

# Morphological variation between territorial vs. flock-feeding Zenaida doves: Evidence for resource polymorphism?



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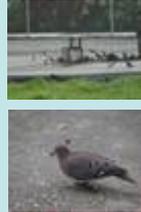
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## Introduction



Zenaida doves in Barbados

2 foraging strategies



Flock foraging at grain storage facilities

Foraging alone or in pairs on territories

### Box 1: Wing raising

Zenaida doves typically engage in ritualized movement such as wing raising during territorial contests. Wing length appears to determine the outcome of contests.



### A case of resource polymorphism (Sol *et al.* 2005)?

**Hypothesis:** Birds foraging on clumped food are poor competitors compared to birds foraging on territories

**Prediction:** Morphological variation between birds foraging in flocks and territorial birds (particularly for wing size, see box 1)

### Box 2: Measurements



## Methods



Barbados map

2 samples per year (2007 & 2008) and per area (4 areas)

- ✗ 2 areas where birds are territorial
- ✗ 2 areas where birds forage in flocks

Birds caught with traps

⇒ Body measurements and blood sampling (box 2)

⇒ Molecular sex identification (box 3)



Walk-in baited drop trap

### Box 3: Molecular sex identification

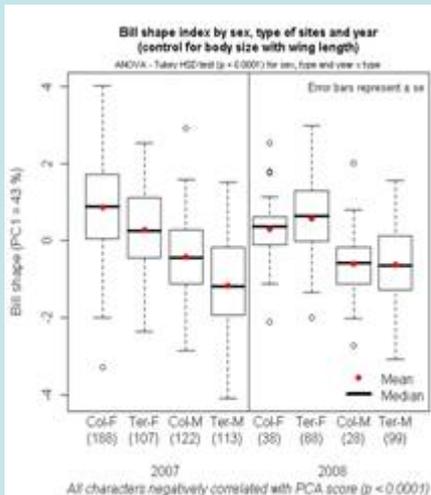
As there is no strong sex dimorphism, molecular markers were used to sex doves: 2 spots for females and only one for males.

Primers 2550F-2718 R (Fridolfsson & Ellegren 1999)

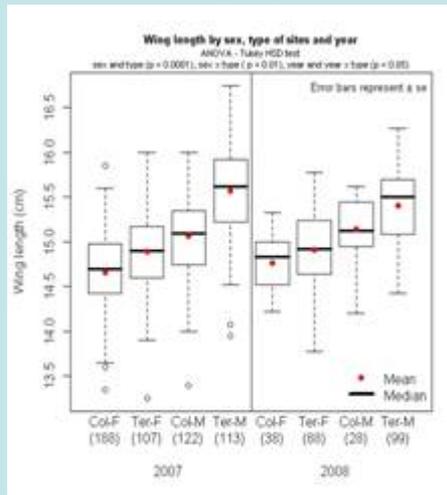


## Results

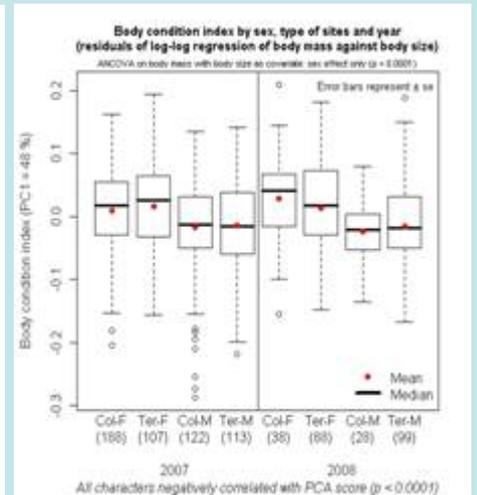
### Bill shape



### Wing length



### Body condition



- Males are **always bigger** than females
- Territorial birds have **bigger bills and longer wings** than flock-foraging birds
- **No differences** in body condition between flock-foraging and territorial birds
- **No difference** between areas within category (territorial or flock-foraging)
- **Additive effect of year** on both wing length and bill shape

## Conclusions

- Results consistent with Sol *et al.* (2005), except for body condition => no difference between flock foraging and territorial birds.
- Reduced competitive ability (small body size) may prevent low quality individuals from obtaining a territory and then force them to exploit alternative food resources. Future studies should investigate the possibility that birds change status (territorial vs. flock-foraging) during their lifetime.