Solar microgrids effects on insect diversity in a California coastal prairie

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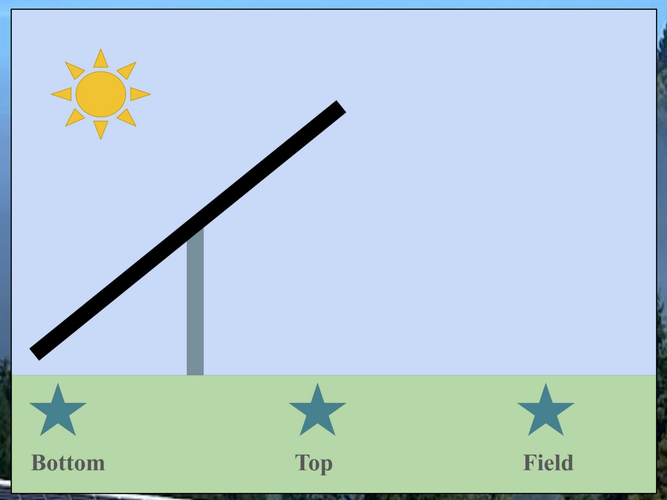
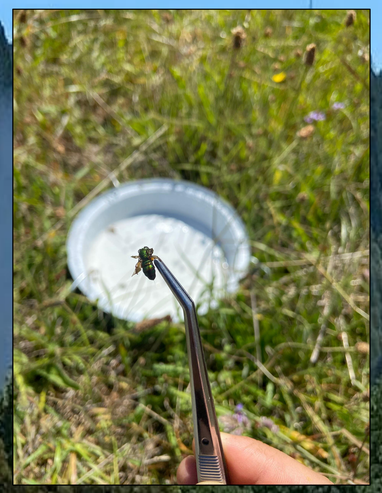
Question:
Do solar microgrids affect insect diversity in coastal prairies?

Background:

- Solar fields have a measurable impact on the soil and plant life directly underneath them.
- Artificial canopy creates microclimates underneath panels: changes in wind patterns, temperature, and diversion of precipitation
- Insects respond to microclimate differences and may prefer high light, warmth, flight space
- Insects support ecosystem services; pollination, food source for insectivores, breakdown of organic matter, etc.





Methodology:
We investigated the differences in abundance and diversity of insect populations along three different microhabitats within a solar array in a coastal prairie in Kneeland, CA.

- Pitfall traps and pan traps (red, yellow, blue, and white) filled with soapy water (lethal)
- Sampled every three days for ten sampling periods at each microhabitat (n=4)
- Insects were collected from each trap into centrifuge tubes and kept in water until they are processed and stored in EtOH after that
- We are currently processing samples with data analysis to follow to understand the impacts of solar microgrid habitats on insect diversity.

Expected Results:
We are currently processing samples with data analysis to follow; we anticipate that abundance and diversity will be highest in the field position (control) and lower under the panels, with the lowest being at the bottom position.

Management Implications:
Our findings will establish a baseline and identify if solar microgrids significantly affect insect populations. Our conclusions can be considered when setting management goals.