
Fragments of Extinction - A New Recording Approach in Primary Equatorial Forests

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Abstract

Through a case study of field recordings collected in Borneo's undisturbed rainforest within the scope of Monacchi's long-term project "Fragments of Extinction" – An Eco-acoustic Music Project on Primary Rainforest Biodiversity, this paper will focus on a particular methodology for deriving punctual analytical data from omnidirectional sound-art oriented field recordings.

Soundscapes were recorded with innovative three-dimensional microphone systems deployed in remote and challenging habitats, where the rate of biodiversity loss will be increasing. The result is one of the most vivid sound portraits possible with current hi-definition technology, providing a detailed example of the current state of Bornean biophony.

This paper will focus on a specific analysis of a 27 hour (dusk to dusk - included) continuous recording. Data are being evaluated with different methodologies to assess the ecosystem richness and variability through an entire circadian cycle. A careful dissection of species' sonic languages within an omnidirectional recording domain is followed by species mapping, to then outline the entire 27-hour eco-acoustic behaviour of life cycles. In parallel, data are examined with Acoustic Complexity Indexes as important ecological meters of information, and acoustic codes are traced.

Within the aim of the study two questions are posed: how do soundscape data represent significant ecological indicators for revealing the complexity and interconnected equilibrium of these primary natural systems? How can the specific recording techniques employed preserve essential information for the investigation of acoustic communities?

In consideration of the Acoustic Niche Hypothesis (Krause 1987), engaged here to interpret and frame one of the most diverse soundscapes on Earth, we think that the different degrees of complexity found in the communication codes of insects, amphibians, birds and mammals reflect evolutionary mechanisms of long-term cross-adaptation confirmed by extreme acoustic efficiency, niche partitioning, and systemic behaviour.

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