REPTILES & AMPHIBIANS

Conspecific Neonatal Trailing Behavior in Southern Pacific Rattlesnakes (*Crotalus helleri*)

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Documented social behaviors in crotaline pitvipers is widespread, including conspecific trailing in Northern Cottonmouths (*Agkistrodon piscivorus*) (Martin 2019), communal parenting (Greene et al. 2002), and others (Schuett et al. 2016; Martin et al. 2023). However, the natural history and behavior of neonates are generally less understood than those of adults (Figueroa 2006).

Beginning at 1952 h on 10 September 2024, I observed four neonatal Southern Pacific Rattlesnakes (*Crotalus helleri*) at a rookery near San Diego, California, USA (elev. 178 m asl; coordinates are omitted to protect the rookery). This is a human-modified site, consisting largely of broken concrete slabs that the snakes use as a rookery. Over a period of around 40 minutes, a neonate left the rookery, followed by a second, and eventually by a third and fourth. The neonates appeared to trail one another around the rookery, following the movements of the first to emerge.

The first neonate emerged from the rookery and moved about half a meter from the initial exit. A second neonate appeared and began moving in the same direction as the first. Once the second neonate had moved from the rookery, two more emerged from the entrance. The first two traveled extensively around the rookery, initially in the same direction but then diverging; the first stayed close to the rookery, slowly completing about half a circuit, then returning in a similar direction. The second eventually moved into the nearby grass and was observed for about 20 minutes. The other two coiled next to one another near the exit point; their coils did not appear to be stereotypical ambush coils.

Two short videos documented this narrative. The first (https://www.youtube.com/shorts/uweUvbC8ydU) shows the first neonate leaving the rookery, followed closely by the second snake (Fig. 1). The second video shows the trailing behavior continuing (https://www.youtube.com/watch?v=C5K3gFjH_O0), note neonates three and four in the grass as they begin emerging from the rookery. Only one adult snake, possibly the mother, was observed at this site; it retreated into the rookery. As no neonatal sheds were found at the site, the neonates probably had not undergone ecdysis, which appears to influence leaving the rookery (Wagner et al. 2023).

Figure 1. The first Southern Pacific Rattlesnake (*Crotalus helleri*) neonate leaving the rookery (left), and the second neonate following the same path as the first (right). Photographs by Derek Halm.

Movements of the second, third, and fourth neonates during their initial forays from the rookery were consistent, seemingly following the initial neonate, suggesting that the others were trailing it. Conspecific scent-trailing has long been noted in rattlesnakes (e.g., Brown et al. 1983). Scent-trailing in Timber Rattlesnakes (*Crotalus horridus*), for example, seems to play an important role when neonates move from parturition sites to suitable winter dens (Reinert and Zappalorti 1988; Cobb et al. 2005). However, scent-trailing generally focuses on neonates following adults, not neonates following one another. This observation adds to the literature on conspecific behavior of neonatal *Crotalus* at rookeries and trailing behavior more generally.

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