Time Budget Analyses of Wild Nine-Banded Armadillos

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ABSTRACT

Nine-banded armadillos exhibit obligate polyembryony, whereby they produce litters of genetically identical quadruplets by repeating twinning of a single fertilized egg. High levels of altruism have been predicted among these clonal littermates, yet intensive long-term field studies have revealed no evidence of this. The "time constraints" hypothesis attempts to explain these findings by arguing that armadillos are precluded from evolving complex social interactions, such as altruism, because of their evolutionary history. That is, armadillos have very low metabolic rates, eat low quality, widely scattered prey, and have very short active periods, so they may not have the time to be social. I collected data relevant to this hypothesis from May-July of 2007 and 2008 at Yazoo National Wildlife Refuge, Hollandale, Mississippi. Focal animal observations lasting up to 10 min were obtained from marked armadillos during the two 7 h time periods: 16:00-23:00 and 23:00-06:00. Supplementary scan data were collected at first sighting of animals during the first of these time periods. I present data describing the general pattern of armadillo time budgets, as we as sex, age, temporal and environmental influences on time allocation. A comparative analysis of time budgets in other mammals was also performed to determine where armadillos fall relative to other species. My findings showed that nine-banded armadillos spent almost all of their active time feeding with little variation in time budgets. My study represents the first detailed description of armadillo time budgets and should shed light on the validity of the time constraints hypothesis.

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