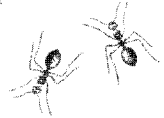


# Sampling Effort and Choice of Methods

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A number of studies have qualitatively assessed the efficacy of diverse methods for sampling rainforest ground-dwelling ants, including pitfall traps (e.g., Adis 1979), Winkler extraction (e.g., Olson 1991), baits (e.g., Fowler 1995), hand collection from quadrats (Room 1975), and “trapping” using artificial nesting sites (Young 1986). However, very few studies have addressed the question of how many samples need to be taken in order to obtain a reasonably complete census of an ant community (e.g., Fisher 1999a). This deficiency of the literature results in part from the fact that the goal of most past ant sampling studies has been to provide a general inventory of the ant fauna of a region (e.g., Wilson 1959; Cover et al. 1990; Veerhagh 1990) rather than a rigorous measure of the underlying

biodiversity in terms of species numbers and relative abundances.

The qualitative approach may well be adequate when the aim is merely to provide a list of the species present. However, if ants are to be used as bioindicators of some aspect of the environment, or if a rigorous census of species is desired, then richness and abundance measures must be described explicitly per unit area or per unit of sampling effort. In such cases, it is necessary to know whether the samples are or are not capturing a reasonably high proportion of the ant species present; if they are not, then it is necessary to estimate what proportion of the total ant fauna is being sampled.

A single sampling method is unlikely to capture all the ants present in the litter or in other