

Table 6.1 Correlations between Ants and Other Taxa in Changes in Species Richness across Plots along a Disturbance Gradient^a

Other Taxa	Canopy Ants	Ground-Dwelling Ants
Birds	5,— <i>3, 0.78, P = 0.12</i>	4, 0.47, <i>P = 0.53</i>
Butterflies	3, -0.49, <i>P = 0.67</i> 4, 0.97, <i>P = 0.03</i>	5, 0.025, <i>P = 0.69</i>
Flying beetles		
Malaise traps	2,— 5, -0.75, <i>P = 0.15</i>	4, 0.43, <i>P = 0.57</i>
Interception traps	2,— 3, 0.30, <i>P = 0.81</i>	4, 0.21, <i>P = 0.80</i>
Canopy beetles	3, 0.86, <i>P = 0.33</i> 4, 0.97, <i>P = 0.03</i>	5, 0.67, <i>P = 0.22</i>
Termites	2,— 3, 0.46, <i>P = 0.70</i>	4, 0.84, <i>P = 0.16</i>
Nematodes	3, 0.04, <i>P = 0.98</i> 4, 0.70, <i>P = 0.30</i>	5, -0.21, <i>P = 0.73</i>
Ground-dwelling ants	3, 0.99, <i>P = 0.01</i>	

^aData presented are number of plots compared, Pearson's *r*, and associated probability, *P*. Dashes indicate sample sizes too small for correlations to be calculated. Data in *italics* were calculated using an assumed species richness of zero for canopy-inhabiting taxa in the absence of a canopy. Data in **boldface** indicate statistically significant values. Data from Lawton et al. (1998).

Most other studies have been carried out in Australia. Results from seven studies from Australia and Tasmania are shown in Table 6.2. These results indicate that, in general, ant species richness does not correlate positively with many taxa and that correlations are not consistent between different habitat types. The species richness of ants correlates positively only with that of vascular plants and a few invertebrate groups (Table 6.2).

These seven studies differed in terms of the taxa and habitat types studied, sampling methods, and data analysis methods. Two studies, Majer (1983) and Andersen et al. (1996), found significant positive correlations between ants and several other taxa. Majer (1983) compared the species richness of ants to the species richness and abundance of plants and several invertebrate taxa at several Western Australian sites. He found significant positive associations

between the species richness of ants and plants in rehabilitated bauxite minesites of differing ages and rehabilitation treatments (see Majer et al. 1984 for details). He also found a significant correlation between the species richness of ants and that of collembolans and termites in pitfall traps (Table 6.2). The species richness of ants in sweep and beat samples was also significantly positively correlated with the total species richness and abundance of all the invertebrate taxa sampled.

Andersen et al. (1996) also found several positive associations between ant species composition and that of seven other taxa in the Kakadu region of Australia's Northern Territory. Ants and several other invertebrate groups were collected in pitfall traps in (1) natural *Eucalyptus* woodland, (2) disturbed sites on rehabilitated bauxite minesites (woodlands or shrublands dominated by either *Acacia* spp.