



## Ecological impacts of a utility-scale photovoltaic panel facility on a creosote-bursage plant community

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The demand for cleaner sources of energy has been steadily increasing owing to the improved financial viability of green technology and greater acknowledgment of the global effects of fossil fuel consumption. Southern Nevada is poised to become a leading contributor of green energy through the commissioning of public and private lands for solar development. However, there exists a pressing need to better understand the environmental consequences of these facilities as documentation of the impacts of large-scale solar operations on the surrounding desert plant ecosystem is severely lacking. The Copper Mountain 2 (CM2) solar facility in Eldorado Valley, NV utilizes nearly 1.8 square kilometers of photovoltaic panels to generate enough energy to power about 50,000 homes. Currently, the potential impacts on the local environment related to this massive development are being studied from two perspectives: microclimate effects and surface hydrology truncation. A series of meteorological towers and ibuttons are being used to monitor localized temperature changes in CM2 and the adjacent natural habitat as localized climate within the facility may be altering growing conditions in nearby desert plant communities. Because the placement of CM2 represents a major obstacle to established surface water flow, a transect of soil moisture probe access tubes have been placed under creosote plants along a downslope gradient from the facility to observe changes to soil water storage. Individual creosote and bursage plants are also being monitored to study any potential increase in plant stress influenced by the CM2 solar facility. Greater details on the research infrastructure will be presented along with the latest observational data.



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