IV. RESULTS FROM PRIOR NSF SUPPORT

NAME: Walter D. Koenig


The goal of the project is to elucidate the ecology and evolution of social behavior in the cooperatively breeding acorn woodpecker by means of a long-term study of a color-marked population resident at Hastings Reservation in central coastal California. The mating system of this species is one of the most complex among vertebrates. Social units consist of up to 7 related males (occasionally more) competing for matings with up to 3 related females, all of whom lay eggs communally in a single nest, plus up to 10 nonbreeding helpers of both sexes (offspring from prior years). Research being supported by the current LTREB grant is focused on elucidating patterns of reproductive partitioning (“skew”) within groups, particularly between cobreeder males. In general, skew is high. A single male monopolizes most or all of the reproduction within a nest, but which male is successful often switches between nests, and no characteristic of males seems to predict which male is the most successful. These results have led us to propose that the apparently high skew observed among cobreeder males is an artifact resulting from nonindependence of paternity within broods combined with small sample sizes and that, in fact, cobreeder males have an equal chance of paternity within each nest. We are currently testing this hypothesis experimentally and investigating the implications of this result for transactional models of reproductive skew.

EDUCATION AND HUMAN RESOURCES

Grant IBN-9600782 supported postdoctoral fellow Dr. Joseph Haydock (Ph.D., Purdue Univ., 1993), currently an Assistant Professor at Gonzaga University in Spokane, Washington. Haydock continues to collaborate on the project and is in charge of the molecular work.

Each year we train 4–5 undergraduate students, who aid in censusing, banding, behavioral watches, and other aspects of field and laboratory work associated with the project. Since 1979, we have trained 85 undergraduate assistants, approximately half of whom have gone on to perform their own research and either have obtained, or are currently in the process of obtaining, higher degrees in the fields of ecology or behavior.

PUBLICATIONS RELATED TO THE PROJECT (1999–present)


RELATION TO PROPOSED RESEARCH

The proposed work will enhance our ongoing studies of social behavior in this species by adding to our understanding of the role of communication in this species.