BIOSPHERE SOUNDSCAPES: THE RAINFORESTS OF BRAZIL TO THE COASTLINES OF AUSTRALIA

Leah Barclay
Queensland Conservatorium
Griffith University
Brisbane, Australia

ABSTRACT

Biosphere Soundscapes (BioScapes) is a large-scale interdisciplinary art project underpinned by the creative possibilities of soundscape ecology, a rapidly evolving field of biology used to record environmental patterns and changes. This project is designed to inspire communities across the world to listen to the environment and re-imagine the potential of UNESCO Biosphere Reserves as learning laboratories for a sustainable future. This paper outlines the project background and preliminary outcomes in addition to supporting the BioSphere Soundscapes performance. The live performance features field recordings from three UNESCO Biosphere Reserves in Australia and Brazil: the Central Amazon Biosphere Reserve in Brazil, The Great Sandy Biosphere Reserve and the Noosa Biosphere Reserve, both in Queensland, Australia. This premiere performance for ICMC2013 is the first major creative outcome from BioSphere soundscapes.

1. INTRODUCTION

The global ecological crisis has become a catalyst for interdisciplinary collaborations at a time when a shift in thinking is urgently required. World leaders are now looking towards the validity and possibilities of creative methodologies as tools for change. This presents both a challenge and an unprecedented opportunity for creative practitioners to gain a critical understanding of the situation, and devise policies for a sustainable future. There is an urgent need to listen to the state of our environment and facilitate a sense of interconnection within communities globally. ‘Sound’ as a catalytic and creative medium is undoubtedly one of the most powerful means to stimulate this shift in consciousness.

In a recent addition of Musicworks, Joel Chadabe stated that the current artistic practices of electroacoustic composers are rooted in the idea that new technologies, unlike traditional musical instruments, can produce sounds used to communicate core messages, including information about the state of our environment. He claims that we are all participating in the emergence of a new type of music accessible to anyone, which can be used to communicate ideas that relate more closely to life than those communicated through traditional musical forms. He believes we need to think of ourselves as ‘leaders in a magnificent revolution rather than the defenders of an isolate and besieged avant-garde’ [1].

2. BIOSCAPES RATIONALE

BioSphere Soundscapes is a large-scale interdisciplinary project underpinned by the creative possibilities of soundscape ecology, a rapidly evolving field of biology used to record environmental patterns and changes. This project is designed to inspire communities across the world to listen to the environment and re-imagine the potential of UNESCO Biosphere Reserves as learning laboratories for a sustainable future. This project is a key outcome from my practice-led doctoral research that involved conceiving and delivering seven original electroacoustic projects for dissemination in multi-platform environments. The divergent projects were created in cultural immersion, spanning from ambitious sonics explorations in the center of the Amazon Jungle to sounding the rivers of the world through India, Korea, Jamaica, Australia and New Zealand. The delivery and dissemination of each project was underpinned by a rich methodology that pivots on a site-specific project embedded in community cultural engagement.

Throughout these projects it became evident that the environmental interconnectedness many of us have been seeking is still prevalent in a profusion of first nations cultures globally. These ancient knowledge systems argue that the process of simply listening to the environment can completely shift our perception. These collaborative processes transformed my approach to listening and undeniably influenced my creative responses to the environment. My ambitious doctoral research began as an exploration of the sustainability of electroacoustic music and evolved into a complex web of projects harnessing electroacoustic music as a change agent. The beginning was fueled by an isolated intention grounded in a visually dominant western society. Yet through the process of cultural immersion I discovered a tool that not only provides a gratified language of creative expression, but also a voice for the communities and environments collaborating on these projects. The discoveries and observations from each individual project showed a clear trajectory towards a set of tools to initiate cultural changes through environmental electroacoustic music. As a result, the Sonic Ecologies Framework was developed as a means to create an accessible methodology for artists interested in implementing similar projects.

3. SONIC ECOLOGIES FRAMEWORK

The Sonic Ecologies Framework pivots on a site-specific soundscape project embedded in a multi-layered community cultural engagement process developed in response to a specific community. The site specificity requires that this methodology be intrinsically flexible in order to be adaptable within a diversity of environments and cultures. It is essentially creative and innovative research process, taking an ecological approach to contextualising a project within an environment. While there is an essential degree of freedom and adaptability, the process is grounded within the theoretical contexts generated by the artists who experiment and innovate within a continual spiraling between theory and practice.

The Sonic Ecologies framework involves five essential elements: site-specific subject matter, multi-platform dissemination, community engagement, interdisciplinary partnerships and a long-term strategic vision. The Sonic Ecologies framework encourages collaboration and multiple outcomes where possible. The research outcomes proved the sonic material should be disseminated in a range of environments for maximum exposure; this includes harnessing the power and value of virtual platforms to facilitate global accessibility. The community engagement and education tools will always evolve depending on the nature and accessibility of the proposed community but the most successful tools throughout this research included: community sound labs, artist residencies and extensive community workshops and providing access to the appropriate technology for the community to remain engaged in the process.

In order to truly attempt to create a paradigm shift using a framework such as Sonic Ecologies, electroacoustic music must be augmented from its traditionally isolated academic circles and expand into regional communities collaborating with environments, environmentalists, conservationists, scientists and policy makers to expand awareness. Creating a support network around the project will be essential in its future viability and sustainability within a community. The Biosphere Soundscapes project was conceived and designed with the Sonic Ecologies framework with a particular focus on the interdisciplinary partnerships resulting from this doctoral research. The artist implementing the Sonic Ecologies framework is initiating a process within a community. The creative outcomes serve as significant milestones but ultimately it is the process that will continue to resonate and evolve over time. As with any form of community engagement, it requires time in order to facilitate change. The capacity building community engagement is designed to empower the community to continue working long after the artist has departed. It is therefore essential the artist invests critical thought into the methods in which the community will continue to engage and appropriate technology is accessible to continue working. The most successful strategy resulting from this research was to leave low costs digital recorders with a key stakeholder in the community and design a web platform to enable the community to continue creating and uploading content. This web platform ignited the beginning the Biosphere Soundscapes project and illustrates the design of a major international project highlighting the future possibilities of the Sonic Ecologies framework.

4. BIOSCAPES STRUCTURE

BioSphere Soundscapes pivot on a network of site-specific electroacoustic music projects embedded in multi-layered community engagement processes within global Biosphere Reserves. This evolving process is implemented by sound artists, acting as agents of change spiraling between contextualised theory and practice. The content generated is embedded in a virtual network of global Biosphere Reserves via google earth technology and shared through the BioScapes community on the website (http://www.biospheresoundscapes.org). The process and creative outcomes are delivered by a core team of artists and advisors who are currently achieving catalysts for a global participatory environmental project accessible to anyone with an internet connection.

Composed of 610 sites in 117 countries, Biosphere Reserves are sites recognised under UNESCO’s Man and the Biosphere (MAB) programme to promote sustainable development based on local community efforts and science [2]. As places that seek to reunite the conservation of biological and cultural diversity and provide the community with a sense of ownership as co-guardians they are ideal to test and demonstrate innovative approaches to sustainability. Biosphere Reserves also represent a fascinating tool for international collaboration through sharing knowledge, exchanging experiences and building capacity for interdisciplinary collaborations and partnerships. This is the first major international project connecting the soundscapes of global Biosphere Reserves.

The methodological grounding for BioSphere Soundscapes revolves around the creative possibilities of Soundscape Ecology, a rapidly evolving field of biology where scientists record a given habitat and listen for patterns and changes to form an analysis of the health of the environment. The process of working with each Biosphere modifies depending on the collaborating artists and accessibility of the local community and there is any case it is grounded in the Sonic Ecologies Framework. In some instances the process involves sound labs, artist residencies and extensive community engagement, while in other cases the key community...
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In addition to the virtual outcomes, Biosphere Reserves – Learning Sites for Sustainable Development (online) 111: pp. 6.

3. SPACE

3.1. Use of space

Space is not mainly focusing on the forward axis, but tends rather to a wide distribution of the composition, also with moments of prevalence of exclusive zone or with obvious sudden contrasts.

I used MaxMSP to create an algorithm that allows me to manage the mapping of each sound event by creating random trajectories and rotations.

The space of the live clarinet, instead, is a bridge from nowhere; the environment and re-imagine the potential of Biospheres as learning laboratories for a sustainable future. This project combines art, science, technology and community to give Biosphere Reserves across the world a voice and a global audience to listen.

The composition is quadraphonic, and the acoustic sounds of the clarinet are opposing the electronic noises, sometimes reworking of monodic characteristic timbre of the instrument, sometimes totally synthetic.

7. REFERENCES


A BRIDGE FROM NOWHERE (‘84’)

Link to a stereo sample and to a full version: https://www.dropbox.com/s/zb/7rwn8l28bPg9E3l2Ch4mF1y

ABSTRACT

A bridge from nowhere is an electroacoustic work written for clarinet and quadraphonic electronics. It is a tribute to John Cage’s music and philosophy.

1. INTRODUCTION

John Cage is a revolutionary figure for music of all time.

A bridge from nowhere is inspired by his masterpiece ‘Lecture on nothing’, a brilliant musical prose composed in the ’50s. It is written with the same rhythmic structure used in his compositions, such as, for example, Sonatas and Interludes.

The basic idea is that: ‘a structure is like a bridge from nowhere to nowhere and anyone may go on it: noises or tones, corn or wheat. Does it matter which? […] We really do need a structure, so we can see we are nowhere.’ (J. Cage, Lecture on nothing, 1959)

The structure of the piece evokes the text of Cage in its division into five sections. This is made clear from the solid fragment that, as in the prose, is repeated at the beginning of each section and also from the apparent ‘randomness’ of every musical gesture. The central section is the bridge that brings together the whole composition, which ends with a new beginning, like a bridge to nowhere.

The composition is quadraphonic, and the acoustic sounds of the clarinet are opposing the electronic noises, sometimes reworking of monodic characteristic timbre of the instrument, sometimes totally synthetic.

2. ALGORITHMS AND STRATEGIES

Most of the sounds are coming from clarinet and are acquired ad hoc on the basis of the composition’s purposes.

Each sound is subjected to various editing processes, especially warping, shuffling, convolutions, delays. All the processes I’ve used are related to my idea of composition: I’d like to have an apparently random delay. All the processes I’ve used are related to my idea of composition: I’d like to have an apparently random delay.

I formed complex sounds without any harmonic relationship. Changing the envelope of each sound, I meant that synthetic sounds have a typical profile of the sampled clarinet sound and clarinet loses its shape to conquer another one.

Many of the sound events are severely distorted, or deprived of their transitional attack, to create events more or less prolonged with an attack transient artificially slow. On some of these I applied a new transitional character, quick and impulsive, using the spectrum of the resonance area, commonly less rich in harmonics.

I used other editing processes to create events for which the original material is used as a modulating vocoding algorithm of spectra as rich as square waves and triangular ones, to enrich the sonic palette of timbres and the synthesis possibilities.

The continuous bands that characterize the central section are constructed from pink noise, with an excess of power for the low frequencies, molded with the convolution of other waveforms, especially clarinet events.

I used a delay in multiple sections, also with feedback, with the possibility to modulate or maintain constants in the delay time.

Clarinet and electroacoustic scores took place simultaneously, evaluating new performance practice for the clarinet, while respecting the structural features of this instrument. Every gesture of the clarinet is a bridge between the traditional writing and a new form of sound.