

Do PV panels reduce plant productivity in grasslands?

A previous study in the UK found that PV arrays in grasslands reduced plant productivity by 25% in sheltered zones under the PV panels (referred to as 'Under zones') compared to the ambient grassland; however, soil properties did not vary between the treatments (Armstrong et al., 2016).

Can a PV array be used in degraded grasslands?

However, it is still being determined whether deploying PV arrays in degraded grasslands has better restoration effects than common grassland fencing, achieving a win-win for grassland restoration and resolving land use conflicts.

How do photovoltaic systems affect grassland restoration?

Photovoltaic systems relieve the pressure of resource extraction and energy generation on climate change, and their installation and module operation affect vegetation productivity and grassland restoration by changing the microenvironment and ecosystem processes.

Do photovoltaic systems promote vegetation restoration of grassland ecosystem in semi-arid region?

The study suggested that photovoltaic systems promoted vegetation restoration of grassland ecosystem in semi-arid region through the water and nutrient coordination and the carbon-water coupling, and provides a solution for reasonable planning of photovoltaic industry and sustainable socio-economic development.

## 1. Introduction

Do PV arrays affect grassland ecosystems?

Moreover, previous studies have investigated the influence of PV arrays on grassland ecosystems by focusing on two distinct areas: the Under and Gap zones. However, these studies have failed to consider the effects of PV arrays as a whole on the host ecosystem.

Do photovoltaic systems affect nutrient status in grassland?

The relationship between grassland restoration of photovoltaic systems and water and nutrient status was understood ultimately.

### 3.1. Microenvironment characteristics

The photovoltaic systems changed the microclimate and soil microenvironment.

There is significant opportunity to produce large amounts of solar energy on farmland. Agricultural land in the U.S. has the technical potential to provide 27 terawatts of solar energy capacity. This is a quarter of the total U.S. solar ...



# Grass and desert grow under photovoltaic panels

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