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2018

PITUOPHIS CATENIFER SAYI (Bullsnake). AGONISTIC MOBBING ATTACK.

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Delutes, James J. III and Engeman, Richard M., "PITUOPHIS CATENIFER SAYI (Bullsnake). AGONISTIC MOBBING ATTACK." (2018). *USDA National Wildlife Research Center - Staff Publications*. 2131.
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DeLutes III, J.J., and R.M. Engeman. 2018. *Pituophis catenifer sayi* (Bullsnake). Agonistic mobbing attack. Natural History Notes. Herpetological Review 49(1): 139

PITUOPHIS CATENIFER SAYI (Bullsnake). AGONISTIC MOB-BING ATTACK. Snakes have been observed as recipients of agonistic, non-predatory attacks by individuals from other taxa towards a presumed enemy (e.g., Engeman et al. 2009. Herpetol. Rev. 40:84–85; Kaiser et. al. 2013. Herpetol. Rev. 44:329). Mobbing, an attack involving multiple individuals, has been observed against many taxa of vertebrate predators (e.g., Altmann 1956. Condor 58:241–253; Owings and Coss 1977. Behaviour 62:50–69). Snakes appear to be frequent targets for this behavior and a variety of taxa have been documented to mob snakes (e.g., Owings and Coss 1976, *op. cit.*). Birds, probably more than any other taxa, have been commonly observed to mob snakes (e.g., Guthrie 1932. Wilson Bull. 44:88–113; Curio et al. 1978. Science 202:899–901), with mobbing sometimes simultaneously involving multiple bird species in the attack (e.g., Sieving et al. 2004. Auk 121:738–751; Suzuki 2016. J. Ethol. 34:79–84). Mobbing behavior can serve a variety of defensive purposes such as avoiding predation, drawing attention to the potential predator from others, defending a nest or young, and transmitting enemy recognition to others (e.g., Curio et al., *op. cit.*).

Here, we describe a mobbing attack by two Black-billed Magpies (*Pica hudsonia*) on a *Pituophis catenifer sayi*. The encounter between the two species was observed on 15 May 2017 at 1600 h on a warm, sunny day (26°C) near Berthoud, Colorado, USA (40.27178°N, 105.16736°W; WGS 84). A commotion from two magpies repeatedly diving from about 3 m above ground level into tall grass in an early growth hayfield was observed. After 3–5 min, the subject of the magpies' attention was revealed when an individual *P. c. sayi* became visible as it moved into shorter vegetation while attempting to escape the magpie attacks. Observations of the magpies diving and hitting the snake continued for another 2 min until the attack broke off when JDL edged closer for a better vantage point to observe the attack. After the mobbing attack, closer inspection of the bullsnake (which had recently shed its skin, total length >150 cm) revealed no apparent bleeding wounds on the snake.

Magpies are known to mob potential predators (e.g., Stone and Trost 1991. Anim. Behav. 41:633–638), especially mammalian and avian predators like cats (*Felis catus*), coyotes (*Canis latrans*), dogs (*Canis familiaris*), and raptors. The nearest tree to the scene where the mobbing was initially observed was ~ 45 m away, and there was not a magpie nest in the tree. To our knowledge this was the first observation of a Black-billed Magpie mobbing

attack on a bullsnake, and its apparently agonistic nature was especially interesting because the snake did not appear to be a threat to the pair of birds and there was not an observable nest in the nearby vicinity that they might have been defending.

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