THE WESTERN BLUEBIRD AS HOST FOR THE BROWN-HEADED COWBIRD: A NEW RECORD FROM CALIFORNIA

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Nest records for North America suggest that brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) on cavity-nesting species is relatively rare. Indeed, a summary by Friedmann and Kiff (1985) indicated that cavity nesters constitute only 8% of known hosts of the cowbird. Of these, only the Prothonotary Warbler (*Protonotaria citrea*) was considered to be a major host.

In bluebirds (*Sialia* spp.), all cavity nesters, documented incidences of cowbird parasitism are extremely rare (Gowaty and Plissner 1998). Most involve the Eastern Bluebird (*S. sialis*). Power and Lombardo (1996) reported only four cases of cowbird parasitism of the Mountain Bluebird (*S. currucoides*), with no accounts of cowbirds raised to fledging. Campbell et al. (1997) found that only two of 767 Western Bluebird (*Sialia mexicana*) nests in British Columbia contained cowbird eggs, and neither produced fledgling cowbirds. Bendire (1893) and Friedmann and Kiff (1985) alluded to occasional cowbird parasitism of the Western Bluebird but did not indicate that the Western Bluebird ever fledged cowbirds. Recently, however, I discovered three cases of parasitism of the Western Bluebird, one of which resulted in a cowbird fledging and associated bluebird mortality.

The observations occurred within the context of a study of artificial nest boxes conducted along lower Putah Creek, Yolo and Solano counties, in California's Sacramento Valley. This fragmented riparian habitat, surrounded by agricultural and grazing lands, is frequently invaded by cowbirds during the breeding season (Gaines 1980).

On 2 June 2001, I discovered a cowbird egg with three Western Bluebird eggs in an artificial nest box (labeled E3.4). The pair of bluebirds had already fledged five chicks from a nearby nest box (E3.0). The parasitized nest was in a standard North American Bluebird Society side-opening box with dimensions of 26 × 15 × 15 cm, with an entrance hole 4 cm in diameter. This box had been retrofitted to hang from a tree branch via a wire hook (Purvis 2000) and was hung at a height of approximately 3 m above the ground, facing southeast, in a mature Interior Live Oak (*Quercus wislizenii*) tree located in a 1-hectare fragment of oak savanna adjacent to the riparian corridor.

On 11 June, I discovered that the female bluebird had laid another egg in her clutch—suggesting that she had not been deterred by the presence of the cowbird egg—and had begun incubation. The male bluebird remained nearby, tending to the juveniles from the first brood. None of the eggs in the parasitized clutch hatched—despited being incubated to term—and so were deposited with the nest in the Museum of Wildlife and Fisheries Biology, University of California, Davis (museum number WFB-4968). The same pair of bluebirds then initiated a third clutch in another nearby nest box (E3.7). This clutch also failed to hatch. There was no embryonic development in any of the eggs from either clutch.

In 2002, after again successfully fledging a first clutch from box E3.0, the female bluebird again laid a second clutch in E3.4 that was again parasitized by a cowbird. Since cowbirds typically have strong site fidelity (Dorst 1971, Lowther 1993), it is possible that the nest was parasitized by the same cowbird as in the previous year. I do not know whether the cowbird removed any host eggs at the time of parasitism, a common practice among cowbirds (Lowther 1993), but one bluebird egg did disappear *after* incubation had begun, resulting in a clutch of two bluebird eggs and one

cowbird egg. This time, two of the eggs hatched: the cowbird egg on or about 16 June, and one of the bluebird eggs on or about 17 June. The other bluebird egg failed to hatch and contained no embryonic development.

The cowbird was about one-third larger than the bluebird chick at hatching and quickly outpaced it in growth and development. On 26 June, the cowbird fledged while the bluebird remained behind in the nest box. Its eyes had still not opened—though bluebirds' eyes typically open at around seven to eight days of age (Guinan et al. 2000)—and it weighed only 18.0 grams, compared to an average weight of 22.4 grams for bluebird nestlings of comparable age from the same location (unpubl. data).

Once fledged, the cowbird received the majority of the host pair's attention. In a timed observational study of parental provisioning, the cowbird fledgling was fed five times in 22 minutes while the bluebird nestling was fed only once. This observational period was cut short by attempted predation of the cowbird by a Western Scrub Jay (*Aphelocoma californica*). The jay and a companion (probably its mate) were driven off by the mobbing bluebird pair, which then remained with the grounded cowbird fledgling, neither making any attempt to visit the nestling bluebird.

Two days later, the fledgling cowbird had disappeared and the nestling bluebird was dead. I observed the male bluebird looking into the box containing the dead nestling on one occasion. As in the previous year, the bluebirds initiated a third clutch in box E3.7. This clutch was also parasitized with a cowbird egg but was abandoned when the eggs failed to hatch. No embryonic development was detected in any of the eggs.

Of all North American bird species, few have experienced a greater expansion in distribution than has the Brown-headed Cowbird (Campbell et al. 2001). Furthermore, there is evidence that cowbirds colonizing parts of western North America parasitized many species that had little recent experience with them (Friedman and Kiff 1985). Indeed, since the 1920s, the number of species that have been known to serve as hosts for Brown-headed Cowbirds has increased from 157 to over 220 (Campbell et al. 2001).

Brown-headed Cowbirds have been very successful in colonizing California's Central Valley, most likely because of conversion of native landscapes to agriculture (Laymon 1987). As their populations increase, cowbirds may continue to expand their suite of preferred hosts to include formerly underexploited species such as the Western Bluebird.

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LITERATURE CITED

Bendire, C. 1893. The Cowbirds. U.S. National Museum, Annual Report of the Board of Regents, Washington, D.C.

Campbell, R. W., Dawe, N. K., McTaggart-Cowan, I., Cooper, J. M., Kaiser, G. W., Stewart, A. C., and McNall, M. C. E. 1997. The Birds of British Columbia, vol. III. Univ. of British Columbia Press, Vancouver.

Campbell, R. W., Dawe, N. K., McTaggart-Cowan, I., Cooper, J. M., Kaiser, G. W., Stewart, A. C., and McNall, M. C. E. 2001. The Birds of British Columbia, vol. IV. Univ. of British Columbia Press, Vancouver.

Dorst, J. 1971. The Life of Birds. Weidenfeld and Nicolson, London.

Friedman, H., and Kiff, L. F. 1985. The parasitic cowbirds and their hosts. Proc. W. Found. Vert. Zool. 2:226–304.

Gaines, D. 1980. The valley riparian forests of California: Their importance to bird populations, in Riparian Forests in California: Their Ecology and Conservation (A. Sands, ed.), pp. 57–73. Agric. Sci. Publ. 4101, Univ. of Calif., Berkeley.

Gowaty, P. A., and Plissner, J. H. 1998. Eastern Bluebird (*Sialia sialis*), in The Birds of North America (A. Poole and F. Gill, eds.), no. 381. Acad. Nat. Sci., Philadelphia.

Guinan, J. A., Gowaty, P. A., and Eltzroth, E. K. 2000. Western Bluebird (*Sialia mexicana*), in The Birds of North America (A. Poole and F. Gill, eds.), no. 510. Birds N. Am., Philadelphia.

Laymon, S. A. 1987. Brown-headed Cowbirds in California: Historical perspectives and management opportunities in riparian habitats. W. Birds 18:63–70.

Lowther, P. E. 1993. Brown-headed Cowbird (*Molothrus ater*), in The Birds of North America (A. Poole and F. Gill, eds.), no. 47. Acad. Nat. Sci., Philadelphia.

Power, H. W., and Lombardo, M. P. 1996. Mountain Bluebird (*Sialia currucoides*), in The Birds of North America (A. Poole and F. Gill, eds.), no. 222. Acad. Nat. Sci., Philadelphia.

Purvis, D. 2000. Purvis' hanging nestbox and box lifter. Bluebirds Fly! 6(1 & 2):12. Calif. Bluebird Recovery Program, P. O. Box 39, Somerset, CA 95684.

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Western Field Ornithologists' Field Trip Birding San Blas, Mexico, January 17–24, 2004

San Blas is a premiere birding spot on Mexico's west coast. It became famous in the 1960s and '70s following the publication of Peter Alden's guide and a Christmas bird count that flirted regularly with the 300-species mark. It remains a prime destination for birders because of the town's charm as a small fishing village combined with its proximity to habitats ranging from ocean to mangrove swamp, dry tropical forest, dry scrub, tropical deciduous forest, and pine–oak forest in the nearby mountains. This range of habitats supports many endemic species such as the Rufous-bellied Chachalaca, Elegant Quail, Mexican Parrotlet, Eared Poorwill, Golden-crowned Emerald, Mexican Woodnymph, Bumblebee Hummingbird, Citreoline Trogon, Golden-cheeked Woodpecker, White-striped Woodcreeper, Black-throated Magpie Jay, San Blas Jay, Purplish-backed Jay, Sinaloa Crow, Spotted Wren, Sinaloa Wren, Happy Wren, Red Warbler, Red-headed Tanager, Rusty-crowned Ground-Sparrow. Another specialty group are mangrove species such as the Boat-billed Heron, Snail Kite, Limpkin, Mangrove Cuckoo, Mangrove Vireo, Mangrove Swallow, and Mangrove Warbler.

The group size will be limited to eight. The trip is open to a wide range of bird-watching skill levels, and the pace will be moderate. There will be evening presentations by the leaders and local biologists on the natural history of the area and ornithological research that is taking place in west Mexico. Costs will range from $1550 to $2150 from Puerto Vallarta. For more information, please write to Tom Ryan at wtswift@aol.com. This field trip is open to both members and nonmembers of WFO.