ABSTRACT:

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Título Proyecto:	**Aplicaciones creativas y educacionales de grabaciones de paisajes sonoros naturales**

The proposal focuses on the design, implementation, and validation of creative and educational applications centered on the use of artificial intelligence, immersive audio, and creative learning based on natural soundscape recordings (Figure 1). The transdisciplinary use of these recordings is discussed, highlighting their relevance in acoustic ecology, creativity, and environmental education. A conceptual and experimental framework is presented, based on the ISO/DIS 12913 standard on soundscapes and activities carried out within the Soundlapse project, with the aim of exploring the intersection between creation, science, and environmental education.
The project addresses the identification of avian acoustic communities and their relationship with biodiversity, proposing an AI-based method to extract information from soundscape recordings. It also emphasizes the need to monitor acoustic diversity in the Valdivian ecoregion and describes the tools developed for this purpose, including algorithms for detecting sound events and the automatic identification of bird species.
Regarding immersive audio, the study explores its potential in creative and educational applications, highlighting its use in site-specific art installations and the design of 3D virtual environments. The optimization of an original sound spatialization algorithm and its integration into hybrid sound design platforms for site-specific installations and creative virtual reality tools are proposed, aiming to enhance user immersion and improve the localization of sound sources in three dimensions.
Finally, sensory environmental education is addressed, proposing strategies based on recent advances in creative learning models and the use of soundscape recordings. Through activities such as immersive concerts, outdoor environmental education labs, and virtual environment design workshops, the development and validation of sensory educational tools for the implementation of an interactive virtual platform are proposed.
The project's results aim to contribute to soundscape research from a comprehensive and transdisciplinary perspective, making significant advances in the conservation of natural sound heritage and the appreciation of biodiversity in southern Chile through the unique convergence of creative processes, cutting-edge technology, and sensory environmental education.

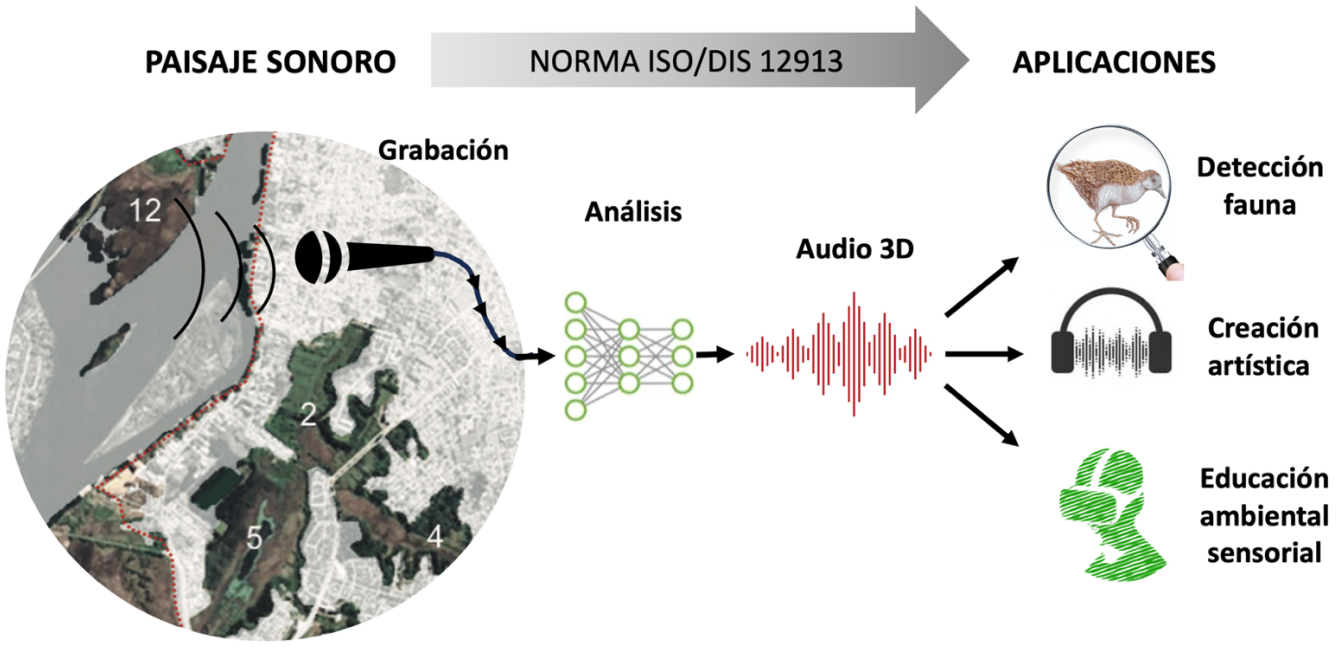

Figura 1. Graphical abstract.