

Video Monitoring as a Viable Approach to Assessing Insect-Plant Interactions

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September 4, 2023

Abstract

Insects perform the greatest part of pollination services (Winfree et al., 2011) and insects native to a given habitat can play an irreplaceable ecological role in food webs and plant reproduction (Travis & Kohn, 2023; Pelmyr, et al., 1996; Suarez, et al., 2000). With precipitous declines in insect species over the last decades, it is urgent to document insect assemblages in native plant communities to support conservation efforts. Identifying pollinators and their pollination activity is challenging; emerging methods involve the use of camera traps (Droissart, et al., 2021). In this study, we compare the accuracy of two different methods of monitoring to produce insect assemblage of Encinitas Baccharis (*Baccharis vanessae*): focal observations and video recordings from camera traps. *B. vanessae* is a rare, endemic species found in Coastal Sage Scrub communities in San Diego County (U.S. Fish and Wildlife Service, 2021). This federally listed species is threatened by habitat loss and fragmentation, which may also be affecting the availability of its insect pollinators (U.S. Fish and Wildlife Service, 2011). Preliminary results indicate that *B. vanessae* supports a variety of flower-visiting insect guilds and is in turn supported by diverse pollinators. While focal observations underreported insect activity by approximately half, the proportions of common diurnal visitors were similar with both methods. Camera traps were unable to provide sufficient detail to discern visually similar guilds, but were able to record nocturnal insect activity, which was dominated by moths (Lepidoptera, 82%). While collection protocol in this study did not record the time an insect spent interacting with a flower, moths spent notably longer periods in contact with flowers than most diurnal insects. This study has implications for the effective monitoring of endangered plant species and their affiliated pollinators.

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