Contribution # AED-05-024

REDUCED FOREST COVER AND CHANGES IN BREEDING BIRD SPECIES COMPOSITION IN RHODE ISLAND

[1]Lussier, S.M., [2]Enser, R.W., [3]daSilva, S., [4]Charpentier, M.; [1]USEPA, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division, Narragansett, RI, lussier.suzanne@epa.gov,[2] R.I. Department of Environmental Management, Natural Heritage Program, renser@dem.state.ri.us, [3] Nelson, Pope & Voorhis, LLC, sdasilva@nelsonpope.com, [4]CSC, Narragansett, RI, charpentier.mike@epa.gov

This study was conducted to assess the relationship of land use/cover, riparian vegetation, and avian populations. Our objective was to compare the vegetation structure in riparian corridors with the composition of breeding bird populations in eight Rhode Island subwatersheds along a range (4–59%) of residential land use. We used field transects to measure the extent of tree, sapling, and ground cover, and a Geographic Information System to document larger-scale land cover attributes. Bird surveys were conducted in the riparian zone at each site. The observed bird species were separated into guilds based on tolerance to human disturbance, habitat, foraging type, and diet preference. Species richness, tolerance, and habitat preference were correlated with riparian vegetation, revealing patterns of breeding bird distribution. Both forest cover and residential land use had significant correlations with species composition, but not with species richness. The number of intolerant (forest-dependent) species declined significantly at less than 30% forest cover and greater than 17% development, while tolerant species increased at these thresholds. Subwatersheds with more contiguous forest cover and less fragmentation from development supported more species of forest-dependent breeding birds. This study showed how sensitive the distributions of breeding birds are to habitat structure and development.

Key Words: Breeding birds, Forest cover, Habitat disturbance, Urbanization, Vegetated habitat, Monitoring