

# The Golden Swallow Project (Proyecto Golondrina Verde)

"...[an] exceedingly lovely little swallow, whose plumage reflects the radiance of the Hummingbirds" – Gosse, 1847

## Hispaniolan & Jamaican Golden Swallows

Over the last three decades, aerial insectivores have experienced population declines throughout North America (Nebel et al. 2010). Specifically, in many families of flycatchers, swifts, swallows, and nightjars, ornithologists are noticing a dramatic downward trend in the sizes of well-studied populations. There are many theories concerning the widespread decline across this guild of birds, with the strongest evidence pointing toward changes happening at the ecosystem level. Some hypotheses include: the reduction of adequate nesting structures such as barns and open chimneys (McCracken 2013), a decrease in the quantity of preferable foraging habitat (Evans et al. 2007, Gruebler et al. 2010), lower availability of calcium necessary for egg and bone development as a result of acid rain (McCracken 2013), and changes in food availability in the form of flying insects (Nebel et al. 2010, Robillard et al. 2012, Pomfret et al. 2014). As one might suspect, the informal consensus for explaining the aerial insectivore decline tends toward an amalgam of these elements.

### Continent-wide tracking to determine migratory connectivity and tropical habitat associations of a declining aerial insectivore

Kevin C. Fraser, Bridget J. M. Stutchbury, Cassandra Silverio, Patrick M. Kramer, John Barrow, David Newstead, Nanette Mickle, Bruce F. Cousens, J. Charlene Lee, Danielle M. Morrison, Tim Shaheen, Paul Mammenga, Kelly Applegate, John Tautin

### Declines of Aerial Insectivores in North America Follow a Geographic Gradient

Silke Nebel<sup>1</sup>, Alex Mills<sup>2</sup>, Jon D. McCracken<sup>3</sup>, and Philip D. Taylor<sup>1</sup>

### The Swallow and the Sparrow: how agricultural intensification affects abundance, nest site selection and competitive interactions

Audrey Robillard · Dany Garant · Marc Bélisle

Why are birds that feed on insects disappearing?  
New findings point to answers that touch on a range of troubling environmental factors.  
By Douglas Hunter

### Effects of crop type and aerial invertebrate abundance on foraging barn swallows *Hirundo rustica*

Karl L. Evans<sup>a,b</sup>, Jeremy D. Wilson<sup>b</sup>, Richard B. Bradbury<sup>c</sup>

### Linking agricultural practice to insect and bird populations: a historical study over three decades

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### POPULATION DYNAMICS OF A DECLINING SWALLOW *HIRUNDO RUSTICA* POPULATION

BY ANDERS PAPE MØLLER

Are Aerial Insectivores Being 'Bugged Out'?



Aerial insectivore species in the Greater Antilles of the Caribbean are almost completely absent from the scientific literature. The paucity of work being conducted on this guild makes broad-scale and comparative population assessments almost impossible. In fact, even basic natural history for many of the aerial insectivores is incomplete, and even more surprising, roosting and nesting localities for many common, resident species have yet to be found. Here we present a comprehensive look at both the natural history and breeding biology of a threatened aerial insecti-

vore endemic to the island of Hispaniola, the Hispaniolan Golden Swallow (*Tachycineta euchrysea sclateri*), with intentions of laying down a foundation of knowledge that can be used to inform conservation efforts and help us better understand if and how the species may fit into the larger story of aerial insectivore decline.

Two subspecies of Golden Swallow have been described. The nominate subspecies (*T. e. euchrysea*) was first recorded by Philip H. Gosse in 1847 and was always considered endemic to the island of Jamaica (Gosse 1847, Ridgway 1904, Graves 2014). This subspecies declined significantly throughout the 20th century (King 1981, Downer 1982) and is now believed to be extinct (Raffaele et al. 1998, Haynes-Sutton et al. 2009, Graves 2014, Proctor et al. in review; This Thesis Chapter 2.). The extant race and focus of this article, the Hispaniolan Golden Swallow (*Tachycineta e. sclateri*) (Gosse 1847), was first distinguished from the Jamaican race (*Hirundo euchrysea* var. *dominicensis*) by naturalist Dr. Henry Bryant, who noticed that *H. dominicensis* had a smaller bill, but gave no further description (Bryant 1866). It was not until 1884 that ornithologist Charles B. Cory described the bird in greater detail, presenting it with the taxonomic distinction of *Hirundo sclateri*, the species name having been chosen as a compliment to P. L. Sclater, Esq., of London, England (Cory 1884:2):

**“The present species differs decidedly from *Hirundo euchrysea* [*Tachycineta euchrysea euchrysea*] from Jamaica, that species having the upper parts bright golden-green, and lacking the blue on the forehead entirely. The Santo Domingo bird [*T. e. sclateri*] is also larger, and the bill is apparently somewhat more slender.”**



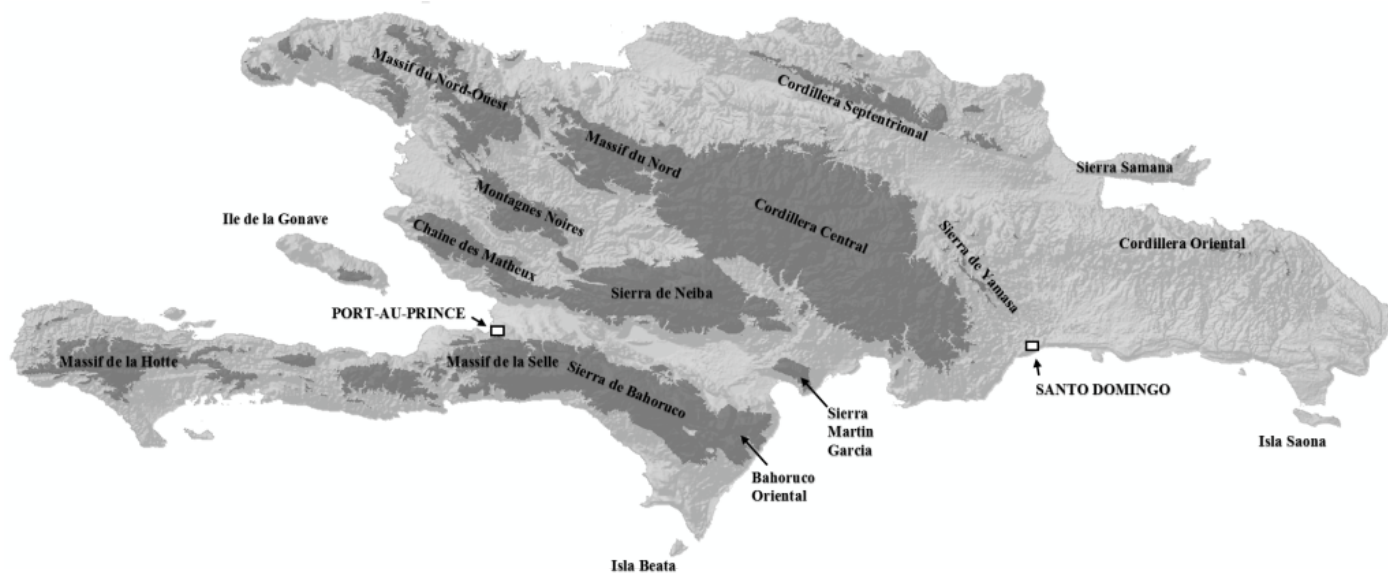
The Hispaniolan Golden Swallow is believed to be endemic to the island of Hispaniola (Latta et al. 2006). The most recent estimates generated in 2000 (IUCN data quality: poor) gauge population size at anywhere from 1500-7000 mature individuals with a declining trend. This assessment justifies placement of the species into “Vulnerable, Category B” (small range and fragmented, declining or fluctuating) on the IUCN Red List of Threatened Species (BirdLife International 2012). From the earliest known records to today’s most current sightings, the swallow has been described as a bird of the mountains (Cory 1884, 1886, Bond 1928, 1936, 1943, Wetmore and Swales 1931, Raffaele 1998, Latta et al. 2006, eBird 2015).

Wetmore and Swales (1931:315-316): “This handsome swallow is found among the interior hills and is greeted with delight wherever seen from its graceful actions and pleasing coloration. As one climbs over steep slopes in the mountains among dead trunks of pine a long-tailed swallow may come circling through the air to display in passing a white breast and glossy back. In its active evolutions it is certain to attract the eye and the traveler is sure to pause to observe its course as it circles quickly away.”

At present, the species is found in the Sierra de Neiba (highest point: Pico Neiba – 2,279 m), Cordillera Central (Pico Duarte – 3,098 m) and Sierra de Bahoruco (Loma Gaio en Medio – 1,779 m) mountain chains of the Dominican Republic (Turner and Rose 1989, Dod 1992, Klein et al. 1998, Fernandez and Keith 2003, Rimmer et al. 2004, Townsend

2006, Townsend et al. 2008) and within the Massif du Nord (near Morne Beaubrun – 1,160 m), Massif de la Hotte (Pic de Macaya – 2,347 m), Montagnes Noires (near Morne Boeuf – 1,760 m) and Massif de la Selle (Pic la Selle – 2,680 m) of Haiti (Bond 1928, Woods and Ottenwalder 1986, Raffaele et al. 1998, Dávalos and Brooks 2001, Keith et al. 2003, Rimmer et al. 2005, 2010) (Fig. 1).

Figure 1. Map of Hispaniola, Greater Antilles with major mountain chains and islands labeled, as well as the capital cities Port-au-Prince and Santo Domingo of Haiti and the Dominican Republic, respectively. Darker shading denotes elevations > 475 masl.



Throughout its range, the swallow is thought to be increasingly restricted to isolated remnant patches of montane forest dominated by Hispaniolan pine (*Pinus occidentalis*) (Keith et al. 2003, Latta et al. 2006, Townsend et al. 2008), a trend that is congruent with a notable decrease in the species' presence at lower elevations over the last century (Wetmore and Swales 1931, Latta et al. 2006, eBird 2015). The species is believed to have declined over the past several decades (Dod 1992, Keith 2003, BirdLife International 2015); though some localized populations may have recently stabilized (Rimmer 2004). Some authors attribute the decline to habitat loss and degradation within native pine forests (Keith 2003) – a concern echoed by scientists studying the congener *T. cyaneoviridis* in the Bahamas (Allen 1996). Others have highlighted high rates of nest depredation by invasive mammals including the small Indian mongoose (*Herpestes auro punctatus*; additional common names: small Asian mongoose, Javan mongoose, marsh mongoose) (Hays and Conant 2007, Veron et al. 2007) and black rat (*Rattus rattus*) (Townsend 2006). Though the underlying causes are not definitive, the species' increasing sparsity over its historical range has been the catalyst for the scientific community's growing advocacy towards implementing conservation measures (Rimmer et al. 2005, Townsend et al. 2008).