

Environmental risk assessment in time and space - To boldly go where no man has gone before

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Natural ecosystems are characterised by a high spatial and temporal variability and in recent years environmental risk assessment has begun to address this variability more and more realistically. At landscape scales, ecological as well as chemical processes may exhibit different dynamics as compared to standardized and one-dimensional test settings; hence the persistence and occurrence of ecological effects of toxicants extrapolated from such tests in space and time can only be assessed on appropriate spatial and temporal scales. Although at a local scale, often only one stressor is dominating, populations and communities in a landscape are subject to multiple stressors. Nevertheless, the scientific and regulatory interpretation of such risk assessment in time and space becomes a complex exercise. Currently, at lower tiers, environmental risk assessment is a static approach based on worst-case assumptions for which results from standard toxicity tests are compared to the maximal expected exposure. However exposure, effect manifestation and recovery are dynamic processes which depend also on the local situation. In a more realistic approach, like in higher tier studies (e.g. semi-field or field studies), the representativeness at EU level of a specific environmental scenario in a study is a point of concern, since the linking of the exposure within such a study to the various different realistic exposure situations in the field can be a complex task. Presentations in this session may comprise, but do not have to be limited to, results about ecotoxicological effects and/or chemical exposure patterns obtained by the means of model simulations or measurements on mesocosms, field or monitoring campaigns. This session is inviting especially presentations of case studies which demonstrate how to link risk assessment output (lower or higher tiers, laboratory or field studies) to a realistic risk assessment taking into account the heterogeneity in time and/or space, e.g. how to construct risk maps to define vulnerable scenarios based on field studies or how to link exposure over time to effects on individual and population level in realistic landscapes. Also aspects of spatial ecology that influence ecotoxicological effects in the environment are highly welcomed. ...Engage!