Invasive ants opportunistically form mutualistic associations with plants and arthropods that produce carbohydrate exudates such as nectar and honeydew. Argentine ants, *Linepithema humile*, shows ecological plasticity in resource use and behaviour which is thought to enhance its invasion success. The ability of *L. humile*, to utilise temporarily available floral nectar was compared to that of the dominant native ant, *Anoplolepis custodiens*, within the Cape Floristic Region (CFR), South Africa. The abundance and species composition of ground foraging ants as well as floral arthropod visitors in inflorescences of two Proteacea species were assessed, as well as comparing the foraging activity of the two ant species on the Proteacea nectar, during different flowering periods. Elemental Stable-isotope analysis of Carbon and Nitrogen, as well as the ratio of Carbon to Nitrogen (C:N), was used to investigate patterns of resource assimilation in *L. humile* and *A. custodiens*, and how they respond to increased carbohydrate resource availability. Compared to *A. custodiens*, *L. humile* showed strong dietary flexibility, showing a trophic position similar to that of herbivores during the flowering period, and a higher trophic position when floral nectar was depleted. *Linepithema humile* presence altered the composition of floral visitors by 29% compared to the dominant native ant *A. custodiens*, and negatively affected species abundance and composition of epigaeic native ant species. The CFR is rich in floral resources, providing ample opportunity for *L. humile* to spread further in this biodiversity hotspot. Through the effective utilisation of this fluctuating and temporarily available carbohydrate resource abundant in the CFR, coupled with the lack of competition from native ant species, *L. humile* has the potential to expand into more pristine areas, which may exacerbate its negative impacts in this biodiversity hotspot.