

Physiological responses in rufous-collared sparrows to thermal acclimation and seasonal acclimatization

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A large number of physiological acclimation studies assume that flexibility in a certain trait is both adaptive and functionally important for organisms in their natural environment; however, it is not clear how an organism's capacity for temperature acclimation translates to the seasonal acclimatization that these organisms must accomplish. To elucidate this relationship, we measured BMR and TEWL rates in both field-acclimatized and laboratory-acclimated adult rufous-collared sparrows (*Zonotrichia capensis*). Measurements in field-acclimatized birds were taken during the winter and summer seasons; in the laboratory-acclimated birds, we took our measurements following 4 weeks at either 15 or 30°C. Although BMR and TEWL rates did not differ between winter and summer in the field-acclimatized birds, laboratory-acclimated birds exposed to 15°C exhibited both a higher BMR and TEWL rate when compared to the birds acclimated to 30°C and the field-acclimatized birds. Because organ masses seem