

### **A New Priority Area for Endemic and Threatened Birds in the Atlantic Forest of Southeastern Brazil**

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The Atlantic Forest (AF) biome encompasses a significant portion of the species of birds in Brazil (849), including 216 endemics and 122 threatened with extinction. The identification of priority areas for conservation of birds is fundamental, but it is hampered in the AF by the small number of localities that have been studied systematically, and with published data. With the aim of turning this situation around, we selected a sector of the Serra do Mar called “Curucutu” (2356’S; 4639’W), situated near the metropolis of So Paulo, to conduct a field inventory together with an assimilation of published material, museum specimens and gray literature. This inventory has been in continuous operation for the past 16 years, with the simultaneous use of mist-nets and point counts, totaling 405 field days. Between 1900 and 2007, 338 species were recorded in the region, but only 278 were published in publicly available works, many of which are difficult to find. Between 2007 and 2019, we recorded 373 species in the field, bringing the total for the region to 422, including 128 AF endemics, 29 threatened, and 45 migratory species. This high species richness is supported by the variety of habitats as well as its 800 meter elevational gradient, partially protected in a state reserve. The greatest threats to the avifauna continue to be deforestation, hunting, and illegal capture of some species. Our data show that the Curucutu region ranks among the highest-diversity sites for birds in the AF of southeastern Brazil, and should be considered a high-priority area for conservation action.

### **Using Tree Swallows to Evaluate the Effectiveness of Artificial Wetlands to Support Aerial Insectivores**

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Over the last 100 years, 50% of natural wetlands in the United States have been lost due to urbanization or agriculture. As natural wetlands have been lost, artificial wetlands are constructed to restore water quality and valuable ecological habitat for bird assemblages. The conservation value of artificial wetlands needs to be explored further. In this study, we investigated how wetland habitat type (natural versus artificial) and quality (water quality, insect availability, and foraging rate) affect populations of breeding Tree Swallows (*Tachycineta bicolor*). We evaluated reproductive success (nest box occupancy rate, clutch size, and hatch-

ling mass) with respect to nutrient enrichment, prey availability, and foraging rate in wetlands. Alkaline persulfate digestion was performed for total nitrogen and phosphorus in water and sediment. Surprisingly, a pooled t-test showed that total nitrogen in water was significantly greater in a natural site than the artificial wetland ( $n=8$ ,  $t=5.04$ ,  $p=0.001$ ). There was significantly greater total phosphorus in natural wetland sediment than artificial ( $n=8$ ,  $t=-2.99$ ,  $p=0.017$ ). These results may be attributed to the presence of cattail (*Typha latifolia*), the presence of wool-grass (*Scirpus cyperinus*), and closer distance to agriculture. Foraging rate did not differ between site type (natural versus artificial). Additionally, insect densities were greater at the artificial site due to higher dissolved oxygen (mg/L), and lower turbidity (NTU). Further, nest occupancy rates and clutch sizes were greater in wetlands with lower nitrogen and higher prey density showing that artificial wetlands can support avian aerial insectivore populations assuming disturbances resulting from distance from agriculture are minimized.

### **Genomic and Phenotypic Variation in Russet Nightingale-Thrushes**

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Taxonomic classification of the Russet Nightingale-Thrush (*Catharus occidentalis*) and close relatives has been historically prone to errors and revision due to phenotypic similarities between allopatric populations. Currently, there are four recognized subspecies of Russet Nightingale-Thrush, each of which with its own loosely defined range. In this study, we first applied modern statistical techniques to assess the distinctness of populations by subspecies using morphometrics, and then further investigated the question of distinctness using genomic analyses of Ultraconserved Elements and mitochondrial DNA. While morphometric analysis indicated no significant differences between specimens when grouped by subspecies, phylogenetic analyses of mtDNA showed two major clades: one primarily consisting of specimens from the Sierra Madre and Transvolcanic ranges, and one primarily of specimens from the states of Oaxaca and Guerrero (states respectively representing the ranges of *C. o. occidentalis* and *C. o. fulvescens*). This suggests the possibility of a population in the southeast Sierra Madre del Sur and Transvolcanic ranges that is genetically distinct from populations farther to the north, which does not reflect current subspecific taxonomy. Further study of Russet Nightingale-Thrush genomics, plumage coloration, and