NATURAL CLIMATE SOLUTION: BIOCRUST RESTORATION

PROJECT DESCRIPTION

Scientists at The Nature Conservancy and the U.S. Geological Survey are researching cutting-edge techniques to restore biological soil crust or biocrusts, the desert's living soil surface, which sequesters CO_2 and helps sustain plants, wildlife, and agriculture. Biocrusts are a community of mosses, lichens, and cyanobacteria that stabilize and add fertility and carbon to desert soils. They are exceptionally vulnerable to climate and land use change. Restoring biocrusts is a natural climate solution that holds soil and water in place so drylands can better withstand violent weather events, reduce harmful dust and increase soil fertility. Innovative restoration options are needed to bring back biocrusts following disturbance.

OBJECTIVES

- Develop innovative techniques for restoring biocrusts that can survive real-world conditions.
- Develop a pathway for reversing degradation of dryland ecosystems – 25-35% of which are already degraded globally, affecting over 250 million people.
- Quantify the carbon sequestration potential of biocrusts.

PATHWAYS FOR SCALING



Continued research, in collaboration with researchers globally, to identify best practices for biocrust restoration and its benefits.



Incentives for U.S. landowners to protect and restore biocrusts under federal conservation programs.



Re-establishment of biocrusts on public lands – potentially through initiatives like the America the Beautiful program.

LOCATION

Utah, but applicable to desert landscapes around the world

FUNDING AMOUNT AND SOURCES

Approx. \$300,000 from sources including the Wildlife Conservation Society Climate Adaptation Fund, Doris Duke Charitable Foundation, and Rim to Rim Restoration

PROGRAM PARTNERS

The Nature Conservancy in Utah, U.S. Geological Survey, Northern Arizona University

SUCCESSES TO DATE



Creation of the world's largest biocrust farm near Moab, UT, successful growth of intact biocrust communities on biodegradable cloth, and placement of farm-grown biocrust in two restoration sites.



Creation of a biocrust restoration community of practice called CrustNet to facilitate information-sharing with scientists globally.

For more information about this and other innovative and scalable projects implementing Natural Climate Solutions in the U.S., please visit www.usnature4climate.org/building-ambition/.