

# Spatial Fieldrecordings: Photogrammetric Listening and the Expanded Practice of Environmental Capture

**Stefan Maier**

University of Applied Arts Vienna  
Schanzstrasse 15-17/29  
stefan.maier@uni-ak.ac.at

## **Keywords**

photogrammetry; field recording; spatial sampling; interactive performance; computational imaging

## **Introduction**

Field recording has historically been understood as a practice of environmental listening. Rooted in soundscape studies and acoustic ecology, it attends to the fleeting sonic traces of environments and the situated act of listening. This paper asks what happens when the epistemologies of field recording are expanded beyond the audible and applied to the spatial, visual, and computational reconstruction of place. My artistic research introduces *spatial fieldrecording*: a hybrid methodology in which photogrammetry functions as a form of extended listening, a way of treating photographic capture as the collection of spatial samples rather than visual representations. In this approach, the camera becomes an instrument not of depiction but of inquiry, gathering overlapping photographic views that are later reassembled into point clouds: volumetric placeholders of a site.

I conceptualise photogrammetric datasets as spatial fieldrecordings that operate analogously to sound recordings: they are grounded in situated capture, attuned to environmental conditions, and profoundly shaped by what the apparatus can and cannot perceive. Most importantly, they are incomplete. Only what is seen by the lens, what is accessible, reflective, stable, sufficiently lit, and not occluded, becomes part of the reconstructed field. This selective visibility establishes the reconstructed space as a *placeholder*: a fragmentary, indexical, and necessarily partial stand-in for the site, suspended between documentation and speculation.

Through case studies from Örö Island, I show how photogrammetric reconstructions enable new modes of revisiting, narrating, and transforming places through artistic research.

## **Methodology: From Environmental Capture to Spatial Reconstruction**

The methodological framework of this research unfolds across three interrelated stages: environmental capture, computational reconstruction, and performative recomposition. Together, they articulate spatial fieldrecording as a process that is at once sensory, technical, and speculative.

Rather than treating photogrammetry as a neutral imaging pipeline, the method foregrounds the situated, embodied, and relational conditions under which spatial samples are produced. This approach understands the reconstructed image-space not as representation but as a material negotiation between site, sensor, and recordist.

### **Environmental Capture as Expanded Listening**

At the foundation of spatial fieldrecording lies an expanded notion of listening. Field recording, in the tradition of acoustic ecology, has always been more than the extraction of sound; it is a practice of *being-within* an environment, an attunement to the vibratory relations that constitute a place. Listening situates the recordist within the world as an active participant rather than an external observer, a mode of dwelling in which perception, movement, and environment continually shape one another.

Photogrammetry adopts that same ethos. Walking, circling, crouching, adjusting, waiting: the gestures of photogrammetry echo the embodied attention of on-site listening. The camera becomes a resonant companion, its sensor responding to light, texture, moisture, wind, and obstruction just as microphones respond to acoustic conditions. This entanglement of body, apparatus, and landscape reflects a new materialist perspective: the field is not simply *recorded* but *co-produced* through the encounter. What is gathered is not a view from nowhere but a contingent, situated trace of a specific moment of being-in-the-world.

In this sense, environmental capture becomes a dialogical practice: a negotiation between what the recordist seeks and what the site permits. Documentation is shaped by its own constraints of visibility, access and technical range. What cannot be captured becomes as significant as what can.

### **Computational Reconstruction as a Site of Mediation**

Photogrammetric processing converts these images into spatial data: point clouds. These computational objects are not neutral. They manifest thresholds, errors, compression, and noise, what we could identify as *resolution regimes*. Rather than treating these as technical shortcomings, my practice recognises them as *indexical traces* of environmental conditions, apparatus limitations, and moments of non-capture. The photogrammetric model is not the “thing” itself but a computational placeholder: a scaffold awaiting interpretation, recomposition, or activation.

### **Interactive Performance and Recomposition**

In live performances and interactive installations, these spatial samples are imported into the game engine Unity3D, where they become playable, navigable (re-)active environments. Sound and Image interlace: spatial samples trigger generative audio processes, and audio recordings from the same sites feedback into the visual transformations of the photogrammetric environment. The reconstructed audio-visual space becomes an instrument, not a reference or document but a performative interface.

## Case Study: Örö Island as Latent Geography

In February 2025, during an artist residency on Örö Island, a former military outpost in the Finnish archipelago, the site became both subject and collaborator in the development of my spatial fieldrecording methodology. Winter conditions dictated not only where I could move but what could be captured: snow, wind, ice, and shifting light determined which surfaces revealed themselves and which resisted documentation. Working within these constraints, I collected photogrammetric sequences of eroded shorelines, lichen-textured granite, frozen tidal pools, and sparse pine forests, alongside stereo audio recordings that traced the island's changing acoustic envelope.

Thousands of photographs were later computed into interactable spatial fragments whose structures disclose what I call *latent geographies*. These reconstructions reveal spatial relations and micro-textures that only emerge through the computational reassembly of images, yet they simultaneously expose their own incompleteness.

In subsequent performances, these fragments are imported into the Unity game engine and recomposed as a spatial narrative. Here, Örö is not replicated but reactivated: these fragments become speculative placeholders for the island's changing ecology, not representations of Örö but invitations to reimagine it.

## Conclusion

This extended abstract proposes spatial fieldrecording as a methodology for rethinking field recording, photographic capture, and computational imaging in the context of contemporary environmental and media conditions. By treating photogrammetry as a form of extended listening, it reframes photographic images as spatial samples that operate as placeholders: partial, situated, and generative. Through the case of Örö Island, it shows how these reconstructed fragments enable new narratives of presence, environmental change, and artistic speculation.

Spatial fieldrecording does not aim to stabilise place but to keep it open, acknowledging that placeholders remain productive precisely when they do *not* harden into stand-ins for the world, but invite new ways of sensing, remembering, and engaging with it.