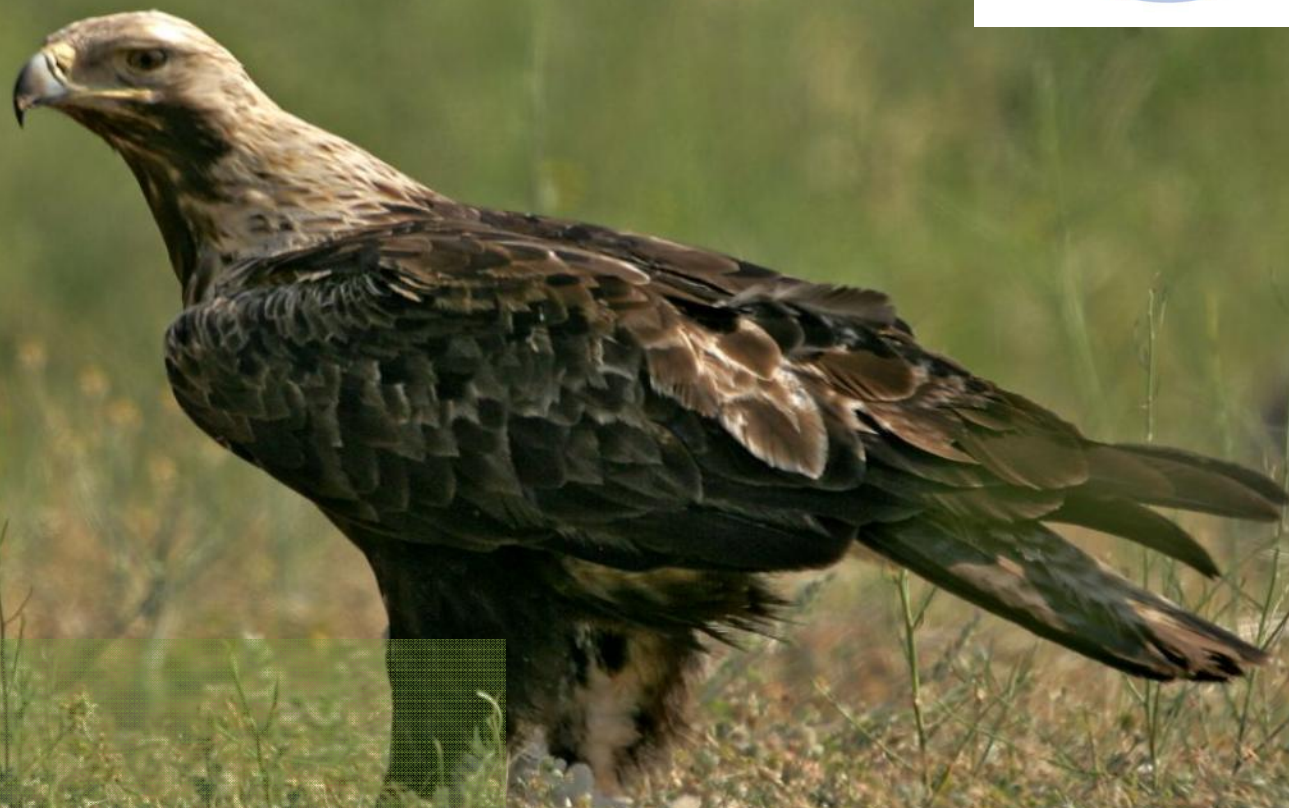


HUMAN ACTIVITIES CAN HINDER THE BREEDING OF A TOP AVIAN PREDATOR: PRELIMINARY RESULTS



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Human activities can hinder the breeding of a top avian predator: preliminary results

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Received: May 19, 2021 – Revised: October 11, 2021 – Accepted: October 12, 2021



Dobrev, D., Dobrev, V. & Demerdzhiev, D. 2021. Human activities can hinder the breeding of a top avian predator: preliminary results. – Ornis Hungarica 29(2): 71–80. DOI: 10.2478/orhu-2021-0020

Based on a study from April–July during the period 2008–2009



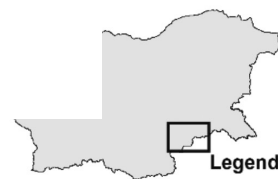
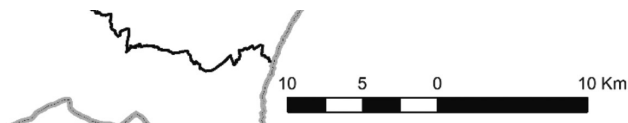
Animal Conservation. Print ISSN 1367-9430

CORRESPONDENCE

Human disturbance and the conservation of the Spanish imperial eagle: a response to Gonzalez et al. (2006)

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But...



Legend

Country border

Study area border

How did we plan this?

Demerdzhiev et al. 2014,
Slovak Raptor Journal, 8(1):
27–39

Between 2001-2013, 47 breeding attempts were guarded by BSPB (2009-2013, n=31).

Guarded pairs had a higher mean breeding success (1.32 ± 0.88) than non-guarded pairs (1.06 ± 0.91).

Our objectives were:

- (1) to reveal the most common human activities and their magnitude in EIE territories;
- (2) to define and measure eagle's reactions and
- (3) suggest primary conservation measures to avoid disturbance and nest/clutch abandonment.



Materials and methods

- ✓ We monitored three breeding attempts of two EIE pairs during the breeding season.
- ✓ Observations lasted between 7.00 and 20.00 h each monitoring day (n=67) and were performed from vantage points at a distance of around 1,000 m from the nest.
- ✓ Observations covered the period from the laying of the eggs until fledging.
- ✓ For each breeding attempt, we differentiated two periods: (a) incubation (from the laying of the first egg until hatching of the first chick) and (b) chick rearing period (since the hatching of the first egg until fledging).



Materials and methods

We recorded the following information: (1) exact starting time, (2) type and (3) duration of the activity, (4) linear distance to the nest, (5) number of people or vehicles involved in the activity and (6) the eagles' response.

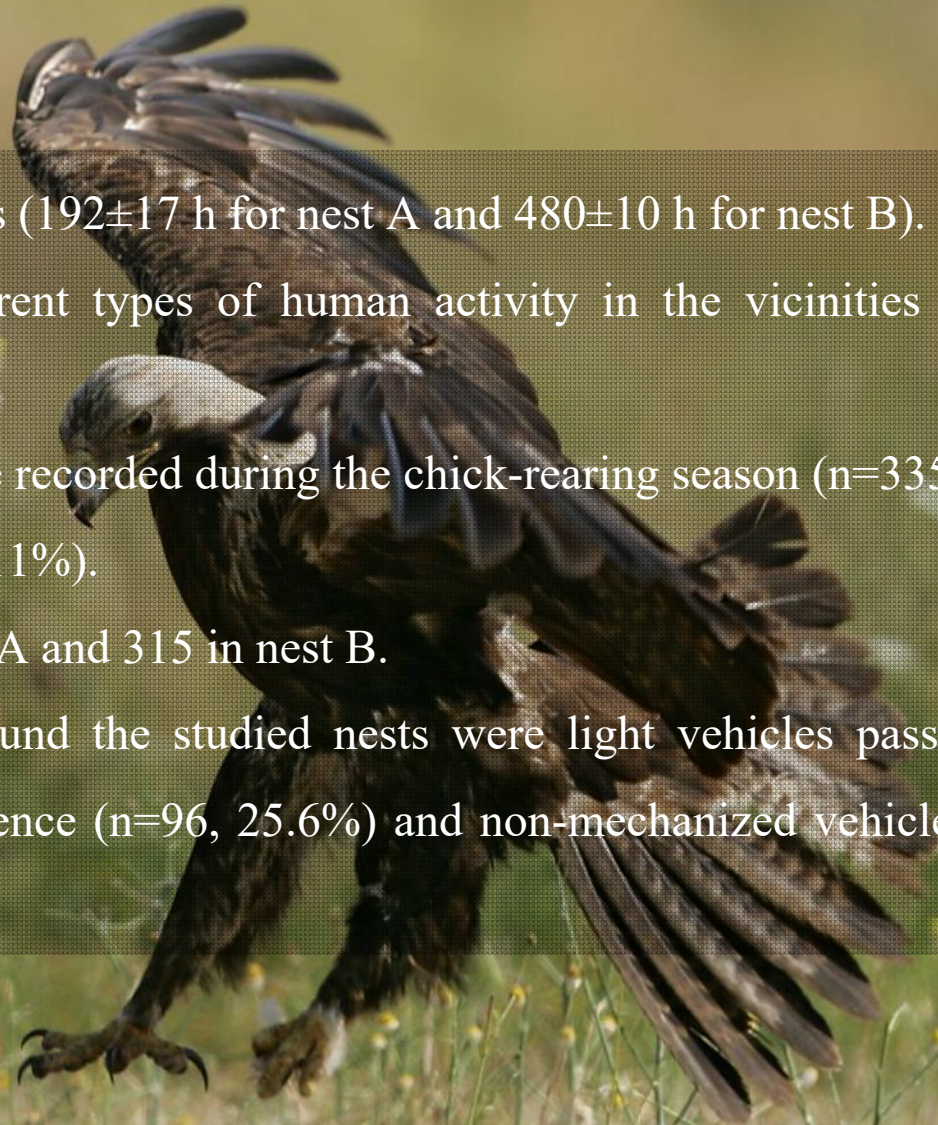


The reaction of the birds was categorized as follows: (NR) No reaction; (AR) Alarm reaction; (FR) Flight reaction ;

We used Break down & one way ANOVA to study the effect of different human activities on the reactions of the eagles. We set the reaction of the birds as a dependent variable and the number, the distance, the type and the duration of the activities as predictor variables. All tests were considered significant when $p \leq 0.05$.



Results



- ✓ We spent 672.15 h of observations (192 ± 17 h for nest A and 480 ± 10 h for nest B).
- ✓ We recorded 375 cases of different types of human activity in the vicinities of the two surveyed nests.
- ✓ The majority of the activities were recorded during the chick-rearing season ($n=335$, 89%) and the rest during incubation ($n=40$, 11%).
- ✓ We recorded 60 activities in nest A and 315 in nest B.
- ✓ The most common activities around the studied nests were light vehicles passing ($n=100$ cases, 26.6%), local people presence ($n=96$, 25.6%) and non-mechanized vehicles activities ($n=85$, 22.7%).

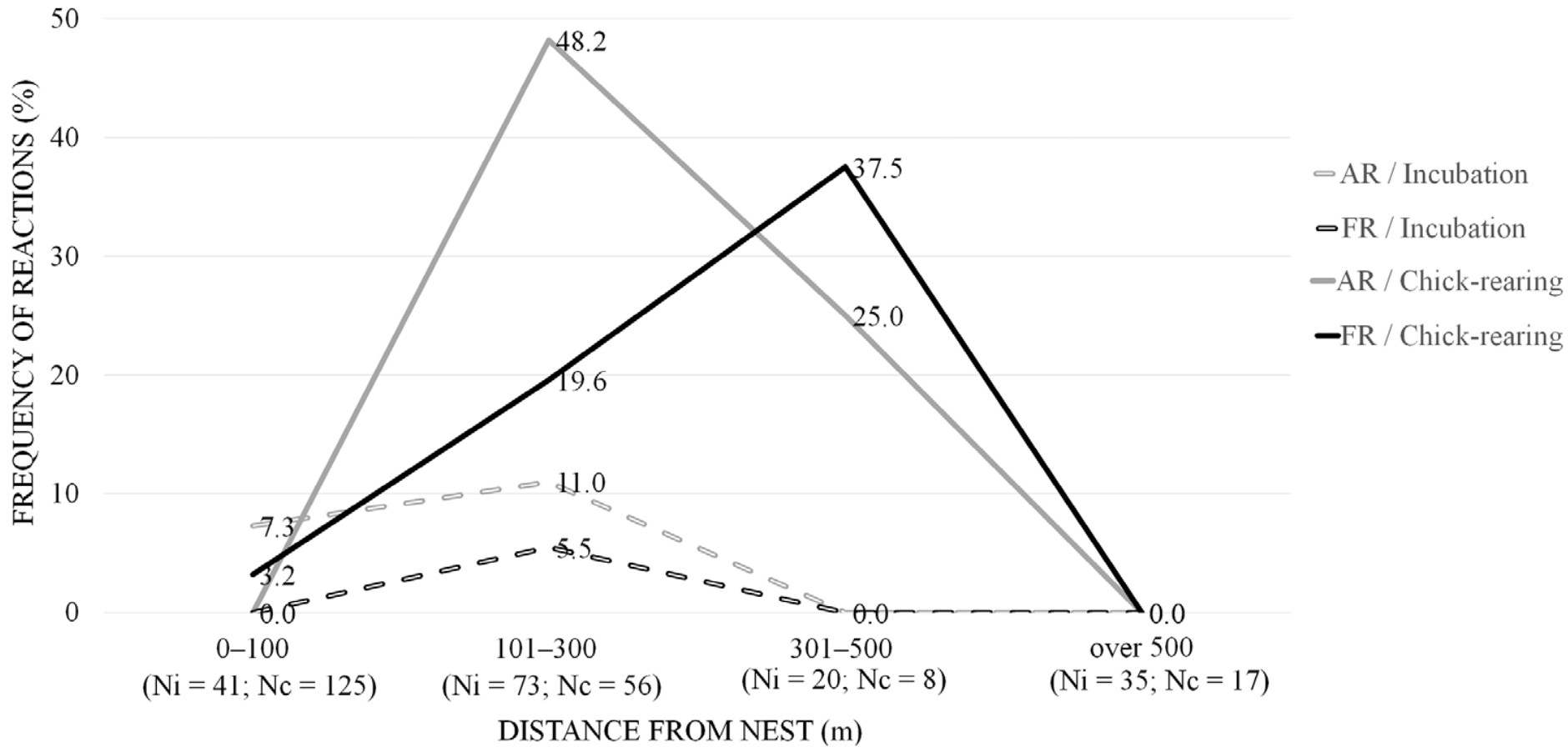
Results

- ✓ In 313 cases (83%) we did not record any reaction of the eagles.
- ✓ In 40 cases (11%) eagles showed signs of alarming reaction and in 22 cases (6%) eagles left the nest without attendance because of it.
- ✓ The probability of reaction in the EIE is dependent on the type of the activity ($F=10.09$, $P=0.002$), distance from the nest ($F=8.39$, $p=0.004$) and the duration of the activity ($F=7.29$, $P=0.007$).



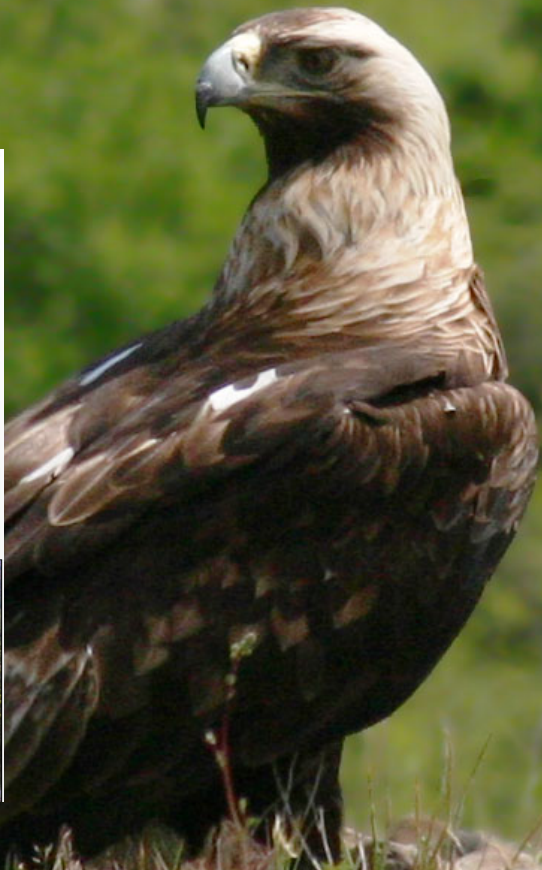
Results

Eagles start to respond to any intruder when it approaches at distances of 301–500 m from the nest. However, we found that with the decrease of the distance to the nest, the reaction progresses and its frequency is most pronounced at a distance belt 101–300 m ($t = -2.66$, $p = 0.008$) when the majority of the reactions were registered during incubation and chick-rearing period ($n = 50$).



More extensive research on the topic is needed...BG data about to be summarized soon...

Remember Slide 3?



1 How did we plan this?

2 Demerdzhiev et al. 2014, Slovak Raptor Journal, 8(1): 27–39

Between 2001-2013, 47 breeding attempts were guarded by BSPB (2009-2013, n=31).

Guarded pairs had a higher mean breeding success (1.32 ± 0.88) than non-guarded pairs (1.06 ± 0.91).



A large eagle is captured in mid-flight, its wings fully extended. The eagle's feathers are dark with some lighter, mottled patterns. Its head is turned to the left, and its talons are visible, reaching down. The background is a soft, out-of-focus green field with some small yellow flowers. The lighting is natural, suggesting a bright day.

Acknowledgements

The current research was financed by National program “Young scientists and Postdoctoral candidates” funded by the Bulgarian Ministry of Education and Science. We are grateful to the following colleagues who contributed to the data collection, field logistics support and cooperation during the study: Stanislav Dyulgerov, Hristo Danov and Vanyo Angelov.

THANKS!

Спасибо!

