

DIVGRASS

PLANT FUNCTIONAL DIVERSITY* OF PERMANENT GRASSLANDS

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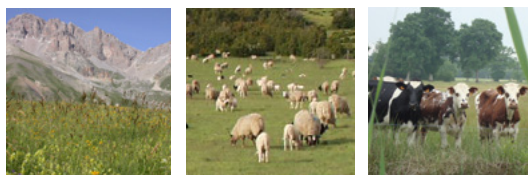
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2010 projects

Permanent grasslands still cover about 10 millions of hectares in France (among which 20% are not seeded), but, like in most of Europe, they have been clearly receding over the last decades due to the combined effect of urbanization and changes in agricultural practices. These grasslands are remarkable areas for biodiversity and serve a large number of functions and ecosystem services: food resources for animals, carbon sinks in the soil, water filters, erosion prevention on slopes, touristic interest and cultural value of the landscapes where they are implemented, etc. The DIVGRASS project aims at combining existing data on the plant diversity of French permanent grasslands to better understand the links between biodiversity and ecosystem functioning.

STEPS

- Synthesize existing data on the geographic distribution, the plant taxonomic (species composition) and functional diversity of grasslands.
- Identify key drivers (i.e. relief, soil, climate, management) of the geographical distribution of grasslands as well as the spatial and temporal patterns of their plant diversity.
- Analyze the relationships between plant diversity, ecosystem functioning and ecological services delivered by these grasslands as they impact agriculture and society at large.



CESAB'S
ADVANCES

■ CESAB will make possible the gathering of a large amount of existing data from different sources on French grasslands, and it will promote a cross-disciplinary research approach.

■ DIVGRASS data base will become a very useful tool to analyze for instance the relations between plant characteristics (reproduction timing, features of leaves, etc.) and their ecosystem properties. At the French scale, it has the potential to improve the sustainable management of these ecosystems.

■ Fostering communication between experts in grassland ecology, soil science, ecosystem modelling and conservation management will be at the heart of this project. This CESAB project aims at further developing the network of all the national players working in grassland ecology.

Focus

*Functional diversity

The definition of biodiversity would be incomplete without considering functional diversity. Each species fulfills particular functions within an ecosystem and participates in a set of complex interactions. For example, certain plant species are capable of capturing nitrogen from the air in combination with micro-organisms. Other plants can benefit from this nitrogen supplement and plants with large amounts of nitrogen might attract herbivores, etc. Functional diversity captures the diversity

of functions fulfilled by an assemblage of species. The properties and dynamics of an ecosystem depend on its functional diversity. A greater functional diversity might lead to a better use of the soil resources and result in higher primary productivity. In case of disturbance, this diversity might also help the ecosystem to recover more efficiently. Functional diversity can be considered as the «life insurance» of ecosystems.