environmental variables, such as habitat, season, year, land management regime, elevation, or diversity of other taxa. We can estimate community species richness given certain assumptions about community boundaries. Cognizance of the relationships between sampling regime, data structure, and analysis options will not only improve the quality of individual projects involving ant communities but also make more likely synthetic analyses that examine results from many separate studies. The global importance of ants in terrestrial ecosystems and their potential value in environmental monitoring justify an emphasis on quantitative sampling and cross-study comparability.

ACKNOWLEDGMENTS

I thank Rob Colwell and Jonathan Coddington for many discussions of inventory methodology and for help with the manuscript of this chapter. I thank the ALAS staff—Danilo Brenes, Carolina Godoy, Nelci Oconitrillo, Maylin Paniagua, and Ronald Vargas-for helping provide the Berlese data set. This work has been supported by National Science Foundation (NSF) grants BSR-9025024, DEB-9401069, DEB-9706976, and by the Office of Forestry, Environment, and Natural Resources, Bureau of Science and Technology, U.S. Agency for International Development, under NSF grant BSR-9025024; by Apple Computer; and by ACI-US.