

Title of the symposium:

The ecological role of sound in terrestrial and aquatic landscapes: theories, methods and application of ecoacoustics

Detail of organizer(s):

Responsible

Name:	Almo
Surname:	Farina
Email	almo.farina@uniurb.it
Organisation/Affiliation:	Urbino University
Telephone:	328-
Country:	Italy
Address:	Loc. Ortolano 5, 54013 Fivizzano

Co-organizer(s)

Co-organizer

Name:	Susan
Surname:	Fuller
Email:	s.fuller@qut.edu.au
Organisation/Affiliation:	
Address:	
Country:	

Co-organizer

Name:	Sandra
Surname:	Muller
Email:	sandra.mueller@biologie.uni-freiburg.de
Organisation/Affiliation:	
Address:	
Country:	

Co-organizer

Name:	Alice
Surname:	Eldridge
Email:	alicee@sussex.ac.uk
Organisation/Affiliation:	
Address:	
Country:	

Co-organizer

Name:	Gianni
Surname:	Pavan
Email:	gianni.pavan@unipv.it
Organisation/Affiliation:	
Address:	
Country:	

Symposium abstract

Ecoacoustics aims to investigate the ecological role of sounds in environmental functioning across multiple scales -- from species interactions to landscape networks. It is a young discipline, built upon robust theoretical foundations and serviced by advanced automated sound recording technology; current research is developing powerful metrics for big data processing, establishing methodological protocols. The potential for ecoacoustic approaches to support monitoring and management of natural and human-modified terrestrial and aquatic landscapes is becoming widely recognized.

This symposium aspires to:

- share the state of the art of ecoacoustics research and application in terrestrial and aquatic landscape management
- describe ecoacoustics methodologies
- characterise acoustic processes and patterns emerging from terrestrial and aquatic landscapes for different biomes
- illustrate the potential of ecoacoustic analysis in long term monitoring schemes, focusing on climate change, landscape transformation, and biodiversity decline
- discuss application of ecoacoustic approaches to support policy and management actions

The symposium aims to develop the logic of the ecoacoustics framework by considering theories, models and methods alongside key studies of terrestrial and aquatic landscapes across difference levels of habitat disturbance and in different eco-regions.

Practical examples of ecoacoustics to manage, remediate, improve and conserve natural and human-modified dynamics of the environmental systems will be discussed. In particular analyses of soundscapes that emerge from interactions between acoustic signals produced by biotic and abiotic processes (biophonies, geophonies) and human-made industrial/mechanised processes (technophonies) will be presented and offered as a new, productive perspective for describing the dynamics of terrestrial and aquatic landscapes.

How your symposia will improve landscape ecology science?

The monitoring of sound in a landscape has long been neglected in landscape analysis, planning and management, however, there is an increasing number of evidences that sound plays a fundamental ecological role in both terrestrials and aquatic landscape functioning. We are only the beginning to understand the worldwide patterns of natural soundscapes and how they are influenced by human induced landscape changes. At the

same time natural or “close to nature” soundscapes are dramatically disappearing due to the loss of soniferous species. Furthermore, natural soundscapes are degrading even more dramatically and quickly than natural landscapes for habitat fragmentation and the increase of traffic noise that disturb landscape configurations, modify communication patterns among animals, producing annoyance on various organisms included humans.

A lot of progresses has been made both in terms of technical advantage for autonomous recording devices as well as for analytical methods to analyse and interpret variations in soundscapes.

We suggest this symposium to bring these achievements made in the field of ecoacoustics to a wider audience in order to trigger its broader application and integration in landscape analysis and management. Soundscape monitoring can contribute to understand interaction between land-use and local biodiversity. Acoustic diversity has been shown to relate to habitat type and vegetation structure and can be a powerful tool also in combination with other remote sensing techniques.

Broad thematic areas

Broad thematic areas 1st choice: Biodiversity conservation

Broad thematic areas 2st choice: Landscape planning

Free Keywords

Ecoacoustics, Terrestrial soundscape, Aquatic soundscape, Ecoacoustics metrics