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## Biogeography, Taxonomy, and Evolutionary Relationships of Shrews

### Description:

Shrews (Family Soricidae) are small mammals that often get mistaken for mice, mainly because they are small, furry creatures that scurry around underfoot. In reality, they are entirely unrelated to rodents, and their closest living relatives may be moles or hedgehogs. Shrews are relatively abundant in many places, even inhabiting suburban lawns and gardens, but, in part because of their superficial resemblance to mice, few people have ever knowingly seen one.



Even among biologists, there are a number of misconceptions about shrews, primarily due to the fact that so few people have studied them in detail. For example shrews tend to be considered “primitive,” despite the fact that they have a number of unique characteristics that set them apart from other mammals. The goals of the shrew project are to understand the most basic biology of shrews: their diversity (how many species), the distributions of species, and the genetic and historical relationships among species. This project utilizes laboratory tools and methodologies available through collaborations with partners at the National Museum of Natural History, Washington, DC, and at other national and international institutions, as well as field work in areas throughout the distribution of shrews. Trees mapping evolutionary relationships among species will be constructed and tested using both traditional morphological techniques as well as current molecular techniques. Modern geographic information systems and associated computer programs will be used to predict potential

distributions of shrews based museum records. This technique provides insight into natural and human-caused limits to the distributions of species, it can be used to determine poorly sampled regions where rare species may be encountered, and it can be used to determine how species respond to environmental perturbations or management practices.

### Progress to Date:

This project already has resulted in the publication of two scientific papers and several public presentations. In addition, one paper is in press, four are in review, and a paper and a comprehensive monograph are in preparation.

### Management Implications:

This project provides valuable information on the diversity and distribution of poorly known species that necessarily forms the basis of any well-informed decisions regarding the management of populations, communities, or systems. In addition, proposed collaborative work on the modelling of species’s distributions will provide important insight into potential barriers that limit distributions.

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