

Red soil saline-alkali planting under photovoltaic panels

Do photovoltaic panels affect soil chemistry 7 years after installation?

The aim of this study was to assess changes of soil physical, chemical and biochemical properties seven years after the installation of the panels. For this purpose, the soil under photovoltaic panels was compared with the GAP area between the panels' arrays and with an adjacent soil not affected by the plant.

How does a photovoltaic power plant improve vegetation growth?

The vegetation has grown well due to the shading, wind-sheltering, and water accumulation effects of the panels. Photovoltaic Power Plant can promote biological soil crusts and improve vegetation growth. The Ca, S and Cl inside the Photovoltaic Power Plant were higher than those outside.

Does a photovoltaic plant increase soil electrical conductivity?

The photovoltaic (PV) plant increased soil electrical conductivity and pH at 20 cm depth. Under PV panels, SOM and microbial activity were lower than between panels rows (GAP). Almost all biochemical properties were increased in GAP soil with respect to the control. The land use change resulted in a striped pattern of soil properties.

Do solar panels promote vegetation growth?

The greater amount of soil moisture under the panels can promote vegetation growth (Makaronidou 2020). Specifically, under rainfall conditions, PV panels concentrate rainfall along the lower edge, thus causing a heterogeneous spatial distribution of soil moisture.

Are ground mounted photovoltaic power plants reversible?

The installation of ground mounted photovoltaic power plants is considered a reversible form of land consumption (ISPRA, 2018). However, even if this transitory soil consumption will last until the panels will be kept on site (on average 20-25 years), the setback on soil quality will certainly have future consequences on agronomic practices.

What is the vegetation around a photovoltaic system (PPP)?

The vegetation around the PPP mainly includes *Tamarix elongata*, *Agropyron desertorum*, *Suaeda glauca*, and *Cirsium segetum* as well as small distributions of *Peganum harmala*, *Festuca glauca*, *Nitraria tangutorum* and *Lycium chinense*. The photovoltaic panels have upper and lower layers with an inclination angle of 37°.



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