Avignon Université
Institut Méditerranéen de Biodiversité et d'Ecologie

Soutenance de Doctorat

L'écopastoralisme, un outil adapté pour la gestion conservatoire des écosystèmes très anthropisés ?

Le cas des digues artificielles du canal de dérivation de Donzère-Mondragon dans la vallée du Rhône (Vaucluse-Drôme, France)

Spécialité : Biologie des populations et écologie

Thèse présentée par Cannelle MOINARDEAU
Le 12 décembre 2018 à 14h dans l'amphithéâtre de l'IUT d'Avignon

Devant le jury composé de :

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The main objective of the thesis was to characterize the impacts of different types of pastoral management (cattle, horses, goats) on "new ecosystems" plant communities. Our experimentations were conducted in highly anthropized dykes and embankments of the Donzère-Mondragon reserve in the lower Rhone valley. Various tools were used (i.e. vegetation surveys, soil analyzes, grassland mineral analyzes, remote sensing, GIS, etc.), and at different spatial scales in order to identify the interrelationships between the different levels of vegetation organization and functions. Indeed, the emergence of "new ecosystems" requires managers to reconsider the initial principles of conservation management. Our study showed that, in the short term (3-5 years), grazing systems using herds of herbivores, whose organization is adapted to maintain open habitats, increase species richness, diversity and heterogeneity of plant communities compared to lack of management or mechanical interventions. Moreover, the annual species that appear are appetizing and contribute to increase the forage value of the site grazed by horses. These herbivores also have an impact on the permanent seed bank by increasing both its heterogeneity and the density of viable seeds under the most grazed patches. Grazing of cattle and horses confirm a correlation between the vegetation index (NDVI), biomass and plant species richness. Finally, we evaluated the efficacy of goats' action on bramble via consumption indices calculated using GIS. Our different results are in the line with those already obtained in natural environments. Future experiments should test the effects of mixed grazing systems, particularly cattle, goats and horses, on

the colonization dynamic of competitive shrubs such as brambles. Applied pastoral management should be considered in the medium term, via multi-year contracts to promote the sustainability of this management method and its effects over time.

Keywords: anthropized ecosystems – biodiversity – conservation biology – ecograzing – extensive grazing – GIS – GPS – plant communities – remote sensing – rustic breeds – vegetation index