

Bird mobbing of *Boa constrictor* in lowland tropical rainforest of Costa Rica

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Mobbing is well documented in birds – particularly in songbirds (Passeriformes) – as a predator deterrent behaviour that also communicates the presence of predators to others. Most information on avian mobbing of potential predators comes from studies involving north temperate species, with the targets typically being raptors. Here, we document mobbing of a *Boa constrictor* by a Neotropical bird assemblage, noting the composition and number of individuals in this mobbing group. The diet of *B. constrictor* consists of a variety of vertebrates, which can include poultry as well as wild birds (documented prey items range from smaller songbirds like Blue-gray Tanager (*Thraupis episcopus*) and antbird (Thamnophilidae) [Greene, 1983] up to Chestnut-fronted Macaw (*Ara severus*) [Begotti and Filho, 2012]).

We were alerted on 04 March 2014 by naturalists about the presence of a small (ca. 1 m long, including tail) *B. constrictor* that was coiled up on a branch ca. 3 m above the ground beneath a leaf cluster of a *Miconia impatiolaris* (Melastomataceae). This location was next to a heavily used concrete pathway through a maintained lawn with clusters of shrubs, located adjacent to the dining hall on the property of the La Selva Biological Station (Organization for Tropical Studies), Heredia Province, Costa Rica. The following day, the snake had relocated about 15 m away, and was coiled up ca. 4 m above the ground in an isolated *Trophis racemosa* (Moraceae) above the lawn. At this time, it was being actively mobbed by a substantial group of birds. Most individuals were giving chip notes or other calls rather than singing. No birds made physical contact with the snake during our observations. The *B. constrictor* did not attempt to retreat from the birds, nor strike out at them as prey, during our observation time.

The 25 individual birds mobbing the snake were: *Phaethornis striigularis* (Stripe-throated Hermit) – 1; *Amazilia tzacatl* (Rufous-tailed Hummingbird) – 2; *Trogon massena* (Slaty-tailed Trogon) – 1 male, 1 female; *Pitangus sulphuratus* (Great Kiskadee) – 2; *Megarynchus pitangua* (Boat-billed Flycatcher) – 1; *Myiozetetes granadensis*

(Gray-capped Flycatcher) – 1; *Campylorhynchus zonatus* (Band-backed Wren) – 2; *Turdus grayi* (Clay-colored Thrush) – 1; *Setophaga pensylvanica* (Chestnut-sided Warbler) – 1; *Ramphocelus passerinii* (Passerini's Tanager) – 5; *Cyanerpes cyaneus* (Red-legged Honeycreeper) – 1; *Chlorophanes spiza* (Green Honeycreeper) – 2; *Saltator maximus* (Buff-throated Saltator) – 1; *Piranga rubra* (Summer Tanager) – 1 female; *Icterus galbula* (Baltimore Oriole) – 1; *Euphonia luteicapilla* (Yellow-crowned Euphonia) – 1.

Hummingbirds and songbirds have been noted mobbing snakes elsewhere in the Neotropics (e.g., in Ecuador by Matheus et al., 1996), but the presence of a trogon in this mobbing group was unexpected. Three of these species – *S. pensylvanica*, *P. rubra*, and *I. galbula* – are Neotropical migrants that breed in forests of North America and winter in Central America, and would only encounter *B. constrictor* during the five to six months of their annual cycle spent in the tropics. Snakes are known to be primary nest predators (Robinson et al., 2005), but their role in predation on adult birds is not well studied.

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