



## **Fabiana imbricata shrublands: natural firebreaks in the northwestern Patagonia?**

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Fire is a natural disturbance that affects different ecosystems like the Northwestern Patagonian woodland/steppe ecotone. Here, the fire impact on the vegetation depends on the heterogeneity of the plant communities and the environment. This includes different responses and adaptations to fire of the species present in this community. *Fabiana imbricata* is a shrub characteristic of Patagonian grasslands and although its response to fire is not well known, it generates a special landscape pattern. Direct field observation coupled with aerial photography interpretation and remote sensing data were used to identify the vegetation pattern. From the lower to upper zones of the hillside topographic gradient, the vegetation changes from grasslands to *F. imbricata* shrublands, followed by open *Austrocedrus chilensis* woodland and ending in rock outcrop. We hypothesized that *F. imbricata* acts as a firebreak that creates an *Austrocedrus chilensis* refuge in the upper part of the topographic gradient. This fire line could relate to horizontal fuel discontinuity that derives from the presence of bare soil that occurs within the *F. imbricata* shrubs. If fires are not very intense, the fuel discontinuity would stop the spread of fire coming from the grassland. In this survey we worked in one of the post-fire sites of San Ramón ranch ( $41^{\circ} 03' 19''$ S and  $71^{\circ} 01' 50''$ W), 30 km east of Bariloche, Patagonia, Argentina, where we observed the above described pattern. For this site, we know of two fire events, and the oldest occurred 36 years ago, and the second occurred 10 years ago. We also have data regarding the *F. imbricata* shrubland dynamics. Dendrochronology techniques were used to determine the age of the shrubland. We match this data with Landsat TM images coupled with aerial photography interpretation to determine the pre and post- fire vegetation. Future studies analysing other sites where this pattern is present will be needed to corroborate the relationship between the pattern and the fire regime at landscape scale