

A FIELD TEST OF TWO ACOUSTIC CLASSIFICATION SYSTEMS TO DISCRIMINATE  
INDIANA BATS (*MYOTIS SODALIS*)

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With the proposed US Fish and Wildlife Service Indiana bat summer protocol interest and concern has grown regarding the effectiveness of different hardware and software systems for acoustic recognition for this species. As management decisions depend upon the assessed presence of Indiana bats, determining the rates of false positives from various systems becomes imperative. Field recordings of free-flying bats made outside the expected range of Indiana bats, but in the presence of acoustically similar species as Indiana bats, e.g., little brown bats (*M. lucifugus*), can provide a direct means for testing and comparing the rates of Indiana bat false positives. We had the opportunity to perform a preliminary test of this approach on three overnight recording sets from a site near a known little brown bat roost in southern Maine approximately 100 miles beyond the reported range of Indiana bats. We analyzed full-spectrum data acquired from Pettersson D500X detectors using SonoBat 3.1 NE and converted the recordings to Anabat format using Myotissoft ZCANT for analysis using EchoClass 1.1. The three recording sets yielded 112, 177, and 73 high frequency bat passes. Despite an expectation of no Indiana bats at these sites, EchoClass reported twice as many Indiana than little brown bats at site one, 10 times as many at site two, and 1.7 times as many at site three, and concluded  $\geq 99\%$  probability of presence for Indiana bats at all sites. In contrast, SonoBat reported 4% Indiana to 88% little brown bats at site one, and only little brown bats and no Indiana bats at sites two and three. As the 4% Indiana bat result lies within the expected 8–10% Indiana to little brown bat error rate by SonoBat, the SonoBat results would conclude that Indiana bats do not likely occur at these sites.