SOUNDING THE UNHEARD: REVIVING MALAYSIA'S NATURAL-CULTURAL SOUNDSCAPE THROUGH LIVE ELECTROACOUSTIC NARRATIVES

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ABSTRACT

This article introduces Nada Sfera, a live electroacoustic composition method that integrates Malaysia's ecological environments with its cultural and mythological narratives. In this study, *environment* refers to the sonic properties of ecological habitats—such as caves, mangroves, and coral reefs—while *ecological memory* denotes how these sounds encode temporal, cultural, and ecological knowledge. By embedding these environments within Malay folklore and Orang Asli oral traditions, Nada Sfera positions sound as both ecological record and cultural text. Custom-built binaural streaming devices capture site-specific soundscapes, which are manipulated in real time through Pure Data and Ableton Live. Distinct habitats contribute structurally differentiated materials: caves with resonant overtone layering, mangroves with polyrhythmic cycles, and coral reefs with granular inharmonic textures. These sonic identities are reframed through *performative cultural memory*, where live performance re-enacts ecological and cultural continuity, and through *cultural re-imaging*, where traditional narratives are reshaped via contemporary sonic practice. Rather than equating ecological storytelling with Chion's reduced listening, this project emphasizes re-embedding sound into its cultural and ecological context. Ultimately, Nada Sfera demonstrates how live electroacoustic performance—still rare in Malaysia—can function as eco-cultural storytelling, a revival of sonic heritage, and a bridge between environmental awareness and cultural identity.

Keywords: Soundscape, Acoustic Ecology, Electroacoustic, Music Composition, Internet of Things

INTRODUCTION

The intersection of live performance and environmental soundscape presents fertile ground for rethinking how we experience place, culture, and sound. In this article, the term *environment* refers to the sonic attributes of ecological sites such as caves, mangroves, and coral reefs, while *ecological memory* denotes the way these sounds encode temporal and cultural knowledge—whether seasonal cycles, species signatures, or communal practices of remembrance. Clarifying this distinction allows us to situate sound both as a physical phenomenon and as a medium of continuity between humans and nature. Traditionally, live music denotes the immediate realization of sound by performers in a shared time and space, enabling collective sensory engagement (Gottschalk, 2016). Unlike studio-based reproduction, which fixes sound, live performance is imbued with spontaneity, affective intensity, and relational presence (Campbell, 2017). This paper extends that idea into electroacoustic soundscape composition, asking: *How might the real-time performance of environmental soundscapes promote eco-cultural consciousness and artistic resonance?* (Figure 1).

Soundscape composition, pioneered by R. Murray Schafer and advanced by Barry Truax and Hildegard Westerkamp, frames biophony (animal sounds), geophony (non-biological natural sounds), and anthrophony (human-made sounds) as compositional materials carrying ecological meaning (Truax, 2008; Westerkamp, 2002). Yet most works remain fixed media, presented in galleries or acousmatic concerts. In Malaysia, live performance that integrates site-responsive or streaming soundscapes remains rare. Projects such as Locus Sonus' *SoundMap* and *Open Microphone* have demonstrated global live environmental streaming since 2005 (Sinclair, 2018). However, these initiatives often remain within experimental sound art and lack cultural embedding. This paper introduces Nada Sfera, an off-grid device and method for retrieving real-time soundscape recordings. The system has been demonstrated and applied in an electroacoustic composition that integrates live ecological sounds with indigenous narratives, particularly those rooted in Proto-Malay and Orang Asli traditions, in a work entitled *Seed of Life (SoL) 3: Black Forest*.Emerging during the COVID-19 pandemic, Nada Sfera employs binaural streaming devices to capture sonic environments and situates them in performance through real-time manipulation in Pure Data and Ableton Live.

This approach transforms overlooked sonic habitats—caves, mangroves, and coral reefs—into immersive performances. Each zone is treated according to its sonic character: caves emphasize resonance and overtone layering, mangroves employ polyrhythmic density, and coral reefs highlight inharmonic spectral fragmentation. By embedding these environments in cultural narratives such as the Batu Belah Batu Bertangkup myth, the project repositions soundscape as a form of *performative cultural memory*. Here, mythology is not equated with cultural memory but acts as one of its vessels—translating ecological experiences into enduring narrative form. Finally, this paper distinguishes *ecological storytelling* from Chion's (2019) concept of reduced listening. While reduced listening brackets sound from its source, ecological storytelling re-embeds it within context, making sound both a medium of cultural re-imaging and a tool for ecological awareness.

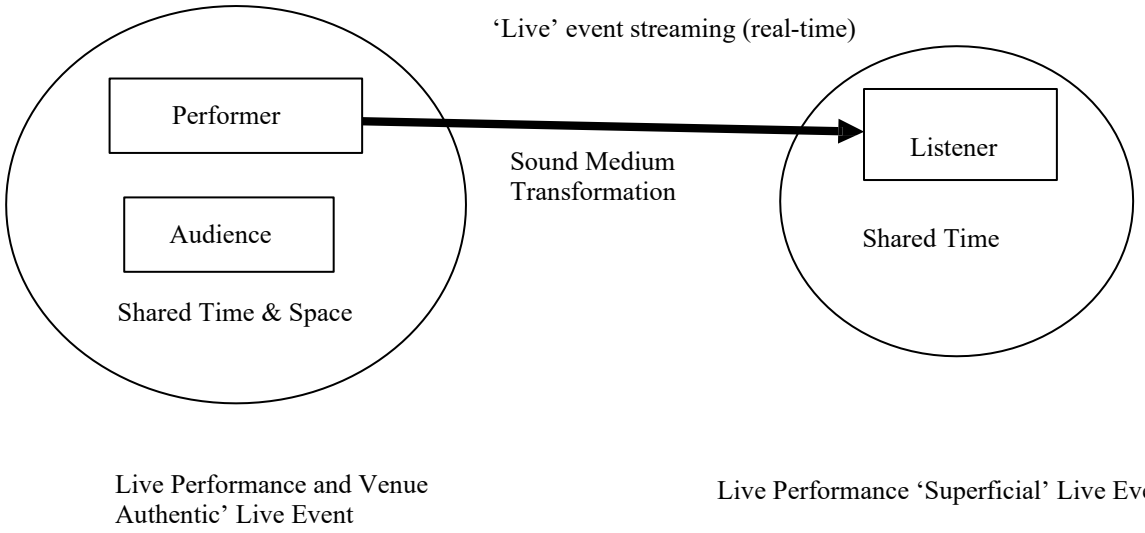

Figure 1: Live performance and venue details, visual and acoustic are streamed in real-time to emulate real-world music performance experience

UNHEARD MALAYSIA NATURAL SONIC CULTURAL AND HERITAGE

Malaysia's landscapes encompass a wide array of acoustically distinctive habitats across the Sundaland biogeographical zone (Farina, 2013; Krause, 2016). While these environments—ranging from rainforests and caves to mangroves and coral reefs—are widely celebrated in visual and recreational terms, their sonic identities remain relatively underexplored in cultural discourse and musical practice. A handful of high-quality rainforest recordings circulate online through platforms such as Wild Ambience and Nature Soundmap, yet many other habitats, including caves, swamp lakes, and reef ecosystems, are comparatively underdocumented. This underrepresentation has consequences: when sonic environments are neglected, their potential as cultural heritage and as ecological record is diminished, reducing the possibility of building meaningful connections between communities and their acoustic environments.

The present project therefore highlights "unheard" soundscapes as a form of living heritage. The selection of specific sites is guided not only by ecological richness but also by their cultural and mythological significance. For example, habitats tied to Orang Asli communities (Figure 2), such as the coastal mangroves inhabited by the Orang Seletar, provide both ecological complexity and narrative resonance. Here, myths like *Batu Belah Batu Bertangkup*—the story of a grieving mother and a mudskipper (ikan belacak)—function as interpretive frameworks for listening. Mythology in this sense is not synonymous with cultural memory, but rather one of its primary vessels, a symbolic and oral means by which ecological experience is translated into narratives of identity, survival, and spirituality (Benjamin, 2019; Ali, 2002). By integrating myth with environmental sound, Nada Sfera repositions sonic environments as cultural texts that can be performed and reimagined in the present.

Equally important are the distinct acoustic characteristics of each ecological zone, which shape both how they are experienced and how they are translated into compositional structure. Caves produce long reverberant decays and overtone-rich resonances, qualities that invite compositional strategies such as layered sustain, convolution with impulse responses, and gradual spectral accretion. Mangroves, by contrast, are dense with insect choruses and tidal rhythms, producing a mid-frequency texture punctuated by avian calls and amphibian croaks. These environments lend themselves to polyrhythmic structuring and

stochastic gating, emphasizing cyclical density and swarm-like unpredictability. Coral reefs, meanwhile, generate high-frequency, inharmonic textures through the activity of snapping shrimp and other aquatic species, producing granular, impulsive sonic fabrics that are well suited to pointillistic spatialization and granular synthesis. In treating each environment differently, the project demonstrates how ecological memory is not a general abstraction but an acoustically grounded phenomenon, carried by habitat-specific sonic properties. When framed through cultural narrative, these properties become performative cultural memories: living, enacted links between environment, story, and community.

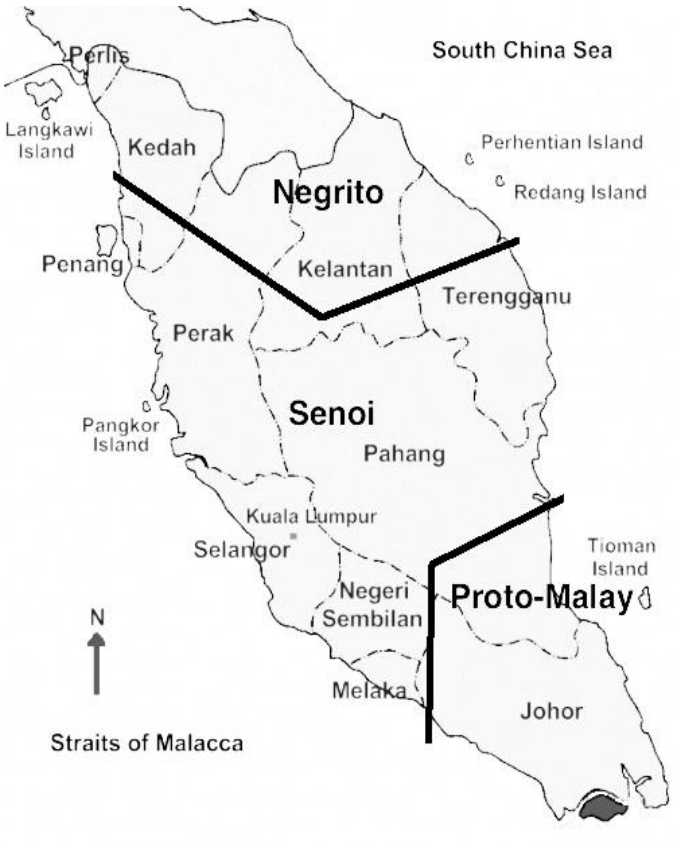

Figure 2: Possible area of the unheard Malaysia natural-cultural sites soundscape based on indigenous people community group locations

HYBRID GENRE: ELECTROACOUSTIC SOUNDSCAPE

The integration of found soundscapes with electroacoustic music generates a hybrid genre that balances fidelity to ecological and cultural specificity with the transformative power of contemporary compositional techniques. Historically, the roots of this practice can be traced to early twentieth-century experiments that expanded the definition of musical sound. Ferruccio Busoni's *Sketch of a New Aesthetic of Music* (1907) anticipated the role of technology in widening the musical palette, while Luigi Russolo's *Intonarumori* and *L'arte dei rumori* (1913) introduced mechanical instruments designed to produce noise as a legitimate musical material. Although Russolo did not engage with electronic sound per se, his work legitimized the incorporation of non-pitched, environmental timbres. Edgard Varèse later concretized these ambitions in works such as *Déserts* (1954) and *Poème électronique* (1958), where electroacoustic resources shaped new conceptions of sonic mass and spatial projection.

By the mid-twentieth century, figures such as Pierre Schaeffer, Karlheinz Stockhausen, and Iannis Xenakis advanced electroacoustic practice through tape manipulation, montage, synthesis, and algorithmic structuring (Manning, 2013). In parallel, Schafer's soundscape theory positioned acoustic environments as compositional frameworks, introducing the categories of keynote, soundmark, and signal (Schafer, 1993). Barry Truax and Hildegard Westerkamp extended these ideas, emphasizing the ecological and ethical stakes of soundscape composition (Truax, 2008; Westerkamp, 2002). Later, Michel Chion elaborated a taxonomy of listening—causal, semantic, and reduced (Chion, 2019)—which reframed the detachment of sound from source not as a loss, but as a compositional strategy.

Nada Sfera situates itself within this history while proposing a new category: *electroacoustic soundscape composition*. In this practice, environmental recordings are not left untouched, nor are they abstracted beyond recognition. Instead, they are manipulated in ways that preserve ecological identity while situating sound within new performative contexts. This involves moving fluidly among Chion's listening modes: reduced listening to highlight timbral qualities, causal listening to situate sound within its environment, and semantic listening when sounds act as culturally coded signals within narrative frames. Importantly, electroacoustic music should not be understood as inherently non-linear. Works in this project combine linear trajectories—such as those tied to tidal cycles or diurnal rhythms—with non-linear processes such as swarm textures or stochastic overlays. The hybrid genre thus emerges as a balance of ecological fidelity, cultural embedding, and artistic transformation, with structure shaped by both the acoustic affordances of habitats and the narrative frameworks of myth and memory (Figure 3).

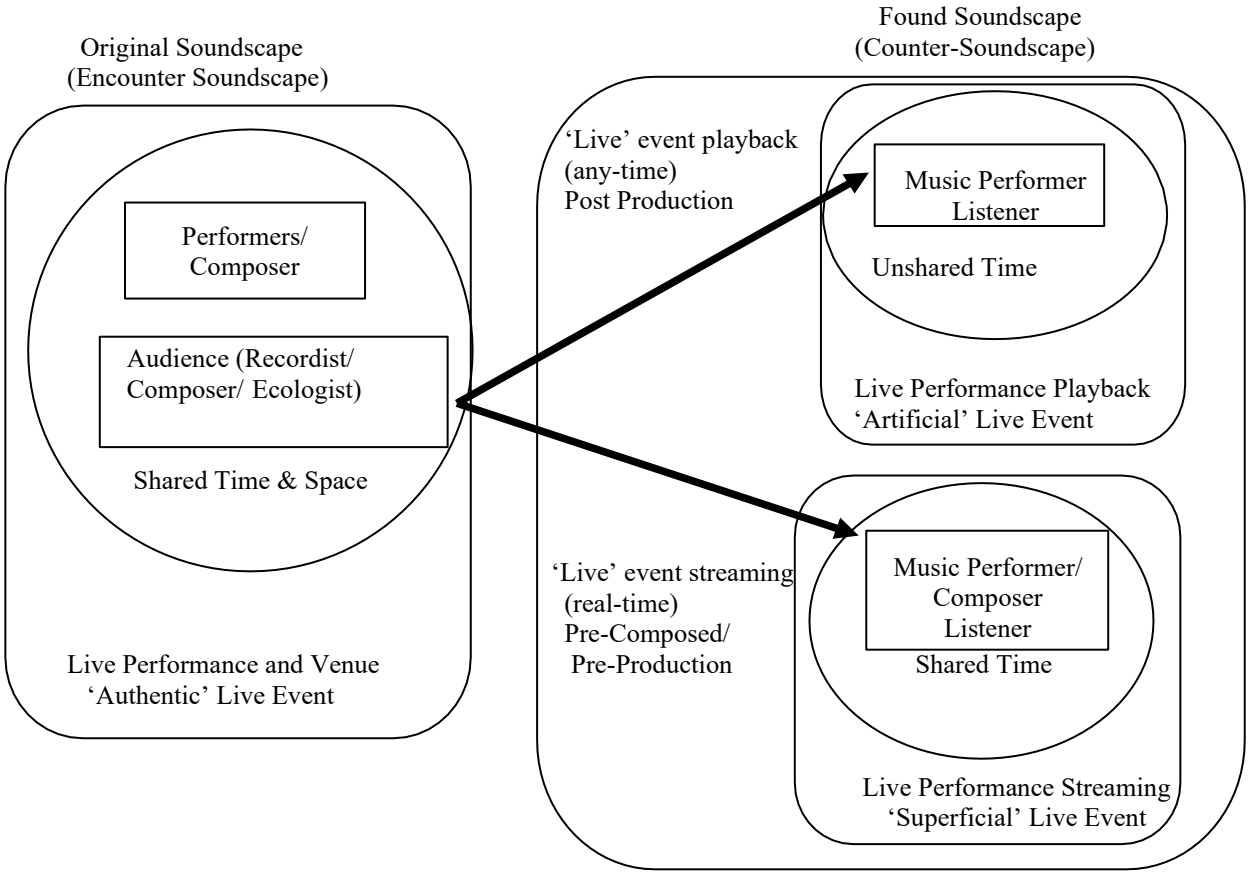

Figure 3: Soundscape sonic event transformation from shared time and space to unshared time and shared time.

LIVE ELECTROACOUSTIC SOUNDSCAPE: NADA SFERA

The Nada Sfera project emerged as a response to the limitations imposed by the COVID-19 pandemic, particularly the inability to physically access ecologically significant and sonically rich environments. It represents a novel convergence of ecological awareness, cultural heritage, and real-time digital audio performance. Rather than treating nature as a passive recording subject, Nada Sfera repositions the natural environment as a live performance collaborator, enabling composers and sound artists to stream, manipulate, and respond to field soundscapes in real time. This shift in methodology from studio-based acousmatic soundscapes to live-streamed ecological interaction provides a more dynamic and performative interface between human creativity and natural processes. It expands the scope of electroacoustic music practice to include environmental immediacy, technological accessibility, and cultural resonance, especially in Southeast Asian contexts where landscape and mythology are deeply entwined.

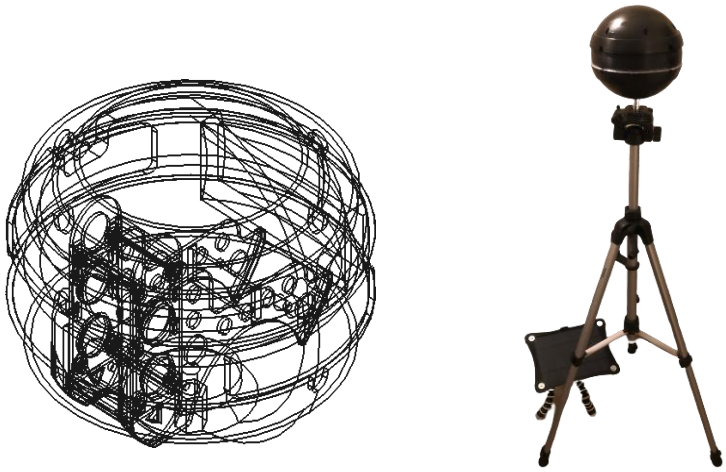

Figure 4: Nada Sfera device with 3-D printed head-size binaural audio recorder streamer based on Locus Sonus Streambox device. Audio example: https://l1nq.com/pU8QH.

From a design perspective, Nada Sfera is engineered as a compact, modular, and field-resilient streaming device capable of long-term deployment in remote outdoor locations. Constructed using fused deposition modelling (FDM) with PETG (polyethylene terephthalate glycol) filament, the device offers weatherproof durability while remaining lightweight and customizable (Szykiedans et al., 2017). Its configuration includes support for binaural, stereo, or mono microphone arrays, providing spatial richness in captured audio. The solar-powered energy system ensures uninterrupted operation in off-grid areas, and the inclusion of Hardware-on-Top (HAT) modules allows integration of environmental sensors, offering opportunities for real-time data collection that can inform compositional choices or research in sound ecology. The design was heavily inspired by the Locus Sonus Streambox, a pioneering open-source platform that has supported environmental streaming initiatives since 2005 (Sinclair, 2018). However, Nada Sfera adapts this model specifically for Southeast Asian climates and cultural needs, extending its functionality into performance-based contexts.

The pilot deployment site was strategically selected in the mangrove forests of southern Peninsular Malaysia (Figure 5), particularly near the coastal habitats of the Orang Seletar (Video 1: https://youtu.be/paLKTrUvk3w), an indigenous Proto-Malay community whose livelihood and cosmology are closely tied to aquatic environments. This region is rich in biophonic and geophonic textures—from the rhythmic splashing of tidal waters to the insect and amphibian choruses—that serve as both musical raw material and cultural signifiers. One of the folktales linked to this location is *Batu Belah Batu Bertangkup*,

a tragic myth involving a grieving mother and a mudskipper (*ikan belacak*)—a species native to mangrove ecosystems and symbolic of survival in difficult conditions (Toh, 2020). By embedding such cultural narratives within sound-based compositions, Nada Sfera offers an eco-cultural framework where performance becomes an act of storytelling, remembrance, and ecological advocacy. The selection of such a mythologically charged site allows the work to tap into embodied and oral histories of local communities, recontextualizing these through contemporary sonic media.

To ensure stable real-time transmission of audio data, network mapping was conducted using the OpenSignal platform to locate zones with adequate cellular reception. In areas of poor connectivity, signal boosters were installed to amplify reception, enabling continuous audio streaming to a remote server accessible via tools like Pure Data and Ableton Live. This technical layer bridges the physical distance between sound source and performance space, allowing artists to work with "live" ecological materials despite being hundreds of kilometers away. This model supports an acoustic ecology paradigm as articulated by scholars such as Farina (2013)**,** Westerkamp (2002**)**, and Montgomery (2018), where the sonic characteristics of place are seen not merely as objects of study but as agents of aesthetic and ethical engagement. Nada Sfera thus situates itself at the intersection of technological innovation, cultural reanimation, and environmental stewardship, making it a compelling tool for composers, sound artists, educators, and researchers working in transdisciplinary spaces.

Figure 5: Onsite survey for preliminary observation on the unheard Malaysia natural-culture biophony and geophony and study on its possible sonic narrative for Nada Sfera streamer installation at Kukup island mangrove forest park, Johor Malaysia. Audio example: https://youtu.be/wsdi200jya0

ARTISTIC APPLICATION AND PERFORMANCE PRAXIS

The artistic application of Nada Sfera extends beyond its technical novelty to propose a new mode of co-creation between human and non-human agents. Its modular, weather-resilient streamers are capable of capturing binaural and stereo audio over long durations, powered by solar systems and linked to performance spaces via cellular networks. Incoming streams are ingested and manipulated through Pure Data (Pd) using open-source externals such as PdLocusonus, then further processed and spatialized within Ableton Live. The technological system is deliberately lightweight and adaptive, designed not only for ecological research but also for cultural performance.

In performance, the acoustic distinctions of each habitat are translated into compositional form. Cave recordings, with their natural reverberance, are used to generate layered resonances and slowly evolving spectral textures, giving structure to large-scale sections. Mangrove streams, dominated by dense insect choruses and tidal pulses, are translated into polyrhythmic layers and cyclical gestures that foreground ecological cycles. Coral reef recordings, characterized by high-frequency inharmonic bursts, inspire granular processing and pointillistic spatialization, producing sonic fabrics that contrast sharply with the long decays of cave material. In each case, ecological difference is not simply documented but structurally encoded into the performance.

The work also operationalizes Chion's semantic mode of listening by linking ecological sounds to culturally coded gestures. In *Seed of Life (sol) 3: Black Forest*, for example, mudskipper calls from mangrove environments are paired with short, glissandi-like gestures by Korean percussionists, creating an indexical link to the *Batu Belah Batu Bertangkup* myth. Tidal pulses cue low drum swells that structure sectional transitions, while cave echoes trigger bowed cymbal tones designed to extend and dramatize natural decays. These mappings exemplify how semantic listening can function not in linguistic terms but in cultural-symbolic ones, transforming ecological signals into narrative signs.

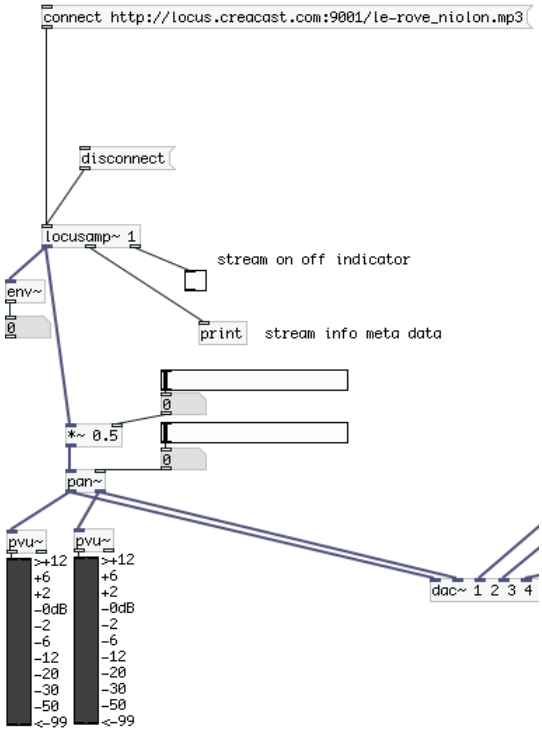

Figure 6. an example of multiple 'live' found-soundscape streaming from deployed Nada Sfera

streamer retrieved and feed into Pure Data using PdLocusonus external library patch Spatial dramaturgy is equally central. Performers move through choreographed trajectories that correspond to the distribution of live-streamed layers, turning the stage into an acoustic architecture in which audience and performers are immersed. Real-time contingency is preserved through indeterminacy: streams may fluctuate in density or content, and performers respond via graphic notation and improvisatory prompts. Even when pre-recorded materials must substitute for live streams due to bandwidth constraints, protocols of "first hearing" ensure spontaneity, aligning with Christopher Small's (1998) notion of musicking as dynamic ecological interaction (Figure 7 and 8).

Ecological storytelling here is clearly differentiated from reduced listening. Rather than bracketing context, the project deliberately re-embeds sound within ecological and cultural frameworks, inviting audiences to hear sonic materials not merely as aesthetic textures but as heritage and as ecological testimony. The distinction between environment and ecological memory is made audible: environments provide material in the form of sound, while ecological memory emerges through the way these sounds carry temporal, cultural, and mythic resonance. In performance, this memory is enacted as *performative cultural memory*, a live reanimation of ecological and cultural traces that affirms sound as a medium of continuity, identity, and renewal.

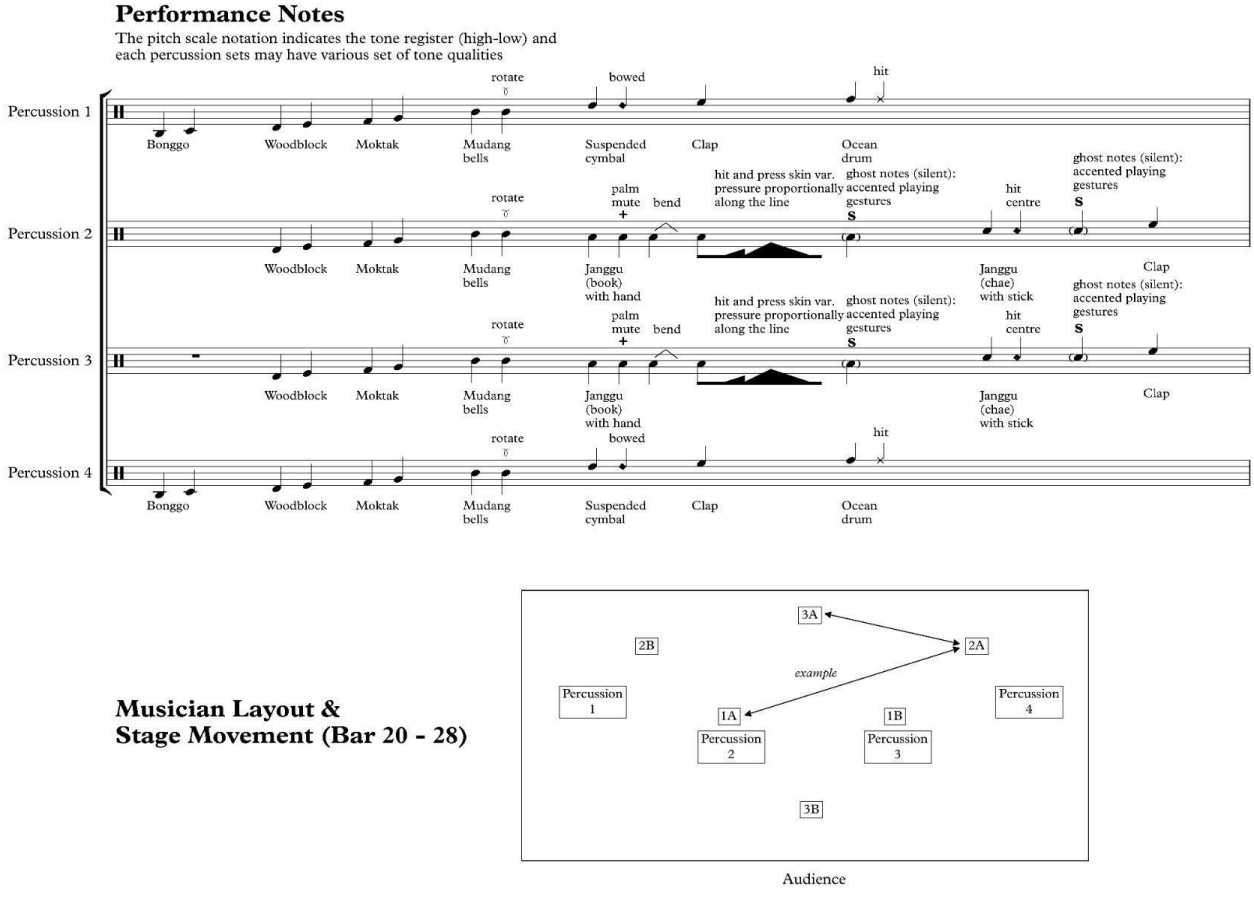

Figure 7: Percussion ensemble instrumentations and choregraphy notation example for acoustic spatial cue performance in *Seed of Life (sol) 3: Black Forest* by Ainolnaim Azizol 2021.
Full score: shorturl.at/eftuG

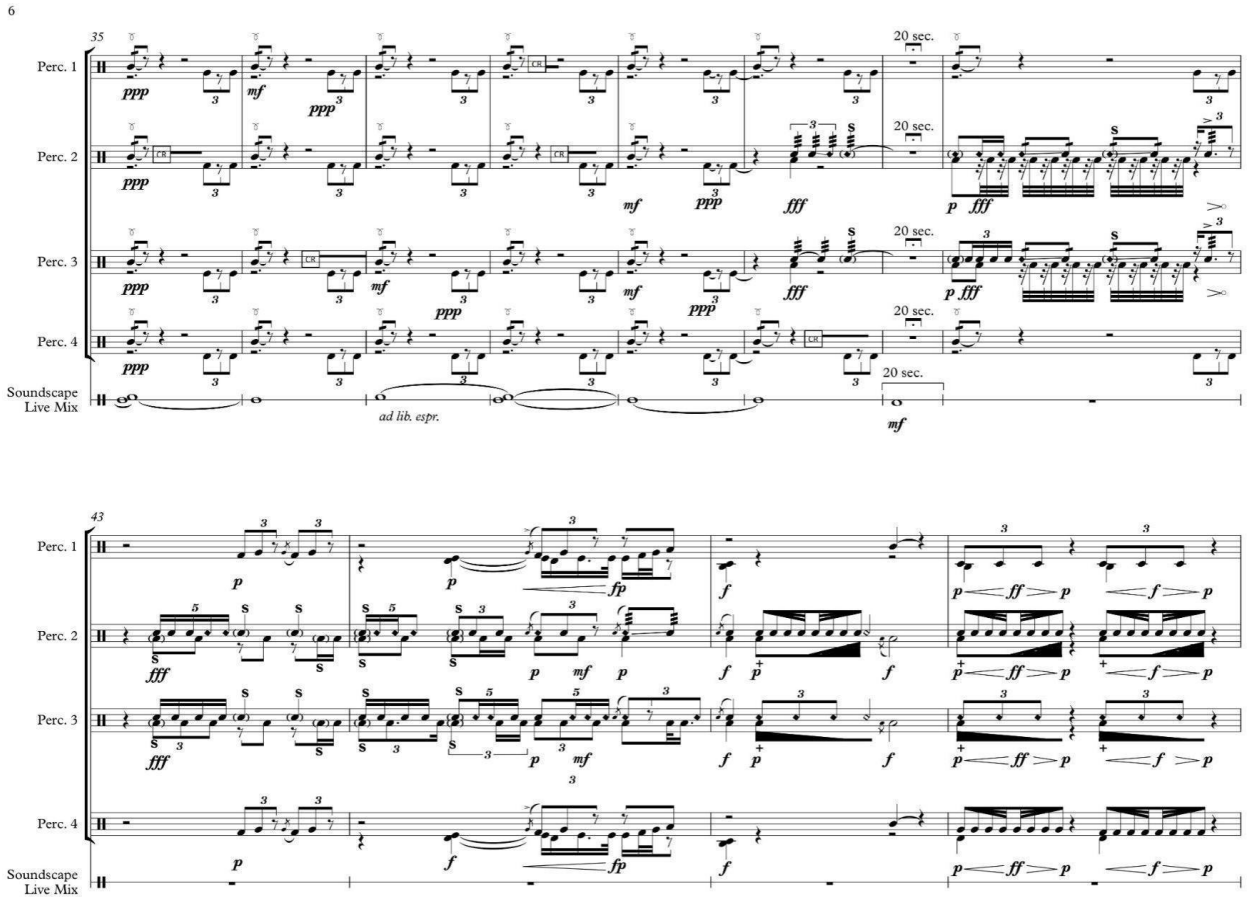

Figure 8: Call and response section as notated on the score with a boxed labelled with [CR]; bar 35 percussion 2, bar 36 percussion 3, bar 38 percussion 2 and so on.

Due to pandemic limitations, the work was first presented in telematic form during a Zoom reading session in July 2021. Although real-time streaming was replaced with pre-recorded environmental audio clips (due to latency and bandwidth constraints), the unpredictability was preserved by ensuring that performers experienced the material for the first time during the session. This retained the piece's spirit of spontaneity, echoing musicking as ecological interaction (Small, 1998)—where the interplay between performer, environment, instrument, and listener unfolds as a dynamic and mutually responsive system. Ultimately, the Nada Sfera framework transforms electroacoustic performance into a ritual of co-existence, where natural sounds are not background material to be manipulated but equal agents of meaning, carrying with them the memory, mythology, and living resonance of their places of origin.

CONCLUSION

This study has proposed Nada Sfera as a novel approach to live electroacoustic composition that integrates Malaysia's ecological environments with its cultural and mythological narratives. By distinguishing between *environment* as the acoustic material of ecological sites and *ecological memory* as the way these sounds encode temporal and cultural knowledge, the project situates soundscapes as more than aesthetic resources. They become living archives of place, rendered performative through cultural framing and live interaction. In this framework, *performative cultural memory* is understood as the active re-enactment of cultural identity through sound, while mythology operates as one of its vessels, translating

ecological experience into narrative continuity. The artistic praxis of Nada Sfera demonstrates how distinct habitats—caves, mangroves, coral reefs—possess unique acoustic identities that can be structurally encoded in composition through resonance layering, polyrhythmic cycles, or granular fragmentation. These strategies reveal ecological differences as formal differences, ensuring that environment-specific sonic qualities are not subsumed into generalized abstraction.

In parallel, the project clarifies its position relative to existing theoretical frameworks: ecological storytelling here is not equivalent to Chion's reduced listening but rather its counterpart, seeking to re-embed sound in cultural and environmental context. Similarly, while electroacoustic music often embraces non-linear textures, the present work affirms that linear trajectories—such as those tied to tidal or diurnal cycles—are equally viable, expanding structural options rather than constraining them. Through this hybrid genre of electroacoustic soundscape composition, Nada Sfera positions environmental sound as both heritage and collaborator. It reframes live electroacoustic performance in Malaysia—still rare compared to fixed-media practice—not simply as an artistic endeavor but as an act of ecological storytelling, cultural re-imaging, and memory-work. In doing so, it contributes to broader discourses in acoustic ecology, soundscape studies, and performance studies, while foregrounding Southeast Asian perspectives within global electroacoustic practice. Ultimately, the project illustrates how unheard environments can be revived as cultural heritage, how ecological sound can function as performative cultural memory, and how live electroacoustic music can bridge the gap between environmental awareness and cultural identity in ways that are both immediate and enduring.

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REFERENCES

Azizol, A. (2017). Sonic Exploration of Alto Recorder for Nadi Bumi: Applied Research in Contemporary Classical Music Composition. *Malaysian Journal of Music*, *6*(2), 71-93. Retrieved 7 March 2021 from https://doi.org/10.37134/mjm.vol6.2.4.2017

Ali, M. (2002). 12. Singapore's Orang Seletar, Orang Kallang, and Orang Selat: The Last Settlements. In *Tribal Communities in the Malay World* (pp. 273-292). ISEAS Publishing.

Benjamin, G. (2019). 'Why you should study Aslian languages' in Research Mosaics of Language Studies in Asia: Differences and Diversity. Salasiah Che Lah & Rita Abdul Rahman Ramakrishna (eds). Penang: Penerbit Universiti Sains Malaysia, pp. 8–60. [ISBN 9789674613693.].

Campbell, I. (2017). John Cage, Gilles Deleuze, and the Idea of Sound. Parallax, 23(3), 361- 378.

Collins, N., Schedel, M., & Wilson, S. (2013). Electronic music (Ser. Cambridge introductions to music). Cambridge University Press.

Chion, M. (2019). Audio-vision: sound on screen. Columbia University Press.

Deng, Z., Kang, J., & Wang, D. (2015). 'Soundscape composition as a distinct music genre'.

In: R. Timmers, N. Dibben, Z. Eitan, R. Granot, T. Metcalfe, A. Schiavio, & V. Williamson (Eds.). Proceedings of ICMEM 2015. International Conference on the Multimodal Experience of Music. Sheffield: The Digital Humanities Institute, 2015. ISBN 978-0-9571022-4-8.

Everest, F. A., & Pohlmann, K. C. (2015). Master handbook of acoustics. McGraw-Hill Education.

Farina, A. (2013). Soundscape ecology: principles, patterns, methods and applications. Springer Science & Business Media.

Farina, A., Armelloni, E., & Chiesi, L. (2011). Experimental evaluation of the performances of a new pressure-velocity 3D probe based on the ambisonics theory. In 4th international conference and exhibition on Underwater Acoustic Measurements: Technologies and Results.

Floss Manuals (1991). Pure Data (Version 2).

Gottschalk, J. (2016). Experimental music since 1970. Bloomsbury Publishing USA. Hass. C. (2017). Microphones for nature recording 1.: types and arrays.

JKOA. 2021. Suku Kaum (Ethnicity), Jabatan Kemajuan Orang Asli Malaysia (The Department of Indegenous People Development). R

Krause, B. (2016). Wild soundscapes: discovering the voice of the natural world. Yale University Press.

Kreidler, J. (2009). Programming Music in Pd.

Lee, J. (2005). Scalable continuous media streaming systems: Architecture, design, analysis and implementation. John Wiley & Sons.

Locus Sonus. (2021, January 30). Hardware. Streambox. http://locusonus.org/streambox/ Manning, P. (2013). Electronic and computer music (Fourth). Oxford University Press. Mohd Sam, S.A. & Seow, T. W. (2013). Practice cultural of orang asli Jakun at Kampung Peta.

Montgomery, W. (2018). Writing the field recording: sound, word, environment. (S. Benson, Ed.). Edinburgh University Press.

Norhalifah, H. K., Syaza, F. H., Chambers, G. K., & Edinur, H. A. (2016). The genetic history of Peninsular Malaysia. Gene, 586(1), 129-135.

Reason, Samuel. (2020. November 06). Music Streaming Actually Existed Back In 1890.

Rumsey, F., & McCormick, T. (2014). Sound and recording: applications and theory (7th ed.). Focal Press.

Schafer, R. M. (1993). The soundscape: Our sonic environment and the tuning of the world. Simon and Schuster.

Sinclair, P. (2018, August). Locus Stream Open Microphone Project. In 2018 ICMC Preserve| Engage| Advance

Simensen, T., Halvorsen, R., & Erikstad, L. (2018). Methods for landscape characterisation and mapping: A systematic review. Land use policy, 75, 557-569.

Sori Percussion (2020. Korean Percussion. Retrieved 12 August 2021, from https://www.sori-percussion.com/korean-percussion-eng

Szykiedans, K., Credo, W., & Osiński, D. (2017). Selected mechanical properties of PETG 3- D prints. Procedia Engineering, 177, 455-461.

Tagg, J. (2012, October). A Microphone Technique for Improved Stereo Image, Spatial Realism, and Mixing Flexibility: STAGG (Stereo Technique for Augmented Ambience Gradient). In Audio Engineering Society Convention 133. Audio Engineering Society.

Toh, T. (2020). Malaysian graphic novel 'Batu Belah' gives a familiar folk tale a dark spin. Retrieved 22 January 2021, from https://www.thestar.com.my/lifestyle/culture/2020/05/17/malaysian-graphic-novel- 039batu-belah039-gives-a-familiar-folk-tale-a-dark-spin

Truax, B. (2008). Soundscape composition as global music: Electroacoustic music as soundscape. Organised Sound, 13(2), 103.

Vail, M. (2014). The synthesizer: a comprehensive guide to understanding, programming, playing, and recording the ultimate electronic music instrument. Oxford University Press, USA.

Vella, R., Drummond, J., White, G., & Marcellino, R. (n.a.). Creative Thinking with Sound and Textures. Retrieved 2 March 2021 from http://www.squelch.com.au/creativethinking/fmb.html

Vennerød, J. (2014). Binaural Reproduction of Higher Order Ambisonics. Norwegian University of Science and Technology, Department of Electronics and Telecommunications. Retrieved 11 February 2021 from https://core.ac.uk/download/pdf/30806443.pdf

Westerkamp, H. (2002). Linking soundscape composition and acoustic ecology. Organised Sound, 7(1), 51-56.