Number of conspecifics and reproduction in the invasive plant Eschscholzia californica (Papaveraceae): Is there a pollinator-mediated Allee effect?

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© 2014 German Botanical Society and The Royal Botanical Society of the Netherlands. The component Allee effect has been defined as 'a positive relationship between any measure of individual fitness and the number or density of conspecifics'. Larger plant populations or large patches have shown a higher pollinator visitation rate, which may give rise to an Allee effect in reproduction of the plants. We experimentally tested the effect of number of conspecifics on reproduction and pollinator visitation in Eschscholzia californica Cham., an invasive plant in Chile. We then built patches with two, eight and 16 flowering individuals of E. californica (11 replicates per treatment) in an area characterised by dominance of the study species. We found that E. californica exhibits a component Allee effect, as the number of individuals of this species has a positive effect on individual seed set. However, individual fruit production was not affected by the number of plants examined. Pollinator vis