

Flight Speed of the Gray Bat, *Myotis grisescens*

ABSTRACT: *The flight speed of the gray bat, Myotis grisescens, was calculated at 11.14 mph when measured under natural conditions in a cave in Perry Co., Tennessee.*

Flight speeds are of increasing importance in interpreting information on feeding habits, homing ability, home range and seasonal movements of bats. Hayward and Davis (1964) recorded the flight speeds of 17 species of bats from Arizona and summarized the earlier literature. Patterson and Hardin (1969) timed the flight speeds of five species from Kentucky, and Mueller (1966) clocked *Myotis lucifugus* flights in Wisconsin. However, no data are available on the flight speed of the gray bat, *M. grisescens*.

On 2 June 1971, several individuals of *M. grisescens* were collected in a mist net, shortly after dark, as they left a cave passage 18 miles NE of Linden, Perry Co., Tenn. The bats were placed in a large container, the net was removed, and the bats were taken into the cave to be released. A gas lantern was placed approximately 20 m inside the cave; this light made the bats clearly visible during flight. The bats were released in a straight but irregularly shaped passage measuring approximately 20 m long, 5 m wide, and 3 m high. They were timed at distances of 30 (9.15 m) and 40 (12.2 m) ft as they flew toward the dark exit of the cave. All times were measured with a stop watch and only information from the most direct flights is presented.

The average flight speed of six males and 31 females, with an average forearm length of 42.6 mm, was 8.61 mph for 30 ft (SD, 1.28; Range, 6.60-10.23 mph) and 9.23 mph for 40 ft (SD, 0.06; Range, 7.80-10.97 mph). The average speed between 30 and 40 ft was 11.14 mph. This latter speed is probably the most accurate since bats reaching this distance were probably flying at their top speed and the acceleration time would be at least partially compensated for. This speed corresponds closely to the average speed of *M. sodalis* (10.8 mph), a similar species also measured in a cave passage (Patterson and Hardin, 1969). Since the bats were captured and quickly released in familiar territory and during their normal activity period, we feel these results present a relatively accurate account of the flight speed of the gray bat.

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