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A SYMPOSIUM ON USING NEST BOXES TO STUDY RAPTORS: DO THE BOXES PROVIDE VIRTUAL REALITY?

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Despite the widespread use of nest boxes to study cavity-nesting raptors, investigators have paid scant attention to the naturalness versus artificiality of their findings. Many have not compared life history and population data from nest boxes (experimental treatments) with paired data obtained at natural cavities (presumed controls). In Nero et al. (1987), for example, none of the four contributions employing nest boxes describes the methodology in comparative detail with respect to natural nest sites. This is unfortunate, because nest boxes may or may not be effective in conserving raptors faced with declining natural habitats.

Møller (1989, 1992) and Clobert and Lebreton (1991) have criticized the naturalness of nest-box studies, although some of Møller's observations were rebutted by Koenig et al. (1992). To learn more about this problem, a symposium was held in connection with the joint meeting of the Hawk and Owl Trust and Raptor Research Foundation at the University of Kent, Canterbury, England, in September 1993. The symposium was designed to answer questions about the validity of nest-box versus natural-cavity information in studying owls and kestrels. We hope our contributions will instigate further work wherein appropriate attention is paid to nest-box methods.

The five papers that follow this introduction and one other¹ were presented at the symposium. Gary

Bortolotti gives results of an experimental study showing the effects of nest-box size on reproduction in American kestrels (*Falco sparverius*). Steve Petty, Geoff Shaw, and David Anderson show how nest boxes can be used to study owl populations and a conservation technique in tawny owls (*Strix aluco*) and barn owls (*Tyto alba*). Anders Møller examines possible problems affecting the interpretation of data from nest-box studies. Paul Johnson compares reproduction in barn owls between nest boxes and natural nest sites. Fred Gehlbach tests for differences in nest site choice and reproductive performance between natural nest sites and nest boxes in the eastern screech-owl (*Otus asio*).

Major findings are that boxes were preferred nest sites compared to natural cavities (all species except *O. asio*), boxes did not increase nesting density (except *T. alba*), there was no relationship between box size and either clutch size or fledgling output (*O. asio* and *F. sparverius*), and productivity was the same in boxes and cavities (*O. asio* and *T. alba*).

Nest boxes appear to be adequate substitutes for natural cavities by providing quasi-natural nesting space and unbiased information about population size and productivity. Their general use for studying raptor biology is thus validated. However, we advocate the simultaneous monitoring of box and natural-cavity nests in every study. We conclude that conservationists may replace or rejuvenate cavity-nesting raptor populations by using nest boxes in appropriate foraging habitat.

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¹ Hubertus Illner's symposium contribution, "Population Changes and Breeding Biology of Little Owls (*Athene noctua*) in Natural Holes and Nest Boxes," will be published elsewhere.

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