

# Vegetation change in large clearings: Patterns in the Chilean matorral

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## Abstract

Previous studies have shown that in Chile the so called mature matorral can have the form of either a continuous matrix of shrubs (wet sites) or of multispecific clumps of shrubs (dry sites). After clearing, sites are known to be initially covered by annuals and then by *Baccharis* spp. or *Acacia caven* shrubs. Further vegetation changes are still not documented. In the first part of this contribution we show evidence indicating that the "seed rain" of plants dispersed by birds is important only around bird perches and that in general "seed shadows" of mature matorral shrubs are small. These results suggest that late recolonization of cleared areas occurs by a slow diffusion process in which the presence of perching sites for birds plays a significant role. Then we exhibit results regarding the importance of seasonal droughts and European rabbits in explaining transitions between the various types of plant cover. Here we conclude that nursing by older shrubs and not by rocks or fallen branches, is a requirement to insure the survival of seedlings belonging to mature matorral shrubs. Nurses are important regarding both summer desiccation and herbivory. These nurse effects seem to be more important at dry sites where rabbits are also more numerous, than at wet sites where conditions seem somewhat milder and vegetation change could be faster. In the last part we discuss a scheme of vegetation change that incorporates these processes and explains the relation between them, the vegetation types and the recolonization of wet and dry areas. Finally, a brief mention is made to the difference between these processes and the comparable ones in the California chaparral.

**Keywords** Diffusion Process, Vegetation Type, Plant Cover, Vegetation Change, Slow Diffusion