William Brewster Memorial Award, 1999:

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Awards

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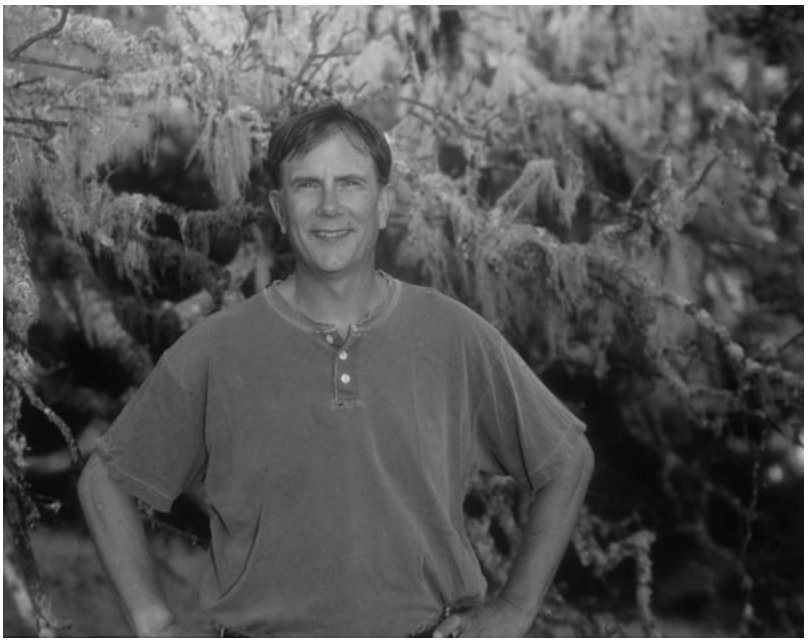

Walter Koenig's broad expertise includes subjects such as conflict and cooperation within complex societies, the evolution of altruism and sex ratios, the importance of dispersal and territoriality in social organization, and the nature and functional significance of parental care. It derives in part from his fascination with the Acorn Woodpecker's remarkably complex social organization in which extended families of up to 15 adults cooperatively rear young at a single nest. Walter's studies of Acorn Woodpecker social behavior and demography represent one of the world's preeminent research programs on cooperative breeding. His early work (summarized in 1987 in *Population Ecology of the Cooperatively Breeding Acorn Woodpecker,* with Ronald Mumme) and his subsequent research have made this one of the world's most extensively and explicitly examined avian social systems.

With remarkable intellectual and conceptual depth, Walter Koenig has addressed successive topics—the bird, its social system, its critical food base, its space-time fluctuations—by analyzing constraints and testing the survival value of behaviors. Inevitably, one study has led to another in a sort of expanding chain reaction. Early hypotheses that cooperative breeding evolved in response to ecological constraints such as habitat saturation or food limitation led Walt to examine the Acorn Woodpecker's dependence on oaks and the factors that govern dispersal. Understanding why helpers delay dispersal—a central question in cooperative breeding—led to the development of the delayed-dispersal threshold model for the evolution of cooperative breeding (*Quarterly Review of Biology* 67:111–150, 1992, with Frank Pitelka and others). It also prompted Walt to reexamine dispersal. Using data derived from genetic estimates of gene flow and radio tracking, he showed that nearly all currently available dispersal estimates are biased, often highly so (*TREE* 11:514–517, 1996, with Dirk Van Vuren and Philip Hooge). Unraveling the interaction between consumer and acorn production, which is basic to the success of

Acorn Woodpeckers as cooperative breeders, has led Walt into studies of variable seed production by forest trees and the evolution of mast-fruiting, particularly by oaks. His ongoing work on patterns of acorn production, started in 1980, has illuminated the geographic distribution and patterns of abundance and variability of Acorn Woodpecker populations (*Journal of Biogeography* 26:159–165, 1999, with Joseph Haydock) and required the development of new statistical techniques for analyzing patterns of spatial autocorrelation in nature (*Ecography* 21:423–429, 1998, with Johannes Knops; *TREE* 14:22–26, 1999). This research has demonstrated continental-scale synchrony in oak and conifer seed production (*Nature* 396:225–226, 1998, with Knops), as well as bird population fluctuations (*Conservation Biology* 12: 612–610, 1999).

Walt's investigations over the past 10 years have resulted in 45 journal articles, 7 book chapters, a co-edited book (*Cooperative Breeding in Birds: Long-term Studies of Ecology and Behavior,* 1990, with Peter Stacey), and 9 general articles, including 1 in Japanese. Walt and his woodpecker research also have been featured in films produced for general audiences by NHK (Japan) and Oxford Scientific Films (National Geographic Explorer Series).

For his success in unraveling some of the mysteries of cooperative breeding, and for his record of excellence in evolutionary and population ecology, The American Ornithologists' Union takes great pleasure in presenting Dr. Walter D. Koenig with the 1999 William Brewster Memorial Award.

Award criteria.—The William Brewster Memorial Award consists of a medal and honorarium provided through the endowed William Brewster Memorial Fund of the American Ornithologists' Union. It is given annually to the author or coauthors (not previously so honored) of the most meritorious body of work on birds of the Western Hemisphere published during the 10 calendar years preceding a given AOU meeting.