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Myrmecochory in relation to soil disturbances in south-eastern Australia

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Myrmecochory, or seed dispersal by ants, is a significant ant-plant mutualistic relationship worldwide. Dispersal services provided by ants are largely influenced by habitat disturbances, primarily due to changes in the composition of ant species. In much of south-eastern Australia, an extensive network of road corridors exist, which contain linear tracts of native vegetation. As much of the landscape has been cleared, roadsides often provide critical refuge for native species and are of high conservation status. In Australia and elsewhere, minor rural roads are maintained by anthropogenic disturbances (i.e. road grading operations) which create novel environments for native species to persist. Despite the severity of disturbances from roadworks, some authors have suggested that certain ant species may prefer to nest such areas owing to foraging or habitat benefits (e.g. cleared substrate) provided by roadwork disturbances. However little is known about the effect of soil disturbances on seed dispersing ant communities. Field studies were conducted in a typical fragmented agricultural landscape in southern NSW, Australia. The selected area contains a large network of minor rural roads of gravel construction that require periodic management. Seed removal experiments were performed in 30 road segments that can be divided into two distinct zones: (1) a disturbed zone maintained by grading operations, and (2) a non-disturbed zone or roadside, which possessed *Acacia* shrubs. Seeds of *Acacia pycnantha*, a common myrmecochorous shrub found throughout the region, were offered to ants at multiple stations at each site. The composition of ant species interacting with seeds, rates of seed removal and seed dispersal distances by ants was recorded. We hypothesized that removal rates, dispersal distances, and seed dispersing ant assemblages would differ between the two zones as a consequence of differences in habitat conditions which influence the foraging ability of particular ant species.