

How much do juvenile bats drive their mothers to drink? An innovative method for assessment

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Data gathered at water holes with the intent of understanding species-specific use patterns have discerned apparent structure and organization associated with resource partitioning and drinking pathways. In this study we present detailed data using a new method for keeping track of visitation patterns of individual bats at water holes. These data give insight into basic, but thus far unanswered, questions such as: How many times per night do bats drink? What is the importance of water resources to reproductive versus nonreproductive females? We captured bats in mist nets near a maternity colony of *Myotis thysanodes* outside of Boulder, CO. Each individual was pit-tagged and released. A flat plate antennae (BioMark, Inc) was placed in a 1m diameter artificial water hole approximately 0.5 km from tagging sites. Data on humidity and temperature were gathered using a Datascribe, Inc. datalogger. A total of 39 adult *M. thysanodes* females were pit-tagged in July and 16 individuals were reacquired with the plate antennae. There was significance difference between numbers of drinking passes for lactating versus nonreproductive females ($N_{lac} = 236$, $N_{nonlac} = 15$; Kruskal-Wallis, $p = 0.0001$). On average nonreproductive females visited the site 2.4 times nightly (SD = 1.4), whereas lactating females visited an average of 21.4 times nightly (SD = 8.6). An index of temperature and humidity (T/H) was significantly correlated with drinking patterns of nonreproductive ($r = 0.63$, $p = 0.05$), but not with lactating females ($r = 0.51$, $p = 0.13$). Lactating females showed high numbers of drinking passes regardless of temperature and humidity. Drinking bouts were clustered most dominantly right after evening emergence and at dawn.