

Variation in carbon and nitrogen stable isotope ratios in flight feathers of a moulting White-bellied Sunbird *Cinnyris talatala*

Craig T Symes^{1*} and Stephan M Woodborne^{1,2}

¹ School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Private Bag 3, Wits 2050, South Africa

² Natural Resources and the Environment, CSIR, PO Box 395, Pretoria 0001, South Africa

* Corresponding author, e-mail: craig.symes@wits.ac.za

ABSTRACT

We measured $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ isotope signatures in flight feathers of a White-bellied Sunbird to assess the value of using stable isotopes of feathers in avian dietary studies. Significant variation in $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ isotope values of flight feathers (range = 3.1‰ and 2.7‰, respectively) indicated that the source of carbon (i.e. C3 or CAM) and trophic level position shifted significantly during the flight feather moult period. Temporal dietary changes in an individual sunbird highlight the implications for interpreting avian diets using stable isotopes. However, by analysing feathers, dietary input may be interpreted at different levels if the moult process is well understood.