

Western Ecological Research Center

Publication Brief for Resource Managers

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Endangered Passerine Response to Cowbird Control

The least Bell's vireo and southwestern willow flycatcher are two federally endangered passerines that have been managed with cowbird control for nearly two decades. As interest in cowbird control as a tool for protecting other sensitive species grows, it is essential to inform decision makers on the efficacy of established control programs. USGS scientist Dr. Barbara Kus and Mary Whitfield of the Southern Sierra Research Station recently collaborated to evaluate the effectiveness of cowbird control relative to the goal of increasing populations of least Bell's vireos and southwestern willow flycatchers, and comment on the role of cowbird management in the recovery of endangered species. The results of their analyses are included in an *Ornithological Monograph* devoted to management of cowbirds and their hosts, published by the American Ornithologists' Union.

Examining data from their long-term field studies in California, the authors showed that annual trapping of cowbirds at vireo and flycatcher breeding sites during the last 20 years has eliminated or reduced parasitism relative to pre-trapping rates, and thereby significantly increased seasonal productivity of nesting pairs. Enhanced productivity, in turn, has resulted in an 8-fold increase in vireo numbers, which grew from approximately 300 territorial males rangewide in 1986 when the species was listed to nearly 2,500 males today. In contrast, willow flycatcher abundance has changed little, and at some sites has declined despite cowbird control, leaving the statewide population at roughly 200 territories. While generally successful by these short-term measures of host population response, cowbird control poses potential negative consequences for long-term recovery of endangered species. As currently employed, cowbird control lacks pre-determined biological criteria to trigger an end to the control, creating an open-ended dependency of these species on human intervention for their persistence. Prolonged reliance on

Management Implications:

- Cowbird control is an appropriate and effective short-term management tool in recovery of endangered hosts.
- Cowbird control has been instrumental in promoting increases in abundance and distribution of least Bell's vireos, but will remain effective only as long as suitable habitat is available for colonization.
- Southwestern willow flycatchers have not responded to cowbird control with sustained population growth, suggesting that something other than parasitism is currently limiting this species. Identification of the factors limiting flycatchers is a high-priority recovery need.
- Managers designing control programs should establish specific desired results of the program and specify criteria for ending it.
- Managers should consider the potential negative effects of long-term cowbird control on the ability of species to persist without management intervention.

cowbird control to manage endangered species can shift attention from identifying and managing other factors limiting populations; in particular, habitat availability. In addition, cowbird control may interfere with the evolution of natural antiparasite defenses required for self-sustaining host populations, such as desertion of parasitized nests. Based on these analyses, the authors recommend that cowbird control be reserved for short-term crisis management, to be replaced as appropriate by practices emphasizing restoration and maintenance of natural processes upon which species depend.

Kus, B. E. and M. J. Whitfield. 2005. Parasitism, productivity, and population growth: response of Least Bell's Vireos (Vireo bellii pusillus) and Southwestern Willow Flycatchers (Empidonax traillii extimus) to cowbird (Molothrus spp.) control. Ornithological Monographs 57:16-27.