Soil Crust InterNational (SCIN) – Understanding and valuing biological soil protection of disturbed and open land surfaces

Bare ground is not just bare ground; in fact, the soil surface in areas free of normal vegetation is often covered with a skin made up of a complex community of microorganisms, like cyanobacteria (blue-green algae), lichens and bryophytes – the biological soil crust (BSC). BSCs can be the only living cover in and semi-arid regions such as hot and cold deserts or xerothermic steppe vegetation. They are also the first colonizers of disturbed soils and have major impacts on the soil properties through stabilization, erosion limitation, and facilitation of colonization by higher plants. Despite these immensely important properties that provide protection to large, particularly marginal areas, soil crusts are neither well understood nor well appreciated by conservation and regularity authorities who are missing opportunities for improved policies and actions in the area of land protection.

The aim of SCIN is to achieve both better appreciation of the functioning and importance of BSCs in Europe and to add value by contributing to the development of better and simpler soil protection policies and practices. SCIN will provide a much improved understanding of BSC functionality from the severest deserts to the alpine ecosystems.

Functional studies will be backed by detailed biodiversity assessments that aim to reveal the key organisms in BSC functioning over a wide latitudinal, altitudinal and climatic range. Information transfer to stakeholders will be achieved through a series of consultations and reports including highly visual material supporting their work.

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Further information: Burkhard Büdel
e-mail: buedel@rhrk.uni-kl.de

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URBES – Urban biodiversity and ecosystem services

URBES addresses significant scientific knowledge gaps on the role of urban biodiversity and ecosystem services for human well-being. This is of importance for building the ability of European cities to adapt to climate change and reduce their ecological footprints. URBES focuses particularly on functional diversity, urban ecosystem services, institutions, economics, and resilience science. It strives to translate cross-disciplinary research insights into principles, land use scenarios, landscape designs and applications. In addition, URBES pioneers the development of the TEEB approach in an urban context. This project is innovative in integrating monetary and non-monetary valuation techniques. It also studies the implications that these results might have on governance, and develops guidelines for implementation in urban landscapes.

URBES is developing a tool box that intends to promote sustainable management of urban biodiversity and generation of ecosystem services. In doing this, it involves and communicates the results of biodiversity research to important stakeholders. Several cities are used as sites for the empirical studies: Berlin, Stockholm, Rotterdam, Salzburg, and to some extent, Helsinki and New York City. URBES consists of nine research institutes in Europe well placed to take on the challenging cross-disciplinary tasks of the project. Two other institutes (University of Helsinki and The New School in New York City) are also participating in this project.

To achieve the ambitious goals of URBES, the scientific objectives of the project address the most pressing research questions in the field, in a cross-disciplinary way. They are:
- Relationships between urban biodiversity, ecosystem services and land use;
- Valuation of biodiversity and ecosystem services, including monetary and non-monetary evaluation approaches of separate ecosystem services, where indicator sets are developed and integrated in a multi-criteria analysis;
- Governance and management of urban biodiversity and ecosystem services;
- Communication and training.

URBES is developing a professional communication and training program together with ICLEI and IUCN. It will actively liaise between important policy mechanisms and contribute to global partnerships with e.g. CBD, TEEB, IPBES, as well as with the EU on the post-2010 EU Biodiversity Strategy, and on the Thematic Strategy on the Urban Environment. It will also provide inputs into national strategies regarding biodiversity and environmental issues.