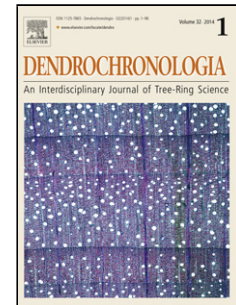


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Growth dynamics and disturbances along the last four centuries in the *Prosopis caldenia* woodlands of the Argentinean pampas

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Abstract

Semiarid woodlands of the Argentinean pampas are dominated by *Prosopis caldenia* Burkart (*caldén*) (*Fabaceae*). This area has experimented severe changes over the last centuries, and fire events, overexploitation and land use changes have shaped the landscape. A sound knowledge of these disturbances and their effects on woodland dynamics is essential to plan a management and wise use of *caldén* woodlands. The objective of this study is to analyse the relation between growth dynamics and disturbances of *P. caldenia* woodlands in the last four centuries in the Argentinean pampas. Fire frequency and growth releases were analysed using dendrochronological techniques in three sampling sites (n=86). Mean radial growth varied between 1.88 and 2.49 mm.year⁻¹, according to the site. One chronology covered the 1738-2011 period, the largest one for the Argentinean pampas. Fire frequency was higher during the aboriginal period (18th-19th centuries) and mid-twentieth century. Growth releases were consistent at all sampling sites and they all had a positive association with sheep introduction after the aboriginal settlement. These results demonstrated that the use of fire by aborigines challenged the widespread concept of an idyllic relation between them and forests. Growth releases were linked to sheep introduction, consistent with records of massive deforestation which took place at the end of the 19th century,

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