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OBSERVATIONS OF BLACK-BILLED MAGPIES (PICA PICA)
GROOMING FERAL HORSES (EQUUS CABALLUS)

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Key words: Black-billed Magpies, Pica pica, feral horses, grooming habits.

On 4 March 1995 I was observing feral horses (Equus caballus) in the southeast section of the Granite Range in Nevada (latitude 40°47'19" North, longitude 119°18'13" West) (Fig. 1), when I witnessed an interaction between a Black-Billed Magpie (Pica pica) and 2 of my study animals. The magpie alighted on the back of the 1st horse and moved around the animal's back. The magpie appeared to be scanning each new section of the horse's back as it moved, occasionally making pecking movements with its head, presumably removing ectoparasites from the animal. After about 3 min, the magpie left the 1st horse and landed on the back of the 2nd animal. It repeated its searching and picking behavior, this time moving onto the horse's neck and searching extensively through its mane. After 5 min on the 2nd horse, the magpie returned to the 1st and searched its mane for more than 1 min. Neither horse attempted to displace the magpie and both remained quiet throughout the visitations, suggesting familiarity with this behavior. I was able to closely observe the magpie behavior with a Kowa 22-60X spotting scope from ~20 m.

On 17 February 1996 I saw a repeat of this behavior with 2 magpies and 2 different feral horses. This episode occurred approximately 2 km east-southeast of the 1st observation but within the same valley. A magpie landed on top of the withers of the 1st horse and moved about its back for 3 min, occasionally picking at the horse's back.

During the same period a 2nd magpie flew to a nearby sagebrush (Artemisia tridentata) and appeared to be watching the behavior of the 1st bird. The 2nd magpie then flew to the back of a 2nd horse and proceeded to search and pick for approximately 3 min. During the grooming bout this magpie climbed into the mane of the horse, again without any adverse response. The wind was variable, 10–15 kph, and stronger gusts occasionally caused the 2nd magpie to struggle to maintain its footing. In one instance the horse twitched, dislodging the magpie.

I next observed 2 magpies grooming a yearling feral horse on 12 April 1997 in the Granite Basin, approximately 7 km south-southwest of the previous 2 sightings. This encounter lasted slightly more than 10 min. One of the magpies groomed the horse's rump, back, and dorsal area of its neck up to the base of its skull. The 2nd magpie clung to and groomed the ventral surface of the animal's neck for more than 1 min, moved to the inner aspect of the right foreleg at the hock for 4 min, and then briefly returned to grooming the underside of the horse's neck. Although there were periods when one or the other of the birds was not on the horse, there were 2 magpies grooming the animal simultaneously for more than 5 min.

The regularity and extent of this behavior is impossible to determine at this time. In more than 50 trips to this area, I have witnessed only these 3 incidents involving magpies and feral horses. The distances between observations at the Granite Ranch site and between Granite Ranch and Granite Basin can lead one to believe that magpies in this area search for horses to groom rather than wait at an established feeding station as described by Isenhart and DeSante (1985) for Scrub Jays (Aphelocoma coerulescens) cleaning Columbian black-tailed deer (Odocoileus hemionus columbianus). That conclusion, however, cannot be supported.
by the small number of observations and lack of individual identification of the birds involved. On 3 occasions I have seen magpies in the vicinity of feral horses in even more remote sites in the Granite Range; however, I saw no grooming.

Magpies exhibit a variety of opportunistic foraging practices including scavenging, preying on nests (Groom 1993, Pampush and Anthony 1993), preying on small mammals (Goulden 1975), and grooming large herbivores (Dixon 1944, Linsdale 1946, Linsdale and Tomich 1953, Massei and Genov 1995). Magpies are reputed to probe sores on the backs of domestic and wild animals that are in poor physical condition (Bendire 1895). All of the horses I observed being groomed by magpies were in excellent condition. Because I viewed the behaviors closely, from <20 m with a 22–60X spotting scope, I am confident that grooming took place. I suspect the magpies were removing ectoparasites from the animals, not probing sores. Ticks (Parasitiformes: Metastigmata) are abundant mammalian ectoparasites in the Granite Range and are likely objects of the magpies' behaviors.
These observations add to the number of apparently mutualistic interactions between corvids and large herbivores. This extensive relationship includes (1) Black-billed Magpies (Linsdale 1946), Yellow-billed Magpies (Pica nuttali) (Linsdale and Tomich 1953), and California Scrub Jays (Aphelocoma californica) (Dixon 1944) interacting with mule deer (Odocoileus hemionus); (2) Black-billed Magpies (Linsdale 1946) with elk (Cervus canadensis); (3) Florida Scrub Jays (Aphelocoma coerulescens) with white-tailed deer (Odocoileus virginianus) (Fitzpatrick and Woolfenden 1996); (4) Scrub Jays (Aphelocoma coerulescens) with Columbian black-tailed deer (Odocoileus hemionus columbianus) (Isehnart and DeSante 1985); (5) Common Crows (Corvus brachyrhynchos) with cattle (Bos taurus) (Kilham 1982); and (6) Common Crows (Corvus brachyrhynchos) (Kilham 1982), Florida Scrub Jays (Aphelocoma coerulescens) (Baber and Morris 1980), Black-billed Magpies, and Carrion Crows (Corvus corone cornix) with feral hogs (Sus scrofa) (Massee and Genov 1995).

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**LITERATURE CITED**


