

Indigenous traditional use of fire for conservation and adaptation

Venezuela, Bolivarian Republic of Canaima National Park (CNP), Venezuela
The fire experiment was done near the Parupa Scientific Station (5°43'N, 61°35'W, 1,226 masl)

Researchers empirically tested the potential for traditional indigenous fire management methods to aid in conservation and adaptation of the Canaima National Park. The Pemón people have used a method of fire management that creates a mosaic of patches of land at various stages of re-growth that serve as fire breaks for other areas.

The Pemón Amerindians are the traditional inhabitants of the territory within the Canaima National Park. They have historically used fire to clear forest for cultivation, cleaning and removal of vegetation, visual communication, keeping dangerous animals away, hunting, and fishing. Research in other tropical savannas has shown that fire exclusion can lead to the proliferation of forests. However, without fire these forests become prone to even more devastating fires, thus evoking the merit of fire management practices. Over generations, the Pemón people have developed a complex system of burning in a mosaic pattern that maintains different patches of land in different states of re-growth. The savanna patches burnt more recently serve as firebreaks for other areas. However, the more concentrated settlement patterns of the Pemón in recent decades, combined with an increased forest vulnerability to climate change, has disrupted this method of fire management leading to the over-use of fire. Therefore, researchers assessed the potential for a modified yet maintained version of the traditional fire management scheme in the Canaima National Park. Researchers simulated traditional Pemón fire management methods by burning a series of plots of savanna at different intervals over a seven-year period to observe the firebreak and conservation potential of this practice. The researchers indeed found that the use of the traditional strategy of fire management could assist in the conservation of local forests, as burning in savannas near forest borders could help avoid devastating wildfires. Ultimately, researchers found that linking traditional and scientific knowledge was a credible way forward for the formulation of effective fire management.

Case effectiveness on

Climate change

Mitigation: Not reported

Adaptation: Positive

The analysis found that burned patches required three to four years to be able to be burned again, indicating the usefulness of a patchwork fire management scheme as firebreaks for surrounding areas.

Ecosystem health



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Conducted at landscape scale

Intervention type

Management

Ecosystem type

Tropical & subtropical grasslands

Climate change impacts addressed

Wildfire

Instigators

Research institutions

Societal challenges

Biodiversity conservation

Climate change adaptation

Disaster risk reduction

Literature info

Peer reviewed

Case methodology not reported

External case resources

Read resource 1

Ecological effect: Positive

The behavior of land exposed to the fire management regime yielded a variety of results with regard to species abundance and composition and biomass recovery.

Socioeconomics

We are currently working on adding the case effectiveness on socioeconomics.