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SHORT COMMUNICATION

Reproduction of the Barn Owl (*Tyto alba*) in Cyprus (Aves: Strigiformes)

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Knowledge about the reproductive biology of the Barn Owl (*Tyto alba*) in the Middle East is limited to a few studies focused on Israel (e.g. Charter, Izhaki, Leshem, Meyrom, & Roulin, 2015). Here, we report data on Barn Owl clutch and brood sizes obtained from nesting boxes installed and monitored by Game and Fauna Service (GFS) personnel on the island of Cyprus.

From 1996 to 2016, nesting boxes were placed by GFS as part of an ongoing project to control rodent damage in agricultural fields. Each year, all boxes were visited at least twice between 1 April and 30 June; with respect to clutch size, we only report complete clutches. As nestling age was not recorded, we could not estimate laying dates. Nevertheless, our observations indicate that egg laying usually occurs in March with some pairs starting as early as late January and very few pairs as late as May and June. This is similar to Israel where most Barn Owls lay their eggs in March (mean: 17 March) (Charter et al., 2015). Table 1 shows the number of clutches and broods that were recorded. As can be seen in Figure 1a, full clutches ranged from 2 to 11 eggs with a mean clutch size of 6.45 (the modal clutch is 7). Broods contained between 1 and 8 nestlings with a mean brood size of 4.18 (Figure 1b). This is slightly lower than in Israel where successful pairs produce on average 4.9 fledglings (range: 1-9) (Charter et al., 2015). As in Israel, second annual clutches in Cyprus are rare with only 5 recorded cases compared to 125 first clutches.

A nocturnal spotlight survey – following the methods Fajardo, Pividal, Trigo, and Jimenez (1998) and Condon, Kershner, Sullivan, Cooper, and Garcelon (2005) – has been conducted by four GFS staff members since 2005 to assess trends in the owl population. The nocturnal survey was conducted along 55 roadside transects of secondary dirt roads covering a total length of 408 km in 2005 and 488.8 km between 2006 and 2016. The roadside count method was chosen because it is time-efficient and can traverse many habitats in a relatively short period of time. The length of the roads surveyed varied from 5 to 20 km (8.9 km on average) and each route was surveyed with a spotlight by the same two teams of two observers. A spotlight was used while driving and during stops of usually 1 minute in duration. The observers drove along each route at a slow speed (~10 km/hour) in the same direction each time; they counted all Barn Owls spotted flying or perched on a post while driving and then at pre-selected stops (approximately every 200 m). Barn Owls were easily distinguished from the other three owl species present in Cyprus – the rarer Long-Eared Owl *Asio otus*; the abundant but much

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Table 1. Number of Barn Owl clutches and broods recorded between 1996 and 2016 in Cyprus. The number of nest-boxes monitored each year is also given.

| Year | No. nest boxes monitored | No. of nests |
|--------------|--------------------------|--------------|
| 1996 | 10 | 1 |
| 1997 | 10 | 3 |
| 1998 | 10 | 3 |
| 1999 | 10 | 4 |
| 2000 | 12 | 4 |
| 2001 | 44 | 4 |
| 2002 | 45 | 5 |
| 2003 | 56 | 8 |
| 2004 | 82 | 12 |
| 2005 | 79 | 17 |
| 2006 | 71 | 7 |
| 2007 | 70 | 20 |
| 2008 | 60 | 11 |
| 2012 | 40 | 1 |
| 2013 | 52 | 1 |
| 2014 | 38 | 4 |
| 2015 | 63 | 4 |
| 2016 | 77 | 11 |
| Total | | 117 |

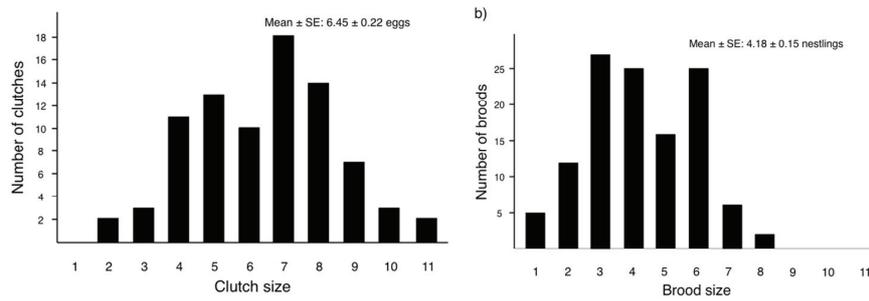


Figure 1. Frequency distribution of clutch sizes (left) and brood sizes (right) in Cypriot Barn Owls.

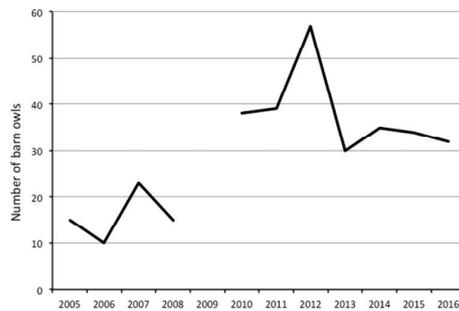


Figure 2. Night census of Cypriot Barn Owls from 2005 to 2016 (except 2009) along a transect length of 408 km in 2005 and 488 km in all other years. For each year, we summed the total number of Barn Owls seen at night. For instance, in 2012 a total of 58 individuals were observed.

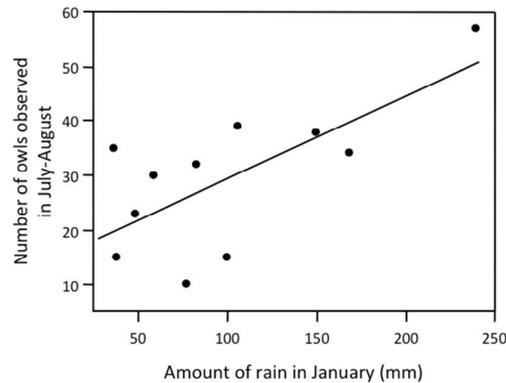


Figure 3. Relationship between the amount of rain in January and number of Barn Owls observed in July-August in Cyprus.

smaller Little Owl *Athene noctua*; and the Cyprus Scops Owl *Otus scops cyprius* – by size and colouration. A single survey was performed each year (except in 2009) in July–August, during the first 3–4 hours after sunset. All adults and juveniles were counted so the results refer to individuals, not pairs. Each year the nocturnal survey was completed in about one month, across the part of the island where the Republic of Cyprus exercises effective control. The total number of owls observed along all roads was summed. Figure 2 shows that the number of Barn Owls observed increased from the period 2005–2008 to the period 2010–2016 (Pearson’s correlation: $r = 0.64$, $n = 11$ years, $P = 0.035$) with a peak in 2012. The number of owls observed in July–August (once all nestlings have fledged) was higher in years with more rain in winter (January, data from the Department of Meteorology of Cyprus) ($r = 0.69$, $n = 11$ years, $P = 0.018$) (Figure 3). This suggests that drought has a negative impact on Barn Owl reproduction.

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Disclosure Statement

No potential conflict of interest was reported by the authors.

References

- Charter, M., Izhaki, I., Leshem, Y., Meyrom, K., & Roulin, A. (2015): Relationship between diet and reproductive success in the Israeli barn owl. *Journal of Arid Environment*, 122, 59–63.
- Condon, A. M., Kershner, E. L., Sullivan, B. L., Cooper, D. M., & Garcelon, D. K. (200): Spotlight surveys for grassland owls on San Clemente Island, California. *The Wilson Bulletin*, 117, 177–184.
- Fajardo, I., Pividal, V., Trigo, M., & Jimenez, M. (1998): Habitat selection, activity peaks and strategies to avoid mortality by the Little Owl *Athene noctua*: a new methodology on owls research. *Alauda*, 66, 49–60.