Tracing Ecotone —connecting the landscape through invisible design







PhD Proposal Konstfack, Stockholm

Design: Applied Explorations in Transitions for Sustainability

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Tracing Ecotone

-connecting the landscape through invisible design

This is a proposal to research *how site-specific sonic sculpture can encourage sustainable interaction with biotopes and landscapes, leveraging the infrastructure of digital cloud services and mobile internet connectivity.*¹

Network technologies allow us to live and work far from urban hubs, offering the opportunity to revitalize towns and villages once thought destined for decline. Cultural heritage and vernacular practices that may become vital to our sustainable transition, tend to dissolve in the city. They are more present in small communities, but need new generations of practitioners.

Decentralization—a key principle in sustainable thinking—can also foster ecological renewal. Remote living brings biotopes closer, and nurtures a sense of stewardship. There are many deindustrialized rural sites that require sustainable care, presenting opportunities for innovative, ecological practices.

The site in my proposal is an overlooked piece of swampy land, about 1/2 km² in size. Previously, a rail line for industrial goods ran through the site. Now the embankment is a footpath. It is the view from my window, in the village I moved to during the recent pandemic. A performer moves through the site wearing headphones.² The sound heard changes based on their movement.³ This evolving soundscape embodies a *land ethic*⁴—through eco-musical interplay between site and performer, an invisible spatial object eventually reveals itself. Depending on season, different areas can be reached, resulting in a variable geometry.

My project is inspired by early land art, especially the walking pieces of Richard Long. Land art responded to the "absolute loss of place" (Krauss 1979, 35) in modern sculpture by entangling the work with its environmental conditions. *Tracing Ecotone* seeks to entangle the quintessentially homeless phenomenon of audio streaming with ecological realities. Its raw material is sound collected from the site, rearranged—as in Andy Goldsworthy's nature collages—to highlight environmental conditions.

Like my recent project *Sounding Craft* at Konstfack, *Tracing Ecotone* leverages active listening as a tool for expression and interaction. But while the former pursued sustainability in the forgotten musicality of the craftsperson's hands, *Tracing Ecotone* explores the *more-than-human worlds* around us. My listener-performer is David Abram's magician at the edge of town, "mediating between the human community and the larger community of beings upon which the village depends". (Abram 1996, 14)

¹ I use a definition of sculpture from Rosalind Krauss: "[A] sculpture is a commemorative representation. It sits in a particular place and speaks in a symbolical tongue about the meaning or use of that place." (Krauss 1979, 33)

² Using sound to directly communicate with non-human actors has been ruled out on ethical grounds, as it would very likely contribute to the serious environmental problem of sound pollution. c.f. Shannon et al 2016

³ GPS data is sent from the performer's phone to a server, which generates and streams audio back to the device.

⁴ "[A] limitation on freedom of action in the struggle for existence" (Leopold 2020, 190)

Tracing Ecotone combines methods from artistic practice, technology and reflection. The project has four phases: <u>mapping</u>, <u>integration</u>, <u>performance</u> and <u>presentation</u>. Initially the biotope is <u>mapped</u> using the method of *field recording*, aided by *active listening*.⁵ The site is researched using *archives*, *interviews* with locals with knowledge of the site, *literature* and *media review*.

Integration uses methods from software design; *clean code, test-driven development, resilient design* using *self-healing architecture*, and *agile* methods—*minimum viable product* and *iteration.*⁶ Soundscape design is part of integration. An *immersive practice* is used to create a sense of place, like in the *acoustemology* developed by ethnomusicologist Steven Feld.⁷

<u>Performance</u> uses the embodied methodology of *walking* to reveal the hidden sonic sculpture. Walking as method has been adopted by a wide variety of practitioners, including artists like Janet Cardiff and Christina Kubisch who use sound as part of their walking practices. The performances will use methods of *free improvisation* and *ritual*, and be *seasonally attuned*.⁸

<u>Presentation</u> of the research is based on the *site/nonsite* dialectic originally developed by Robert Smithson to enable the artistic representation of site-specific works outside of their original environment. Maps, photos, video and physical artefacts from the site can be recombined in an exhibition space to constitute the *nonsite* of the chosen location, together with recorded sound of the performance.⁹ I also consider the dissertation part of the project's nonsite.

In my artistic research into ecology I have found Basarab Nicolescu's *transdisciplinarity* to provide a very fruitful framing. His ideas combine seamlessly with the ethos of "Democracy of Experiences and Methodological Abundance"¹⁰ in artistic research, and also reflects the character of my own practice. *Tracing Ecotone* would make continued use of *transdisciplinary methods* of inquiry and practice, ideally together with other researchers.

<u>Roughly one year of research would be spent for each phase. *Performance* does not take a full year of work, but should be conducted *over the course* of a year. *Integration* and *presentation* will require more work, which can be allocated at the beginning and end respectively of the third year.</u>

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One of the catalysts for Nicolescu's transdisciplinarity was the breakdown of local causality caused by the discovery of quantum physics. Nicolescu interprets this rupture in classical physics as pointing to an irreducible multiplicity in the universe, evident to ancient human cultures but brushed aside by scientific positivism. The neglect of this *layered nature of reality* has been singled out by ecologically minded thinkers as a root-cause for unsustainability in our culture.¹¹

⁵ c.f. Lindeborg 2024, citing experimental musician Pauline Oliveros and eco-musicologist Murray Schafer.

⁶ c.f. respectively: Martin 2009, Beck 2003, Beyer et al 2016 and Ries 2011, in particular chapter 6.

⁷ c.f. Feld 1996, chapter 3.

⁸ Many strategies described in Caines & Heble 2015 could feasibly be adapted for human/biotope improvisation.

⁹ GPS and gyroscope data can be used to overlay the shapes of the sonic sculptures on images of the site. ¹⁰ c.f. Hannula 2008.

¹¹ Such as the French philosopher Sacha Kagan. c.f. Kagan 2013, chapters 1-2, arguing after Nicolescu 2002. Many ecological texts—like Suzi Gablik's *The Reenchantment of Art*—echo very similar sentiments.

Tracing Ecotone casts the near-ubiquitous presence of mobile internet connectivity and the availability of public cloud computing resources as a layer of reality in Nicolescu's sense—an intangible but real expression of the world. The performative revealing of my site's hidden sculpture creates a portal between the biological and digital layers of reality.

Computing resources in the cloud are temporarily allocated to the performance. The configuration of the cloud changes—digital geometry is created in virtual space to mirror sonic geometry in physical space. As the piece concludes, resources are deallocated, maintaining symmetry. The symbiotic relationship between biotope and digital cloud gives agency to nature in constructing the digital layer of reality—mediated by ecologically conscious performance.

Society has gradually moved away from bespoke IT solutions running in office building basements, to systems of shared and distributed computing resources—the public cloud. I work in a cloud services consultancy. We provide software engineers with the virtual environments where they deploy services to their users. The public cloud market in Sweden is a big industry with a very significant growth rate.¹²

In *Tracing Ecotone*, I will work with actors in the cloud industry to showcase how connectivity continues to positively transform the world. This partnership can provide the project with expertise, resources and exposure. In turn, the industry will benefit from artistic reimaginings of what the cloud is and represents, especially how it already contributes to sustainable transitions through the rural lifestyles it enables. Details will emerge through collaboration, but as an example, <u>sited sonic sculptures could be offered to cloud customers as a way to "adopt" threatened or recovering biotopes</u>, likely ones that relate to the client's activities.

Through my window, I watch my site change with the seasons, as I chat with colleagues sitting at other windows, in locations all over the world. I could not embed myself in this biotope, and engage it in ecological dialogue, without the network infrastructure provided by internet operators and cloud services. This can apply to countless other sites around the world.

There are other potential industry partners to this project. The backdrop of my site is the easternmost outcropping of the large Jädraås wind park. Production of renewable energy is clearly relevant to this project, as is mobile internet coverage provided by telecom operators—where I also have connections through previous software engineering work.

I want to engage my local government in the project. There are other sites that highlight the area's ecological and cultural heritage, where I would like to put sonic sculptures—for example Rönnåsens Klapperstensfält, and abandoned mine holes and quarries. The sculptures will be permanently available through self-service, creating a reason for eco-tourism in the area.

There is a tradition of industry collaboration in land art. Several of its early pioneers explored projects to reclaim industrial sites for art installations. There is also an ecological tradition in internet culture, which was greatly influenced by the 1960s and 70s counterculture. *Tracing Ecotone* combines these traditions with my own experience as an urban émigré, to explore through sound-sculpture how to give nature a voice in shaping our digital, connected future, while emphasizing the revival of cultural heritage made possible by network technology.

¹² Swedish cloud market, projected revenue: statista.com/outlook/tmo/public-cloud/sweden, accessed 2024-12-31

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