

Figure 15.2. Frequency of capture for species in nine 9-m², 16-m², and 25-m² plots in Malaysia.

found per m² on the 9 m² plots compared to the 25 m² plots. The similarity in ant species composition was also affected by plot size, with Sorensen's similarity values of the 25 m² plots ranging from 37.5% to 63.8%, and those of the 9 m² plots from 28.5% to 66.7%. The mean values are 52.7% for the 25 m² plots and 43.0% for 9 m² plots. These differences are highly significant ($P < 0.001$, Mann-Whitney U-Test). The higher species turnover in the 9 m² plots resulted from more single captures and a smaller number of repeated captures (Fig. 15.2).

The species-accumulation curves for each plot size reveal that none of the plot sizes samples all ants of the area since none of the curves

Table 15.2 Number of Ant Species per Square Meter for 9- and 25-m² Plot Samples in Malaysia

Plot	9 m ²	25 m ²
P1	2.22	1.36
P2	2.44	1.16
P3	2.22	1.44
P4	2.22	1.64
P5	1.55	0.92
P6	2.00	1.24
P7	3.11	1.52
P8	3.22	1.76
P9	3.22	1.68
Mean	2.47	1.41

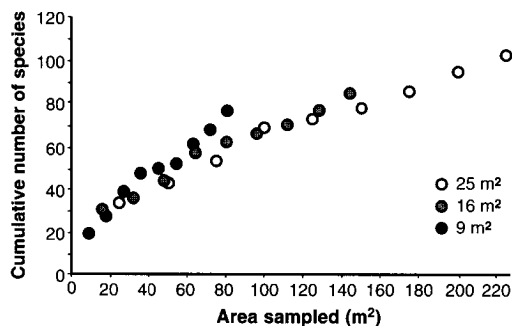


Figure 15.3. Species-accumulation curves for the three plot sizes of 9 m², 16 m², and 25 m² in Malaysia.

levels off (Fig. 15.3). In addition, each plot size produces a different estimation of the overall ant species richness. This is an important consideration when comparing the results from studies using different plot sizes; it is not possible to compare them directly.

These results emphasize the importance of using a consistent, standard plot size across studies in order to make comparisons. The 1-m² litter plot of the ALL Protocol provides this standardization.

Western Ghats, India

Ant diversity was investigated using a variety of sampling techniques in the state of Karnataka, Western Ghats, India (Gadagkar et al. 1990, 1993). A total of 36 1-ha plots from 12 habitat types were sampled in sites representing elevations from sea level to 600 m in forested habitats, in three monoculture plantations, and in a forest that was regularly harvested to produce leaf manure. At each of these sites, sampling was carried out in three 1-ha plots.

Five sampling methods for ground-dwelling ants were employed at each site: vegetation sweeps, pitfall traps, light traps, scented traps, and direct (hand) collecting. Light traps use a luminescent light source to attract insects that