

Special Issue

The Hidden Treasure: Grasslands, Carbon, and Climate Resilience

Message from the Guest Editor

Grasslands, covering about 54% of Earth's surface, are often overlooked in climate discussions despite being a major carbon sink and a pillar of ecological resilience. Unlike forests, which store most carbon above ground, grasslands retain up to one-third of the world's organic carbon in their soils through dense root systems. This makes them especially valuable: during fires, their underground carbon remains protected, avoiding large atmospheric releases. However, climate change and human pressures—such as agricultural expansion and intensive grazing—threaten their stability. Rising temperatures and declining plant diversity in alpine meadows and savannas can reduce soil humus, releasing carbon and weakening their role as sinks. Conservation and sustainable management are therefore essential. Practices like rotational grazing and pasture restoration improve soil health, biodiversity, and carbon sequestration. Grasslands are not merely open fields—they are a strategic ally in strengthening climate resilience.

Guest Editor

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