

MOVEMENT AND AGE OF MALE LITTLE BROWN BATS IN ALBERTA

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The movement of prairie bats is poorly known. For example, in Alberta there are three known hibernacula where Little Brown Bats spend the winter months. There are also a number of summer maternity roosts in central Alberta.⁶ There are, however, no data at present that show where the summer bats at maternity roosts hibernate or where the bats that winter in the known hibernacula spend the summer.¹

In 1972 a program of bat banding was initiated by the Provincial Museum of Alberta in an attempt to shed some light on the movement of bats in Alberta. Unfortunately, the program was suspended after approximately 2000 bats were banded due to cancellation of the issuing of bat bands.

Smith⁸ reported the movement of three individual bats that were banded as a result of that program. One Big Brown Bat moved a distance of 176 km from point of banding to point of recovery. And two Little Brown Bats had travelled 150 km and 225 km from their banding locations. Two of these bats, one Little Brown Bat and the Big Brown Bat, were banded at maternity sites but their recovery was not at any hibernacula. The other Little Brown Bat was banded during the fall migration and was recaptured at a location away from a maternity colony and had not yet reached a hibernation site.

Recently, I received information on the recovery of two male Little Brown

Bats that had been banded at a hibernaculum and recovered away from the banding site. Both bats were banded on the same night, 9 September 1978, at Cadomin Cave, Alberta. This site is located in the front ranges of the Canadian Rocky Mountains. The first bat was recovered 19 July 1983 at Seba Beach, Alberta, approximately 184 km from the banding site. The other bat was recovered 8 km southwest of Sangudo, Alberta on 1 August 1992, approximately 180 km from where it was banded. The two recovery sites are approximately 32 km from each other and are in an east-northeastern direction from Cadomin Cave. Schowalter⁶ indicated that some male Little Brown Bats return to the same summer roost in subsequent years. If this applies to the bats that were recovered at Sangudo and Seba Beach it is a strong indication that some of the male bats at Cadomin Cave are moving to the plains of central Alberta during the summer.

Another aspect of studying the population of a group of animals has to do with the age of individuals that make up that population. Schowalter⁷ reported on a method of aging individual bats by counting the dental annuli. Phillips *et al.*⁴ pointed out several shortcomings this method poses and essentially discounted it as a means for aging bats. Banding of known age individuals is another method for aging. When banded, the bats reported in this note were listed as adults. This was determined by the epiphyseal closure of the finger joints and by weight.^{3,5} The Seba

Beach bat weighed 10.0 g and the Sangudo bat weighed 11.7 g at the time of banding.

Because both individuals were considered adults at the time of banding they would have had to have spent at least one winter in hibernation and at least one summer in foraging prior to banding. Therefore, it is safe to assume that the Seba Beach bat was more than five years of age and the Sangudo bat was more than 14 years of age when recovered. These ages are certainly not remarkable for the Little Brown Bat when compared to the ages reported by Keen and Hitchcock.² These authors reported ages of 29 and 30 years for this species. These Alberta records are still important in that they show a trend to longevity in northern plains bats.

Even though these records indicate that some male bats that hibernate in the mountains move to the plains during the summer, there is as yet no indication where the summer, maternity roosting females hibernate. Also, the longevity records reported by Keen and Hitchcock² are for male bats, as are the ages for the bats reported here. There are no records for the ages of Alberta female bats.

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3. KUNZ, T.H. and E.L.P. ANTHONY. 1982. Age estimation and post-natal growth in the bat *Myotis lucifugus*. *J. Mamm.* 63:23-32.
4. PHILLIPS, C.J., B. STEINBERG, and T.H. KUNZ. 1982. Dentin, cementum, and age determination in bats: a critical evaluation. *J. Mamm.* 63:197-207.
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6. SCHOWALTER, D.B., J.R. GUNSON, and L.D. HARDER. 1979. Life characteristics of Little Brown Bats (*Myotis lucifugus*) in Alberta. *Can. Field-Nat.* 93:243-51.
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A sacred place is one where the Earth's voice can be heard more clearly. Go to these places and listen. Once you've heard her, she can reach you anywhere.

F. Lahrman. 1988. *The sacred landscape. Celestial Arts, Berkeley, CA*