GEO BON

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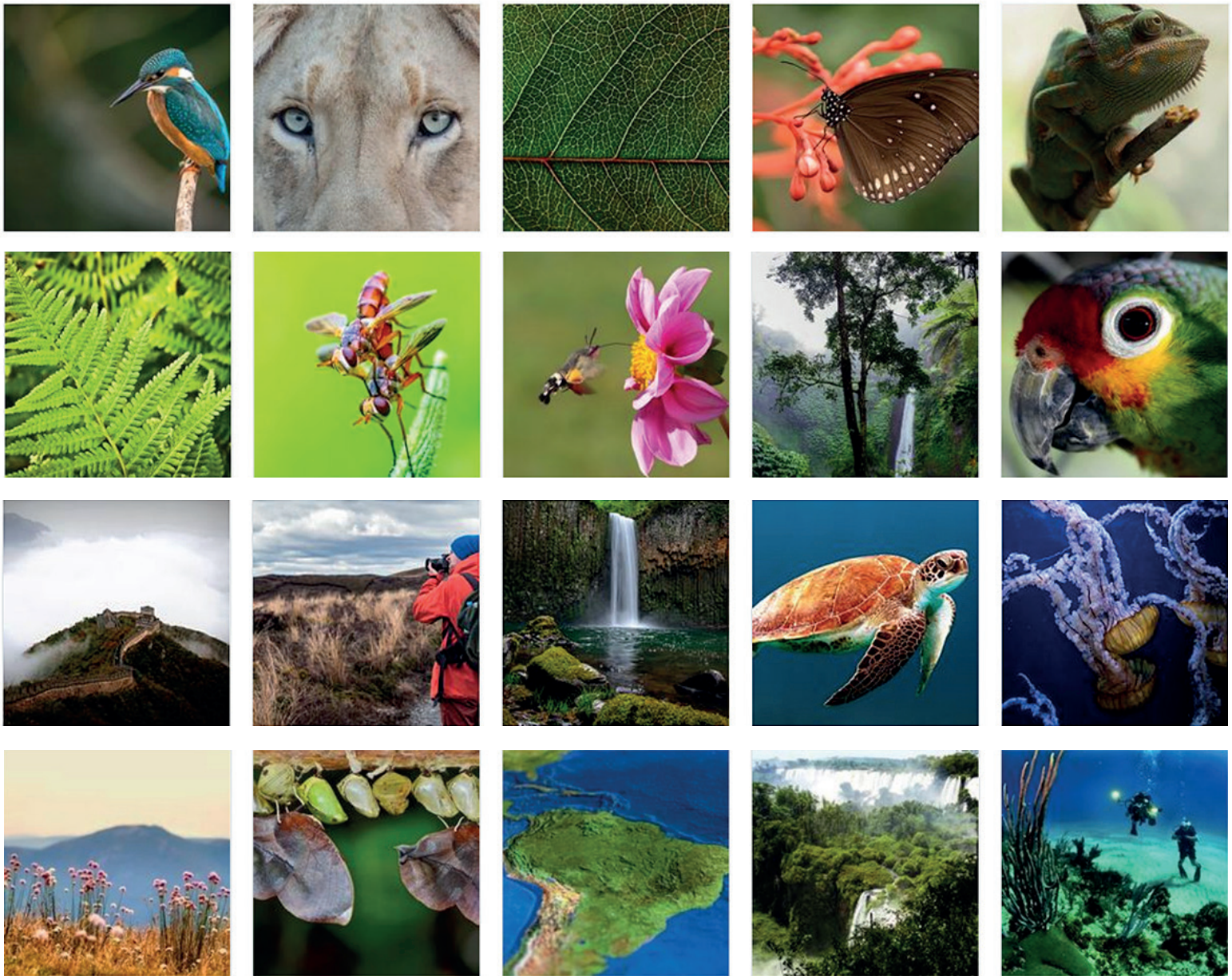

Book of Abstracts

Session: Soil BON

Poster presentations

Land-use changes negatively affect soil fauna communities: preliminary results of a meta-analysis

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Soil fauna plays an important role for delivering ecosystem services, such as food production, climate mitigation and soil erosion. However, land-use changes can alter the characteristics of soil fauna communities which could affect the functioning of the ecosystems. Research into anthropogenic effects on soil has grown in recent decades. After this data generation, there is a need to synthesize land-use effect on soil biodiversity in order to identify general patterns. We conducted a meta-analysis to assess the effect of land- use changes on the abundance, richness and diversity of soil invertebrates. We performed a search in online databases to find studies comparing soil invertebrate communities in reference/natural sites (primary and secondary forests and grasslands) with communities in sites under different uses: agriculture, plantations, logging and pastures. We identified 146 suitable studies evaluating land-use change effects. The overall effects of land-use changes across all studies were negative and significant for three community characteristics although the effects were more pronounced for abundance and species richness of invertebrates. It remains to be examined if these effects vary according to type of land use, time since land change, taxonomic group of invertebrates among other moderator variables. Our results indicate a strong reduction of soil fauna communities in anthropogenic landscapes, which may severely compromise ecosystem services essential for human wellbeing.