroat, a foliage gleaner, lost mass during stopover, indicating that the site might be an energy sink for some species.
- Small urban green patches might function as stopovers but they might be more beneficial to species better adapted to such habitats.

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