Dechmann D, K Safi, and MJ Vonhof (2006) Matching morphology and diet in the disc-winged bat *Thyroptera tricolor* (Chiroptera). *Journal of Mammology*. 87(5)1013-1019 Due to publisher copyright issues, we cannot provide a copy of this full report but include the publically available abstract.

Abstract: The dietary niche and morphological adaptations of as a species should be highly correlated. However, conflicting selective pressures may make predications about diet difficult without additional knowledge of a species' life history. We tested the reliability of predicating a bat's diet from its wing morphology using data for Spix's disc-winged bat (*Thyroptera tricolor*). The species has been predicated to all within either the aerial hawking or gleaning forage group. We compared the results of a theoretical (canonical disciminant function analysis of morphology) and an applied (analysis of droppings) method of diet determination. Our results places *T. tricolor* in the gleaning function group with a 77% probability according to morphology. Correspondingly, a large proportion of the diverse diet consisted of non-flying prey, such as spiders, insect larvae, and other silent prey, which should be difficult to detect using echolocation. Although some flying prey were taken, it is clear that *T. tricolor* regularly gleans prey from surfaces, indicating that for this species, morphology is a useful indicator f diet. However, the breadth of the diet; the high proportion of jumping spiders, leafhoppers, and insect larvae; and the extremely small size of prey were unique features of the diet that could not be predicted from morphology alone. Thus, although comparative statistical methods and the analysis of wing morphology may be helpful to predict the general ecological niche, only detailed investigations of the life history may yield the detail needed for understanding the link between morphology and ecology of individual species.