

Reducing CO₂ Emissions through Tree Planting in **Biria Forest** and Naftali Mountains

Exploring the impact of tree planting initiatives in the Biria Forest and Naftali Mountains on mitigating carbon dioxide emissions.

Project Overview



CO2

CO₂ Emissions Reduction

The planted trees are expected to reduce CO₂ emissions by approximately 13,212 tons over a 50-year period.

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Environmental Impact

The reforestation project will help improve air quality, create habitats for wildlife, and contribute to the overall sustainability of the local environment.

Reforestation in Biria Forest and Naftali Mountains

The project aims to plant 20,000 trees in these two regions to aid in the restoration of the natural ecosystem.

This comprehensive reforestation project in Biria Forest and Naftali Mountains is a significant step towards mitigating climate change and restoring the natural balance of the region.

Project Location

• The project is situated within the Biria Forest and Naftali Mountains, an area near the city of Kiryat Shmona in the Upper Galilee region of Israel. This region experiences a Mediterranean climate, characterized by hot, dry summers and cool, rainy winters.



Tree Species

Jerusalem Pine

A coniferous evergreen tree native to the Mediterranean region, known for its distinctive pyramidal shape and dark green, needle-like foliage.

Common Cypress

A tall, slender evergreen tree with a distinctive pyramidal or columnar form, often used in landscaping and for windbreaks in Mediterranean climates.

Tabor Oak

A deciduous oak species that is well-adapted to the local climate, featuring lobed leaves and providing valuable shade and habitat for various wildlife.

Carob

An evergreen tree that produces edible pods used as a chocolate substitute, known for its droughttolerance and ability to thrive in the local climate.

Soil Characteristics

Calcareous Regions Terra Rossa Soils **Rendzina Soils** Terra Rossa soils are reddish-brown, iron-Rendzina soils are shallow, dark-colored The project area is located in a hilly, calcareous region, which means the rich soils that are common in hilly, soils that develop on calcareous parent materials, such as limestone or basalt. underlying bedrock is predominantly calcareous regions. They are known for composed of calcium-rich materials like their fertility and excellent drainage. They are also well-drained and fertile. limestone or dolomite.

Basalt-based Regions

The project area also contains basalt-based regions, where the bedrock is volcanic in origin. Basalt-derived soils are typically rich in nutrients and well-suited for agriculture.

Soil Fertility

Both Terra Rossa and Rendzina soils are considered highly fertile, making them ideal for a variety of agricultural activities and supporting diverse plant life.

Methodology for Calculating CO₂ Reduction

Determine Tree Species

Estimate Carbon Sequestration Rate

Incorporate Tree Mortality Rate

Apply Conservative Estimates

Select the specific tree species to be planted based on their average carbon sequestration rate, which varies by species and local environmental conditions. Calculate the average carbon sequestration rate for the selected tree species, using data from reliable sources and accounting for local climate, soil conditions, and growth patterns. Adjust the carbon sequestration estimate by a 10% tree mortality rate to account for potential losses over the project's lifetime. Use conservative estimates for all calculations to ensure the CO₂ reduction is not overstated and the project's impact is realistically represented.

Key Statistics

Estimated Annual CO₂ Reduction (Tons)



Rationale for the Calculation

Conservative Tree Mortality Estimate

Consideration of Local Environmental Conditions

Tailored to Target Tree Species

Reliability of Impact Estimation

Data Sources

