

# Evaporative water loss and dehydration during the night in hummingbirds

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Nectar-feeding birds oscillate between avoiding overhydration when they are feeding and preventing dehydration during fasts. Here, we examined how resting rates of total evaporative water loss (TEWL) and metabolic water production (MWP) influence water balance in the green-backed firecrown (*Sephanoides sephanoides*), a Chilean hummingbird. We hypothesized that a circadian rhythm in TEWL would assuage the dehydration risk that hummingbirds face during the night. However, we did not find support for this idea. In resting hummingbirds, rates of TEWL during the day ( $54 \pm 6 \text{ ?Lh}^{-1}$ ,  $n = 8$ ) and night ( $65 \pm 12 \text{ h}^{-1}$ ,  $n = 5$ ) were similar. Rates of MWP were also similar between the day ( $22 \pm 3 \text{ ?L h}^{-1}$ ,  $n = 8$ ) and night ( $23 \pm 2 \text{ ?L h}^{-1}$ ,  $n = 5$ ). MWP rates were significantly lower than TEWL rates during both the day and night. Our findings both support the notion that hummingbirds dehydrate during extended fasts and illustrate that evaporative water loss is an important osmoregulatory consideration in hummi