

# Embodied Listening Practices and Ruderal Ecologies

**Lindsey french**  
University of Regina  
Lindsey.french@uregina.ca

**Alex Young**  
Carnegie Mellon University  
alexym@andrew.cmu.edu

## ABSTRACT

*We propose embodied multisensory listening as a methodology of engaging with, and listening to, complex multispecies relations of ruderal ecologies via a collaborative interdisciplinary art project, Scent Poems for Pipeline Plants. Building on scholarship on ruderal ecologies and theories of multisensory listening, we consider: can a methodology of embodied listening allow us to confront the living legacies of the ongoing colonial project of extractivism and imagine shared ruderal futures from a position of listening?*

## 1. INTRODUCTION

### 1.1 Project Introduction

*“Edmonton Bridge Terminal. Poems: 1, 2, 3. Aug 12/13... Foxtail Barley, Red Clover, Creeping Thistle, Smooth Brome, Smooth Blue Aster, Saskatoon Berry, Bird’s foot trefoil. Sewage smells from nearby plant, grassy hay, our own bug spray. Sounds of cars and insects (grasshoppers?). warm, sun bright, oils heated, condensation inside the container.”*

These notes mark the start of an over 1000-mile journey along the Line 3 petroleum pipeline from Edmonton, Alberta to Superior, Wisconsin in which we delivered scent poems to ruderal plant species living atop the pipeline. Enacting close engagement with the ruderal lifeforms along this energy infrastructure of colonial extractivism, we propose embodied multisensory listening as a methodology of engaging with complex multispecies relations.

### 1.2 Definitions

*Ruderal ecologies*, derived from the Latin word *rudera* meaning ‘rubble’ or ‘ruin,’ here refers to the more-than-human constellations of life that form in human modified environments (see section 2.1).

*Scent poems* refer to compositions made of oils infused with scent compounds, many of which are thought by scientists to be utilized by plants as communication signals (see section 2.2). With workshop participants, we created three poetic compositions using these compounds, as “poems” to be delivered to plants living along the pipeline (see section 3.1).

*Embodied multisensory listening* describes our methodology, which positions listening as a practice of

receptivity and sensorial exchange that exceeds listening with the ears (see section 2.3).

## 2. MULTISENSORY AND MULTI-SPECIES LISTENING

### 2.1 Ruderal Ecologies

The use of the word ruderal to describe places of human disturbance as well as the plants growing amid them can be traced to botanists in 19th century Europe studying the adventive flora of industrial cities. Writing at the beginning of the 20th century, Otto Naegeli and Albert Thellung would observe that the distribution of ruderal vegetation correlates, by direct measure, to the size and intensity of trade and industry [1]. The ruderal conditions of lands affected by the extractive activities of industrial capitalism provide grounds for those plants who, as J.P. Grime describes, possess life-history traits and adaptive strategies that are particularly suited to factors of environmental stress and disturbance [2]. As capitalism and colonialism produce environmental stress and disturbance on a planetary geologic and climatic scale, the effects of such alteration also contribute to ruderalization at a planetary scale. The upturned earth that contains the Line 3 pipeline hosts an array of ruderal plants, both indigenous and introduced. Additionally, through their contributing to world warming along with stressed and disturbed soil conditions, the petroleum oil sands transported by the Line 3 pipeline further affect the emergence of ruderal ecologies.

### 2.2 Multispecies Exchange

Scientific research on plant signaling reveals many plants emit – and respond to – Volatile Organic Compounds (VOCs) as signals to nearby plants and insects [3-4]. Many VOCs used as plant signals are detectable to the human nose, whether or not humans are an intended receiver of these signals. We propose that developing an attention to these signals in our environments can lead to a form of multispecies listening to the ruderal plants present in a landscape. Further, if we consider human-induced emissions as airborne signals (i.e., our own breath, industrial emissions, car exhaust, petroleum byproducts, etc.) we can perceive ourselves within a shared atmosphere of multispecies signaling. If we are already participants within multispecies signaling: what

potential exists for poetic exchange, especially if we expand our own definition of listening to include multisensory forms of attention and reception?

### 2.3 Embodied Multisensory Listening Practices

In 1997, Nigerian feminist theorist Oyeronke Oyewumi proposed the term “world-sense” as an alternative to the Eurocentric “worldview,” offering a term more inclusive of a variety of perceptual understandings of the world [5]. This broadened focus on the sensate brings critical attention to embodied and multisensory perception. In his 2020 book *Hungry Listening*, xwélmexw artist, curator and writer Dylan Robinson proposes that “to decolonize perception in general, and listening in particular, requires different strategies for settler and Indigenous listeners.” He writes that for “settler listeners, decolonial strategies ... require new frames for listening that do not treat listening as a single-sense activity, while resisting the hunger to consume alterity and Indigenous content,” which opens possibilities for non-auditory listening [6].

Robinson's call for multisensory listening is echoed in Hsuan Hsu's work related to smell. Hsu highlights the potential of olfaction, and olfactory art, to confront us materially with the realities of environmental risk, particularly in the atmosphere [7]. Hsu addresses the transcorporeal experience of olfaction – or, its ability to cross the threshold of the body – a concept which Stacey Alaimo develops as a way of describing porous entanglements with environmental agents [8]. Within a multispecies framework, the airborne compounds that plants emit into the environment are a form of signal. While the human nose may or may not be the intended receiver, we propose that developing an attention to this signal constitutes a form of multisensory listening.

Related to multisensory listening, Steph Ceraso proposes *multimodal listening*, defining listening as a “situated, full-bodied act” [9]. We follow Ceraso's formulation of situated listening yet stray from sound, centering instead the *olfactive* experience of listening, which is nonetheless full-bodied and inclusive of sonic and embodied experiences. Hildegard Westerkamp proposes soundwalking as an opportunity to intensify a connection between the listener and the environment with “full consciousness and attention,” [10]. Expanding on her notions of listening as a relationship of attention, we suggest that multisensory and multispecies listening practices can include developing attention for signals including and beyond the aural.

## 3. SCENT POEMS FOR PIPELINE PLANTS

### 3.1 Project Details

*Scent Poems for Pipeline Plants* was a multipronged artwork commissioned for 4GROUND: Midwest Land Art Biennial, consisting of an offsite project and two public events at Franconia Sculpture Park.

For the biennial's June 2023 opening event, we delivered a participatory scent workshop presenting information on scent-based plant signaling, the history of the Line 3 pipeline, and led activities in which we ‘tuned’ our noses – and attention – to the smells around us. We adapted listening activities traditionally focused on sound, such as soundwalks and exercises inspired by R. Murray Shaefer's “ear cleaning” [11], to focus instead on “listening” to scent signals in our atmosphere. To tune our noses to plant signals in particular, we smelled isolated VOCs used as communication signals in varying concentrations by different plants. With participants, we collectively created three “scent-poems” by gathering plants and other materials on site, composing them into three arrangements, and infusing them into oil. These scent poems held our plant- and human-derived scented signals for the next part of the process.



**Figure 1.** Ceramic vessels placed at the start of the Line 3 pipeline in Edmonton, Alberta.

In August 2023, we delivered the scent poems to plants that live along the Line 3 pipeline in hand-built ceramic scent diffusers, fitted with convex lenses to warm the oils under the sun (*Fig. 1*). The scent diffusers were made from clays gathered in the northern Midwest and Prairie Province regions of the pipeline's path. The form of the vessels is adapted from a pair of cruets designed by Eva Zeisel in the 1940s for Minnesota-based manufacturer Red Wing Pottery. These ceramics are emblematic of a broader transition from manufacturing crocks for food preservation to artware in the wake of the increasing ubiquity of fossil fuel powered electric refrigeration in the United States. Zeisel's design was colloquially referred to as “shmoo” for their resemblance to cartoonist Al Capp's creatures of the same name. Fantastically abundant, the shmoo were seen as a near-bottomless resource for human extraction and consumption in a manner not dissimilar from perceptions of fossil fuel in the mid-20th century.

Placing these vessels along the Line 3 pipeline, we experienced the politics of this petroleum infrastructure not as a smooth abstraction but as an imperfect sequence of granular particularities. Doing so, we confront the hubris of this infrastructure of settler colonialism – and our own attempts as artists and settlers to engage with it.

### 3.2 Listening to Ruderal Pipeline Plants

Practices of embodied multisensory listening occurred most directly with plants during the pipeline trip. The poems were written as a time-based media consisting of scent signals in oils to be released from vessels when warmed by the sun. When visiting the sites, we developed attention, listening to multispecies signals in the form of scent, sound, air quality, and exchanges with other humans to deepen our understanding of this place.

Approaching this as artists and not scientists – and as humans and not plants – we recognize we have produced mistranslations or other failures of language. Our poetic lexicon includes both plant signals (recognized by scientists) and human-made emissions already existing as signals in this shared airspace. We appreciate Steven Shaviro's proposal that "a certain cautious anthropomorphism is necessary in order to avoid anthropocentrism," [12] particularly for those of us raised within anthropocentric worldviews. This is not to suggest that what we offer to these plants is legible and understandable, but to ask what connections are possible in gestures of temporarily decentering, but not denying, a human perspective, and turning our attention to what we are *already* writing into this shared airspace.

These practices of multisensory listening importantly extend beyond our experiences as artists, via public events at the beginning and conclusion of the biennial. Our audiences include the plants along the pipeline, as well as human audiences in public presentations. The scent poems were developed with workshop participants after introducing plant signaling and emphasizing the social, political, and ecological contexts of sites of gathering and delivery.

At the conclusion of our trip, we hosted a workshop introducing participants to the plants we experienced along the pipeline, as well as a new scent poem, derived from petroleum-based roadside debris and tailpipe soot we gathered along the way. These poems offer smells related to atmospheric risk and toxicity, an important affective experience of the pipeline which contains elements that implicate our own fossil fuel usage. Hidden in plain sight, these petroleum pipelines wind underground through rural, urban and suburban landscapes, wetlands, treaty lands, roadsides, and backyards. If listening is attention, then we propose listening to those already living at these ruderal sites indicative of future ecologies.

### 4. CONCLUSIONS

When we consider that plants signal via airborne compounds, we can understand that our presences, our breath, or our industrial emissions may already be participating in multispecies signals. By turning our attention to these signals, we can also develop forms for listening, receptivity, or attention, which can allow for a form of close learning and engagement with ruderal species that are living and growing at these sites of colonial extraction. This form of listening, which includes

embodied experience, attention to multispecies signals, engagement with ruderal ecologies, and investigation of the landscapes which form from the colonial legacies of extractivist logics, might allow for a form of listening that decenters colonial logics by prioritizing vulnerability and learning.

### Acknowledgments

*Scent Poems for Pipeline Plants* was realized with support from 4GROUND: Midwest Land Art Biennial curated by Ginger Shulick-Porcella, Franconia Sculpture Park, and the University of Regina.

### 5. REFERENCES

- [1] O. Naegeli and A. Thellung, Die flora des kantons Zürich, *Vierteljahrsschrift der Naturforschenden Gesellschaft Zürich*, vol 50, pp. 225–305, 1905.
- [2] J. P. Grime, *Plant strategies and vegetation processes*. Chichester: John Wiley & Sons, 1979.
- [3] M. Ameye et al., "Green Leaf Volatile Production by Plants: A Meta-Analysis," *New Phytologist*, 220, no. 3, pp. 666-683, 2018.
- [4] R. Glinwood & J. D. Blande, Ed., *Deciphering Chemical Language of Plants*. New York: Springer, 2016.
- [5] O. Oyèwùmí, *The Invention of Women Making an African Sense of Western Gender Discourses*. Minneapolis: University of Minnesota Press, 1997.
- [6] D. Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies*. Minneapolis: University of Minnesota Press, 2020.
- [7] H. L. Hsu, *The Smell of Risk: Environmental Disparities and Olfactory Aesthetics*. New York: NYU Press, 2020.
- [8] S. Alaimo, *Bodily Natures: Science, Environment, and the Material Self*. Bloomington, Indiana: Indiana University Press, 2010.
- [9] S. Ceraso, " (Re)Educating the Senses: Multimodal Listening, Bodily Learning, and the Composition of Sonic Experiences," *College English*, vol. 77, no 2, p. 103, 2014.
- [10] H. Westerkamp, "Soundwalking as an Ecological Practice," in *The West Meets the East in Acoustic Ecology Proceedings for the International Conference on Acoustic Ecology*, Hirosaki University, Hirosaki, Japan. Nov. 2-4, 2006.
- [11] R. M. Schafer, *Ear Cleaning: Notes for an Experimental Music Course*. Toronto: Clark & Cruickshank, 1967.
- [12] S. Shaviro, *The Universe of Things: On Speculative Realism*. Minneapolis: University of Minnesota Press, 2014.