

*J. Raptor Res.* 38(4):381–382

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### HOW LONG IS TOO LONG? A CASE OF FOSTERING NESTLING BONELLI'S EAGLES (*HIERAAETUS FASCIATUS*)

After monitoring eight nests of Bonelli's Eagle (*Hieraaetus fasciatus*) for more than 11 yr in the state of Maharashtra, India, we recorded two incidents wherein eaglets were either found to have fallen out of nests due to human disturbance or removed by local children. In the two incidents, we replaced the previously-removed eaglets into the nest immediately upon discovery and then verified continued parental care.

To help ensure the continued survival of raptors in the wild, a wide range of techniques have been developed and applied to maximize the survival of the brood (see Cade et al. 1988, Peregrine Falcon populations: their management and recovery. The Peregrine Fund, Boise, ID U.S.A.) including "add-on" techniques (an abandoned nestling is introduced into a wild brood of similar age); guarding of nests during the breeding season; relocation of nests away from sources of mortality; presentation of alternative, artificial nest platforms or sites; translocation; hacking in natural or artificial nests; and inter- or intra-specific fostering by parents with young of the same age (Allen 1982, Pages 5–19 in T.N. Ingram [Ed.], Proceedings of the Bald Eagle conference on Bald Eagle restoration. USDI Fish and Wildlife Service, Rochester, NY U.S.A.). All of these techniques are very costly, do not always ensure success, and many are employed in human-modified environments. Here, we present a method that has not been previously employed in a natural environment with Bonelli's Eagles, though similar experiments have been conducted for the Spanish Imperial Eagle (*Aquila adalberti*; Gonzalez et al. 1986, *J. Raptor Res.* 20:77–78; Ferrer 1993, *J. Ornithol.* 134:335–337).

Our experiment was conducted unintentionally on 14 March 2003 when we discovered that local children had removed an eaglet from a Bonelli's Eagle nest in Jejuri, Pune district (18°31'N, 73°55'E), India. The eaglet was 40–42 d old and it was returned to the nest. We noted that there were no green branches on the nest, which was unusual because in previous seasons parents were observed to layer the nest with new leaves and branches almost on a daily basis. Moreover, the parents continuously evicted the eaglet over the next 3 d, by pushing it out of the nest with their wings. Therefore, we decided to foster the eaglet into the nest of another pair. This foster pair nested ca. 250 km away at Pawangad, Kolhapur district (16°42'N, 74°16'E), and on 5 March had two chicks in the nest.

Upon arrival on 18 March, we found the nest empty and the eagle family soaring over the nest tree. Nevertheless, we decided to place the eaglet into the vacant nest. Based on previous observations, we knew that eaglets and parents roosted at the nest for at least 2 wk after the young had fledged and that the young at this stage were still dependent on their parents for food (pers. obs.). After almost 2 hr the family was observed to land on the branches adjacent to the nest to roost for the night. Neither the young nor the parents displayed any signs of aggression towards the foster eaglet.

Initially, the family ignored the eaglet but in the evening one of the adults dropped an un-plucked chicken by the eaglet and after observing the inability of the foster eaglet to feed upon the chicken, one of the fledglings, which were ca. 60 d of age, then plucked the chicken and consumed a small portion of it. The foster eaglet observed the actions of the fledgling and imitated its movements of plucking the chicken and swallowing, and when the fledgling

left the nest, the translocated eaglet immediately grasped the partially-consumed chicken and proceeded to dismember and consume it.

For the next week (20–26 March), the parents and the fledged young alternated in bringing prey to the foster nestling. The eaglet was not observed to have any further prey handling difficulties and between feedings stood at the nest and flapped its wings vigorously. The foster chick eventually fledged on 26 March 2003.

We conclude from this episode that at least some parent Bonelli's Eagles will accept a foster young in an empty nest, but only if egg or chick loss happened a few hours earlier. We have done such translocations successfully in the past, but within 24 hr of the nest becoming empty (Pande 2003, *Newsletter for Birdwatchers* 43:31–33). Similarly, a 24-d-old chick of Changeable Hawk-Eagle (*Spizaetus cirrhatus*) has been fostered successfully in a nest of a similar species, that had been empty for just over 24 hr in India (Naoroji 1984, *J. Bombay Nat. Hist Soc.* 82:278–308).

We assume that the finding of translocating an eaglet into a foster family during the post-fledging dependence period may also be applicable to other raptor species, provided that siblicide is not common in the host species. This technique seems mainly suitable as an emergency action to save individual birds.

We thank Mr. J.C. Daniel, and the other authorities of the Bombay Natural History Society in Mumbai, and Mr. Prakash Thosare, and the staff of the Forest Department in Pune for their cooperation and permission for the above. Drs. T.J. Cade, M. Ferrer, Javier Balbontin, Fabrizio Sergio, and an anonymous referee greatly improved an earlier version of this manuscript.—**Satish A. Pande, Amit P. Pawashe, Banda Pednekar, ELA Foundation, C-9 Bhosale Park, Sahakarnagar 2, Pune 411009, India; Anil Mahabal, Zoological Survey of India, WRS, Pune, India; Reuven Yosef (corresponding author's e-mail address: ryosef@eilatcity.co.il), International Birding and Research Centre in Eilat, P.O. Box 774, Eilat 88000, Israel.**

Received 6 April 2004; accepted 10 August 2004  
Associate Editor: Fabrizio Sergio