

asymptote calculated for all methods combined. A similar exercise (results not shown) was performed with combinations of four sampling methods. Generally speaking, the combinations that maximized species counts are simply permutations of the methods listed in Table 10.4. The combination of methods that produced the maximum species count (117 species) was Winkler sack samples + small soil samples + inspection of dead wood + pitfall traps (7-day). This value of 117 species is 86% of the asymptote value calculated for all methods combined (Table 10.2).

Conclusion

The choices of what collecting methods to use and how many samples to collect are dependent

on the intended species completeness of the proposed inventory, that is, on what proportion of the ant fauna the inventory intends to survey. The results presented here demonstrate that Winkler extraction is the most efficient method for surveying leaf litter ants and therefore that this method should be included in all ground-dwelling ant inventory protocols. If a second method is also to be used, we recommend pitfall traps. The total number of samples to collect should be determined both by the alpha diversity of the inventory site and by the level of species completeness that is necessary to achieve the project's goals, but, based on the results reported here, in most situations we recommend taking 20 1-m² Winkler samples for areas comparable in size to the 1-ha 20-year-old cocoa plantation.