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James J. DeLutes III

Richard M. Engeman
USDA/APHIS

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Black-billed Magpie Agonistic Mobbing Attack on a Bullsnake

James J. DeLutes III¹ and Richard M. Engeman²

¹P.O. Box 1743, Berthoud, Colorado 80513

²USDA/APHIS/Wildlife Services/National Wildlife Research Ctr, 4101 La-Porte Ave., Fort Collins, CO 80521-2154

Snakes have been targeted as a presumed enemy for non-predatory, agonistic attacks by individuals from many species, including other reptiles (e.g., Engeman et al. 2009, Kaiser et al. 2013). Mobbing is an attack involving multiple individuals that has been observed against many species of vertebrate predators (e.g., Altmann 1956, Owings and Coss 1977), and snakes especially appear to be recipients of mobbing behavior (e.g., Owings and Coss 1977). Probably more than any other taxa, birds have been documented to mob snakes (e.g., Guthrie 1932, Curio et al. 1978), with mobbing attacks sometimes simultaneously involving multiple bird species (e.g., Sieving et al. 2004, Suzuki 2016). Mobbing is a defensive behavior serving purposes such as deterring predation, alerting others to a potential predator, defending nests or young, and conveying enemy recognition to others (e.g., Curio et al. 1976).

We describe here a mobbing attack on a bullsnake (*Pituophis catenifer sayi*) by two Black-billed Magpies (*Pica pica*). The encounter was witnessed on 15 May 2017 at 16:00 hr on a warm, sunny day (26°C) in a rural area near Berthoud, Colorado. A commotion in an early-growth hayfield created by two magpies diving repeatedly into tall grass from about 3 m above ground level instigated further investigation. The subject of the magpies' attention became visible after 3–5 min of observation when a bullsnake moved into shorter vegetation while attempting to escape the attacking magpies. The magpies continued diving and hitting the snake for another 2 min until breaking off the attack when JDL moved closer for a better vantage point. Following the attack, closer inspection of the snake (which had recently shed its skin, total length >150 cm) showed no apparent wounds or bleeding.

Magpies have been documented to mob potential predators (e.g., Stone and Trost 1991), especially mammalian and avian predators such as domestic cats (*Felis catus*), coyotes (*Canis latrans*), domestic dogs (*Canis familiaris*), and raptors. The site where the mobbing at-

tack was initially observed was ~45 m away from the nearest tree, and no magpie nests were in the tree. As far as we know from the literature, this is the first documentation of Black-billed Magpies mobbing a bullsnake. Its apparently agonistic nature was particularly interesting because the snake did not appear to pose a threat to the birds, nor was there an observable nest nearby that the birds might have been protecting.

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