
Restoration ecology, rewilding, pastoralism and food security: renewing old connections in central Chile

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Abstract

Restoration of the semi-arid Chilean silvopastoral system called "espinal" is a longstanding challenge. Here we present and discuss the prospects for a restoration approach inspired by rewilding. We embrace a model of rewilding with the potential to contribute to food production and security. Pastoral systems are adaptations to environmental heterogeneity and variability, and may involve both domestic and semi-wild species. With sedentarization, the capacity for dynamic responses to the environment is lost, and with factory farming may be decoupled from local variability while strongly coupled to regional or inter-regional fodder production. Extensive pastoral systems have a large water footprint, which has been used as an argument against extensive meat production as a component of food security. However, the water input (precipitation) to pastoral systems produces a large number of supporting, provisioning and cultural ecosystem services, which intensive meat and vegetable production do not. Furthermore, the grazing of large herbivores can contribute to landscape management for ecosystem services. The rewilding movement has provided lessons on passive and dynamic approaches to megaherbivores as management tools. We thus argue that the ecological restoration of a dynamic rewilding-inspired (silvo-)pastoral system can broadly contribute to food security as well as biodiversity and sustainability. We discuss this model of rewilding with reference to our experiments on the potential to reintroduce semi-wild guanacos (*Lama guanicoe*), the "missing herbivore" in the espinal habitat, as a restoration tool.

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