Modelling the management of fragmented forests: Is it possible to recover the original tree composition?. The case of the Maulino forest in Central Chile

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In the fragmented Maulino forest (in Central Chile), differences in the relative frequencies of species between seedlings and mature trees are strong indicators of a changing replacement dynamics in the community. Stationary Markov chain models predict that the future tree composition such Maulino forest fragments will differ from that of continuous, intact forest. We found that the persistence probability was highest for Aristotelia chilensis and lowest for Nothofagus glauca. These two tree species are the most affected by fragmentation, and changes in their abundances appear to be the main drivers of the long-term change in stand composition. The aim of our study was to test if the management of just these two species would be sufficient to avoid long-term changes in the composition of forest fragments or would recover their composition toward a state more similar to the continuous forest. For this purpose, we constructed a Markov matrix model from published information, and calculat