CLEAN GRID ALLIANCE

FACT SHEET

Solar Panels & Soil Health

Soil under solar panels grow **90%** more plant biomass during growing season[1]

Solar panels "pause" soil degradation, restoring land so it can return to farming even healthier than before

Machinery & Soil Compaction

- Soil compaction is localized to posts and access roads, leaving surrounding subsoil layers free for water movement and root growth.[4]

Erosion & Water Infiltration

- Year-round vegetative cover stabilizes topsoil, reducing erosion.[2]
- Freeze–thaw cycles and deep-rooted native plants loosen compacted soil layers, improving water infiltration and moisture retention.[1]
- Vegetation reduces stormwater, nutrient, and fertilizer runoff.[3]

Vegetation, Roots, & Soil Biology

- Perennial native vegetation under panels sequesters carbon and adds organic matter, increasing worms, fungi, and beneficial microbes.[5]
- Soil structure stabilizes and strengthens over time.
- As organic matter and carbon levels increase, soil fertility improves and fertilizer dependence decline.[6]

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Soil Recovery Timeline

0-2 years
Vegetation starts growing

2-5 years
Roots break up soil, holding moisture longer

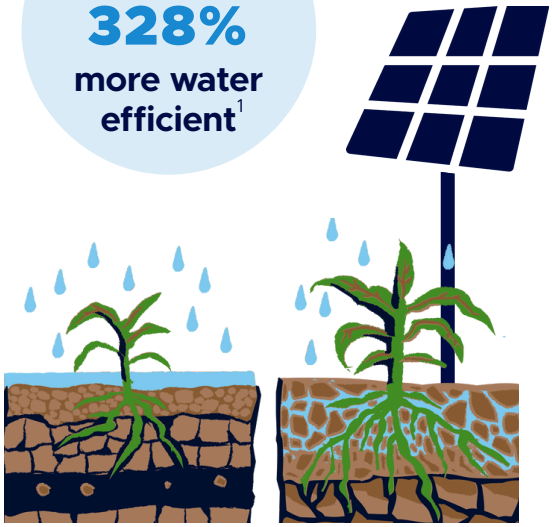
5-10 years
Organic matter increases and topsoil thickens

10+ years
Soil is often healthier than before, ready for farming

Solar preserves the legacy of American farmland for generations to come.

By fostering healthy soils, solar projects empower farmers to grow both life-sustaining crops and homegrown energy.

Shaded soil under panels are 328% more water efficient[1]



Sources

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