

How do karst areas improve vegetation recovery?

However, reducing harmful human interference and proactive ecological restoration measures enhance vegetation recovery in some karst areas, which in turn boosts the accumulation of organic matter and the carbon sequestration capacity of the vegetation (Zhang et al., 2015).

Why is karst vegetation important?

Karst vegetation, notable for its high carbon sink potential, plays a critical role in the global carbon cycle and is intricately linked to changes in the global climate (Zhang et al., 2015, 2022).

Why do karst zones have different NEP values?

Such consistency indirectly corroborates the findings of our study. The slight difference in mean annual NEP values between karst and non-karst zones can be attributed to common factors such as ecosystem types, vegetation cover, climatic effects, carbon cycling dynamics, and methodological consistency (Han et al., 2020).

How does latitude affect global Karst vegetation?

The latent variables of geography are predominantly determined by latitude (Fig. 9 a), indicating that higher latitudes correspond to reduced carbon sink capacities in global karst vegetation. This reduction is likely due to the need for adequate water and heat for vegetation growth and development (Wang et al., 2024).

Do karst regions have higher NPP and NEP rates?

The findings indicate that from 1981 to 2019, the rates of increase in NPP ($2.02 \text{ gC} \cdot \text{m}^{-2} \cdot \text{yr}^{-1}$), R h ($1.47 \text{ gC} \cdot \text{m}^{-2} \cdot \text{yr}^{-1}$), and NEP ($0.54 \text{ gC} \cdot \text{m}^{-2} \cdot \text{yr}^{-1}$) were marginally higher in global karst regions compared to non-karst areas.

Which factors influence karst NEP growth rate?

NEP growth rate was higher in karst than in non-karst areas. Bedrock regulated karst NEP less than climate. Leaf area index dominated the changes in karst NEP. Geography, human footprints, and soils have had limited influence on NEP in karst. The impact paths of driving factors on karst NEP vary slightly across bedrock types.

Imagine storing enough energy to power a small city... inside a giant underground balloon. That's essentially what karst compressed air energy storage (CAES) brings to the renewable energy ...

The case studies are a selection of natural karst settings and their characteristics in relation to the occurrence of flood events, engineering measures to manage them as well as ...

In areas with karst development, especially for pumped storage power station area, the development of karst

not only affects the early construction, but also has a huge ...

Global karst vegetation is crucial for carbon sequestration and biodiversity conservation. However, research on the carbon sink capacity of vegetation...

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The approach can be used to characterize the heat regulation capacity of karst flow systems, which is of great significance for studying the thermal behaviour of karst aquifers ...

Karst aquifers with increased permeability may improve efficiency of geothermal systems, but their characteristics involve special requirements for investigation and exploration. The marble karst ...

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The supergenetic karst formed at this time is the most conducive to reservoir construction, and the karst types mainly include weathering karst zone, fault karst zone and bedding karst zone (Xing et al., 2022).

That's essentially what karst compressed air energy storage (CAES) brings to the renewable energy table. As the world races toward net-zero targets, this quirky marriage of geology and ...

Karst is a project development company that specialises in underground pumped hydroelectric energy storage projects and essentially what that means is that it repurposes mines for energy...

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Developing hydrothermal resources in highly conductive karst aquifers at deep mine floors is regarded as a potential approach to achieving the co-development of coal and ...

The carbonate rock karst thermal reservoir in the Niutuozen geothermal field is a high-quality geothermal resource with significant development potential. However, due to the strong ...

Most existing gas storage in the United States is in depleted natural gas or oil fields that are close to consumption centers. Conversion of a field from production to storage duty takes advantage ...

Natural gas demand in the U.S. varies seasonally, with higher consumption during colder months potentially causing price increases due to supply shortages. Underground storage, primarily in depleted reservoirs, salt ...

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