

## PEER EDITED

## NOTES

## MATERNAL CARE IN SAN JOAQUIN ANTELOPE SQUIRRELS

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**Abstract.**—Here I report on an incidence of maternal care by a nursing San Joaquin Antelope Squirrel (*Ammospermophilus nelsoni*) near Tupman, California, in the San Joaquin Desert.

**Key Words.**—*Ammospermophilus nelsoni*; California; parental care; squirrels; San Joaquin Desert

San Joaquin antelope squirrels (*Ammospermophilus nelsoni*) are listed as Threatened by the State of California and are afforded survey, avoidance, and impact minimization measures to mitigate the impacts of habitat development projects. During implementing an Incidental Take Permit issued for the construction of a new oil well pad near Tupman, California, on 24 April, 2016, I witnessed maternal behavior that likely indicated pre-weaning relationship between the mother and her young. The female was obviously lactating (Fig. 1) and four young and the female were observed foraging together at a Tomahawk trap baited with rolled oats and parakeet seed. I also observed mother and young feeding together at a bait station on the existing road near the new construction access road. Close parental care was also indicated by an interesting interaction between the female and her young. Late in the afternoon, at 1553, the female ran up the road away from the trap location with two young following close behind (Fig. 2). Within 7 min, the female returned without the young and she was observed with two other young at the trap location. At 1605, the female was seen again running up the road, but the two young were not observed following her. At 1613,

one young was still seen foraging at the trap. The female returned at 1618, they greeted in a nose-to-nose posture, and then the female grabbed the youngster in her mouth. The youngster held on to her head, and the mother ran up the road and around the corner where she had previously led the other young (Fig. 3). This behavior may indicate that the weaning of young had not been completed, despite young foraging on their own. Hawbecker (1975) reported that during weaning, the female feeds alone and leaves the young that approach her. She does not allow them to nurse, and she may spend the night in a different burrow. While I did not observe all of these behaviors, the determination of the mother to gather her young after the foraging bout appears to indicate continued parental care.

## LITERATURE CITED

Hawbecker, A.C. 1975. The biology of some desert-dwelling ground squirrels. Pp. 277–303 *In* Rodents in Desert Environments. Prakash, I., and P.K. Ghosh (Eds). Dr. W. Junk Publishers, The Hague.



**FIGURE 1.** Female San Joaquin Antelope Squirrel (*Ammospermophilus nelsoni*) with enlarged nipples along a road next to an oil pad well site, 24 April, 2016, near Tupman, California. (Photographed by Lawrence Saslaw).



**FIGURE 2.** Female San Joaquin Antelope Squirrel (*Ammospermophilis nelsoni*) running along a road with two young following, 24 April, 2016, near Tupman, California. (Photographed by Lawrence Saslaw).



**FIGURE 3.** Female San Joaquin Antelope Squirrel (*Ammospermophilis nelsoni*) carrying a youngster, who is clutching the head of the female, 24 April, 2016, Tupman, California. (Photographed by Lawrence Saslaw).