

Activity and identification of bats at Sachuest NWR during fall 2010 migration

Bat activity

Between 10 September and 13 October 2010 (excluding 29 September - 5 October, due to a recording unit failure), 4391 distinct bat passes were recorded at Sachuest NWR with an ultrasonic microphone. The number of bat passes, however, does not necessarily equate to the number of individual bats present. A single bat can be responsible for several to many recorded bat passes if it is foraging near the microphone on a given night. However, bat passes is a reasonable way to assess and compare bat activity among nights or locations. Thus, a graph of bat passes by date (Figure 1) reveals some general patterns of bat activity at Sachuest NWR

Bat species identification

Of the 4391 bat passes discussed above, 458 (10.4%) of the files were of adequate quality to suggest bat species identification using the default (and somewhat conservative) criteria of the Sonobat 3 software (Table 1). Eastern red bats were, by far, the most commonly identified species at Sachuest NWR, with silver-haired bats, hoary bats, and eastern pipistrelle also well-represented. Audio files of bat species identified in very small numbers (e.g., big brown bat, little brown bat, and evening bat) were inspected manually; I found their identification suspect, particularly the little brown and evening bat. Certainly, the data are insufficient to confirm the presence of these three poorly represented species at Sachuest NWR.

I suspect the relatively low proportion of audio files that were of adequate quality for identification to be a consequence of microphone location. The microphone was located on the NW edge of the roof of the maintenance building at Sachuest NWR, recording over the small parking lot between the maintenance building and the visitor's center. This abundance of rigid flat surfaces likely resulted in a higher proportion of very "noisy" recordings that preclude identification (but do not preclude a tally of bat passes). Installations on other NWR properties (Block Island) should not suffer from similar difficulties, and a less noisy location will be selected and used should recording occur at Sachuest in 2011.

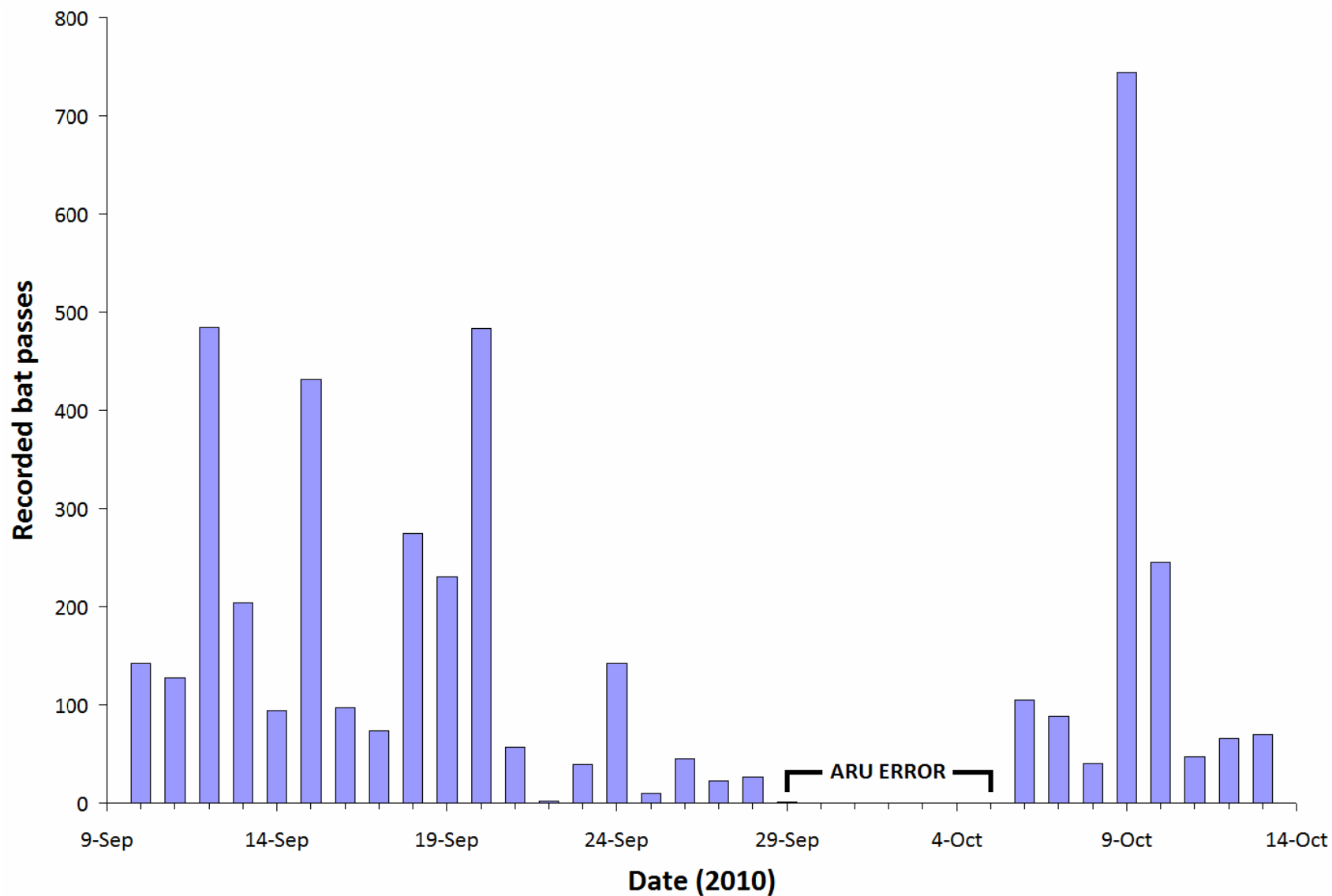


Figure 1. Distribution of bat passes detected via ultrasonic microphone from 10 September to 13 October 2010 at Sachuest NWR. A recording unit (ARU) failure precluded data collection from 30 September to 5 October.

Table 1. Suggested species identifications of bats recorded at Sachuest NWR in September and October 2010. Bat identifications were based on analysis with Sonobat 3 software.

Species	Count
Eastern red bat (<i>Lasiurus borealis</i>)	291
Silver-haired bat (<i>Lasionycteris noctivigans</i>)	65
Hoary bat (<i>Lasiurus cinereus</i>)	48
Eastern pipistrelle (<i>Perimyotis subflavus</i>)	35
Eastern small-footed myotis (<i>Myotis leibii</i>)	15
Big brown bat (<i>Eptesicus fuscus</i>)	3
Evening bat (<i>Nycticeius humeralis</i>)	1
Little brown bat (<i>M. lucifugus</i>)	1
