

Kenneth T. Wilkins*Niche Partitioning in a Community of Forest-dwelling Bats*
(Biology / Arts and Sciences)

Bats, the only mammals capable of flight, comprise a surprisingly large proportion of the biodiversity of mammals: approximately 977 (20%) of the 4,809 extant species of mammals are bats. Thus, from an ecological perspective, they are significant members of the mammalian community in many ecosystems. And, if biologists are to understand ecosystem function (flow of energy, pollutants, etc.), then the role of bats in the ecosystem also must be understood.

Most ecological research on bats has been conducted on the few species that concentrate into large colonies, e.g., roosts of millions of free-tailed bats in caves in Central Texas. Such aggregations are easy to locate and, therefore, relatively easy to study. Less well-known, however, are the species of bats that are solitary or roost in small groups in hollow trees. It is this roosting strategy that is followed by most species of bats, and it is this attribute that explains our rather poor knowledge of the biology of these species.

Conservation of these relatively solitary species, and the ecosystems they occupy, requires us to learn more about them. Even the most-basic aspects of their natural history are unknown for many of these species. We realize, too, that individual species interact with other bats in the same ecosystem and that conservation efforts need to be directed toward this entire group of interacting species, i.e., the community of forest-dwelling bats.

The proposed project will investigate (1) the basic biology of each of the approximately 8 species of bats occurring in the mixed pine-hardwood forest of eastern Texas, and (2) will examine how these species partition the resources of this forest so as to allow coexistence of this group of species. This effort will focus on determination of roosting requirements and differences in diets among these species. The project has both field and laboratory components. The theses of two undergraduate Honors students will form the core of this project.