not only tourists? It is only through dissent in the form of a commons that the Public Art Machine can be interrupted and the development of public art in New York evened out. This is what the *Public Utteraton Machines* aimed to do as a straying point, a gesture in the form of an artwork, not an academic paper.

If public art serves other interests that are economic, partisan or political, it ceases to be public art. As Yates McKee noted in his recent volume, the act of occupying involves the creation of a commons as an activity that brings people together, a "reactivation of . . . space through the antagonistic invention of new forms of communal life . . . outside the relations of property" [10]. He describes, as does Patricia Phillips [11], how the commons is rooted in a form of dissent. By reviving the idea of the commons as dissent and a way of thinking about evenly distributed space for public art, public art can become as exciting and conceptually engaging as other gallery art is in New York. The *Public Utteraton Machines* therefore, through their very locations and their concept, aim to redistribute, or at least point to the uneven development in, public art [12]. If artists are allowed to make the choice of location part of the concept of the work instead of working with a predetermined location chosen by an agency, then they can make work that engages the city in a sociopolitical and cultural manner. As Palmer aptly noted in 2016, "Public art has depoliticized to such a degree, that public art has become, in many instances, individual aesthetic insertions that are not considered a substantial component of the social, cultural, political and economic fabric of the urban environment" [13].

## References and Notes


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6 B. Shepard and G. Smithsimon [3].

7 R. Deutsche, *Evictions. Art and Spatial Politics* (Cambridge: MIT Press, 1996) p. 61.

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9 <www.utteraton.com/display-responses.html>. See also the LMJ28 Audio Companion: <www.mitpressjournals.org/toc/lmj/-/28>.

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11 Phillips [2].

12 R. Deutsche, "Uneven Development: Public Art in New York City," *October* **47** (1988) pp. 3–52.

13 Palmer [2] p. 209.


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# LISTENING TO WETLAND SOUNDSCAPES


*Felipe Otondo*



**ABSTRACT** The author introduces a soundscape project involving wetland field recordings and an original sound time-lapse method used as the basis for the design and implementation of a sound installation.


In recent years, increased access to affordable recording equipment has allowed researchers and artists from various backgrounds to investigate the temporal features of urban, rural and wildlife sonic environments [1]. On the one hand, field recordings have become useful temporal and spatial monitoring tools in soundscape ecology studies of wildlife species conservation, global warming and noise pollution. On the other hand, in recent decades composers and sonic artists have explored the perceived temporal evolution of


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soundscapes by carefully assembling samples of field recordings carried out over days and weeks. Inspired by these developments and recently published wetland preservation regulations, an original sonic time-lapse tool was designed and implemented to study and highlight the cultural heritage of three distinctive wetlands of the city of Valdivia [2].

### Wetlands Soundscapes

Wetlands play an important role in the southern Chilean city of Valdivia, forming an intricate network of river channels, lagoons, swamps and other fluvial manifestations. In recent decades the rapid urban expansion of the city linked to housing developments has damaged and seriously constrained these natural areas. While there have been some projects involving wetland stewardship in the last decade, there is still a significant lack of awareness among Valdivia's citizens of the environmental relevance of urban wetlands [3]. Inspired by this issue, I carried out 24-hour continuous field recordings of wetlands located in three distinctive areas of Valdivia. The first chosen location was the Miraflores wetland, located in a predominantly industrial area that includes two major wood-chipping factories working 24 hours a day, six days a week. The second chosen location was the Huachocopihue-Parque Urbano wetland, situated in a densely populated urban zone. The last chosen site was a wetland located at the confluence of the Cruces and Cau Cau rivers. This area is distinctive for its unique wildlife activity, which in 2003 was seriously affected by toxic substances released near the riverbed of the Cruces River by a pulp and paper factory [4].

### Sonic Time-Lapse

I implemented a simple and straightforward sampling method in order to obtain short sound samples for each recorded hour at each of the three wetlands [5]. Ten-second samples were randomly selected for each recorded hour of the day and modified by creating a 2-second fade-in and fade-out dynamic transition to each sample. A time-lapse track was then assembled by adding in chronological order the 24 recorded samples for each chosen location (Fig. 1). The resulting montage provided a naturally compressed 4-minute time-lapse montage sequence related to the original 24-hour continuous field recording. Figure 2 shows compared spectrograms of the Miraflores wetland soundscape. The top part of the figure shows the original 24-hour recording spectrogram, while the bottom figure shows the time-lapse montage track created by adding the 24 short recorded samples mentioned above.

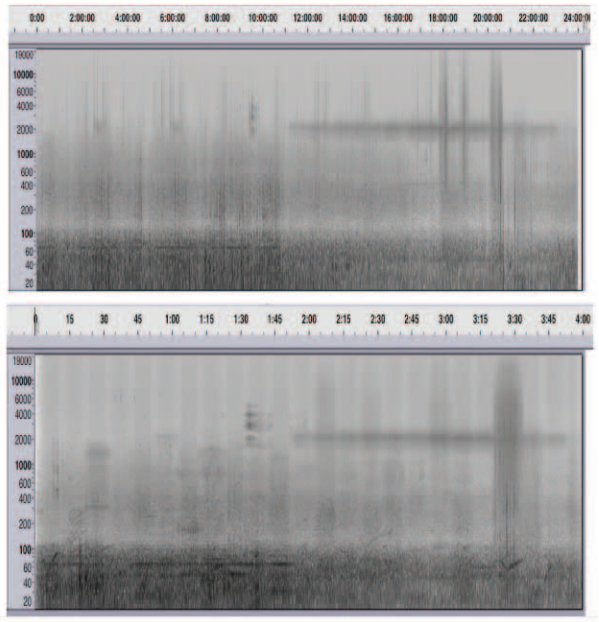

**Fig. 2.** Comparison of spectrograms of 24-hour continuous field recording and a 4-minute time-lapse montage of the Miraflores wetland. (© Felipe Otondo)

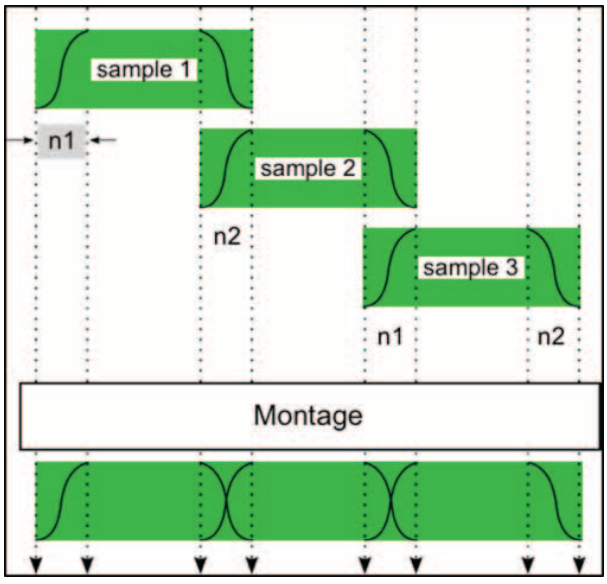


**Fig. 1.** Diagram of the time-lapse montage method. (© Felipe Otondo)

**Fig. 3.** A listener inside the installation space. (© Felipe Otondo)

### Sound Installation

As a way of exploring practical applications of the time-lapse application, I devised and implemented a sound installation in collaboration with the architects Roberto Burgos and Carolina Ihle at the Architecture School of Universidad Católica in Santiago. The main purpose of the installation was to create an immersive listening space where participants could freely explore the sonic time-lapse of each of the three wetlands mentioned above. White hanging straps were used to create three individual listening spaces inspired by the shapes of inverted wetland plants. Each listening space was provided with a pair of headphones hanging from the ceiling, playing one of three wetland time-lapse mixes in a continuous loop (Fig. 3). The installation ran for three weeks and was visited by more than 200 people who provided very positive feedback.

The sonic time-lapse method presented in this article provides an original approach to the study and stewardship of the natural sonic heritage of urban wetlands. The time-lapse capsules of each wetland provided a simple but straightforward way of engaging installation participants with wetland wildlife activity as well as a potential tool to measure the impact of anthropogenic generated noise on natural habitats.


### Acknowledgment

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ANNOUNCEMENT

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**DR. NIGEL HELYER** *is a contemporary artist whose work contains several highly developed creative interests. He produces intriguing and continually inquisitive work of international standard and is able to bring new scientific and artistic partners into truly collaborative artistic projects. He is able to do this through his capacity for deeply immersive site-research and his commitment to collaborative and interdisciplinary enquiry. Nigel is Adjunct Professor in Media, Music, Communication and Cultural Studies at Macquarie University, Australia.*

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### VALDIVIA'S WETLAND SOUNDSCAPE (5:01)

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Composed by Felipe Otondo, 2016.

This audio track was one of the outcomes of an interdisciplinary research project aimed at exploring the temporal evolution of urban wetlands' soundscapes in the city of Valdivia in the south of Chile. Continuous 24-hour stereo field recordings were carried out at the Parque Urbano wetland using a specially designed recording system that included a spaced-pair microphone technique aimed to capture timbral and spatial sonic attributes of the wetland's wildlife activity. Field recordings in this wetland were carried out at noon on Friday, 15 March 2015, at the height of the toads' breeding period, at a distance of four meters from the marsh wetland area. I edited 24 short audio samples of each recorded hour and assembled them chronologically to create a 5-minute time-lapse audio montage aimed at capturing the 24-hour sonic evolution at the specific wetland. On the one hand, this method provides an effective and subtle listening method/tool that enables listeners to appreciate in full the richness and diversity of the wetland's wildlife. On the other hand, it became an effective acoustic monitoring tool to recognize the recurrence of particular sonic events within the wetland area and assess the impact of anthropogenic-generated noise from neighboring housing developments. I used audio files created using the time-lapse montage method described above were used to create two sound installations at a university and a museum in the cities of Santiago and Valdivia. Dozens of people provided very positive feedback about these installations. Participants' responses showed that the proposed sonic time-lapse method is a simple but powerful tool to engage audiences from various backgrounds with the cultural heritage of urban wetland soundscapes.

**FELIPE OTONDO** *(1972) studied composition at the University of York, U.K., with Ambrose Field and Roger Marsh, focusing on electroacoustic composition and experimental theater. Festivals in more than 30 countries across Asia, Europe and North and South America have played his music. Felipe is currently a senior lecturer at the Institute of Acoustics at Universidad Austral in Chile.*

### RECORDED AUDIO RESPONSES (5:36)

Contact: Rebecca Hackemann. Email: <me@rebeccahackemann.com>. Web: <www.utteraton.com>, <www.rebeccahackemann.com/the-public-utteraton-machine.html>.

Anonymous responses, streets of Brooklyn and Queens, 2015.

Recorded audio responses to questions about public art in general and to Jeff Koons's *Split-Rocker* in particular, which was visible in a viewer. The Public Utteraton Machines, an interactive public art project by Rebecca Hackemann in the form of solar-powered recording telephones on the sidewalks in Brooklyn and Queens, New York, 2015, recorded the audio.

The Public Utteraton Machines are interactive public artworks that look like public telephones from the twentieth century. Their aim is to find out what people think about public art in New York or other cities. They record opinions and feature a push-button survey. The project's aim is to intervene into the practice and discourse of public art in areas of New York City where public art is not normally found. The Public Utteraton Machines use audio recordings to ask passersby whether they have seen other public art and what they think of it and then collect that data quantitatively.

**REBECCA HACKEMANN** *is a British/German/American conceptual artist/researcher who works in a variety of media such as stereo photography, 19th century photographic processes, projection, drawing and public art. Her work is concerned with viewer interaction, perception and the construction of virtual, private and public space. She is a PhD candidate at Chelsea College of Arts London and assistant professor at Kansas State University, Manhattan, Kansas, U.S.A.*