

ASA - Workshop on Bioacoustics and Ecoacoustics

INTRODUCTION

Bioacoustics and Ecoacoustics are rapidly developing disciplines to study and monitor ecosystems by their soundscape composition. This is a worldwide emerging research area aimed at monitoring, and possibly contrasting, the decline of biodiversity impacted by habitat reduction and degradation due to both local human activities and global environmental changes (climate changes and chemical pollution). The acoustic environment, also known as soundscape, has been recognized to be an essential component of ecosystems, thus worth of being studied, monitored, protected, and even restored when altered by human activities. In this context, sounds have the potential to serve science, conservation and also education.

Ecoacoustics joins bioacoustics and ecology as an interdisciplinary science that investigates natural and anthropogenic sounds and their relationship with the environment over a wide range of study scales, both spatial and temporal, including populations, communities, and landscapes. Ecoacoustics operates in all types of terrestrial and aquatic (freshwater and marine) ecosystems extending the scope of acoustics and bioacoustics. Sounds can be both the subject and the tools of ecological research. As the subject, sounds are investigated in order to understand their evolution, functions and properties under environmental pressures. As tools, sounds are used to study and monitor animal diversity, abundance, behaviour, dynamics and distribution, and their relationship with ecosystems and the environment.

OBJECTIVE

The objective of the course is to provide scholars with a solid foundation to understand bioacoustics and ecoacoustics, the equipment needed to do acoustic research and monitoring, the software tools, the applications in the different fields, ranging from basic research to environmental monitoring and protection. The course will include topics related to both terrestrial and marine bioacoustics and ecoacoustics, soundscape analysis, noise pollution, digital sound recording and analysis, also considering the importance of the acoustic environment for the human beings.

INSTRUCTOR

Gianni Pavan is a Researcher at the Department of Earth and Environmental Sciences of the University of Pavia, in Italy. He teaches Bioacoustics and Ecology in the Master courses of "Nature Sciences" and "Experimental and Applied Biology". Since the Master degree in Nature Sciences he got in 1983 with a thesis on the computer analysis of bird songs, he dedicated his research time to bioacoustics, computational bioacoustics, marine bioacoustics and, in the last decade, to ecoacoustics. Founder of the Interdisciplinary Center for Bioacoustics and Environmental Research (CIBRA) in 1989, he participated to many international activities for the study and protection of marine mammals. He is cofounder and member of the International Ecoacoustics Society.