

Biomechanic consequences of differences in wing morphology between *Tadarida brasiliensis* and *Myotis chiloensis*

Iriarte-Díaz, José

Novoa, F. Fernando

Canals, Mauricio

The wing morphology of bats is very diverse, and may correlate with energetic, behavioural, and ecological demands. If these demands conflict, wing shape may reflect compromise solutions. In this study, we compared the wing morphology of two bats, *Tadarida brasiliensis* (Geoffroy, 1824) and *Myotis chiloensis* (Waterhouse, 1828), that differ in body size, habitat, and foraging behaviour. We analyzed features of biomechanical and energetic relevance, and sought evidence of compromise solutions to energetic, ecological, and behavioural demands. We found that wing span of both species conformed to expectations based on allometric relationships, but that although the wing area of *M. chiloensis* did not differ from predictions, the wing area of *T. brasiliensis* was lower. *M. chiloensis* possessed an unusually low second moment of area of the humerus. Wing form of *M. chiloensis* is consistent with highly maneuverable flight needed to live between shrubs and wooded habitats, and its low aspect ratio