

FEATURE ARTICLES

ISOTOPIC EVALUATION OF INTERRUPTED MOLT IN NORTHERN BREEDING POPULATIONS OF THE LOGGERHEAD SHRIKE

GUILLERMO E. PÉREZ¹ AND KEITH A. HOBSON^{1,2,3}

¹*Department of Biology, University of Saskatchewan, 112 Science Place, Saskatoon, SK S7N 5E2, Canada*

²*Environment Canada, 11 Innovation Boulevard, Saskatoon, SK S7N 3H5, Canada*

Manuscript received 2 December 2005; accepted 23 June 2006.

³ Corresponding author. E-mail: keith.hobson@ec.gc.ca

Abstract. The Loggerhead Shrike (*Lanius ludovicianus*) breeds throughout North America and various populations apparently exhibit diverse molt strategies. However, molt in this species and how it may vary geographically is generally poorly known. We investigated molt sequence in 27 breeding Loggerhead Shrikes using stable hydrogen (δD) isotope analysis of flight feathers. Because feather δD varies with the latitude at which feathers are grown in North America, it is relatively straightforward to identify those feathers grown south of an individual's breeding location. We sampled 11 feathers per individual to evaluate locations of feather molt between breeding and wintering grounds in North America. Sampling took place in central Saskatchewan, Canada ($n = 18$ individuals) and in the southern region of the Saskatchewan-Manitoba border ($n = 9$). We found evidence that shrikes initiated flight feather molt on their breeding grounds (P1 and P3) but then largely suspended molt until reaching their wintering areas. The isotopic evidence suggests that the first primary (P1, most depleted in deuterium, mean = -103‰) provides information on shrike breeding latitudes while the innermost tertial (S9, most enriched in deuterium, mean = -49‰) provides information on shrike wintering or southernmost molting latitudes.

Key words: deuterium, *Lanius ludovicianus*, *Loggerhead Shrike*, migration, molting pattern, stable isotopes, suspended molt.