CONCORDANCE IN EVOLUTIONARY HISTORY OF THREATENED PLANT AND INSECT POPULATIONS WARRANT UNIFIED CONSERVATION MANAGEMENT APPROACHES

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Threatened organisms may act as host to a suite of dependent organisms, which are likely to be cothreatened. However, despite the strong link between hosts and dependent species, management of both species is rarely coordinated. Here, we present molecular evidence to establish whether conservation actions should be implemented in a unified approach. We test the congruency of molecular data between two critically endangered and closely associated taxa; the feather-leaf banksia (*Banksia brownii*: Proteaceae), and a herbivorous plant-louse insect (*Trioza barrettae*: Triozidae), both of which are endemic to the biodiversity hotspot of southwestern Australia. Microsatellite markers indicated a high degree of congruency between plant and insect population evolutionary histories, with both species showing similar patterns of population structure. Given these results, the extinction in the wild of one divergent plant population may have resulted in the global extinction of a divergent plant-louse population. A combination of conservation measures for both extant plant and insect populations are currently being trialled. The high congruency in molecular data between populations of associated organisms indicates the importance of considering genetic diversity of source material for *ex situ* conservation trials.

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