Brown-Headed Cowbird Attacks Southwestern Willow Flycatcher Nestlings

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BROWN-HEADED COWBIRD ATTACKS SOUTHWESTERN WILLOW FLYCATCHER NESTLINGS

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On 31 July 2000, while observing a nest of the critically endangered southwestern willow flycatcher (*Empidonax traillii extimus*), we observed an attack on the nestling flycatchers by a female brown-headed cowbird (*Molothrus ater*). These observations took place in the Gila River Valley of southwestern New Mexico (32°58′N, 108°34′W) in mature riparian woodland at approximately 1,400 m elevation. The nest was located in a young cottonwood (*Populus fremontii*) about 12 m tall. Repeated visits to the nest by the parent birds carrying food indicated the presence of nestlings.

About a minute after seeing the adults deliver food to the nest, distress calls from the nestlings alerted us to the presence of a female brown-headed cowbird. The cowbird was attempting to pull a nestling out of the nest with its bill. The nestling vigorously resisted the efforts of the cowbird. We intervened to distract the cowbird, which was then chased out of the area by the adult flycatchers on their return. An hour later, 2 chicks were observed perched below the nest. They were approximately 11 to 12 days old based on plumage (Rourke et al., 1999). Subsequent visits indicated the 2 young fledged successfully.

Brown-headed cowbirds often remove single eggs when parasitizing nests (Lowther, 1993). However, they occasionally remove or destroy entire broods after laying is complete or after hatching. A growing number of studies have documented direct and indirect evidence of cowbird destruction of host eggs (Scott et al., 1992; Sealy, 1994; Pietz and Granfors, 2000) and nestlings (DuBois, 1956; Tate, 1967; Beane and Alford, 1990; Scott and McKinney, 1994; Grzybowski, 1995; Sheppard, 1996; Elliott, 1999). Arcese et al. (1996) suggested that if cowbirds encounter host nests too late in the nesting cycle of the host for parasitism to be successful (i.e., too late for the host to incubate eggs and raise a cowbird), they might depredate the nest to induce the host to renest (depredation in this context does not necessarily signify consumption). The cowbird would then have an opportunity to parasitize the new nest (the cowbird predation hypothesis). This hypothesis assumes that cowbirds find and depredate nests of unknown age, doing so most often where habitat structure or host mobbing

behavior precludes prolonged search or observation by cowbirds (Arcese et al., 1996).

Other than the anecdotal accounts cited above, support for this hypothesis has been equivocal. Two recent studies tested the prediction that if cowbirds are significant predators of nests, then parasitized nests should experience a lower rate of predation than nonparasitized nests within a host population (Hauber, 2000; McLaren and Sealy, 2000). Hauber found support for the prediction in a study of song sparrows (*Melospiza melodia*), although he noted that mechanisms other than the cowbird predation hypothesis could explain the apparent link between nest parasitism and predation. In contrast, McLaren and Sealy found parasitism and predation to be positively correlated in a population of yellow warblers (*Dendroica petechia*), an outcome opposite the prediction of the hypothesis.

Our observations are unusual in 2 ways. First, all previously published accounts of nest predation by brown-headed cowbirds involve cowbirds ejecting young nestlings no more than 7 d old (see references cited above). The nestlings that we witnessed being attacked were almost ready to fledge, and survived outside the nest after the attack. D. E. Burhans (pers. comm.) observed a similar incident in which a female cowbird landed on the edge of an indigo bunting (*Passerina cyanea*) nest, apparently inducing the 8-d-old nestlings to fledge. Second, the late date (31 July) of the observed predation attempt was probably too far advanced into the breeding season of the flycatcher to effectively induce renesting (Sogge, 2000). In 4 years, only 1 of 488 flycatcher nests we monitored was initiated after 31 July, which was in 1998, when the breeding season was exceptionally protracted (Stoleson and Finch, unpubl. data). Moreover, because cowbirds rarely lay eggs past late July (Lowther, 1993), the season was probably too well advanced for the cowbird to capitalize on any renesting attempt that might have occurred. Thus, it seems unlikely that the cowbird could have enhanced its opportunities for parasitism, as predicted by the cowbird predation hypothesis. Our observations, however, lend credence to the suggestion by McLaren and Sealy (2000) that if cowbirds incur no costs by depredating a host nest, then nests discovered too late to be parasitized should always be destroyed regardless of future opportunities for parasitism.

Willow flycatchers are frequent hosts of cowbirds, and brood parasitism has profound negative impacts on some populations of the endangered southwestern subspecies (Whitfield and Sogge, 1999). If our observation was not an isolated incident, then cowbird impacts on this critically endangered subspecies may not be limited to parasitism per se and may be more severe than indicated by parasitism rates alone (Arcese and Smith, 1999).

Resumen—Las hembras del tordo negro (*Molothrus ater*) han sido documentadas en el acto de sacar del nido huevos y pichones de hospederos potenciales y verdaderos. Presentamos la primera observación de un atentado de depredación por parte de *Molothrus ater* a pichones volantones de la atrapamosca saucera (*Empidonax traillii extimus*), subespecie críticamente en peligro de extinción. Debido a la avanzada edad de los pichones atacados y por lo tarde de la temporada reproductiva, parecía improbable que las acciones del tordo aumentaran sus oportunidades para parasitismo, como la hipótesis de depredación de tordo predice.

We are grateful to P. Arcese for information on cowbird nest predation incidents and his enthusiastic encouragement to document our findings. J. Grzybowski, C. McLaren, and S. Sealy were helpful in verifying cowbird predation reports. We thank J. Constantinides and the staff of the Josselyn Van Tyne Memorial Library for help with obtaining documents. These observations were made as part of a study of southwestern willow flycatchers funded by United States Department of Agriculture Forest Service, Rocky Mountain Research Station (RMRS), National Fish and Wildlife Foundation, and Phelps Dodge Corporation. D. M. Finch and the RMRS staff provided invaluable financial and logistical support. D. and T. Ogilvie and T. Bays granted permission to work on private lands. Comments by K. M. Bay, S. Sealy, and 2 anonymous reviewers improved earlier drafts of this paper.

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PREDATION ON DESERT MAMMALS BY *LANIUS LUDOVICIANUS* (LANIIDAE)

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The loggerhead shrike (*Lanius ludovicianus*) is known to prey on many species of mammals, such as *Microtus, Peromyscus, Reithrodontomys,* and *Perognathus* (Bent, 1964). Its distribution covers much of North America, including the Baja California peninsula (American Ornithologists Union, 1998). In the state of Baja California Sur, populations of small mammals were studied over a 6-year period beginning October 1994. Sherman traps were set each month for 5 nights. Upon arrival at the study area in the mornings from August 1999 to March 2000, a single individual of *L. ludovicianus* was generally seen in the sampling area perched on the top of a cardon (*Pachycereus pringlei*) about 4 m above the ground and 50 m away from where I stood. When Sherman traps containing live mammals were lifted, the shrike