What Affects Bird Diversity in Urban-Rural Transition Zones?

Collard, Braden (School: Hellgate High School)

Purpose: Scientists have studied bird diversity of the transition zones between urban and rural habitats significantly less than either strictly rural or urban habitats. The diversity of rural-urban transition zone that is the Rattlesnake corridor north of Missoula, Montana needs to be assessed to create a base of understanding of the local bird communities. Procedure: For this study, I conducted bird counts and measured foliage layers at each of 57 points located in the Rattlesnake corridor. I then compared Foliage Height Diversity and other independent variables with bird diversity as well as with abundance of individual species. Results: During the counts, I detected ninety-seven total species, including some unusual species such as Cliff Swallow, Red-naped Sapsucker and Say's Phoebe. No strong correlations arose between species diversity or abundance and any of the independent variables. Conclusion: The most likely causes for no strong correlations were the uniformity and relatively small size of the Rattlesnake corridor and the adaptability of many of the species detected. Nonetheless, this research added to the greater knowledge of birds and bird diversity in suburban transition zones and suggested the Rattlesnake corridor as a good model for developers to use in the future when designing wildlife-friendly neighborhoods. The research also emphasized the importance of integrating natural surroundings into neighborhoods and cities, and that strong planning can allow wildlife and people to coexist.

Awards Won:
Air Force Research Laboratory on behalf of the United States Air Force: First Award of $750 in each Regeneron ISEF Category