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Wandering Tree. Along the Path of Acclimation

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ABSTRACT

Trees are “rooted.” Nevertheless, long-term scientific observations have proved that trees do migrate through landscapes and regions, very slowly and over decades to survive the impacts of climate change which advances faster than they do. *The Wandering Tree* project by artist Agnes Meyer-Brandis observes tree migration in different ecosystems, in Finland at Siikaneva peatland. The project creates narratives and raises questions of the effects of climate change on the ecosystems considered “naturally” unchangeable. This visual essay illustrates yet undiscovered stories of a tree. What happens in the peatland when we are not there? What stories will entangle with the new path of the pine?

As I did stand my watch upon the hill,
I looked toward Birnam,
and anon methought
the wood began to move.

Messenger, Act V, Scene V, Macbeth, Shakespeare, 1606

Forest, wetlands, and trees have been an infinite source of mythologies and stories all over the world. But who has paid attention to the wandering trees lately? The trees which are moving forward from their original living environments and occupying new territories which have become livable thanks to the changing climate?

The writing of this visual essay takes place in parallel with the commencement of an endeavor to narrate a story of the migration journey of a common pine tree (*Pinus sylvestris*) which will be observed at Siikaneva bog in Southern Finland in 2021–23. The initiative is grounded in scientific and artistic research by people driven by their curiosity, experts in various disciplines. The observations started at the Siikaneva in fall 2021 by installing *The Office for Tree Migration* (OTM), led by German artist Agnes Meyer-Brandis in collaboration with curator Ulla Taipale and Hyytiälä Forestry Field Station of University of Helsinki.

Neither good storytelling nor meaningful science are tied to a tight script or to results known beforehand. In that sense, the expectations based on one tree wandering through the wetland could

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Figure 1. Agnes Meyer-Brandis installing the Office for Tree Migration in Siikaneva bog in fall 2021. Photo: Ulla Taipale



Figure 2. The studied peatland complex, Siikaneva, is located in Southern Finland, (61° 50'N, 24° 12'E), 160 metres above sea level. Siikaneva is an open peatland that has bog and fen areas. Peat depth ranges from 2 to 6 m and the age of the peatland from 8000 to 11 000 years cal. B.P. (Mathijssen et al., 2016, p. 6) Drone piloting: Matti Koponen. Photo: Agnes Meyer-Brandis.

be mistaken – and we might not document, in photos and video, a wandering tree but – ‘only’ the changes of a beautiful and rather pristine boreal landscape. In the case of such an outcome, we would have long-term imagery of the diversity and uniqueness of a boreal wetland, the nuances of changing seasons, circadian rhythm; a record of the birds, butterflies, and other insects as well as atmospheric and planetary shifts and maybe in addition, some still unknown, quasi-invisible processes caused by climate change or other phenomena, not yet discovered? In any case we will be able to answer the question: What happens in Siikaneva wetland when we are not there? And, in the best of cases, also these: Why does the pine move, where does it go? Will other pines follow? Why did the pine or pines decide to take off?

THE JOURNEY OF PINUS IN FINLAND

The family of *Pinus* are among the most active trees in the world. They wait for opportunities and react to disturbances such as volcanic eruptions, melting glaciers, forest

fires, or slower climatic changes to occupy new territories. They need light but are willing to live in harsh places which are not accepted by other trees (Lowenhaupt Tsing, 2020). Both pine trees and people arrived in Finland some 9000 years ago, after the ground was exposed from the ice cover.

Many stories fit into such a long timeline. While historians are more interested in the stories about and around humans, the story of *Wandering Tree* focuses on the paths of non-humans.

At Siikaneva, forests of common pine trees surround the open and semi-open peat area. Trails on the peat are used by hikers, scientists, and nature-lovers to walk without difficulty, not sinking into the wet peat, and keeping a human velocity to advance walking. Other beings move with their own species-specific speed, some of which people are not tuned to sense. Tools for imaging and for measuring those movements are needed.

Trees are ‘rooted.’ Despite that fact, long-term scientific observations have proved that trees and entire forests migrate through



Figure 3. Siikaneva peatland is surrounded by a forest of common pine trees. Trails on the open and semi-open peat area are used by hikers, scientists, and nature-lovers. Trees wander using their own paths. Photo: Agnes Meyer-Brandis

landscapes and regions, just very slowly, and over decades, in order to survive the impacts of climate change which currently advances faster than them.¹

Trees are informed about the events of the surrounding environment through their communication systems, mostly biochemically through the atmosphere and via the mycorrhizal networks in the ground. Their agenda depends on a complex interaction between hydrology, nutrient availability, and other biological factors of their habitat (Kokkonen et al., 2019). The shift from open peatland to forested system does not only depend on wetness and water levels, but also on the nutrient level of the peatland. Trees do not move from a spontaneous idea or because they are adventurous. Their tourism is much slower than what humans practice and it is driven by other interests.

PEATLANDS AT RISK

Changes in the function and species composition of peatland ecosystems as a result of climate change are an important and timely area of natural-scientific research. With one-third of the Earth's carbon stored in the northern bogs, their changes affect the climate globally.

Significant changes are to be expected in boreal regions, as they are some of the fastest warming places on Earth (Kokkonen et al., 2019). Boreal zones are also where most of the peatlands are occurring (Xu et al., 2018). A phenomenon called evotranspiration,² caused by climate change is converting the boreal peatlands to suitable places for trees to enter. Slowly but proven.

The SMEAR II scientific measuring station in the Siikaneva fen is an important site for research of peatlands and their interaction with the atmosphere. Academy of Finland research project *Drying of boreal bogs – effects and mechanisms*³ (2020–24) led by Professor of Peatland and Soil Ecology Eeva-Stiina Tuittila (University of Eastern Finland), studies at Siikaneva the effects of climate change on boreal peatlands and vegetation changes caused by their drying up.

Circa one third of the surface (26.7 %) of Finland consists of peatland ecosystems, rich in biodiversity. Proportionally, calculated as a fraction of its total area, Finland is the European country with the most peatland (Tanneberger et al., 2017). Still, more than half of the circa

10,4 million hectares of the Finnish peatlands is threatened by human exploitation and is currently an object of fierce political debate and economic interests (Sandell, 2021).

The situation is not new. The exploitation of the peatlands started a long time ago, first for agricultural purposes, then for forestry and the extraction of peat for energy. The scale and speed of destruction is just different now than one hundred years ago.

In 1971 German artist Joseph Beuys manifested his worry for these fragile environments. *The Bog Action (Aktion im Moor)* was a spontaneous artistic performance, in which Beuys immersed himself in a muddy bog in Zuiderzee, in Holland:

Bogs are the liveliest elements in the European landscape, not just from the point of view of flora, fauna, birds, and animals, but as storing places of life, mystery and chemical change, preservers of ancient history. They are essential to the whole ecosystem for water regulation, humidity, groundwater and climate in general. (Beuys as cited in Tisdall, 1979, p. 39)

The same “elements” are now declared to be the most endangered habitats in the European Union.

Siikaneva has the status of being a protected peatland. A governmental body, Metsähallitus, controls and manages the area, which is important also for human activities like scientific research and recreation such as trekking, skiing, berry-picking, and birdwatching. Will it keep its protected status if more trees decide to move and reforest the site?

OUT OF SUBSORDUM

Wandering Tree project by artist Agnes Meyer-Brandis follows and visually observes tree migration in different ecosystems. In Finland the phenomenon is scientifically observed in bogs and fens, which are different types of wetlands. Climate change modifies the boreal nature steadily but so slowly that only few can detect these processes without the help of technology, science, and arts.

The project forms part of *The Office for Tree Migration (OTM)*, a nomad platform brought into being by Meyer-Brandis that creates narratives



Figure 4. The vegetation consists of different moss and vascular plants such as cranberries (*Vaccinium oxycoccus*), crowberries (*Empetrum nigrum*) dwarf birch (*Betula nana*), and common pine trees (*Pinus sylvestris*), among others (Koivu, 2021). Photo: Ulla Taipale



Figure 5. Agnes Meyer-Brandis (FFUR) and Ulla Taipale (INAR/University of Helsinki) having a coffee break at the Office for Tree Migration Siikaneva, at the station built on the bog to measure the Ecosystem-Atmosphere Relations. Photo: Anges Meyer-Brandis, 2022.



Figure 6. The Office for Tree Migration (OTM) explores possible, seemingly absurd or impossible methods that allow the trees to move faster and simply walk away from the changed climate. It is a long-term research project of the Institute for Art and subjective Science (FFUR). In 2016 the migration of a pine tree was observed in a forest clearance in Denmark. Photo: Agnes Meyer-Brandis



Figure 7. Office for Tree Migration Headlands. Marine County, CA, US. Photo: Agnes Meyer-Brandis, 2019



Figure 8. Tealemetree Station, a permanent installation by Agnes Meyer-Brandis at SMEAR II (Station for Measuring Ecosystem-Atmosphere Relations) at Hyytiälä forestry Field Station (2015->). The table invites people for tea and reminds passers-by of the importance of an adequate ambience when searching for a fruitful dialogue between human and non-human disciplines. Photo: Agnes Meyer-Brandis, 2015

and raises questions related to the effects of climate change for the ecosystems and landscapes considered 'naturally' unchangeable. Over a period of time, Meyer-Brandis has followed and documented the movement of the trees at the Experimental Research Arboretum in Berlin Zepernick, in a forest clearance in Denmark and in the Californian hills in the USA. A collaboration with Max Planck Institute in Germany offered her a chance to explore the same phenomenon at a molecular level.

The interest of Meyer-Brandis towards natural-scientific phenomena has resulted in multiple works of art. The body and the genealogically growing tree of the research behind her work is visually justified in *Subsurdum* (2003- >),⁴ an ever-growing pictorial archive where the letter "T" reveals the developing importance which trees are having in her work. It is published in the book, edited by Meyer-Brandis (2015) and in various exhibition settings. Tree-related imagery especially expanded from the year 2013 onwards. In that year she was invited as an artist-in-residence to *Climate Whirl Arts Program* at Hyytiälä Forestry Field Station

in Finland, which is a peripheral research station of University of Helsinki where the history of forest management and cutting-edge ecosystem and climate studies co-exist at the same site in the woods.

During the residency at the research station in 2013–14 the artist concentrated on scientific inquiry around airborne aerosols and volatile organic compounds, maybe the most conspicuous and best communicated research item of the place, and then, the quietly surrounding trees caught her attention and headspace: Trees and tree communities' biochemical communication (One Tree ID), tree migrations (Office for Tree Migration) and forests' questionable greenness (Forest Green) have been since woven into her artworks in multiple formats and shown in major cultural scenes internationally.

As a memorial of all this mental whirl with trees, atmosphere, forest and people, a sculpture called *Tealemetree Station – Have a Tea with a Tree* (2015) stands permanently in the SMEAR I laboratory forest, reminding a passer-by of the importance of an adequate

ambience when searching for a fruitful dialogue between human and non-human disciplines.

The Wandering Tree – Siikaneva continues the work of Meyer-Brandis under the umbrella of the infinite possibilities for creation at the facilities of Hyttiälä Forestry Station and nearby peatland where two SMEAR (Station for Measuring Ecosystem-Atmosphere Relations)⁵ are located.

We can imagine that the final work, a multi-channel video installation, will introduce the fragile boreal peatland ecosystems to a wider public and address the challenges that climate change creates for nature and its actors. The work subtly suggests to audiences from all walks of life to observe the changing environment; to see and evidence slow but demonstrated natural processes around us, not only in the peatlands but anywhere.

The work communicates the topic of tree migration outside of scientific communities through artistic manifestations that avoid being didactic – the minds of the viewers are given the chance to get activated and imagine migrating trees wherever they go. Meyer-Brandis invites us to experience and appreciate the results

of long-term artistic research with scientific ground.

The Office for Tree Migration can be seen as an artistic monitoring system to provide evidence of the changes that climate change causes in the landscapes and ecosystems which we have considered static and unchangeable. Through a series of artworks, the transience of the natural events, and simultaneously, the irrevocability of those prolonged and gradual shifts is made visible.

Trees are the protagonists of the artwork. However fantastic this may seem, the result of the project is not fantasy, but a poetic vision of reality based on artistic and scientific observations.

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Figure 9. *Pinus sylvestris* at Siikaneva peatland. Webcam images: Office for Tree Migration, October and November 2021

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ENDNOTES

- ¹ The authors refer to several conversations related with tree migration, held with various scientists between 2013–21, such as Constance I. Millar (US Forest Service Research & Development), Olivier Blarquez (Department of Geography, University of Montreal), Eeva-Stiina Tuittila and Aino Korrensalo (University of Eastern Finland) and Timo Vesala (University of Helsinki).
- ² The combination of two separate processes whereby water is lost on the one hand from the soil surface by evaporation and on the other hand from the crop by transpiration is referred to as evapotranspiration. See <https://www.fao.org/3/x0490e/x0490e04.htm>
- ³ See https://akareport.aka.fi/ibi_apps/WFServ-let?IBIF_ex=x_hakkuvaus2&CLICKED_ON=&HAKNRO1=330840&UILANG=fi&TULO-STE=HTML
- ⁴ The *Suburdum* is an extensive collection by Meyer-Brandis that audaciously connects scientific facts with poetic fiction. The archive triggers a disconcerting, turbulent interplay of distant proximity and proximate distance, of different planes of vision, times and spaces. The image and text sources continue thinking and shaping that which humanity has attempted since the beginning of time: To comprehend the terrestrial and cosmic laws and the relationships between the micro- and macrocosm. (Bauerle-Willert, 2015)
- ⁵ See <https://www.atm.helsinki.fi/SMEAR/index.php>