

## AUTUMNAL BREEDING IN THE SCRUB JAY

MARK T. STANBACK

*Museum of Vertebrate Zoology  
University of California at Berkeley  
Hastings Natural History Reservation  
38601 E. Carmel Valley Rd.  
Carmel Valley, California 93924 USA*

**Abstract.**—A case of fall breeding in the Scrub Jay (*Aphelocoma coerulescens*) is reported for central coastal California (first egg date approximately 8 September). Factors contributing to opportunistic fall breeding in general, and to this case in particular, are discussed. An abundant ripening acorn crop and access to a bird feeder may have led to this unusually timed but successful breeding attempt.

### REPRODUCCIÓN DURANTE EL OTOÑO DE *APHELOCOMA COERULESCENS*

**Síntesis.**—Presentamos un caso de reproducción durante el otoño de una pareja de *Aphelocoma coerulescens* en la zona costanera de la parte central de California (el primer huevo fue puesto aproximadamente el 8 de septiembre). Discutimos los elementos que contribuyeron a la reproducción en el otoño en éste, y otros casos en general. Una abundancia en la cosecha de bellotas y acceso a alimento adicional probablemente explica este intento reproductivo.

Opportunistic fall breeding is found in several temperate North American birds. Fall nests of Acorn Woodpeckers (*Melanerpes formicivorus*) in the western United States are associated with the ripening in September of an abundant acorn crop (Cully 1987, Koenig and Mumme 1987, Myers 1915). Similar breeding in response to seed crops has been described for Red Crossbills (*Loxia curvirostra*) (McCabe and McCabe 1933), Pinyon Jays (*Gymnorhinus cyanocephalus*) (Ligon 1971), and Band-tailed Pigeons (*Columba fasciata*) (Gutierrez et al. 1975).

Despite their reliance on acorns, Scrub Jays (*Aphelocoma coerulescens*) are not known to nest in the fall; breeding is typically highly synchronous and restricted to the spring months (Carmen 1988). Of 332 nest records for *A. coerulescens californica*, the latest clutch initiation date was 19 June (L. Kiff, pers. comm.). Under natural conditions the probability of successfully raising independent young decreases significantly as the season progresses, presumably due to dwindling food supplies and increasing predator activity (Carmen 1988, but see Woolfenden 1974, Woolfenden and Fitzpatrick 1984 for alternative hypotheses regarding early nesting).

Nonetheless, on 24 October 1987 a fledgling-age Scrub Jay nestling was found by Margaret Scharzel in Menlo Park, San Mateo County, California. Assuming a clutch size of four, a 21-d incubation period, and a fledging age of 22 d (Carmen 1988), the first egg of this nest was laid on approximately 8 September, more than 4 mo later than is typical.

Due to the timing and the conditions under which this nesting occurred, I consider it to be an example of true fall breeding rather than merely a late nest. Several observations support this claim. First, the 1987 acorn crop at Hastings Natural History Reservation in Monterey County, California, was very large, resulting in more fall nests among Acorn Wood-

peckers than in any previous year (Stanback, unpubl. data). Second, wildlife rehabilitators in Marin and San Mateo counties received a total of three broods of Acorn Woodpecker nestlings in the autumn of 1987; they had never before received fall nestlings. These facts suggest a substantial acorn crop along the entire central coast of California. In fact, the fall 1987 Menlo Park/Palo Alto area acorn crop is known to have been heavy (J. R. Griffin, pers. comm.).

It is unlikely, however, that acorns alone caused this unusual nesting attempt. Very large acorn crops occur irregularly at Hastings Reservation and result in occasional fall nests for Acorn Woodpeckers (Koenig and Mumme 1987), but none have been recorded for Scrub Jays (Carmen 1988). Carmen (pers. comm.) speculates that jays fledged in the fall would be inept at caching and recovering the acorns on which they depend during the winter. The energetic requirements of the late summer molt of adults also may discourage breeding at this time (Pitelka 1945). As the Scrub Jay nest in question occurred in a suburban setting, it is possible that factors other than the abundance of acorns in the area were involved. As nestling Scrub Jays are fed primarily insects (Carmen 1988), knowledge of relative insect abundance at the time of nesting would be valuable. Unfortunately, these data were not available for the Menlo Park area. However, this nesting occurred in the vicinity of a bird feeder that was kept filled year-round. Perhaps an abundant ripening acorn crop, coupled with this additional food resource, triggered autumnal breeding in these Scrub Jays.

#### ACKNOWLEDGMENTS

I thank W. Carmen, L. Kiff and C. van Riper for sharing their knowledge of Scrub Jays. The manuscript was improved by the comments of W. Carmen, G. Woolfenden, W. Koenig, K. McGowan, R. Mumme, F. Pitelka, and E. Ross. The author was supported by a NSF graduate fellowship and a Betty S. Davis fellowship made possible through the Museum of Vertebrate Zoology and Fanny Hastings Arnold.

#### LITERATURE CITED

- CARMEN, W. 1988. Behavioral ecology of the California Scrub Jay (*Aphelocoma coerulescens californica*): a non-cooperative breeder with close cooperative relatives. Ph.D. thesis, Univ. California, Berkeley, California.
- CULLY, J. F. 1987. Autumnal breeding Acorn Woodpeckers in southern New Mexico. *Southwest. Natur.* 32:399.
- GUTIERREZ, R. J., C. E. BRAUN, AND T. P. ZAPATKA. 1975. Reproductive biology of the Band-tailed Pigeon in Colorado and New Mexico. *Auk* 92:665-677.
- KOENIG, W. D., AND R. L. MUMME. 1987. Population ecology of the cooperatively breeding Acorn Woodpecker. Princeton Univ. Press, Princeton, New Jersey. 435 pp.
- LIGON, J. D. 1971. Late summer-autumnal breeding of the Pinon Jay in New Mexico. *Condor* 73:147-153.
- MCCABE, T. T., AND E. B. MCCABE. 1933. Notes on the anatomy and breeding habits of crossbills. *Condor* 35:136-147.
- MYERS, H. W. 1915. A late nesting record for the California Woodpecker. *Condor* 17: 183-185.
- PITELKA, F. A. 1945. Pterylography, molt, and age determination of American Jays of the genus *Aphelocoma*. *Condor* 47:229-261.

WOOLFENDEN, G. E. 1974. Nesting and survival in a population of Florida Scrub Jays. *Living Bird* 12:25-49.

———, AND J. W. FITZPATRICK. 1984. *The Florida Scrub Jay: demography of a cooperative-breeding bird*. Princeton Univ. Press, Princeton, New Jersey. 406 pp.

Received 22 Dec. 1989; accepted 8 Sep. 1990.

## MEETINGS OF INTEREST

**Animal Behavior Society**, 27th annual meeting, University of North Carolina, Wilmington, North Carolina, 1-6 June 1991.

Address inquiries to: Janet Driscoll, ABS Secretary, 2550 W. 43rd Avenue, Denver, CO 80211-1732.

**International Canada Goose Symposium**, Marc Plaza Hotel, Milwaukee, Wisconsin, 23-25 April 1991.

For information write to: Internat. Canada Goose Symposium, Wisc. Coop. Wildl. Res. Unit, 226 Russell Labs, UW Campus, Madison, WI 53706.

**Eastern Bird Banding Association**, Sheridan Inn, Wilmington, Delaware, 26-28 April 1991.

**Cooper and Wilson Ornithological Societies**, joint meeting, University of Oklahoma, Norman, Oklahoma, 15-19 May 1991.

Head of the Scientific Program Committee: Richard N. Connor, U.S. Forest Service, P.O. Box 7600, S. F. A. Station, Nacogdoches, TX 75962.

**American Ornithologists' Union**, 109th Stated Meeting, Montreal, Quebec, Canada, 13-17 August 1991.