



The Evolution of Acoustics in the Goulburn Broken Catchment: Where Did We Begin and Where Are We Now?

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ABSTRACT

Acoustic monitoring within the Goulburn Broken Catchment was initiated in 2008. During this period, Professor Stuart Gage visited the region and conducted a comparative analysis of acoustic indices in orchards surrounded by native vegetation versus those lacking such environments. This study ignited the concept that acoustic methodologies could be employed to monitor wetland responses to environmental water allocations. At that time, Victoria was experiencing the unprecedented millennium drought, which was anticipated to mirror future climate change scenarios projected for 2050. Environmental water was a relatively new concept and had never been monitored in such a way.

Four Sony minidisc recorders were strategically positioned at a swamp on the day of an environmental water allocation delivery. At 1:00 am the following morning, the call of a lone common froglet was recorded, symbolising the swamp's revitalisation. Initially envisaged as a two-month project, the study extended over two years encompassing two additional environmental water deliveries between 2008 and 2010. The data procured from this project provided researchers with unparalleled insights, documenting the presence of species that had not been previously recorded at the swamp. This information has subsequently informed future water allocation strategies in the area and has become a cornerstone in the management of swamps within the Goulburn Broken Catchment.

Currently, environmental water deliveries within the catchment are routinely monitored utilising acoustic recorders, continually generating novel data. This initiative has also spurred additional projects, including a Statewide monitoring program for frogs in wetlands, citizen science endeavours, and ongoing wetland listening programs. Furthermore, acoustic monitoring in the Goulburn Broken Catchment is contributing valuable data to a Traditional Owner 'Biocultural Plan' within the Taungurung Registered Aboriginal Party lands. What commenced as an exploratory project has significantly enhanced wetland site management and is now fostering collaboration among Traditional Owners, the general public, and natural resource managers within the catchment.