

Using stable isotopes to track nutrient flow through invertebrates at the marine-terrestrial interface

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Cross-boundary nutrient flows at the marine-terrestrial interface can profoundly influence recipient systems, but the routing of nutrients through invertebrates is poorly known. Stable isotopes provide a way of exploring the ecology of this interface, the ratio of $^{13}\text{C}/^{12}\text{C}$ and $^{15}\text{N}/^{14}\text{N}$ being higher in marine biota than in terrestrial biota. In this paper, we present three case studies which demonstrate the application of stable isotope technology. In the first, we explain why the newly-described mesostigmatic mite *Ayersacarus woodi* can be said to be a predator dependent on seabird guano carbon. In the second, we show that soil invertebrates found in a seabird colony mostly process terrestrial carbon, with only two taxa involved in routing marine carbon. Finally, we show that an undescribed mesostigmatic mite ectoparasitic on the larvae of the endemic sand scarab *Pericoptus truncatus* is not actually parasitic.

