A mineral listening: digital soundscapes of geological time

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Abstract

Composed between 2020 and 2022 by Guillaume Malaret, *Érodé* is a musical piece created from field recordings at Eagles Nest, a tidal island in Australia's Bunurong National Marine Park. Based on an interview with Guillaume Malaret, this article addresses several issues concerning digital representations, renderings, and ecologies of geological, hydrological, and sonic spaces, as well as the cultural geographies of landscape, embodiment, and affect. We explore the potentials of sonic composition and geophonic recordings for mediating bodily connections with difficult-to-imagine processes, such as environmental change over deep time. Our dialogue throughout this article contributes to emerging themes in digital ecological research by focusing on the materialities of digitization, digitally mediated creative practices in sonic geography, and the importance of different affective registers for comprehending environmental transformation.

Introduction

Guillaume Malaret is a French sound artist whose creative practice involves composition, sound design, and field recording.[1] Composed between 2020 and 2022, his work *Érodé*[2] stitches together recordings of water at Eagles Nest, a tidal island in the Bunurong National Marine Park in Victoria, Australia (Figure 1). Malaret's compositions foreground the material agency of recording devices and environments, inviting listeners to comprehend environmental change across new affective registers. This article starts from an interview, conducted in October 2022

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Figure 1. Eagles Nest in the Bunurong National Marine Park, Australia, 2020. Photo by Guillaume Malaret.

between Malaret and Pauline Chasseray-Peraldi, new media and science and technology studies scholar and member of the Digital Ecologies research group, that explores Malaret's practice and its provocations for cultural geographers.[3] This interview has been collaboratively translated into English by Malaret and Chasseray-Peraldi and enriched through the co-editing process. We respond to calls for interdisciplinarity in digital ecologies[4] by investigating the particular geographies and materialities of sound recordings at Eagles Nest.[5] In doing so, we focus explicitly on how artistic field recording practices involving digital technologies can give rise to encounters with corporeally inaccessible aspects of the nonhuman world and, thus, novel sonic geographies.[6] Acknowledging the affective relationship toward the tidal island on which Malaret's composition is based, while situating it in a broader techno-cultural context, this dialogue aims to underline how artistic recording practices, as a mode of listening and a research method, can contribute to the doing of cultural geographies.

For sound ecologist Hildegard Westerkamp, 'soundscape composition is as much a comment on the environment as it is a revelation of the composer's sonic visions, experiences, and attitudes towards the soundscape'.[7] Soundscapes are a relational event between listener, composer, transient environments, unprocessed recordings, and processed sounds. As Westerkamp notes, the 'essence' of soundscape composition is in this relational assemblage and how these relationships inform 'both composer and listener about place, time, and situation'.[8] In our conversation below, we reflect on the creative practice of field recording and digital sound composition and analyze its capacities to forge affective, interpersonal, and more-than-human connections across time and space.

The authors encourage readers to take a moment to listen to the sound recordings of *Érodé* before proceeding with the text. To listen: www.guillaumemalaret.fr/erode; password: %52

Interview

Chasseray-Peraldi: *Let's start with these compositional questions of place, time, and situation. How did you encounter this site, and what made you decide to record it?*

Figure 2. A part of the ground of the tidal island of Eagles Nest, 2020. Photo by Guillaume Malaret.

Malaret:	I stumbled upon this place and visited it on 3 July 2020. I was instantly fascinated. It is along a coastal road: there are headlands revealing the ocean, a stairway leading down to the beach, and, at one end of the beach, a tidal island. I returned a few times at different hours of the day to record sound. I wanted to create a composition by capturing different parts of the island over a few weeks, reflecting its changed qualities upon each encounter. This desire came from the extreme and timeless sense of beauty and detachment I felt about the island, being surrounded by the ocean and cliffs' immensity, seeing and touching the infinite varieties of textures and colours of the minerals (Figure 2). Eagles Nest is an extraordinary case of erosion.
Chasseray-Peraldi:	*So, after this first encounter, you decided to listen to erosion. How do you compose sounds from a geological environment?*
Malaret:	I listened and recorded the water movements in many different positions, within rock formations, around and on the island. The positioning of the microphones initiated the compositional process: moving them along the path that gives access to the tidal island, throwing them in a waterproof box within the cliffs, making close-up recordings of waves shattering on the rocks, etc. *Érodé* uses only recordings of the water around and on the island as materials to compose with. We can define them as 'geophonic recording' because they are non-biological natural sounds like wind, rain, and thunder.[9] So, in a way, I was listening to this process of erosion. It was one of the first step to learn more about the island.
Chasseray-Peraldi:	*We could say that Érodé is a 'mineral listening', an engagement with geology and environmental change. What is your own relation to Eagles Nest, and how is this reflected in the soundscape?*

Malaret: I slowly forged a form of relation with Eagles Nest, trying to approach it without too many preconceived ideas about what I could feel and meet there. *Érodé* comes from the relationship I built *between* the island and myself but also from the relationship *between* unprocessed (original) and processed (modified) field recordings.[10] In *Erodé*, there is a deliberate blurring of these two categories such that the listener might not be able to perceive the difference between natural and artificial sounds. The narrative is based on an implicit journey; each part of the musical form represents a geographic location of the site: the promontory, the beach, the rocky path leading to the rock formation, its spherical rock cavities within the ground, its textures, the cliffs, the water surface, and finally the underwater. The resultant soundscape is a collection of impressions that took shape thanks to the equipment I used to expand my listening capacity, memory, and perceptual access to locations outside my corporeal and embodied reach. From this perspective, the idea was to listen beyond the filters of the microphones in order to imagine soundscapes in deep-time, capturing the flux of environmental change. By attuning to the inhuman sounds of erosion beyond my usual human capacity to hear this landscape, I was able to bring forth the sounds of these forces of nature that operate at geological timescales that exceed anthropogenic temporalities. This composition explores what it would be like to 'feel' like a rock, encountering fragmentation, storms, lightning bolts, currents of water, and other forces of nature. As I wasn't able to listen to the sound of the rock itself, I tried to listen to the absence of this sound by playing with the ones that surrounded it (i.e. the water sounds).[11] As a speculative process, the creation of *Érodé* tells a sonic story of an absence, of what I could not hear but only grasp at via frictions.

Chasseray-Peraldi: *That's where the positioning of your technical set-up comes into play. What equipment did you use?*

Malaret: I used portable audio recorders, different types of microphones and headphones in the field. Then, I did the composition on my computer with different software to modify and to assemble recordings. I worked with three digital recorders: Zoom H4n, Zoom H5, and Zoom F6. In the Zoom H4n and Zoom H5, I used the on-board microphones. With the Zoom F6, I used a pair of LOM mikroUši Pro, a LOM Geofon, and a contact microphone. I didn't have a hydrophone that allows me to record into the water. So I took the Zoom H4n and put it in a waterproof box. The recorder was suspended with tapes within the box that I threw in the cliffs attached on a rope (Figure 3). I managed to record the water flowing on the box, as well as its beating against the rocks. The small microphones LOM mikroUši Pro were hung into rock cracks or put into holes in rocks (Figure 4). Also, waves exploding on myself were recorded by wrapping the Zoom recorder with plastic wrap. By assuming the different limitations of my microphones, of my body movements, and of perceptual possibilities on that island, I was able to
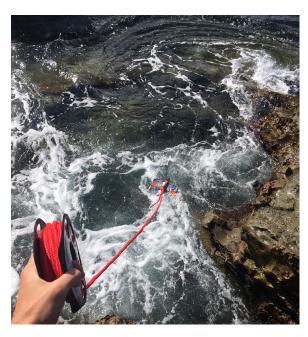
Figure 3. Home-made custom waterproof box containing a Zoom H4n recording, 2020. Photo by Guillaume Malaret.
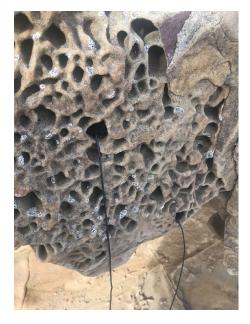

Figure 4. LOM mikroUši Pro microphones in holes in the rock wall of the tidal island of Eagles Nest, 2020. Photo by Guillaume Malaret.

work with a limited palette of sound to imagine my own story of this space. Positioning microphones in non-accessible zones, recording friction points of water and rocks, and sonically amplifying these by processing recordings allowed me to develop a form of situated knowledge about the minerality of the site. It fed my imagination for the creation of the piece, with the curiosity of giving access to zones potentially beyond the reach of human perception.

Chasseray-Peraldi: *What was archived, composed, and, therefore, is missing and has been decomposed? What are the wastes of this recording process?*

Malaret: Sometimes, I felt disappointed that I haven't been able to record my feelings of the bursting and physical experience of the waves. This brings up the question of how to transcribe a strong experience through sound when the recorded sound cannot reproduce the lived experience. As I couldn't transcribe my sensations solely through the unprocessed field recording of the place, I had to reinterpret the gathered materials. When I recorded a massive wave splashing close by, I often found that the recording didn't relate the strength of the event I perceived. The microphone, then, opens up both listener and composer to alternative perspectives and spaces. Florent C. Darras explains that the limits of the recorded field are the limits of the sensor itself. Thus, the microphone operates as the 'cartographer of its own position, a position which is unique to its mode of existence'.[12] The microphone converts sound waves into an electric signal. They have different characteristics of directionality, signal-to-noise ratio, sensitivity, etc. and offer a 'sonic reduction' of what they are recording. They have limits. The microphone's spatiality only relies on audibility, and to that extent, there is a type of positioning that is acoustic rather than geographical.

Seven recording sessions were made on the site of Eagles Nest, between July 31st and September 18th, 2020. I archived the different original recordings by sessions, renaming almost all the files according to some personal parameters, whether it is a geographic position on the island or a feeling, for example 'EN_vague totale', 'EN_vague rochers chemin',[13] etc. I also archived all the processed recordings created from the original ones. According to the needs and creative ideas I had during the composition process, which lasted 2 years, these unprocessed recordings were combined and treated with various types of software and effects. They have been 'decomposed' or 'eroded'. *Érodé* is the result of these transformations coupled with material that has not been transformed. Also, there is obviously waste in this process. A lot of material was created, but very little of it was used.

Composing with vivid and diverse non-human entities allowed me to be in contact with the process of erosion. However, I can't perceive the magnitude of the geological movements the island undergoes through time. The only thing I can partly master, on my scale, are the tools and techniques that allow me to record this site, to interpret it, to imagine a sonic world at the crossroads of fiction and sound documentary. *Érodé*

exemplifies how sonic experimentation and speculation using digital technologies can recalibrate human relations with place, temporality, and the precarity of environmental change. This practice uses sonic recordings to create musical works as a way to enhance the way we perceive the environments we live in, offering a new form of empathy and attention to engage with what surrounds us.

Concluding remarks

For Gilles Deleuze, islands geographically represent a snapshot moment in deep time, a diorama of endless struggle between earth and water.[14] The changes associated with erosion and decay are often unthinkable, as they occur on spatial and temporal scales distinct from our human bodies and activities. By delving into Malaret's creative process for his composition *Érodé*, we see that digital technologies in sound recording practice can create bridges between more-than-human environments and human practices of knowing those environments. *Érodé*, thus, allows listeners to imagine these mineral changes – the relationship between earth and water – across deep time. This mode of listening is part of a speculative process which relies on the listener's imagination to investigate the inaccessibility of geological temporalities. Artistic practice produces alternative modes of inquiry that contribute, here, to an interdisciplinary dialogue on digital ecologies. Malaret's practice produces sensitive infrastructures attuned to more-than-human environments in a creative and tactical manner. This dialogue opens toward an understanding of geophonic recordings as a generative way to encourage individual and collective situations of slow and creative attention toward nonhuman worlds. *Érodé*, thus, seeks to foster slow relationships with environments in flux, to use digital mediation to recompose imaginary and geological worlds, and to consider geological agencies over deep-time.

Funding

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Notes

1. www.guillaumemalaret.fr
2. "Érodé" translates literally to 'eroded' in English but is also used figuratively to mean 'diminished' or 'weakened'.
3. S.Jasper, 'Acoustic Ecologies: Architecture, Nature, and Modernist Experimentation in West Berlin', *Annals of the American Association of Geographers*, 110, 2019, pp. 1–20.
4. http://www.digicologies.com/conferences/2022-workshop/
5. J.Turnbull, A.Searle, O.H.Davies, J.Dodsworth, P.Chasseray-Peraldi, E.von Essen, et al., 'Digital Ecologies: Materialities, Encounters, Governance', *Progress in Environmental Geography*, 2, 2023, 3–32.
6. For example, M.Gallagher and J.Prior, 'Sonic Geographies: Exploring Phonographic Methods', *Progress in Human Geography*, 38.2, 2014, pp. 267–84.
7. H.Westerkamp, 'Linking Soundscape Composition and Acoustic Ecology', *Organized Sound: An International Journal of Music and Technology*, 7(1), 2002, pp. 51–56.
8. H.Westerkamp, 'Soundscape Composition: Linking Inner and Outer Worlds', *Soundscape before 2000*, Amsterdam, 19–26 November 2009. https://www.hildegardwesterkamp.ca/writings/writingsby/?post_id=19&title=%E2%80%8Bsoundscape-composition:-linking-inner-and-outer-worlds-

9. On the specificity of geophony see: https://beta.nsf.gov/news/studying-natures-rhythms-soundscape-scientists
10. Westerkamp, 'Soundscape Composition'.
11. Questioning the narrations of what is absent, Adam Searle assumes that "one can only begin to speak in terms of an absence through presumption, reconstruction, or fantasy." See A.Searle, 'Absence', *Environmental Humanities*, 12, 2020, pp. 167–72.
12. See F.Caron Darras, 'Localités fendues : la technologie comme vecteur de transindividuation dans la pratique du field recording', Filigrane. Musique, esthétique, sciences, société, 2022. https://revues.msh-parisnord.fr/filigrane/index.php?id=1134
13. Translated such as "EN_total wave", "EN_rock path waves."
14. G.Deleuze, *L'Île déserte et autres textes. Textes et entretiens 1953–1974*, (Paris: Les Éditions de Minuit, 2014).

Author biographies

Pauline Chasseray-Peraldi is PhD in media studies and post-doctoral researcher at Université de Liège on biotechnologies and the future of livestock cattle. She is a member of Digital Ecologies research group. Her research focuses on the ecologies of machine perceptions, technosurveillance infrastructures and the speculative landscapes of biotechnological futures.

Guillaume Malaret is a French field recordist, composer and sound designer born in Toulouse (FR) in 1993. His work shows field interpretations intimately linked to his environment. Guillaume employs microphones, recorders, speakers and synthesizers as his main instruments. Since 2013, he co-runs the record label Le Cabanon.