

1. Record Nr.	UNINA9910261136403321
Autore	Michael Rostas
Titolo	Grassland-Invertebrate Interactions: Plant Productivity; Resilience and Community Dynamics
Pubbl/distr/stampa	Frontiers Media SA, 2017
Descrizione fisica	1 online resource (254 p.)
Collana	Frontiers Research Topics
Soggetti	Botany & plant sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>Natural and anthropogenic grasslands such as prairies, meadows, rangelands, and pastures cover more than 40% of the planet's surface and provide a wealth of ecological services. Grasslands alone store one third of the global carbon stocks and grass roots, through their specific architectures, ensure water cycling and prevent the erosion of fertile topsoil. In addition, grasslands are of vital importance for human food production as vast areas of rangelands and pastures provide feed for livestock. Pastoral legumes mobilize atmospheric nitrogen and improve fertility of arable soils. Not least, grasslands are an essential genetic resource. The three major crop species that feed half of the global population have been bred from wild grasses. Ancestors of our contemporary turf cultivars, common components of urban landscapes and recreation spaces, originated from wild grasslands. Although natural and managed grasslands represent pivotal ecosystems, many aspects of how they function are poorly understood. To date, most attention has focused on grassland primary producers (i.e. forage plants) and mammalian grazers but invertebrates are likely to play an equally, if not more important role in grassland ecosystem functioning. In Australian pastures, for example, the biomass of root-feeding scarab beetles can often exceed that of sheep and plant damage caused by invertebrates is sometimes equivalent to an average dairy cow's grass consumption. Indeed, grasslands are one of the most densely populated ecosystems with invertebrates being probably the most</p>

important engineers that shape both plant communities and the grassland as a whole. In a rapidly changing world with increasing anthropogenic pressure on grasslands, this Research Topic focuses on:

1. How grassland habitats shape invertebrate biodiversity
2. Impacts of climate change on grassland-invertebrate interactions
3. Plant and invertebrate pest monitoring and management
4. Plant-mediated multitrophic interactions and biological control in grasslands
5. Land use and grassland invertebrates
6. Plant resistance to invertebrate pests

Given the increasing demand for food and land for human habitation, unprecedented threats to grasslands are anticipated. Resilient to some extent, these key ecosystems need to be better comprehended to guarantee their sustainable management and ecosystem services.

---