THE UNIVERSITY OF CHICAGO

The Atmosphere of Forest Bathing: More-Than-Human Connection in Ecological Crisis

By

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A paper submitted in partial fulfillment of the requirements for the Master of Arts degree in the Master of Arts Program in the Social Sciences

August 2024

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Table of Contents

Abstract 4

Introduction

i. Overview 5
ii. Proposition for "Radical Hope" 6
iii. Note on Methods 7
iv. Research Limitations 9
v. Note on Structure 10

Section 1: Commercial Registers

i. Market Landscape 12
ii. Forest as "Lively Capital" 14
iii. Affective Labor and the Care Work of Forest Atmospheres 17

Section 2: Practical Registers

i. Vital Materialism in Practice 20
ii. What Terms to Use? 21
iii. For What? 24
iv. With Whom? 27
v. Developing New Materialisms 29

Section 3: Scientific Registers

i. Terpenes as Therapeutic Intervention 30
ii. What Are Volatile Organic Compounds? 32
iii. Forest as Medium: Exposure to VOCs 35

Conclusions

i. Patchy Anthropocene 39
ii. What Might Forest Bathing Become? 40

Acknowledgements 44

Bibliography 44

“If we surrendered

to earth’s intelligence

we could rise up rooted, like trees.

Instead we entangle ourselves

in knots of our own making

and struggle, lonely and confused.

So like children, we begin again…

to fall patiently,

to trust our heaviness.”

– Rainer Maria Rilke, *Book of Hours: Love Poems to God*

Edvard Munch’s Towards the Forest II (Mot Skogen II). National Gallery of Victoria.

Abstract

Forest bathing is a contemplative wellness practice whose process connects one's senses to the natural environment. Taken from the term *shinrin-yoku*, or "taking in of the forest atmosphere", coined by Japan's Ministry of Agriculture, Forestry, and Fisheries (MAFF) in 1982, the concept has seen a surge in usage by institutions in the U.S. to describe a modality of nature therapy that consists of a sensory-oriented, guided walk (Annerstedt et al. 2011). In literal terms, this walk lasts between one and three hours, and, per some conventions, covers less than one-mile in distance. Both the concept and the practice are in their nascent stages. As it exists today, forest bathing is generally construed as a harmonious communion between nature and human subject which seeks to repair a sense of personal and ecological well-being through trained attention. Intuitively, we may see the purpose of this contemplative practice as serving some kind of practical need. A need that grows out of current conditions of ongoing, multiple, and increasingly entangled psychic, interpersonal, and environmental crises.

What could be considered a phenomena in a wave of what anthropologist Francis McKay calls "global well-being", forest bathing calls upon affective ecological registers to generate more robust connections to the "more-than-human world" (2016). Importantly, the "habituated affect" that seems to be a definitional characteristic of the practice reverberates meaning about space, time, and the category of "more-than-human" through specific mechanisms of human embodiment (ibid.).

Introduction

Over the past ten years, associations dedicated to training forest bathing guides have popped up across Australia, the U.K., Korea, Japan, and the U.S. Accelerated by the forces of the Covid-19 pandemic, training associations have proliferated. This has led to a diverse array of descriptors for this mindfulness intervention. Morphing rapidly as it is adapted by a variety of institutions, forest bathing is articulated differently by public health, outdoor education, conservation, private psychotherapy, popular wellness, and medical spheres. Some of these institutions market their services as "forest therapy", others "forest bathing", "mindful outdoor experiences", or "extended landscape tours". Scientific literature in landscape ecology, environmental science, and forestry frame the practice as a "forest bathing intervention", while market research uses the term "forest-based" or "nature-based" care. Obviously, differently motivated disciplines have different ways of mobilizing the practice for different ends.

In the mix of variously attached individuals and organizations, it appears that the profit-concerned amongst them are experiencing a boom. Forest bathing's current moment is one in which profit-making logics appear to respond well to this landscape of ambiguous language - particularly as these "forest-based" therapies get absorbed by the global wellness marketplace (Green4C 2024). Some especially savvy groups in the past four years have developed apps - like *TreeQuill*, *Forest Bathing Life,* and *Treespeed* - in response to need spurred by the alienation felt during the pandemic. Developers of this technology drew from knowledge taught by the same organizations that certify forest bathing guides (Metcalfe 2023).

Always and quickly changing, a reality that I grappled with while writing this research, at *this moment* the most influential and well-funded institutions creating knowledge around forest bathing include the International Nature and Forest Therapy Alliance (INFTA), the Association

of Nature & Forest Therapy (ANFT), the Global Institute of Forest Therapy and Nature Connection (GIFT), Treebath Inc., Mind The Forest LLC., The Forest Therapy School, and Nádúr Centre for Integrative Forest Therapy. Provided the notion of a "forest-based care market" gains ascendancy, forest bathing training looks as though it will follow the trajectory of yoga teacher training. This is, at least, a common idea among people involved in forest bathing guide training. A line I often stumbled upon was that "forest bathing is where yoga was 30 years ago".

It is precisely for this reason - that forest bathing is at a point in its development that we are able to speculate on its futures before they become rigidified by variously powerful institutions - that this research in this particular moment is necessary. We need simply observe that, across the U.S., institutions like national and state parks, botanic gardens, arboretums, and outdoor education organizations have begun to capitalize on the lively encounters facilitated by forest bathing. It is, therefore, in this expanding universe of making sense of what, exactly, this mindfulness practice is, and how various groups envision, enact, and instrumentalize it, that we play.

Proposition for "Radical Hope"

First, let's think together on what a "good" forest bathing could possibly resemble. Natasha Myers (2017), cited in Tsing et al.'s symposium on the patchy Anthropocene, points us to the "kind of patchy hope that can be cultivated" in current, real projects in landscape ecology (Mathews 2018). Tsing et al. summarize Myers' (2017) ethnographic project on the oak savannahs of Ontario:

> "Oak savannahs are the result of thousands of years of fire-regime hunting practices by the Haudenosaunee, the Anishinaabe, and other First Nations who lived in the Ontario region until the lands were sold to the British Crown in the late eighteenth century. The First Nations dispossessed from their lands, oak savannas were increasingly turned into farmland and parks.

> Only in the last 2 decades have restoration efforts sought to bring back fires that could maintain an oak savannah that would otherwise disappear. Following these restoration efforts in Toronto's High Park, Myers (2017) reminds us of the *limitations of ecological science* and asks whether one might do 'ecology otherwise' by *becoming attuned to plant sensing.* Demonstrating how middle-class urban recreational areas may hide colonial histories as effectively as plantations, Myers highlights the need for an *affective ecology* that recovers the now erased landscape ties to the dispossessed First Nation peoples of the Toronto oak savannahs"

These kinds of questions - which figure affect and indigenous history telling central - prioritize thought and practice that feeds "the need to learn somehow to narrate," (Haraway 2016, 40). Indigenous ecologists and scientists like Robin Wall Kimmerer passionately recognize this necessity. In *Braiding Sweetgrass,* Kimmerer argues for the commensurability of traditional Potawatomi knowledge and modern scientific practice, offering possible paths for how projects about *sensing* intersubjectivity may be more than extractive pursuits (2013). This grounds our analysis in a view that avoids seeing forest bathing discourses as one-dimensional, utilized only to increase benefit for human health *over* the health of forest ecosystems.

This points us toward how humans craft notions of "multispecies relationalities", modes of thinking familiar to anthropologists who theorize affirmative more-than-human relations (Parreñas 2018, Bennet 2010, Barua 2018). To stay within this strand of new materialist scholarship, it is important to approach the object of forest bathing optimistically, so that we might recognize its political-ecological possibilities as well as its dangers. In doing so, we may see how future iterations of this wellness practice may simultaneously be invested in common projects of forging more-than-human relationships toward mutual healing while, at the same time, advance troubling currents of "lively capital" and natural resource exploitation.

Note on Methods

When I began working on this project in the fall of 2023, I was intensely skeptical of forest bathing and its proponents. I was quite allergic to some of the new age mysticism - sterilized by higher education like Brown University's Contemplative Studies Initiative (McKay 2016) - which guides often subscribe to. But because practitioners appeared genuinely interested in learning how to skillfully interpret and work with their own subjectivity to make good judgments about how to live, I became more sympathetic to the people themselves throughout this project. This was made easier by the fact that these were not strange places for me. As a young, relatively well-off, educated, calm, competent-presenting white woman who spoke in similar soft tones and was also a tree-hugger, I was very aware that I could - and not-so-secretly wanted to - become one of these guides.

Over the course of this research, forest bathing practitioners in the U.S. generously taught me about their field and allowed me to bounce ideas off of them. An inclusive, warm community of humans, it was abundantly evident to me that they unpretentiously cared about growing their awareness of their "more-than-human" neighbors. I was impressed that local *places themselves* - from small stylized gardens in Chicago, to expanses of wetland areas in upstate NY - were constantly acknowledged for their contributions to place-making. There appeared to be real affection between the places of forest bathing and forest bathing guides. That observation revealed to me that forest bathing's techniques for enriching compassion are definitionally place-based and therefore consciously enacted as *political*.

For instance, I admired how guides lit up when describing parts of a path, or section of a wooded area that they had come to know. I won't ever forget how one woman - who also ran a nature-based childcare center in NY - gestured to a surrounding bit of the woods and told me that her group of children called it "dragonland". All while animating her arms about like a dragon.

With tales like this - which illustrate rich, steadfast relations - I became more convinced of the potential of forest bathing. Rather than a simple image of people meditating on their subjective existence in some romanticized natural setting; hearing people tell stories about their "forests" offered a new way to view complexity. As such, soulful processes involved in mindfulness work like this seem *to me* a much more empowering, meaningful option compared to some essentialist biomedical solutions currently available to help suffering people. With all my ambivalence, I, too, find the prospect of being trained as a guide for these experiences hugely attractive. As a researcher with attachments, I even intended on becoming trained to lead forest bathing sessions. I wanted to attend events and make this project a multi-sited exploration, to get a diverse view of how practitioners spoke about their work. But, I was limited by time and the massive financial investment that training involves.

I hold important reservations about some emerging ways that forest bathing is being flattened in scientific and commercial spheres. Still, I share the fundamental belief that movement, use of the senses, and simple acts of attention to other agents, spirits, and things in wooded landscapes bring us into a realm of shared intelligibility and connection. I also advocate for the basic tenets that drive what the practice *does* and how it is acted out in real time - practiced in localized, specific places. Simple enough, forest bathing seems, to me, an ethically compelling way to move your body, or stay still, alongside other beings in your local place.

Small Delusions and Research Limitations

While I agreed with sentiments expressed by forest bathing guides, I still found it uncannily disturbing how guides often unwittingly insulated themselves from some of the realities surrounding the practice. Many forest bathing guides seemed to invite newcomers with genuine openness. But many were unable to recognize just how inaccessible self-determined

interventions like this are for people who lack the time, resources, and freedom to make thought-out decisions about their own healthcare.

Further, no guide I spoke with referred to long-standing indigenous practice involving forest-human bonds in healing (McLachlan 2020, Kramer 2022). Nor did they connect this history to things they taught. It was clear to me that forest bathing guides - perhaps unknowingly - borrowed threads woven by communities that have looked to the therapeutic qualities of the forest atmosphere for generations. This blindness could, I speculate, be a product of forest bathing's current focus on "mindfulness". Locating itself in a wave of global wellness trends, forest bathing might, then, successfully avoid thinking through these connections to indigenous knowledge. As McKay argues in his dissertation on the power of "experiences of affective fullness"; "mindfulness is a term for white, middle-class values" (2016, 1).

This, along with the fact that I had very limited interactions with guides over this quick nine-month period (while also nannying full-time and trying at a well-rounded life in Hyde Park) informs the equally limited role that conversations with forest guides plays in this project. My choice to make their narratives less central functions to shift attention to theorizing how the "more-than-human" relation is conceptualized in this wellness practice across various domains in which it currently emerges - economic, scientific, environmental, and clinical.

Notes on Structure

In telling the story of forest bathing, this research is structured in three distinct sections. First, I give a lay of the land. This functions as a market report of sorts. It outlines plainly the current state of what we consider "commercial forest bathing". Then, I build from this informational portion to mount a critique. I do so by using an analytic of "lively capital" (Haraway 2007, Barua 2018, Lorimer 2020). This section unpacks dynamics of lively biocapital

at work in circulating speculative value in this eco-wellness intervention. It helps us prods at possible exploitative frameworks in some registers of forest bathing; ones that increasingly enlist forests themselves as laborers.

Next, I present the words of forest bathing guides who I grew to admire greatly. This section spends time rendering legitimate the pain that forest bathing practitioners attributed to shared ecological loss. It also nonjudgmentally considers how individuals cast psychological and physical healing as precisely located in the generative process of "making oddkin" through forest bathing (Haraway 2016). It approaches the intervention as an in-good-faith modality of relating to "things" in a forest - animate and inanimate. It then asks; what are the unintended consequences of forest bathing's practical approach to repairing human embodiment through the medium of forest ecologies? This is crucial to understand, for we know that these multispecies encounters are not just base materiality, but are affectively charged and mutable.

The third section investigates a particular strand of emergent studies in forestry, public health, and biology that seek to quantify the therapeutic potential of interactions between humans and bioactive organic compounds called terpenes (Innes 2023, Bratman 2022, Zorić et al. 2022, Cho et al. 2017). In this discussion, we reapply our working definition of "lively capital" established earlier in the text. This casts our view toward how labor done by forests is framed in atmospheric terms. We are, after all, "taking in the atmosphere of the forest". It also grapples with implications of rendering forest terpenes as medically recognized clinical interventions for human health.

These sections work in different registers. Taken together, we may consider this text as flowing from a critical perspective, to a deeply attached ethnographic perspective, to a close

examination of a specific scientific trend, to, ultimately, a vision that offers hope for the various ways that forest bathing exists today and may be used into the future.

Section 1

> "The most profound act of linguistic imperialism was the replacement of a language of *animacy* with one of *objectification* of nature, which renders the beloved land as lifeless object. English has come to be the dominant language of commerce, in which contracts to convert a forest to a copper mine are written. English encodes human exceptionalism…" – Kimmerer, In Holten (2023), 213

Market Landscape

At the ANFT, aspiring guides first pay to receive a Wilderness First Aid (WFA) or Wilderness First Responder (WFR) certificate costing between $175 and $300 USD. Training guides then pay tuition for a six-month program priced at $3350 (anft.earth). The final step in becoming certified is to attend a four-day immersion, located in a remote location either internationally or within the U.S. Cost for this retreat, apart from time and other hefty personal investments, is $495 USD. At the time that this is being written, the ANFT is hosting an immersion in Sintra, Portugal, with access to a UNESCO Natural Park at the luxury retreat center Floresta Encantada (florestaencantadasintra.com). Lodging, transportation, and food costs are not included in immersive training like this. Immersive trips are, however, compulsory for completion of the association's training program.

Depending on the sequence selected, additional elective "professional development" courses are offered to certified guides upon completion. Guides may also decide, alternatively, to select a boutique forest bathing training experience. At the top boutique "training school" in the U.S., guides-in-training go on 3-5 day retreats in national parks across the U.S. These retreats range anywhere between $2000 and $3500 USD, food and transportation not included (The Forest Therapy School, 2024).

Forest bathing has carved out, in a short period of time, a niche market in what Lorimer coins "*ecosystem services*" that "reward entrepreneurial proprietors," (Lorimer 2020, 199). Some early pioneers, like Regan Stacey and Julie Sczerbinski with their company The Forest Therapy School, see forest bathing as a business opportunity. Unburdened by the confines of larger business models, once certified, forest bathing guides are able to sell their services as independent entrepreneurs to institutions like botanical gardens, conservation organizations, and event-spaces.

Many botanical gardens across the U.S. introduced forest bathing programming for the first time during the pandemic. Among them, the New York Botanical Garden (NYBG) began a virtual forest bathing series of recorded guided meditations in 2022. These free online mindfulness sessions are led by Oskar and Nicole Joy Elmgart, who were certified by the ANFT in 2018. The NYBG's two most public forest bathing guides have since co-founded a training school that boasts designer forest therapy walks. Forest bathing - an addition to the couple's larger business platform Treebath Inc. - has rapidly become the company's main focus. With nine full-time staff - all certified forest bathing "practitioners" - the company's outdoor education efforts have made appearances across mainstream publications like *The Guardian*, *The Wall Street Journal,* and *Elle Magazine* (ibid.). Treebath Inc. is a salient example of how for-profit models have been especially swift in developing their own "authoritative" training regimes. In the short time since I started writing this paper, the company has created what it says is a "patented 3-Point Method" for forest bathing. This speedy market uptake should not surprise us, given that the estimated $1.8 trillion USD global wellness market is no stranger to quick shifts and one-off fads (McKinsey Consumer Report 2024).

This trend toward bespoke forest bathing experiences for the urban-dwelling young professional is perhaps best expressed by alluring online platforms like Usal, a company that hires forest bathing guides. The company, featured in a 2023 *Vogue* article, offers the service among a suite of "nature-based workshops and retreats in L.A.". From luxury merchandise to herbal medicine workshops and forest bathing, the private company caters to a predictably affluent, young, West coast clientele. With a range of "immersive journeys", and high-end curated goods, Usual is a single example in a sea of options for bespoke immersive experiences in nature.

Another, albeit less established, organization seeking capital returns from the liveliness of encounters with the forest, Reveal Nature, sells guided bioluminescent forest walks (revealnature.co.uk). Self-proclaimed "specialists and pioneers in the innovative world of guided nature experiences," the group offers a wide range of guided walks. Forest bathing is considered just one of many modalities of walks offered by the company. Others include "aromatic walks" that attune participants to air and breathing, "microscopic marvel" walks that pay attention to insects, and bioluminescent walks that observe "fungi, flowers, insects, lichen, seaweed, and more" (ibid.).

Training services have evolved quickly even since the start of this research in 2023. Nearly unable to keep up with the changes in the market, it was difficult to know *where* I should be looking to for expertise on the nebulous intervention (psychotherapeutic, conservation, elite wellness, etc.). With this in mind, a critical distinction between *commercial forest bathing* (enterprising efforts) and *conservation-oriented forest bathing* (commoning efforts) is necessary. Lorimer notes that the most important difference between "commoning" and "enterprising" occurs when *life itself* is presented for its value as a potential source of "lively biocapital" (2020,

199). Now, we turn to enterprising efforts. This considers how forest bathing might be taken up by some organizations to profit off of the liveliness of encounters between humans and forests, exploiting forest bathing for its "speculative potential surplus value" (Barua 2019).

Forest as "Lively Capital"

> "'We are earthbound, we are terrestrials amid terrestrials,' does not lead to the same politics as saying 'we are humans in nature'." Bruno Latour, *Down to Earth* (86)

Emblazoned across a 2023 annual financial report from a Chicago-based nonprofit offering forest bathing walks is the slogan, "nature is in demand, and we are ready to meet the moment." Situated (un)comfortably in the contemporary moment, we now examine statements like this in the multispecies framework first proposed by Donna Haraway in *When Species Meet* (2007). She argues for a reconsideration of the Marxist three-part concept of (1) use value, (2) exchange value, and (3) encounter value "beyond the problematic solace of human exceptionalism" (Haraway 2007, 46). In doing so, she advocates for the addition of the more-than-human in analyses of economic and ecological dynamics in the social sciences. This view lends us a more embodied approach to "knots of value inherent in relations" between forest bathers and forests - appropriate given the framing of these sensory experiences. This, then, effectively draws our object - the human-forest relation as understood through forest bathing - into the scope of what Haraway calls "the regime of Lively Capital", (2007, see also Rajan et al.'s *Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets*, 2012).

First, let us hone-in on what we mean by "lively capital". Haraway writes, "Marx understood relational sensuousness, and he thought deeply about the metabolism between human beings and the rest of the world *enacted in living labor*." (2007, 46) Metabolic and ecological in its workings, lively capital goes further than use value and exchange value as conceived by Marx. Instead, we examine how "liveliness" of nonhuman agents - read; forests, their trees, and

their terpenes - is productive of a particular kind of affective labor. It is within the sensuous encounter between human and forest that we see the circulation of value forming.

In the context of forest bathing, this affective labor, to draw from theorizations by both Maan Barua (2018) and Jamie Lorimer (2020), is conjured via interaction between: (1) the concept of "the Forest", (2) living and nonliving things, i.e. "intersubjective agents" in the specific surrounding local environment in which the forest bathing happens, (3) the human guide, and (4) the individual participant's subjective phenomenological experience of their senses while noticing these things "intra-acting" around/within themself.

Combined, the expertise of the guide (often elicits an overwhelming sense of safety and calm), the potency of the concept of the forest (with all its allusions to Nature, connection, and healing), and the lifeforms and things that make up the forest (like tree bark, "clean aromatic air", and literal expansive horizons) coalesce to provide an emotionally poignant link between consumption and survival. Within this realm of heightened vulnerability, flows of "lively capital" are made possible by a "body-to-body" relations between humans and the woodland landscapes that forest guides draw attention to (Haraway 2007).

Accomplished vis-à-vis ecological relations, these interactions can be further understood as "incorporated or grown into the performing body, akin to 'body work' (Barua 2019). Some guides, for instance, told me about the role of movement in forest bathing sessions. Oftentimes, forest bathing begins with an invitation to "come into your body" through soft, self-determined movement. Sessions almost always end with a tea ceremony with herbs or leaves taken from the surrounding area. Attention is directed to the sensation of warmth from the teacup on the hands, the smell of the tea, and its taste. Actions of tipping the cup, of setting it on the forest floor, are key. While not compulsory, forest bathing's focus on movement as means to facilitate awareness,

not unlike yoga, connects sensory perception to elements in a forest like scents of flowers or textures of leaves between fingers.

Therefore, in Haraway's terms, "emergent fleshy becomings" are one of the central forces in any forest bathing experience (2008). And while this does contribute to how value is circulated via lively capital, it is crucial to acknowledge that the fleshiness of these encounters also function to prod humans into recognition of a shared reality. This is important insofar as it brings people into shared experience, something that has great political and psychological implications. Namely, phenomenal attunement has the power to generate beautiful realities not based in escape. It encourages presence with surroundings rather than retreat into a land of introversion and psychological defense (though, surely, daydreams are productive things). Instead, these simple acts of movement aid in the maintenance of relations among forest kin, objects, and humans.

Affective Labor and the Care Work of Forest Atmospheres

Consider a unique "Riparian Forest Bathing" walk held by the Ashokan Watershed Stream Management Program (AWSMP) by Cornell's Cooperative Extension in Big Indian, NY in June, 2024. The event was part of the four-month "conservation through connection" conference. The conference offered programmed events like medicinal plant walks, streamside mindfulness meditation, and children's snorkeling in the local Rochester Hollow Stream, a Catskill Mountain tributary (ashokanstreams.org). Like popular ecotourism activities whose potency is felt through "sensory and tactile" encounters between tourists and local wildlife, there is an obvious "emotional register of conservation" here (Barua 2018). It is easy to see how a "series of sensory invitations" in this single river-based forest bathing experience might function to *form value* from intangible affective flows (Barua 2018).

Pulsing through the experience, “awe, wonder, and the feeling of reciprocity” elicited by close attention to the Rochester Hollow Stream demonstrates how feelings about the magnetism of more-than-human become transformed through encounter, through touch, into something that can be commodified. It also suggests how these outdoor education experiences teem with affective charge, so elemental to forest bathing, that might become instrumentalized as “value-added” (Haraway 2008). Difficult-to-pin-down, work done by human-forest bonds in this context is, importantly, located in affect-laden “naturalsocial” interactions (ibid.). Thus, value circulates within the ecological-human encounter, or the perception of it.

Figured as such, the quietly sensuous relation - like that between a person and the flowing stream water that they touch - is not just means for affect to be exchanged between environment and human. The encounter also performs ecological labor. It is productive of a certain kind of care work. For example, DiNovelli-Lang and Hébert (2018) discuss how projects of environmental protection and conservation are mobilized to achieve a peculiar sort of care-work for people. In this perspective, Nature writ-large is enlisted as a source of what the wellness industry may call “emotional labor”. Hence the widespread saying that “the Forest is the therapist” in forest bathing. These multispecies anthropologists argue that the labor done by “Nature” is today being “reconfigured as ecologically reproductive ‘care work,’ the affective and performative dimensions of which are often valued more than objective results (DiNovelli-Lang et al. 2018, see also Maan Barua’s *Animal Work: Metabolic, Ecological, Affective* and Patrick Bresnihan’s *More-than-Human Commons*).

As a final example through which we can play with this frame of ecological care work, we can look to a three-year project ending in 2023 funded by the European Union. Along with a private consulting agency for “valuing nature”, a global consortium of forestry research

institutions - including the University of British Columbia, University College Dublin, and the University of Padua - have joined an “alliance in determining the future of forest-based care” (Green43 2023). The team’s market report examines the entrepreneurial opportunities of “green-based” care (www.greenforcare.eu). It conceptualizes “forest-based care” as follows:

> “the umbrella term referring to the ‘wide range of activities and targeted beneficiaries, ranging from health and wellbeing promotion (targeted to the wider population) to disease prevention (accessible to a wider population, but typically targeted towards more vulnerable or at risk individuals or groups) and therapeutic interventions which include targeted therapeutic or treatment/rehabilitation interventions for addressing specific needs” through contact with natural ecosystems and their elements” (Mammadova et al., 2021)

Ironically, the document’s sloppy style mirrors what it deems the “fragmented nature of the market” (ibid.). It points to how exchanges are “based in informal norms” (2023, 36). It then advises that “professionalism is fundamental” for the future marketability of forest-based interventions (2023, 36). It urges for “formal recognition” of forest-based care by health institutions. Unsurprisingly, to return to our previous understanding of “lively capital”, the affective tones of encounters with living matter in the context of the “forest” are framed in this report as a wellness space bursting at the seams with untapped profitability. Stakeholder value, indeed! Next, we turn not to stakeholders in the wellness industry, but to practitioners of forest bathing who may consider themselves stakeholders of a very different kind - of something much larger - and more ethically complicated. This shift in tone serves to demonstrate how ecological encounters, importantly, are much more than mere value exchange.

It is true that this mindfulness practice has not been immune to market logics. At the same time - and it is precisely because of these tensions that it is interesting - a main feature of

forest bathing's ethos is accessibility. If it were somehow able to exist in its pure, morally-good form - divorced from realms in which it is being operationalized - forest bathing would be available to anyone, of any means, anywhere. This, ironically, intends at its very core to avoid commercialization and commodification, despite the inherently commercial landscape that the intervention sees spread. Now, we turn to some anecdotes of guides to take the multidimensionality of the intervention - ripe with contradictions - seriously. It is in this spirit, one that is less about criticism, and more about earnestly engaging with the possibilities of forest bathing, that we move forward.

Section 2

> "It matters which stories tell stories, which concepts think concepts…We need stories (and theories) that are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections." – Donna Haraway, *Anthropocene, Capitalocene, Plantationocene, Chthulucene*

Vital Materialism in Practice

Amid increasing ecological devastation(s) and accompanying grief, sadness, and anxiety, forest bathing offers the promise of collective healing through repair to "greater-than-human webs" of life via encounters with forests (Kohn 2013). It is through this work that the "vast ecology of selves", in any given local forest at any given time in the present, might quite literally bring humans "back to their senses", a common phrase I heard guides use. Similarly, founder of the ANFT Amos Clifford says:

> "We work in partnership with the more-than-human world, with the forest…We hold the story that the world around us is alive, it's awake, it's sentient, it has agency, it makes decisions, and it's responsive to humans…By using the term the 'more-than-human world', we have a sense of context - that we live within, as a part of, this surrounding, encompassing world that is very much alive." – Interview for the *Association of Nature and Forest Therapy* (2023)

This is possibly the most important notion for proponents of forest bathing. Like the "multispecies turn" in anthropology of the past decade, the idea of a "more-than-human world" orders the logic of this holistic wellness intervention. Words like this indicate that early adopters of forest bathing are certainly readers of more-than-human literature. So, to take these currents as worthy of attention in-and-of themselves, this analysis pays respect to the fact that the practice nearly definitionally demands an interpretation through new materialist frameworks. What follows emerged naturally from a period of researching online forums, testimonials, training materials, and personal websites advertising forest bathing. With this as my foundation for reading new materialism into this wellness practice, I turn directly to small exchanges that I had with forest bathing guides. These vignettes, generously provided to me by only a handful of individuals, are byproducts of phone calls, emails, and face-to-face interactions. I do not call upon any of the forest bathing guides to speak on behalf of all people who have been trained in, or casually practice, this intervention (including, I should note, myself).

What Terms to Use?

On two separate occasions - one with a local outdoor education group in upstate NY and the other a botanical garden - I noticed that organizations updated their online information about forest bathing after talking with me. These were both conversations with program directors who also guided forest bathing sessions at the respective locations. Following our conversation, both organizations' websites removed any mention of "forest therapy" and replaced their language with "certified forest bathing".

It's true that these shifts were likely not in direct response to my inquiry. I would especially like to believe this, as that might suggest that my approach - which I had thought was enthusiastic and genuine - was perceived by my interlocutors as too critical. This would imply

something about the aims of this research. Namely, that I entered into dialogue with guides with the intention of conducting a sort of exposé-style analysis of their work. This is untrue. Yet, it would have been a reasonable response. It is, of course, nerve-wracking to feel oneself as a potential stand-in for an institution.

I moved forward more aware of the sensitivities that guides may have. With this insight, I was more conscious of how institutional ties informed the comfort of my interlocutors. I do, however, think that these probably innocuous changes were a sort of diagnostic signal for a larger difficulty. A difficulty in translating the complex, oftentimes inexpressible qualities of this type of practice. People who struggled to articulate the process very well could have interpreted me, as a researcher, as someone also demanding legibility and easily contained definitions.

More often than not, people I talked to found profound meaning in going out in the forest. And, apart from overwrought interpretations, they noticed real health benefits. Anyone who lives on an especially suffocating city block knows how greenspace impacts wellbeing. It is easy to feel. So, too, do people who live with and care for young children. Forest bathing can be an impromptu act to regulate the human nervous system. It can be a way to avoid simply turning oneself off in stressful conditions. It offers meditative space as an "eco-antidote" to the speediness of modern life. And these sentiments, while also buzzwords, are not just empty advertising ploys.

Simultaneously unremarkable and stirring, allowing oneself to "take in the forest atmosphere" has, to borrow from Landecker, a certain "boundary-dissolving effect" (ibid.). Called to the senses in an interactive, atmospheric sense, "one's corporeality is much more *vividly rendered* as continuous with the landscape" (Landecker 2011, 186). Then, it is not so mysterious why some people I spoke with thought of forest bathing as a simple, relaxing,

low-stakes activity. Their casual attitude expressed the practice's self-evident nature for some. It was necessary and therapeutic.

In light of our previous section, it is clear that the current landscape that surrounds forest bathing is saturated with demands for digestible explanations. I doubt that most people who casually do forest bathing would hesitate to attach words like "therapy" to their personal mindful time in a natural space. In contrast, as we've seen, institutions are more reluctant to deploy words like "healing" and "therapy" to forest bathing. Some guides, however, were not so weary about using "therapy" as a term. One interaction in particular stands out to me as having effectively evaded market understandings of forest bathing.

I had this distinct phone call - distinct in that the person I spoke with felt very unselfconscious - early on in this project. This particular call was with a woman who I found through a simple online search. She advertised private forest bathing walks on her property. She, as opposed to the institutionally-embedded people I spoke with, operated independently. A retired art teacher who described her husband's health decline and recent death with great emotion, she opened up to me about the things she had learned from her little patch of "forest" in the Northern suburbs of Chicago.

A singular sort of relationship - as all quality relationships are - her description of the unreserved care that she shared with that bit of landscape touched me. I was struck by the casual way that she talked about finding a new way of making community. She described how a community formed around her as she started using "forest therapy" as a term. In reality, she told me, she had been doing forest walks for decades - alone and with friends. Now, she was able to teach the things that were intuitive for her to people in her local town who were suddenly much

more interested in joining her. This was crucial in a moment in her life where her main companion had passed.

As we only spoke for about an hour in an informal way, it was funny to me that she so confidently asked me out to her beloved space to go on a walk with her. Now, this part wasn't the unusual bit. Nearly everyone I spoke with invited me to do a session with them. A few other guides - including this woman - even asked if I'd like to stay in their guest homes - something that might just be code for an elite, exclusive kind of generosity that I wasn't accustomed to.

The bit that was peculiar about my conversation with her was that, after we chatted, right before I left, I asked what her training was. She said that she had attended a few forest bathing walks with friends in the suburbs and had found it peaceful. So, she began her own "forest therapy" walks in private, with herself. She took up walking in the woods in an emotionally poignant time in her life - one where loss and grief loomed large. It was uncomplicated in many ways. Landscape as therapy.

She then expanded to people in her immediate social circle, inviting people to join her. Eventually, she grew to a larger platform with a growing audience and potential base - which made her include forest bathing on her personal website. Her walks were free of charge and - in some important way for her - also served as a space to read her poetry aloud in communion with nature and other humans.

For What?

It is fascinating and important that this kind of eco-therapeutic project positions itself explicitly as a "multispecies affair" or "multispecies getting on together" (Haraway 2007). The first Zoom conversation that I had with a guide focused on forest bathing's broader goal of "confronting planetary crisis". The way that this particular woman spoke immediately recalled

me to language used by Latour (2017). He writes, “the madness in question is diagnosed as an alteration in the *relation to the world*.” (2017, 35). In the same vein, this guide emphasized the need to confront our current “crisis of relationship”. She pointed to how forest bathing might “bring people back to their bodies to form relationships again”. Through our conversation, I learned that her theory of action was about attuned embodied perception. Her teaching of forest bathing was at once the driving force for ecological well-being and human health. Ringing in concert with this conception is what Latour proposes in his notion of “worlding”. In response to this “madness” around the relation to the world, he urges “earthbound” things toward a speculative exercise to “open the multiplicity of existents, on the one hand, and to the multiplicity of ways they have of existing, on the other.” (ibid.). Taken alongside forest bathing, this suggests that to go out into a local landscape and pay this *type* of attention to other beings might be a mode of “worlding”.

To this, Tsing et al. (2024) might reply in the affirmative. She argues that “planetary crisis” must, in part, be felt. And it can be felt through sensing life in landscapes. Tsing et al. say, “getting up-close and personal with descriptive practices” may be the catalyst to “truly grapple with the ecological challenges that are bringing us to multiple catastrophic tipping points” (Tsing et al. 2024). Forest bathing, I learned from this woman’s description, fundamentally teaches a kind of slow engagement with surroundings. Suggestive by nature, forest bathing is a “flow”, said this woman, punctuated by informal “invitations”. Invitations are a central exchange between forest guides and participants. Guides invite the group to engage with nonhumans in the landscape in creative ways - ways meant to get people out of rational thinking and into their bodies.

For example, guides ask participants to spend time observing and feeling in a set period of time before returning to the larger group. This one-on-one time with the landscape is a characteristic part of forest bathing. When forest bathers accept the invitation to break-off from the group to spend time alone in their given place, we might consider them as in a state of unreserved resonance with the "dizzying" qualities of "other existents" (Latour 2017). During this part of the session, imaginative acts of thinking, visualizing, and narrativizing with things in the forest occurs. Following this period - a duration of about ten minutes - the group reconvenes to share their experience.

Then, the guide invites each person to make an "offering" of an observation or sensation. Some describe the nails of a squirrel latching on tree bark. Others might paint a portrait of wet soil's coldness on the tips of their fingers. To me, this seems influenced by - if not directly linked to - the "field guide work" that Tsing et al. says is critical for noticing landscapes in our moment of environmental devastation. These moments, both shared and private, have a way of getting at these environmental and relational crises. They do so by asking simple questions. Such questions hold the world open by extending the senses. They invite participants to sense their bodies as they interact with the landscape. Thought this way, contemplation at work in forest bathing draws attention to both *content* and *context*. Its process has a way of collapsing the bridge between form (ideal) and content (real).

Put briefly, this guide's apprehension of this "crisis of relationship" was something she intuited. Forest bathing wasn't necessarily intuitive. Over the course of dedicated time concentrating on the invitations posed by the practice, she aimed to embrace the difficulties of an "impression of living in an atmosphere of end times." (Latour 2017) By asking where she resides, what kind of space, territory, place, and atmosphere had she inherited, the forest bathing

guide became well-versed enough to be able to draw other participants into this practice of "worlding". Through repetition of simple and banal acts of attunement, her and her groups of bathers slowly recognize themselves as "on land *shared with other often bizarre beings*" (ibid.).

With Whom?

> "Even as a small child I had often liked observing bizarre natural forms - not to study and analyze them, but to abandon myself to their unique magic, their confused, deep language. Long lignified tree roots, veins of color in rocks, patches of oil floating on water…everything like that had cast a powerful spell on me…I realized that I felt a kind of joy and new strength, a heightened sense of myself." – Herman Hesse, *Trees*

The task is now to take this notion of "intra-acting" agents in forest bathing to the level of phenomenology (Barad, 2007). In harmony with these ideas, one woman narrated to me her story of a long personal struggle with disembodiment. We are all, she said, "disembodied beings". What forest bathing offered was an opportunity to re-embody presence. Personal, collective, and planetary wellbeing, she described, might become reinvigorated via bodily sensations catalyzed by an "expanded awareness" of the forest. Following her cancer diagnosis and the pain attached to a way of living incompatible with her new health realities, she sought an "entire reeducation in life". She became certified in a range of nature-based meditation activities.

She told me how she quit her job to go to California and be trained as an eco-chaplain. She then became certified in a variety of mindfulness-based and "naturalist" interventions through multiple continuing-education programs at elite universities. She enrolled in a long list of life-coaching classes, for which she flew between California and the East Coast to attend. This journey, and the relative flexibility of a life that allowed for it, made her re-construct her way of relating to others.

Upon talking to her, I interpreted this not as a vacuous attempt at an overly-sentimental connection with some idealized "nature" - a prejudice that I'm ashamed to admit that I had when I began this project. Rather, she helped me see, forest bathing was a very serious endeavor for

her. It made up the stuff of creating *we* - a basic question anthropologists have always been interested in. In my eyes, she underwent a change in her understanding of subjectivity. By that I mean, she described a process of shifting focus to being alongside-within her local forest. In doing so, she no longer made clear distinctions between humans and - as she put it - her "nonhuman peers". We might consider this as a move from pure reason toward phenomena. Doing away with distinctions between objects of environmental stimuli and human experience, meditation in nature consists, in this case, of "making-with" the landscape (Haraway 2016).

For this woman, rather than fleeing the harsh realities of her conditions, forest bathing constituted part of, to use Haraway's term, her "flourishing" (2008). As a means to heal, she chose to join a community of shared intelligibility. She did so by situating her suffering in dialogue with things that exist in a shared world - in the more-than-human nature that the ANFT teaches. In doing so, she brought the relation between herself and her ambient environment closer to the bodily, experiential, and affective parts of subjectivity. Tsing et al. might call this an act of what Jonathan Lear calls radical hope, where "acknowledging catastrophe" coexists "imagining possibility" (2019). As this guide demonstrated to me through her compassionate tone of voice, motivations behind forest bathing can be understood as a desire to enter into a community of people and living and nonliving things who share present, past, and future environmental conditions.

This attitude about the strange goodness of reciprocity was, importantly, not unique to this guide. Ideas about the operative power of reciprocity and gratitude were common threads that revealed themselves through exchanges I had during this research. While this conception of "world" does not quote new materialist thinkers explicitly, it evokes ideas about agency, experience, and embodiment in ways nearly indistinguishable from posthumanist theorists

(Ingold 2012, Bennet 2010). For instance, reciprocity among humans and more-than-humans, for anthropologist Tim Ingold (2012), informs “modes of apprehension of the dwelt-in world”. One of the most influential voices in new materialist theory, Jane Bennet, also advances the idea of a reality that rings resonant with forest bathing (2010). Bennet proposes a “compositional” understanding of reality, a social collective that she terms an “intersubjective assemblage” of things; humans, animals, plants, and nonliving matter (2010).

Developing New Materialisms

Since 2018, the ANFT has certified twenty trails across private and public parklands in the U.S. (Siddiqi 2023). Along nature therapy trails - where “official” forest bathing occurs - walkers find signs that cue breathing, touching, and smelling of surrounding natural elements. Signs offer written indications - like suggesting a path of movement for one’s eyes to perceive leaves moving in the wind, or by giving directions to bend an ear more pointedly to sense the leaves rustling. To suggest how viewers might consider space, the trail’s very design seeks to increase attunement to nature, which is seen to result in a decrease in stress. The invocation of a sensory-oriented relation to plant life and landscape is made possible via contrast to the tech-heavy, speedy ways of contemporary urban life. Resulting feelings of restored attention are seen as a source of healing and a means to foster stewardship to the environment (ibid.).

Forests are uniquely good at proliferating these feelings of “affective fullness” that may lead to a certain kind of reciprocal care (McKay 2016). Forests are potent atmospheres of “particularly dense ecologies” that hold the potential to resituate the human within a more expansive context “beyond the human” (Kohn 2013). For Kohn, the “sensuous qualities” of bodily experience in forests are central to relations beyond the human that “sustain and instantiate life and mind” (2013, 35). So, when we observe that forest bathing guides link

psychological wellbeing to community wellbeing, we might also surmise that the "life" and thought of the forest is intimately tied-up with sustaining the psychic health of humans.

Therefore, we move further from an activity of *consuming* the positive elements of the forest and closer to an ambient sort of sociality with these elements. One of many things I learned listening to forest bathing guides was the importance of returning to "simple sensory perception" for this practice. Perhaps remarkably derivative in some ways, on some level, forest bathing takes seriously this ambient manner of connecting to things in a forest. And, in some elemental way, enacts these lofty philosophical aims through practice. If we dare make this connection, forest bathing might be seen as a try at answering the query; "how should we think with forests?" (Kohn 2013, 24). What's more, "how should we allow the thoughts in and of the nonhuman world to liberate our thinking?" (ibid.).

Section 3

> "The modern, urban self on the one hand feels more and more removed from nature, as family farming becomes agribusiness, hands-on food preparation becomes the consumption of fast food…and so on. But on the other hand, the modern self feels increasingly entangled - cosmically, biotechnologically, medically, virally, pharmacologically - with nonhuman nature." (Bennet 2010, 115)

> "In Uitoto accounts, the atmosphere is not only a set of climatological conditions, but also a shifting configuration of moral qualities and subtle beings—rather than a single system of physical influences, it is the cumulative effect of curative or pathogenic actions by human actors, by ancestral plants, and by the spirits of the dead. As such, atmospheric conditions are moral, ontological, social, and affective indices of states of relationality and social intentions." (McLachlan 2020, 22)

Clinical Registers: The Case of Terpenes as Therapeutic Intervention

Given the political urgency of questions of "increasing commingling" that Bennet (2010) writes of, this section approaches a specific subsection of ongoing clinical studies. These studies on bioactive compounds called terpenes unconventionally merge biomedical and environmental

policy-oriented frameworks (Zorić et al. 2022). They seek to observe the interaction between terpenes - also known as volatile bioactive compounds (VOCs) - and human bodies. VOCs are dexterous, polymorphic chemical assemblages whose exuberance is hinted at through their aromatic release into forest atmospheres.

Research in pursuit of evidence-based therapies examines how these capricious compounds and humans interact. These studies tend to base their hypotheses on the premise that "forest ecosystems have been long suggested as a non-pharmacological potential health medium," (ibid.). They are framed as having a multidisciplinary agenda. And these often state-funded projects aim to prove the efficacy of forest bathing for clinical intervention. In particular, their central concern is how "atmospheric trace compounds" might directly correlate with improved human health. For Western foresters and chemists, atmosphere as therapy may be a new notion. However, plants and their chemical assemblages have been used as medicine by indigenous peoples long before the scientific method came into existence (McLachlan 2020, Kramer 2022).

In what follows, we examine a specific strain of research on terpenes very new to scientific disciplines to clarify motivations behind them. Two things are worth noting prior to jumping into these studies. One, these studies - most commonly done by researchers trained in forestry - attempt to explain how *discrete human bodies* become enlivened by processes enacted by VOCs in specific forest landscapes. Two, terpene emission is a process of biosynthesis that has historically been contained within the biological and atmospheric sciences.

Given this background, it is, indeed, interesting that this kind of research has only recently crossed disciplinary boundaries. Importantly, this fact becomes even more complicated when we see the quick absorption of forestry-related science into the purview of public health

and biomedical spheres. This suggests a recognition of the therapeutic power of forest landscapes in clinical and scientific communities. For example, ParkRX cites such studies as medically compelling evidence for the use of natural space as a remedy for patients. The nonprofit, founded by an amalgam of practicing pediatricians and program designers at Golden Gate National Parks Conservancy, "prescribes nature" through connecting patients to national parks (parkrxamerica.org).

What are VOCs?

While certainly adjacent to public health spheres, VOCs and their circulation in forest ecologies have historically been studied for their anti-inflammatory and carbon-storing qualities. These biogenic compounds, in the fields of biological and atmospheric sciences, have been seen as agents with resilient capacity when faced with extreme conditions. Dynamically activated - or, conversely, stored - through complex processes of forest biosphere metabolism, VOCS act as a signal for larger encompassing forest ecology dynamics. Terpenes act as *one* among many contingent chemical signals, which depend on locally specific soil ecology, air movement patterns, enzyme production, water, sunlight and carbon exchange. Release of terpenes is a huge question for environmental scientists concerned with predicting the adaptability of plants in climate change. For example, an interdisciplinary volume called *Trace Gas Exchange in Forest Ecosystems* teaches us;

> "VOCs can act as chemical signals for communication within and between plants, herbivores, their predators and parasitoids as well as alleviate the effects of changes in physical environment, e.g. elevated temperature" (Gasche et al. 2002, 329)

While I have no airs about being a scientist - let alone an atmospheric ecologist studying trace gases - I will attempt to summarize what this body of research gets at. As critic of new materialists Bruce Braun puts it, I may be falling into the trap of taking 'science' to speak in one

voice (Bennet 2010, 13). However, my invocation of terpene research intends not to "ignore science's heterogeneity", as Braun critiques (ibid.). Rather, the case of terpene research actually illuminates a serious problem - which is that these terpene exchanges pose hugely complex questions of scale. The complexity of these problems in scientific literature on terpenes - that I do not pretend to grasp - *is itself not recognized* by some more modern scientific research.

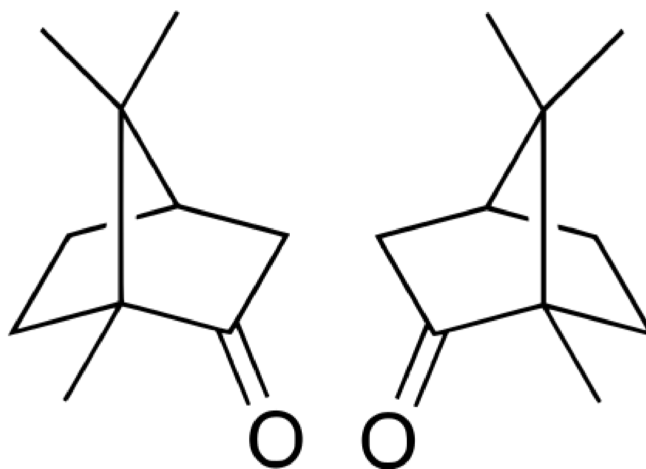
In short, terpenes are finicky beings. They are circumstantially distributed across bodies in a forest ecosystem. To focus scientific inquiry on human consumption of terpenes like camphor flattens the ecological holism that envelopes these distributed beings. Present scientific research agendas - while obliquely alluding to indigenous practice that is better able to account for the ambient qualities of things like terpenes - tend to simplify terpenes for their most useful quality - their pharmaceutical utility. These commercial and scientific projects direct their eye toward therapeutic potential in ways that aren't able to account for the complexity or volatility of forest ecosystems as whole assemblages of beings. Not unidirectional, the problem of terpene biosynthesis complicates these simplified notions. The challenge is, then, recognizing how forest bathing research casts terpenes themselves as "agents for treating various human diseases" (Cho et al. 2017).

Take, for instance, a compelling clinical trial conducted in 2023 by John Innes and his graduate students in the Sustainable Forest Management Laboratory at the University of British Columbia. The group defines itself as concerned with human-nature co-management of forest monitoring systems. Their study on forest terpenes sets out to "investigate the relationship between biotic and abiotic factors" in forested parks in Vancouver to measure "specific health-related outcomes after forest bathing interventions" (Innes 2023). The study's findings describe forest bathing as a "promising therapeutic method for enhancing heart rate and blood

pressure functions," as well as a potential driver for "regulating autonomic nervous system activity and mood" (ibid.).

Over the past five years, other prominent progress on this front has been by researchers who study forests in nationally protected parklands in Serbia, Korea, Japan, the U.S., and Canada (Zorić et al. 2022). For instance, a student of Anna Tsing has written on the (un)natural history of the dynamics of a forest of Californian blue gum eucalyptus trees (Clarke 2022). This particular forest secretes terpenes cineol, pinene, and limonene (ibid.). Not only do terpenes released by eucalyptus trees enliven forests by adding to the alchemical mix that brings us the familiar scent of petrichor; but also, terpenes are well-known for their practical use in forest management as a "natural allelopathic fungicide and insect repellant," writes Clarke (2022). Aromatic oils, when activated by rainfall or moisture in the air, "are dispersed by fog drip" - effectively contaminating all agents in the forest with its effects (ibid.).

In contrast to Californian eucalyptus forests, South Korean, Serbian, and Japanese forests have been used for forest bathing studies for their high concentration of conifers. Conifers are known for producing camphor, camphene, and sabinene (Cho et al. 2017).



Camphor terpenoid, a bioactive part of compounds camphene, pinene, and borneol. Taken from *Wiki*. .

Forest as Medium: Exposure to Volatile Organic Compounds

> "Scientists now accept that trees in a forest are able to communicate with one another in certain circumstances - they can send help, in the form of carbon, to ailing members of their group; and they can warn one another about pestilence and disease." ~ ~ Ghosh, in Holten (2023), 123

One ongoing study at the Environment and Well-Being Lab at the University of Washington aims to examine the effects of exposure to a natural suite of terpenes secreted by forests outside of Seattle (Bratman 2022). The pilot study adopts a novel design. It has participants go on two forest bathing walks to assess if inhalation of terpenes during forest bathing walks has any direct impact on "psychophysiological outcomes" (ibid.). These forest bathing sessions last between 1 and 2.5 hours and measure "seven forest-derived VOCs in serum (i.e., α-pinene, β-pinene, β-myrcene, Δ 3-carene, d-limonene, β- caryophyllene, α-humulene)" to see whether human inhalation of these compounds regulates heart-rate variability (ibid.).

A control group is provided with powered air purifying respirators to sift out forest-derived terpenes (ibid.). The other is exposed fully to the VOCs during their sessions in Pack Forest in Eatonville, WA (ibid.). Trees within the 4,300 acre forest "include old growth Douglas Fir and Western Red Cedar", per the university's website. The forest also includes 300 acres of lowland old growth forest known as the Newton Creek Reserve (www.packforest.org).

This research regards key signals (terpene secretion) for forest communication as potential catalysts for human sociality (hence the mending of relations that forest bathers speak of). Like in many indigenous communities where forests are sought out for their medicinal qualities, the communicative role of something like camphor is seen as useful for helping suffering people.

Lively parts of plant sociality in a forest, in this case, are seen as potentially beneficial actors who might spur a similar kind of holistic healing in the now-expanded human world. Here we find a clear example of how basic life processes in forest ecosystems - at the level of

biosynthesis and plant/biosphere/atmosphere exchange - are sought out as *techniques to manage vital human processes* (Lorimer 2020, Rose 2007). For example, in this particular forest outside Seattle live Ponderosa pines. Ponderosa pines, when warmed by the sun, release "an aroma of vanilla, butterscotch, pineapples, or even cream soda," (Van Pelt 2007). To these smells, a straightforward question might be - how can these concentrated smells benefit human health? A more interesting question might be - how do environments (including humans, animals, plants, microbes, etc.) that commingle to release these smelly complex hydrocarbons act in concert with the Ponderosa's thick, sappy, dark brown bark (ibid.)? And how do we curiously interact with this atmospheric orchestra, apart from simply consuming it in its most lively moments?

The second question draws our attention to inexpressible qualities that need to be felt. We thus shift orientation from consumption toward interaction with the full sociality of a forest. This points us to a kind of politics of health beyond poetical notions of unity, wholeness, and peace. It draws us nearer to an embrace of the ambient, atmospheric qualities of time immersed in nature that may importantly help us craft more coherent shared realities - realities with stakes and things worth defending. Put briefly, the implied call in regarding the forest atmosphere in this way is political *and* profoundly spiritual. For in forest bathing, it is within these oozing, ethereal, misty environments that plant sociality intertwines with human sociality. Returning to sentiments expressed by forest bathing practitioners themselves, it is crucial to call attention to the full-spectrum of sensations and how those are made possible through relation. That, rather than a measurement of a residual side-effect from a single organic compound, might tell us more when considering how forest bathing might be healing for people.

This points to an even more dire necessity to tune ourselves to the agents in the forest - not just the ones that give us therapeutic relief. Kimmerer, a scientist herself, says that "scientific

writing prefers passive voice to subject pronouns of any kind…" (2023, 215). The result of this, she argues, is that we exclude the possibility of "sophisticated practices of reciprocity" out of loyalty to objective, objectifying science (2023, 215). In short, the emergence of these public health and forestry efforts gives us yet another reason to oblige ourselves to the sort of historical, affective attention that anthropologists like Myers (2017) and Kimmerer (2013) urge us to at the beginning of this paper. However crucial this may be, it is important to remain open and optimistic about studies like this at the Environment and Well-Being Lab. In fact, clinical studies on forest bathing may work together with the narrative, sensory-oriented work that people do in their "forest therapy".

In this context, we are empowered to actually take seriously - for all its shortcomings and expressions of elitism - what forest bathing might train us to do. In tuning us to the quality of immersion emphasized by forest bathing, we might find a renewed sense of possibility in the tedious attention required for mutual transformation. To return to the basics - by bringing in human capacity to notice, a distinction is made between merely breathing a forest's organic compounds and *noticing* that you're breathing them. This is the precise thing that forest bathing gets at. Instead of framing forest bathing for its potential to tap into the beneficial elements of forests, it might be a more illuminating question to ask how the entire process of forest bathing itself can be a profound, thoughtful engagement with various agents and their place-specific stories. And while perhaps that includes attention to breathing *of* forest atmospheres, it has always been, really, breathing *with them* (Choy 2020).

And still, health is not just about breath. The *whole* experience might involve reckoning with past historical injustices, forming connections to culturally significant places of spiritual practice, shaping more coherent understandings of personal and collective loss, and forging more

robust systems of belonging. That process is, I learned, what gives forest bathing its potency. Not only that, but attuning one's self to that suite of cohabitating other selves is the work of establishing more livable individual and planetary conditions.

When humans inhale volatile compounds of a forest with intention and for the express purpose of increasing mindfulness with forest kin, they employ a model familiar to indigenous healers. Not a single guide I spoke to was able to articulate a connection to indigenous practice that similarly bases its knowledge of atmosphere in embodied attunement. McLachlan (2020) writes a history of colonialism and bioprospecting in Colombia. She describes the atmosphere of forest-plant-human healing ceremonies that also involve invitations to enter into relation with more-than-human kin. She writes that this process entails a "sensory, affective, and psychic reorganization" through the power of the "extended body" shared by humans and nonhumans (2020, 14). Practiced for centuries, practices like these - that regard the ambient distribution of plant vitality in landscapes - are today taught by healers in indigenous communities (ibid.). Calibrating atmospheric conditions by looking toward a therapeutic landscape of sorts, is, as we know, nothing new (Kramer 2022).

Conclusions

> "What do you want? What are you capable of? With whom are you prepared to cohabit?" ~ ~ Bruno Latour, *Down to Earth*

To conclude, I would like to cast our imaginations toward what forest bathing might become. If, as this research suggests, we are increasingly composed alongside-within the vital materials of places like forests, how does forest bathing take those implications to heart? My provisional response here is: co-contamination, mutual exposure, and shared histories/futures of toxicity and climate disaster. Forest bathing takes these past and ongoing collective catastrophes of environmental degradation and biodiversity loss as replete with elements that may be felt,

embodied, commodified, synthesized, and activated for different groups at different moments in specific landscapes and bodies.

We have seen just how varied approaches to understanding forest bathing are. And in dissecting this diversity, we have revealed how these practices may be very differently motivated and mobilized for different kinds of people. We can recall that the first guide that I spoke with found therapeutic solace in the toolkit the practice provided to grapple with the realities of an ailing body and planet.

In a different mode of valuing how forest liveliness metabolizes with humans, we also saw how private companies like TreeBath and Usual are beginning to invest resources into forest bathing research. That these profit-oriented projects appear to utilize discourses of "eco-immunology" is a fascinating unfinished business. This points to the need for more work, work which is of serious political and ethical import.

Patchy Anthropocene

> "Landscape structures catch our attention as form coming into being. A phenomenological attunement to landscape forms as well as to beings-in-landscapes allows multispecies histories to come into view." ~ ~ Tsing et al. 2019

Without the help of market reports, indigenous healers and anthropologists alike have already equipped us with therapeutic tools to recognize how "cross-species relations make forests possible" (Tsing et al. 2024). Now the question - one of resistance and of courage to face present catastrophe - is how we "re-attune ourselves to the new nature" (ibid.). We have learned through this paper the dangers of figuring the "Forest" as a mere form of lively capital. Now, we may look to new visions of the future of more-than-human relations. Hopeful of the fundamental faith in resilience through symbiotic relationships that is advanced by this Westernized eco-wellness practice, I point us toward Tsing et al.'s notion of "patchy landscapes" (2019):

> Patches show us landscape structure, that is, morphological patterns in which humans and nonhumans are arranged. A forest, a city, or a plantation: each of these is a landscape structure. We recognize these landscape structures through observations, comparisons, and attunements…" (ibid.)

While forest bathing and other popular "nature-based" wellness activities may be dismissed by the cynical among us, this research argues that, underlying these practices is a call to a similar kind of observational attunement to landscape proposed above. This research asks us to consider, with seriousness, how these practices may point to new directions for attuning human senses to place.

I suggest that it is in those encounters - far beyond exchange-value encounters, but not immune to them - is one answer to how we collectively pursue commitments to place and more-than-human relationships. It is in this way that we may "grow from common exposure", perhaps, in part, through breathing volatile organic forest compounds, to develop a "kind of contagious politics" (Tsing et al. 2019, S193). As we share this exposure, and exist in places where forests are, more and more, disappearing, it becomes even more necessary to take things like forest bathing as potential opportunities for connection. As Tsing et al. say, curious collaboration "across multiple registers of knowledge and being" are needed for "anticipatory action" in the face of wide scale climate crisis (2019, S193).

What Might Forest Bathing Become? Stories of our Senses

As a parting invitation - in the spirit and style of forest bathing - come with me, on a silly and romantic journey. While writing this paper, I chose to plant myself in the forest ecology stacks at Cornell University's Mann Library in its College of Agriculture and Life Sciences. In a try at a superficial grasp of these things called VOCs, I perused titles on bioactive chemicals from plants. A titillating book in the plant biochemistry section - a field I know nothing about - called *Scent of the Vanishing Flora* (2011) by Swiss fragrance chemist Roman Kaiser, grabbed

me. And frankly, who's to say if it's "good" ecology, certainly not me (Tsing et al. 2024). But what interested me was that Kaiser does a scent analysis of vulnerable species of conifers. His scientific stories of plant species facing near-future extinction give us a record of beautiful, funky, and seductive smells. All of which are, importantly, hyper-localized interventions.

With a focus on the experience of scent as a way to consider ecological loss in forest ecosystems - Kaiser incorporates storytelling of personal encounters with plant smells with quantitative data on organic chemicals. This occurs across a ten-year study based on his training in biochemistry. He describes endangered Japanese conifers and the scents they produce as follows:

> "*Chamae-cyparis obtusa*, the Japanese Cypress or *Hinoki,* together with *Sugi* (*cryptomeria japonica*) and *Hiba* (*Thujopsis dolabrata*), belong to the famous Japanese conifers of cultural as well as economic importance. This slow growing tree is native to Central Japan, grows to 35 m tall with a trunk up to 2.5 m in diameter, and develops a very high quality timber. Although large cultivations have been established to compensate for the high rate of exploitation, this conifer has become endangered…and is protected by Japanese law. The wood is used for building palaces, temples, and shrines. Furthermore, it is used for the famous Japanese Hinoki Bath so that tourists may experience it at mountain resorts." (2011, 140)

Kaiser goes on to comment on the complex "composition of the leaf scent" of the Japanese Cypress that he felt in the Aokigahara forest, also known as the "Sea of Trees" (2010, 140). He notes that the refreshing scent, born after he crushed leaves to release a mixture of terpenes, was "calming and comforting" (ibid.). Might he - a *nonprofessional*, amateur forest bather of sorts - be cautious about attempts to quantify terpenes to recreate the same experience? Might he be interested in proving the efficacy, through the evidence of his internal biological functioning in that moment, of moments like these? Would he be skeptical of harnessing this

particular kind of atmospheric mix for the express purpose of extracting its “promising therapeutic qualities”?

As Kaiser illustrates, the history of Japanese conifer forests involved “plantings for centuries around temples and shrines where (today) they contribute to the silence and awe of these sacred places.” (2011, 142). Given increasing awareness that these trees - threatened by climate change - will soon reach a point when the last of their kind “breathe no more”, I suspect that Kaiser might be hesitant to use medical terms when describing this particular forest atmosphere (2011, 11). This is because, as he points out, Japanese communities in the foothills of Mt. Fuji have a particular, historically-situated relationship with these spiritually significant trees. It, then, feels reductive - if not dangerous - to call upon public health and biomedical frameworks to capture and study the benefit of these interactions *on behalf of humans*. Rather than flatten these complex moments of meaning-making between a human and the “more-than-human world” to a mere biological compound or experiential commodity, following the words of one forest bathing guide, it is important to have a “practice of gratitude” toward these more-than-human kin.

“Meaningful sustainability requires multispecies resurgence”

~ ~ Tsing, 2017

“When we are gone, when our busy days

Of noisy splendor and endless adversity,

And all their crazy terrors are long forgotten.

The wind will bend it, storm winds tousle it,

Sun laugh upon it, wet snow weigh it down,

The finch and nuthatch, too, will live there

The quiet hedgehog burrow at its feet,

And all that it lives through, savors, and endures

In the course of the years - changing generations,

Will pour out from it, every day, in the song

Of its rustling leaves, in the friendly gesture

Of its gently waving treetop,

In the sweet scent of the resinous sap

That wets the buds stuck shut with sleep,

In the endless game of light and shadow”

– Herman Hesse, *Trees,* 58

Acknowledgements

I want to express my gratitude to the faculty members that suggested points of light for this paper. I was fortunate to grow with the help of good people and wonderful teaching. Thank you to Eugene Raikhel, for patience and thoughtful feedback. To Ella Wilhoit, for caring guidance. And to Marshall Kramer, for setting groundwork for strong questions and methods. Thanks to the handful of forest bathing guides who were willing to chat with me, for sharing in earnest how they thought about their work. To Declan, for listening and for building things with me. To my favorite four-year-old, Ella, for adventuring with me through Hyde Park. You're fun to love. Most of all, to my family. Thank you for encouraging me to take risks.

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