

# Changing European Landscapes: Landscape ecology, local to global

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## Diversity, function and impairment in freshwater ecosystems: consequences for conservation and ecosystem services

### Symposium organised by:

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### Summary

Europe's freshwater ecosystems are now extensively modified by multiple, landscape-scale pressures on their catchments, riparian zones, floodplains and channels. There are large effects on aquatic species composition and diversity, but knowledge about consequences for ecological function, conservation and ecosystem services is still fragmented. This symposium will explore emerging themes in this highly topical and strategically important subject area, blending fundamental science with management relevance. It will include presentations by international researchers and practitioners working at landscape scales in freshwater ecosystems.

### Description

Large scale pressures on European fresh waters range from land-use change and diffuse pollution to habitat modification, altered connectivity and abstraction. These effects often interact to create multiple stressors and are increasingly exacerbated also by emerging major issues such as climate change and invasive organisms. Increasing evidence reveals widespread effects on species composition in running and standing waters with consequences for species interactions, local diversity and regional richness. While evaluations of these effects have focused traditionally on structural measures, the conservation, restoration and sustainable use of freshwaters increasingly requires understanding of likely consequences for ecosystem processes, ecological functions and ecosystem services. We will explore

these themes with contributions on a range of organisms, freshwater ecosystems and locations.

## Impact

We expect the symposium to attract strong interest from research and stakeholder communities ensuring direct impact on the science and management of freshwaters. As well as providing a high profile networking opportunity, we are exploring a special journal issue or a collaborative opinion paper. The symposium will be broadcast directly via Twitter and reported on LinkedIn to ensure wide dissemination.

## Oral presentations

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Title
<b>Diversity, function and impairment in freshwaters: new dimensions for conservation and ecosystem services</b> S J Ormerod (Cardiff University, UK) and others
<b>Can we mitigate agricultural impacts on freshwater biodiversity and enhance ecosystem services at a landscape scale? First results from the Water Friendly Farming project, UK</b> Jeremy Biggs, Pond Conservation Chris Stoate,...
<b>Small scale distribution predictions of stream macroinvertebrates under consideration of catchment properties and landscape processes</b> M. Kuemmerlen <sup>1,2*</sup> , B. Schmalz <sup>3</sup> , Q. Cai <sup>4</sup> , N....
<b>Ecosystem function in urban rivers: what effect does restoration have?</b> Mr Ben Smith, King's College London Dr Mike...
<b>Catchment Restoration in the Tweed UNESCO-IHP HELP Basin - Eddleston Water</b> Chris Spray <sup>1</sup> , Tom Ball <sup>1</sup> , Andrew Black <sup>1</sup> , Luke...
<b>Parallel responses of functional niche features to natural and anthropogenic stressors</b> Cayetano Gutiérrez-Cánovas <sup>1</sup> , David Sánchez-...
<b>Predicting functional redundancy in Mediterranean riparian communities</b> Daniel Bruno <sup>1</sup> , Cayetano Gutiérrez-...

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