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Reconstrucción del historial de incendios y estructura forestal en bosques mixtos de pino-
encino en la Sierra Madre Oriental
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Abstract

Forest fires have had a remarkable relevance since the extraordinary fire season in 1998, due to their direct contribution to deforestation, changes in forest structure, species composition, and recently to their impact on the increment of carbon dioxide in the atmosphere. Nevertheless, there is a lack of detailed information about fire impact on forest structure, species composition, and forest dynamics in the Sierra Madre Oriental (SMO). In order to explain possible changes in those factors, this study has examined a chronosequence (134 years), which was determined by analysing tree ring samples in post-fire cohorts of different ages. The objectives of this study were to: (1) determine forest fire historical range of occurrence, (2) quantify present forest structure and tree species composition along a fire chronosequence in order to determine reference areas to assist restoration programs, and (3) increase the understanding of disturbance patterns in mixed pine-oak forest in this region. The study revealed significant differences between post-fire cohorts in terms of woody species richness, stand composition, and structure. High tree diversity was generally found in young stands, while the intermediate and major ones showed the lowest diversity. In old stands, tree diversity was increased again.

Keywords

Dendrochronological analysis, master fire chronology, forest structure, forest fire, restoration, Sierra Madre Oriental.

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