PREDATION AND INTERACTIONS BETWEEN COYOTES AND FERAL HORSE FOALS

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The neonates of medium-sized North American ungulates such as mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), and bighorn sheep (*Ovis canadensis*) are preyed on by coyotes (*Canis latrans*) (Beale and Smith, 1973; Byers and Byers, 1983; Geist, 1971; Murie, 1940). Few instances of the defense of neonates have been described, although it is known that mothers and occasionally other group members thwart predation attempts when young are generally less than a couple of months of age (see Berger, 1978, 1979; Lipetz and Bekoff, 1980). For large-bodied ungulates such as feral horses (*Equus caballus*) evidence that predators prey on young is lacking (National Research Council, 1980). In this note, we report one such case, describe both paternal and maternal defense of foals, and document instances where coyotes were deterred in their approaches to newborn foals.

Feral horses were observed for over 8200 h in the Granite Range, Nevada, an insular fault-blocked mountain in the Great Basin Desert, from 1979 to 1984. During this time, we became familiar with the home ranges of each band and accumulated information on copulation dates. Using an estimated mean ± SD gestation length of 345 ± 8 days (n = 38) (Berger, 1983), we could predict impending births and check females nightly and each morning to determine whether or not parturition had occurred.

Cases in which coyotes approached to within 30–50 m of horses and the horses responded either by overt behavioral responses (e.g., moving toward or away from coyotes) or by changing the orientation of their ears (e.g., ears forward and eyes apparently fixed) or heads in the direction of the coyotes were considered as coyote-foal interactions. Interactions were observed during a foal's first day of life for five of the 120 foals that were born during the study. In four instances the band was approached by a solitary coyote and in one by two coyotes. None of the interactions resulted in serious threats to foals, and in each interaction mothers were vigilant toward the coyotes. On the occasion when two coyotes approached a band of 5 adults, 2 yearlings, and 3 foals (one of which was newborn), one coyote was chased about 30 m by the foal's mother while the other dashed into the band and seized and carried away postbirth membranes. During the interaction, the band's stallion moved slowly to within 15 m of the latter coyote but he did not pursue it.

Sixteen observations were made of coyotes within 30–50 m of foals 2- to 120-days old. However, in only two instances were overt responses by horses detected. The first involved three coyotes that approached a horse band with three foals, of which the youngest was 3 days. Two of the coyotes moved toward the band from one side and the third approached from the rear. Unlike the 14 other times when stallions showed no perceptible responses, on this occasion the stallion chased the two coyotes with his head lowered for about 25 m while the other coyote watched the interaction and departed moments later. The second instance involved a lone coyote that approached a band with a 2-day-old foal. The neonate's 1-year-old half brother, feeding at the periphery of the group, slowly walked with erect ears to within 10 m of the coyote which then moved away from the band.

An isolated interaction was also witnessed in the Buffalo Hills, a plateau about 12 km W of the Granite Range. It involved a group of 10 coyotes (five adults and subadults accompanied by five young of the year). Two larger members of the group of coyotes had trotted to within 40 m of a horse band that contained two foals, both of which were at least a month old. Two adults stared at the coyotes and resumed feeding as the coyotes moved away and joined the pack, which was out of view of the horses. About 10 min later, a chorus of coyote vocalizations ensued and a parous mare ran in a direction away from the coyotes and was soon followed by the rest of the band. It was not apparent that the coyotes were aware of the horses or their flight. The above interactions indicate that only rarely do horses respond directly to coyotes and, in most cases, when foals are young.

We have no evidence that coyotes prey on healthy foals, even at birth. This does not mean that coyotes are incapable of killing foals. Presumably, maternal and occasionally paternal or sibling behaviors are sufficient to thwart serious predatory advances. However, a coyote killed an unhealthy 1-day-old foal born to a primiparous 3-year-old female. The foal neither stood nor sucked during its first day. The following
day the foal was alive and lying near its mother and other band members, none of which had moved more than 100–150 m from the birthsite. Later that day, the band’s stallion aggressively herded his harem, including the new mother, away from the natal area. The band moved out of view and at least 1 km away. The foal continued to lie in the sagebrush and its ears were occasionally seen twitching. About 40 min later a coyote approached and leaped in the area of the solitary foal (which was no longer in view). One of us (RR) checked the foal about 10 min later. It was dead with puncture marks around the throat and its stomach had been torn open. The inescapable conclusion was that the foal had a congenital problem and that it was preyed upon. About 4 h later the foal carcass was again inspected; a leg had been separated from the body and abdominal viscera were partially consumed and scattered about.

In summary, our observations indicate that coyotes investigate relatively large-bodied animals, although it is unclear whether interest lies in the young or in the birth membranes. However, it is only through unusual circumstances that coyotes successfully capture the young of species such as feral horses.

The Harry Frank Guggenheim Foundation, National Geographic Society, Bureau of Land Management (Winemucca Office), Conservation and Research Center (Smithsonian Institution), and Marty Berbach, Carol Cunningham, Dennis Daneke, Debra Dole, Alison Harris, Paul Jancar, Lynn Roberts, and Craig Stockwell each provided generous assistance. Gail Michener and two anonymous reviewers offered valuable comments.

LITERATURE CITED
