

Windmills of Lapua

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ABSTRACT

This paper presents background information and the programme note for the music submission 'Windmills of Lapua,' which was presented at the WFAE 2023 Conference Listening Pasts – Listening Futures on Friday March 24th, 2023.

1. PROGRAMME NOTE

“Direct impacts of wind farms can include collision and barotrauma (damage to tissues from air pressure changes around turbines); indirect impacts can include habitat loss (roosts, commuting routes and foraging areas) and fragmentation.” [1]

This piece comments on the impact of wind farms on the bat population. It uses field recordings of windmills taken in Lapua, Finland using microphones that pick up normally inaudible frequencies (such as contact and electromagnetic mics), combined with various field recordings of bats.

Originally, the piece explored the use of field recordings with the 3D IKO loudspeaker and investigated how a sense of place can be created using a speaker that projects sound from the inside outwards using the sound reflections of the performance space (Figure 1).



Figure 1. Performance of 'Windmills of Lapua' with the Sonible IKO loudspeaker at St Alfege's Church, Greenwich as part of the University of Greenwich Loudspeaker Orchestra Concert series, 11th May 2022.

2. BACKGROUND

In 2019 I went on a two-week residency in Lapua, Finland at the Vanha Paukka Cultural Centre. I decided to

spend the time taking field recordings and these included recordings of wind turbines near Lapua (Figure 2), the quietness of the dense Finnish forests such as Kyrkosjarvi and beauty of dawn choruses surrounding lakes at Koli National Park.

In 2020, I was recording sounds for a soundwalk commission as part of the Ten Acres of Sound festival in Stirchley, Birmingham. I made a DIY bat detector and recorded a Daubenton bat above the River Rea and this is where my love for recording bats started. I followed this with my piece 'Nocturnal Insights' which uses bat recordings taken across Hertfordshire, Birmingham and Dorset. It comments on the effect of light pollution and the man-made world on bats and other nocturnal species. By this time, I had recorded four different bat species: Pipistrelle, Soprano Pipistrelle, Daubenton and rare Greater Horseshoe. I love the magic of making these inaudible frequencies audible to the human ear and the sense of awe and inspiration when you first hear these unique sounds of echolocation.

In 2022, I was awarded a Develop Your Creative Practice grant from the Arts Council England and was keen to explore these bat recordings further. After looking at the impact of wind farms and wind turbines on bats I decided to create a piece that highlights this and use my recordings from Lapua.



Figure 2. Recording windmills in Lapua, Finland with contact microphones, 28th August 2019.

3. THE IKO

This work has been composed for the Sonible IKO loudspeaker using third order B format ambisonics and

decoded for a multichannel system for the performance at the WFAE 2023 conference.

At the time of composing this piece, the specialist IKO loudspeaker was the only one in the UK, out of six in the world.

“The IKO emits highly directional sound beams in a full 360 degrees. These direct beams combine with reflected sound from the walls, ceiling and floor of a site, to create an exceptional spatial impression. In contrast to the usual ‘outside-in’ multichannel speaker systems, it is an ‘inside-out’ system” [2].

The aim of this project was to compose a piece that highlights the impact of wind farms on the bat population, but also develops my knowledge and skills of spatial composition and investigates how spatial practices and workflows can be applied when working with the IKO loudspeaker and environmental sound.

Acknowledgments

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Figure 3. Sonible IKO loudspeaker. Image credit ©Sonible.

4. REFERENCES

- [1] Bat Conservation Trust, “*Wind Farms and Wind Turbines – Threats to Bats.*” <https://www.bats.org.uk/about-bats/threats-to-bats/wind-farms-and-wind-turbines> (accessed July 13, 2023).
- [2] University of Greenwich, “*IKO – Spatial Aesthetics.*” <https://www.gre.ac.uk/research/activity/las/iko-project> (accessed July 13, 2023).