Zoologia Caboverdiana 10, 2, 38–40
Available at www.scvz.org

Nota breve | Short note

Nest site competition between birds of prey on Maio Island, Cabo Verde

Jairson Veiga [1,] *, Juan Patino-Martinez [1], Cláudio Frederico [1], José Santos [1], Hélia Reis [1], João Reis [1] & António Araújo [2]

[1]*FMB, Maio Biodiversity Foundation, Porto Inglês, Maio, Cabo Verde*
[2] *Blue and Green, Nature Conservation and Ecotourism, Lda., Mindelo, São Vicente, Cabo Verde*

* *Corresponding author e-mail: jairson.veiga@fmb-maio.org*

Keywords: coexistence, *Falco (tinnunculus) alexandri*, interspecific interference competition, territoriality, *Tyto alba detorta*

Birds of prey are essential predators for maintaining the balance of the ecosystems in which they occur (Kullberg & Ekman 2000). The coexistence of different species of birds of prey in the same ecosystem is possible and common, because of differentiation in diet, habitat, behaviour and morphology, etc. (Jaksié *et al.* 1981). However, interaction between species can be agonistic, competing for nesting sites, shelter or food (Korpimäki 1987, Hakkarainen & Korpimaki 1996). Interference competition has been observed among several birds of prey (Sergio & Hiraldo 2008). The study of interspecific competition provides a better understanding of community functioning, and ecological relationships (Kullberg & Ekman 2000). Cabo Verde is on the BirdLife International list of Endemic Bird Areas (Stattersfield *et al.* 1998). Knowledge on Cabo Verde seabirds has increased considerably in recent decades, due to conservation and research projects, however, relatively less is known about terrestrial avifauna (Ontiveros 2005). Here we describe in detail the nest-site interference competition between two endemic taxa, the common kestrel *Falco (tinnunculus) alexandri* and the barn owl *Tyto alba detorta*.

The nest, initially occupied by the common kestrel, was located in the Southwest of Maio (15º11'16.2"N, 23º6'7.2"W; Fig. 1). It was installed in a natural cavity at 14.7m height of a sedimentary slope (Fig. 2A). It was daily monitored between September 19 and October 19 2022, using a camera with an infrared sensor (SOLOGNAC-BG500) and a telescope (OPTICRON-MM4-60-ED) set at 400m of distance. Three eggs were incubated alternately by two adults (Fig. 2B). Additionally, two cameras with bait (fish) were installed 300m around the nest to check for predators (cats). A barn owl pair occupied

the nest when the kestrels were absent on the twelfth observation day (Fig. 2C, D). The owls threw the kestrels' eggs out of the nest. The kestrels executed rapid swooping attack flights, accompanied by vocalisations and approaches to the entrance of the nest where the owls remained. The kestrels abandoned the nest definitively, seven days after successive confrontations. The pair of owls continued to occupy the nest. No cats were detected in the nest surroundings.

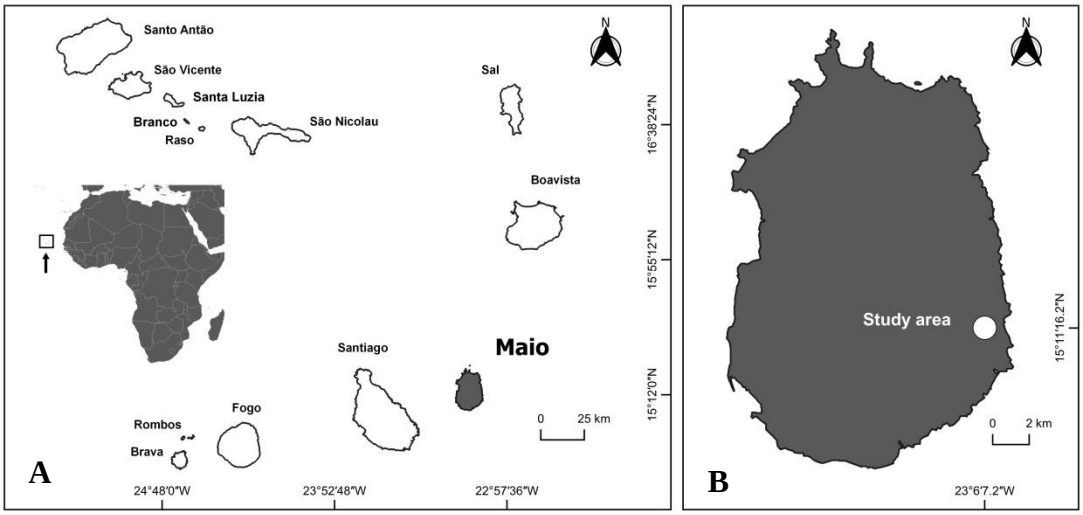

Fig.1. Study area. Maps showing the **A)** location of Cabo Verde on the west coast of Africa, the Cabo Verde Archipelago, **B)** Maio Island and the study area (marked in white).

Fig. 2. Nest location and results from nest observations (photos by FMB's nature wardens). **A)** Sedimentary slope in the bed of a stream where the nest disputed between the two birds of prey was located. **B)** Nest with eggs incubated by a pair of common kestrel *Falco (tinnunculus) alexandri*. **C)** Invasion and **D)** occupation of the nest by a pair of barn owls *Tyto alba detorta*.

It has been shown that these birds of prey also compete for nesting sites in Cabo Verde, in this case with advantage for the barn owl. Interference competition for nesting sites among birds of prey is a well-known phenomenon (Zuberogoitia *et al.* 2005, Preusch & Edelmann 2010) particularly common when suitable nesting sites are in short supply (Forero *et al*. 1996, Hakkarainen & Korpimaki 1996). In this case, the larger body size of the barn owl seems to provide dominance against the common kestrel. We suggest that the characterization and study of the availability of nesting sites and the nesting success of the different resident raptors on the island of Maio should follow. This information can provide indication if the breeding success of the common kestrel is limited by interference competition for nest sites.

ACKNOWLEDGEMENTS

We thank the contributors for their help in the fieldwork: H. Silva, M. Parente, N. Mendes, N. Teixeira and the team of FMB's nature wardens.

REFERENCES

Forero, M.G., Tella, J.L., Donázar, J.A. & Hiraldo, F. (1996) Can interspecific competition and nest site availability explain the decrease of lesser kestrel *Falco naumanni* populations? *Biological Conservation*, 78, 289–293.

Hakkarainen, H. & Korpimaki, E. (1996) Competitive and predatory interactions among raptors: an observational and experimental study. *Ecology*, 77, 1134–1142.

Jaksié, F.M., Greene, H.W. & Yáñez, J.L. (1981) The guild structure of a community of predatory vertebrates in central Chile. *Oecologia*, 49, 21–28.

Korpimäki, E. (1987) Dietary shifts, niche relationships and reproductive output of coexisting Kestrels and Long-eared Owls. *Oecologia*, 74, 277–285.

Kullberg, C. & Ekman, J. (2000) Does predation maintain tit community diversity? *Oikos*, 89, 41–45.

Ontiveros, D. (2005) Abundance and diet of Alexander's kestrel (*Falco tinnunculus alexandri*) on Boavista island (Archipelago of Cape Verde). *Journal of Raptor Research*, 39, 80–83.

Preusch, M.R. & Edelmann, J. (2010) Populationsdynamik von Turmfalke (*Falco tinnunculus*) und Schleiereule (*Tyto alba*) auf einer gemeinsamen Probefläche im Kraichgau (Südwestdeutschland). *Vogelwarte*, 48, 33–41.

Sergio, F. & Hiraldo, F. (2008). Intraguild predation in raptor assemblages: a review. *Ibis*, 150, 132–145.

Stattersfield, A.J., Crosby, M.J., Long, A.J. & Wege, D.C. (1998) *BirdLife Conservation Series. No. 7. Endemic Bird Areas of the World. Priorities for Biodiversity Conservation.* BirdLife International, Cambridge, UK, 860 pp.

Zuberogoitia, I., Martínez, J.A., Zabala, J. & Martínez, J.E. (2005) Interspecific aggression and nest-site competition in a european owl community. *The Raptor Research Foundation*, 39, 156–159.

Received 19 November 2022
Accepted 21 December 2022