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Epifyytti

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Unearthing the Earth: Artistic Research on Socio-Ecological Contentions of Extractivism

Extractivism refers to an economic and political model centred on the large-scale extraction of natural resources – such as metals, minerals, oil, gas, or timber, primarily for export and profit (Chagnon et al. 2022). One of the key forms of extractivism is mining. Mining has been part of human economic activity for centuries, but the Great Acceleration and technological advances of the 20th century placed it on an entirely different scale: extraction became faster and vastly more voluminous (Arboleda 2020). Metallic ores and minerals supply the materials that underpin nearly every aspect of modern technological and urban life – from construction and infrastructure to electronics and medicine. The recent global race for mining and metals has intensified further due to the ongoing energy transition, which seeks to move away from fossil fuels and, in turn, demands a significantly increased supply of mined minerals and metals (Bittle 2025).

While mining is often presented as an essential and even indispensable backbone of contemporary economic and productive activity, it is the current scale of extraction in the age of climate crisis that brings questions of ecological and social justice to the forefront. This violent, large-scale exposure and removal of metals and minerals from the Earth's bedrock frequently disrupts cultural and biological landscapes and systems. There is growing concern about the environmental degradation caused by large-scale mining (Pure Earth & Green Cross Switzerland 2016; Heikkinen et al. 2023; Heikkinen 2024), the disruption of cultures (particularly voiced today by Indigenous communities whose relationships to land are especially deep, see, e.g., Romero-Toledo & Jenkins 2022), and the unequal economic distribution of benefits and burdens (Leino et al. 2023).

In our project – situated in an era in which extractivism unfolds on an already wounded Earth – we shift our careful attention and empathetic analytical gaze toward the Earth itself, centering its human and nonhuman inhabitants, its chemical and physical compositions, and its cultural environments (cf. Bebbington & Bury 2021; Müller & Nielsen 2023). For that, we employ *unearthing* to describe both a material process and a conceptual lens.

Materially, unearthing refers to the physical manipulation of the Earth's subterranean layers of bedrock: the exposure and removal of immense volumes of rock and soil brought to the surface for processing. Conceptually, unearthing becomes a method for

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reorienting our analysis of extractivism. It invites us to uncover, examine, and re-centre the Earth itself amid the ongoing anthropocentric (or rather, capitalocentric) rush for new minerals and metals.

To unearth the socio-material disruptions caused by extractivism, we rely on academic–artistic collaboration. In particular, we employ visual arts – sketching, drawing/painting, and photography – as key methodological tools. Beyond the traditional academic analytical gaze directed at extractivism, these visual tools allow us to attune to materiality itself: to Earth's matter, to mining technologies, and to the processes of their violent interactions.

As part of the project, we researched and travelled to several sites in Finland where extractivism has taken place or is anticipated in the future. Finland, like many regions around the world, faces growing extractive pressures – particularly within the EU's ongoing push to secure strategic raw materials within its own borders (Gataulina 2025). Our fieldwork took place in 2024–2025 and, in addition to the analysis of academic and media sources, included visits to the closed copper mine in Outokumpu, the active Kevitsa mine, the Viiankiaapa bog near Sodankylä, where the Sakatti mining project is planned, and Ohcejohka (Utsjoki in Finnish), where protests against mineral exploration occurred in the 2010s.

During these field trips, Natalia documented material details of both industrial and natural environments through sketching, while Iuliia used photography. These on-site sketches and photographs were developed into paintings and photographic projects at the later stages of artistic analysis.

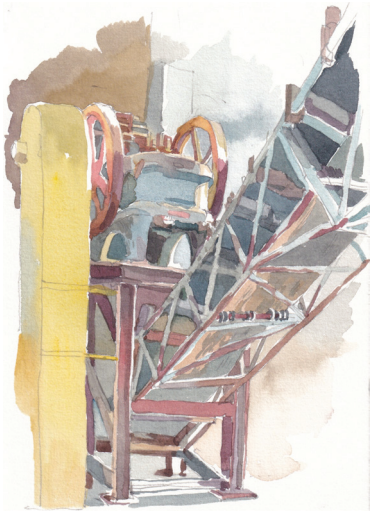
Working with painting and photography enables us to portray relationships between extractivism and questions of ecological and social justice in ways that extend beyond verbal academic discourse. These visual methods tap into aesthetic, affective, and material registers of human expression and communication (cf. Romano 2023). This compilation therefore presents different aspects of extractivist disruptions through visual compositions, each accompanied by a concise descriptive text that contextualizes both the issue and the specific place from which the visual work emerges.

Technologies, rhythms and scales of extraction

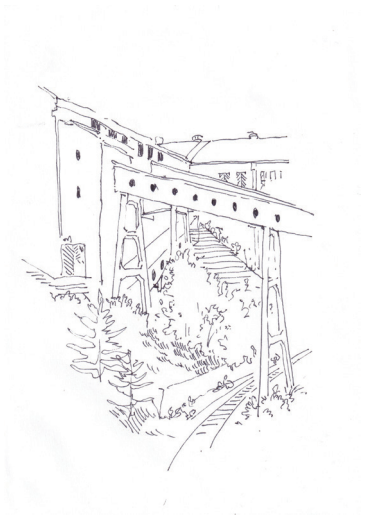
The shift to larger scales of extraction became possible through the technological advancements of the 20th century. Mining machinery now plays an active, agentic role in extracting and processing vast volumes of minerals and metals. The contemporary extractivist assemblage includes not only human labour to manipulate, move, and process materials once embedded in the Earth's strata, but increasingly an array of machines and technologies that, through mechanical, physical, and chemical processes, intensify the overall movement of the Earth's matter (LeCain 2009).

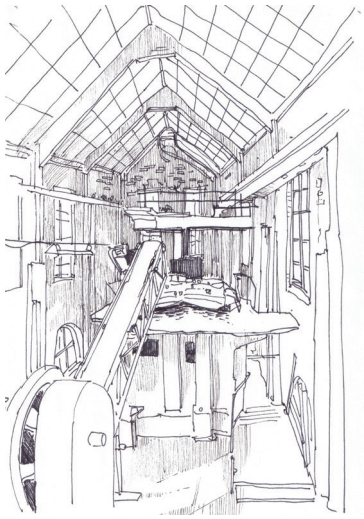
This upscaling is also enabled by changes in the rhythms of mining operations. Labor shifts at technologically advanced mining sites are structured to ensure continuous, uninterrupted extraction and are directly tied to the company's capital generation, transforming subsurface geological strata into commodities. The mine's temporal and spatial scales – its rhythms and intensities – translate a vertically oriented extractive process into a globalized plane of capital accumulation and supply-chain integration (cf. Clark 2017).

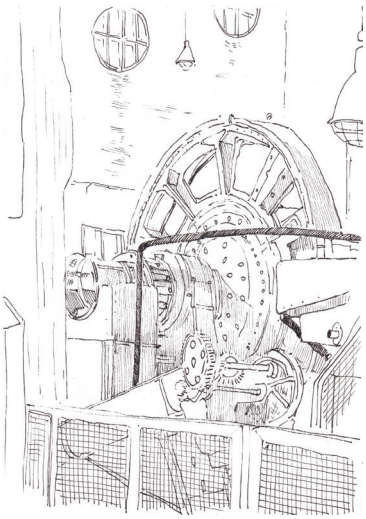
The artworks that follow include on-site sketches made at the closed copper mine in Outokumpu and a series of oil paintings based on the visit to the active multi-metal Kevitsa mine near Sodankylä. The Outokumpu mine operated from 1910 to 1989 and contained an ore deposit stretching four kilometres, making it the second-largest deposit discovered in Europe to date (Outokumpu Mine, Finland 2022). The Kevitsa mine is one of Finland's largest multi-metal open-pit mines, extracting approximately 36 million tons of rock annually. The open pit measures roughly 1.2 kilometres in length, one kilometre in width, and 330 meters in depth (Fieldwork Diary, 15 September 2024).

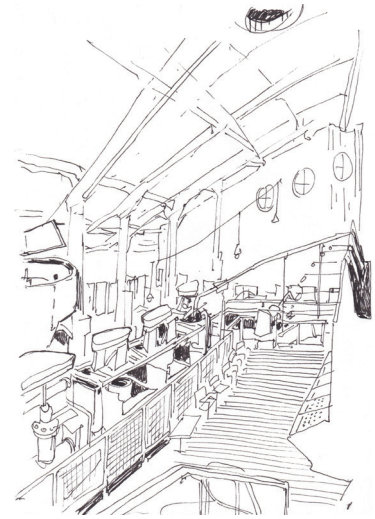


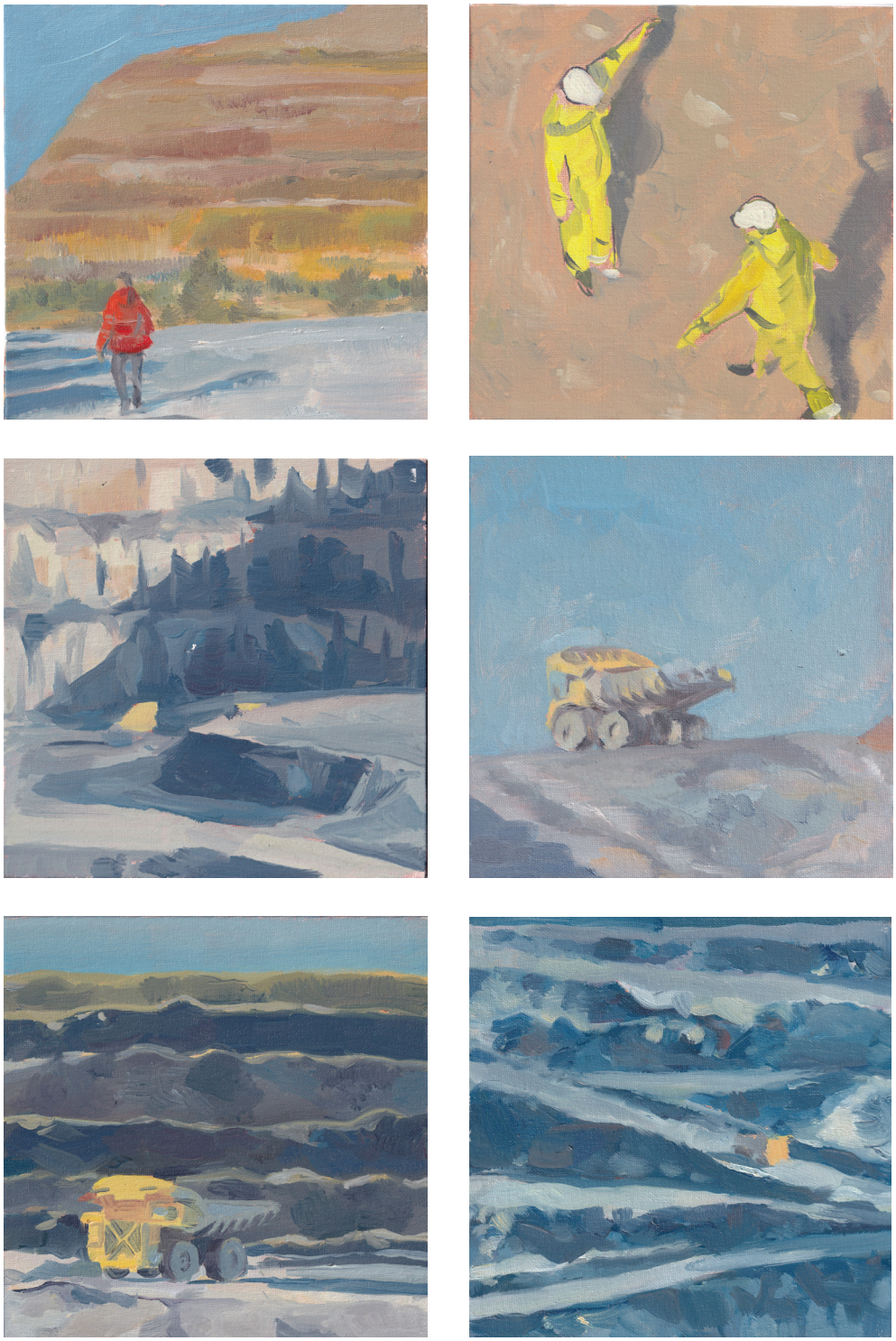
A series of on-site sketches made at the old copper mine in Outokumpu. These sketches closely observe and depict the infrastructure and machinery of the mining site, which once unearthed copper from the bedrock and transformed it into a commodity through various physical, mechanical, and chemical processes. Author: Natalia Batrakova.











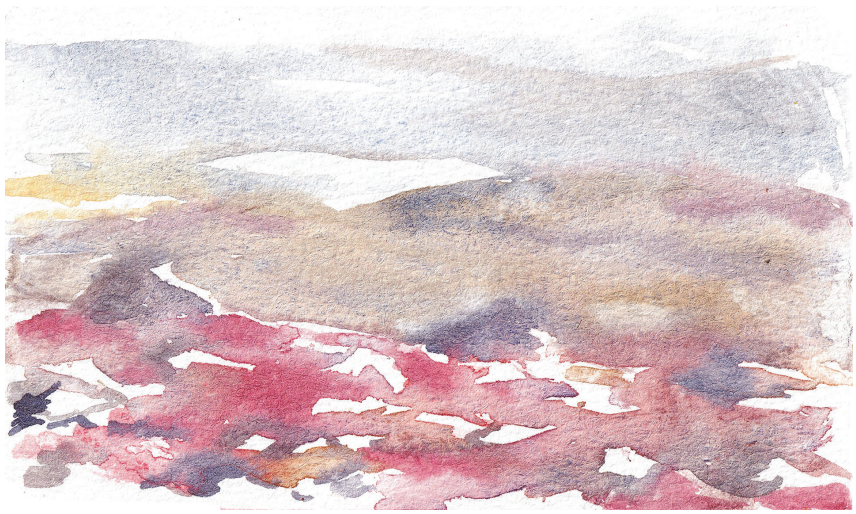
A series of six oil paintings depicting the mine as a site of labour, focusing on people, machinery, and daily operations. Author: Natalia Batrakova.

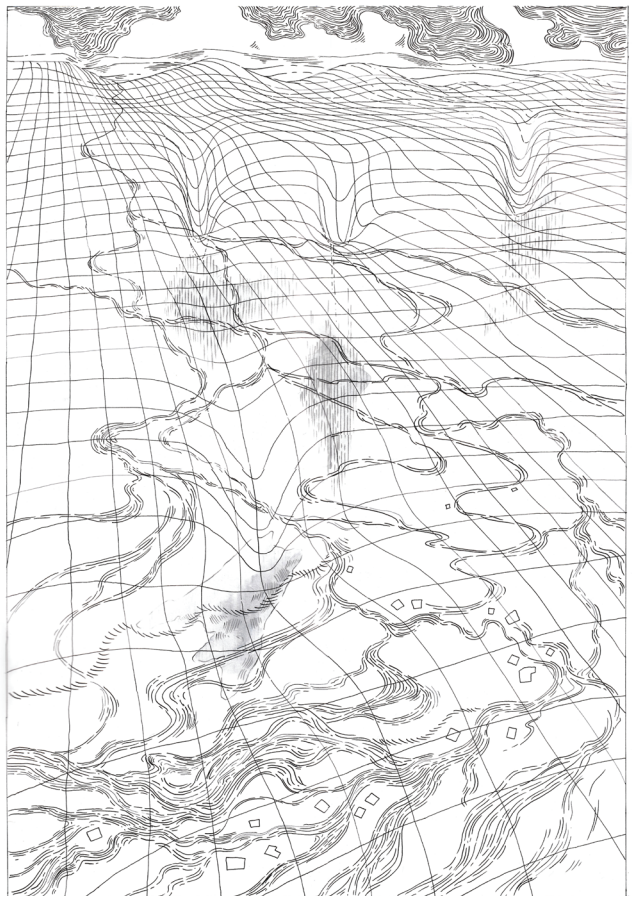
Locating and mapping the minerals

Another factor contributing to the increasing scale of extraction has been the geological and technological advancement in locating and mapping metals and minerals within the Earth's strata. While mapping enables the material processes of extraction in the future, it can also function as a violent political and ontological act in the present (Lassila 2018). The mere presence of minerals on a map produces a particular reality which positions extraction as the most viable and therefore hegemonic way of relating to the land. Such a framing often conflicts sharply with other ontological relations, including social, ancestral, and cultural meanings attached to place.

The following artworks were developed after our visit to Ohcejohka (Utsjoki in Finnish), where diamond exploration activities in the 2010s gave rise to the Anti-Mining Deatnu Movement. Although diamond exploration was eventually withdrawn due to local protest, mineral deposit maps produced by the Geological Survey of Finland (GTK) show reserves of nickel and copper – classified as "critical minerals" – near Ohcejohka, first identified in 2000. Once discovered underground, these minerals continue to exist on the map, sustaining the possibility of being actualized into an extractive reality.

A photo (by Iuliia Gataulina) and a sketch (by Natalia Batrakova) of a site near Ohcejohka (Utsjoki), where mineral deposit maps by the Geological Survey of Finland (GTK) indicate reserves of nickel and copper – "critical minerals" in the current geopolitical and geoeconomic context of energy transition and supply chain security. The presence of these minerals in databases and maps generates uncertain futures, in which the land may be unearthed for extraction.



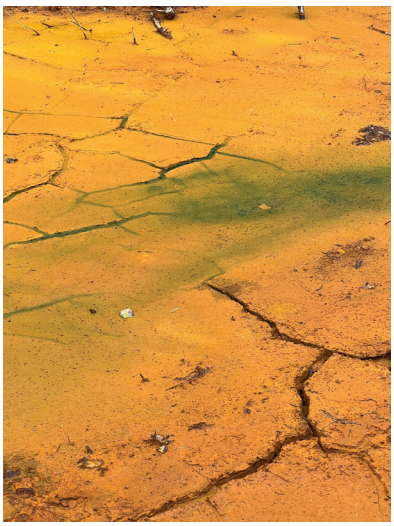


An illustration showing how the discovery of underground minerals distorts maps and perceptions of land.The act of mapping mineral deposits is shown as transformative and often dismissive of the life above ground.Author: Natalia Batrakova.

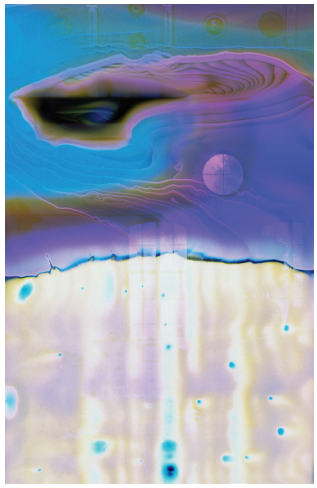
Ecological contamination

One of the major politico-social points of contention around mining is the ecological degradation it produces. Mining is, overall, a highly toxic endeavour. When bedrock is brought to the surface and exposed to air and water, numerous chemical reactions occur, leaching heavy metals and sulfuric acid into the surrounding environment, where they can spread further through waterways (Macklin et al. 2023). Smelting operations further contribute to pollution by releasing metal-laden particulates and other airborne contaminants (Plumlee & Logdson 1999).

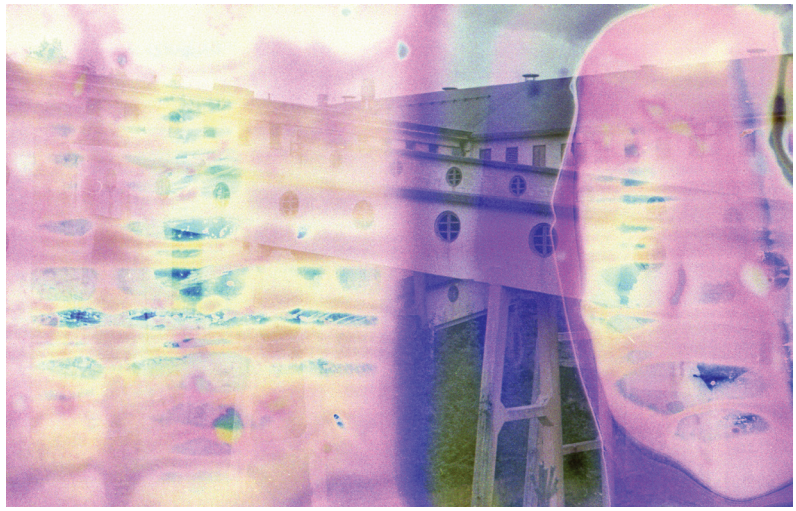
The following photographic works were created during our visit to the former Outokumpu copper mine. Although the mine closed in 1989, its environmental pollution persists today: wastewater from the site – containing heavy metals and sulfuric acid – continues to move through local water systems (Outokumpu Mine, Finland 2022). The most striking example of this contamination is Outolampi, a highly acidic lake located near the former mining site (now functioning as a museum) (Hirvonen 2014).



A series of photographs portraying the contaminated and toxic Outolampi Lake, a remnant of historical copper mining in Outokumpu. The lake sediments contain heavy metals, and the water is rich in sulfuric acid. The copper-coloured shore and lifeless water reflect the extreme acidity and ecological damage. Author: Iuliia Gataulina.



A series of film photographs which portray the chemical contamination by the old copper mine in Outokumpu. The images of mining infrastructure were taken on film; before development, the film was soaked for several hours in water from the contaminated Outolampi lake. The lake water, rich in sulfuric acid (measured pH of 2) and heavy metals, distorted the materiality of the film. This chemical encounter seeks to document and visualize – through both captivating and unsettling aesthetics – the contamination caused by copper unearthing and smelting. Author: Iuliia Gataulina.

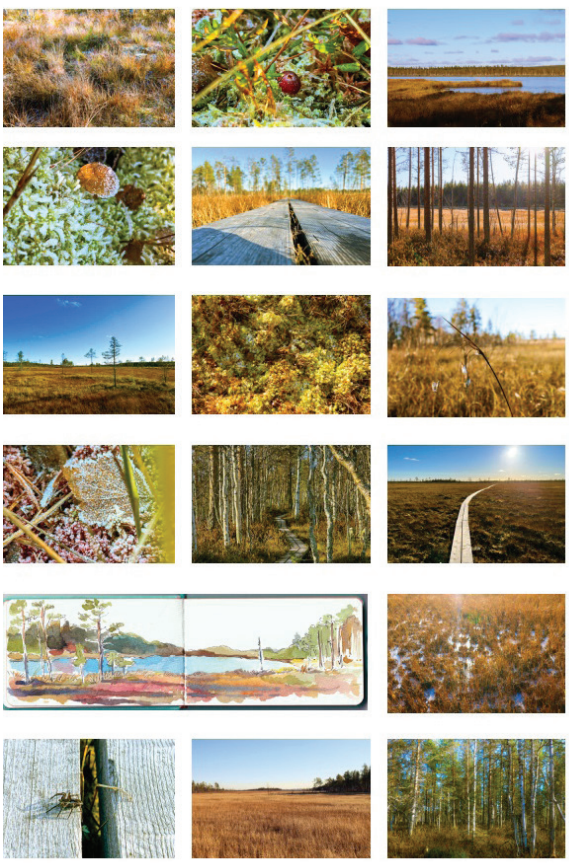


Politics of offsetting

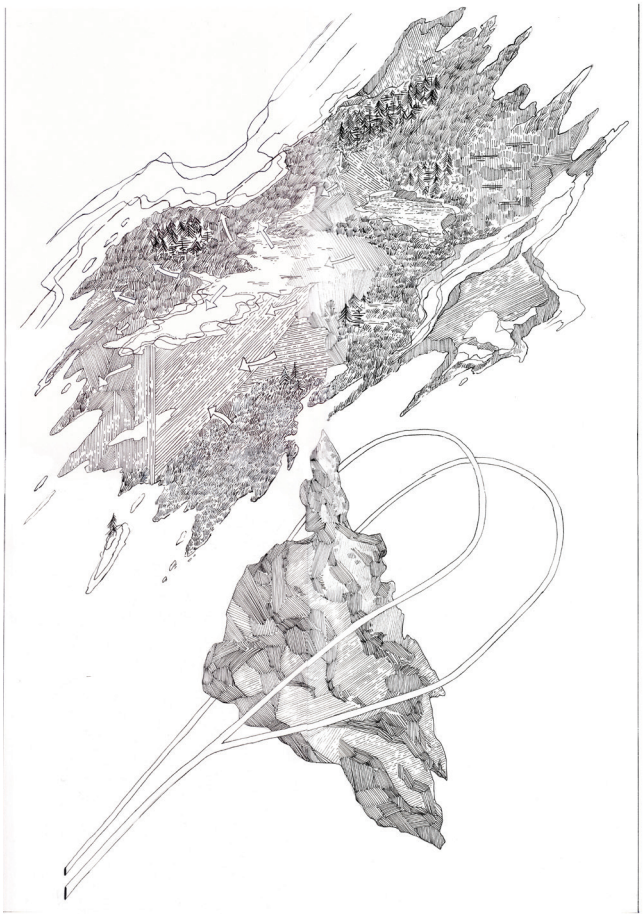
Environmental degradation is addressed in various ways, and one of the dominant strategies in the current mining economy is the politics of offsetting. Offsetting is a market-based mechanism that allows companies to compensate for environmental damage by investing in conservation or restoration projects elsewhere. Yet for the humans and nonhumans living in a specific locality, relationships to place cannot simply be replaced. The politics of replaceability operate only within the quantitative, bureaucratic logic of a capitalist mining economy – an economy in which land is alienated, abstracted, and rendered exchangeable (Leifsen 2020).

The following artworks are based on our visit to Viiankiaapa bog near Sodankylä, where the Sakatti mining project is planned. Viiankiaapa is a doubly protected wetland – designated as a conservation area under both Finnish legislation and the EU's Natura 2000 network. It is home to numerous endangered bird, moss, and insect species. At the same time, an ore body beneath Viiankiaapa is considered one of the richest copper reserves in Europe, containing an estimated 44.4 million metric tons of copper, nickel, platinum, and gold (Lassila 2021).

If environmental protections are overridden and the mine proceeds, the company (AA Sakatti Mining Oy) promises to compensate for the destruction of this unique environment through conservation measures elsewhere. Yet it is precisely this uniqueness and non-replaceability that we sought to attune to in our artistic practice during our visit to the bog.



A collage combining a field sketch and photographs taken at the Viiankiaapa bog in October 2024. The works depict close observation and attention to the diversity of life forms present there, in the face of impending extractive disruption. Authors: Iuliia Gataulina and Natalia Batrakova.



An illustration showing the shape of copper and nickel deposits discovered beneath the Viiankiaapa swamp. The planned 5 km tunnels encircle the deposit. Small arrows indicate groundwater flows, as depicted in environmental impact reports commissioned by the mining company. Author: Natalia Batrakova.

Indigenous resistance

Resistance to mining emerges in many places, and some of the most prominent and continuous voices of opposition come from Indigenous peoples. The encroachment of mining onto Indigenous lands occurs globally – from the Americas to Siberia. Even when mining is recently framed as "green," due to its role in the energy transition, it risks perpetuating forms of climate colonialism (Hanaček et al. 2024).

The following artwork is based on a story from Käsivarsi (Giehtaruohtas in Northern Sámi), a wilderness area in north-western Finland historically inhabited by Sámi Indigenous communities. While there are no large-scale mines in the region, mining companies have shown increasing interest in the area. The Sámi Parliament and the Käsivarsi reindeer herding cooperative oppose mineral exploration, as it harms grazing lands and disrupts traditional reindeer herding – an activity central to Sámi culture, livelihoods, and language (Amnesty International 2025).

An illustration inspired by visual mapping of mineral deposits. The image reflects the contrast between angular, geometric reservations for mineral exploration and the traditional land use shaped by seasonal migration and reindeer movement. Author: Natalia Batrakova.

Conclusion

Artistic research allows us to engage scholarly with topics such as the socio-ecological tensions of extractivist mining through different registers. In the policy world, these issues typically appear in the verbal language of environmental reports; in the industrial world, in the scientific language of engineers and geologists; and in the economic world, in the vocabulary of trade and profit. We argue that it is equally important to engage with aesthetic–conceptual registers.

Visualizing specific places under mineral exploration and extraction enables us to de-abstract them from the bureaucratic language of reports and to enliven them again. Visual attention to technologies, Earth's biophysical processes, and their interactions allows us to perceive their materiality and scale – dimensions that often become hidden in verbal registers.

Moreover, artistic methods allow us not only to visualize (and thereby make an aesthetic–political intervention) but also to move beyond a purely representational approach. They allow us to undertake aesthetic work of conceptualization by revealing socio-material relations in registers other than the verbal. Whether by exposing toxicity in all its colours and shapes or by juxtaposing the angular forms of mineral exploration with the fractal movement patterns of reindeer, the visual helps us perceive these relations in a new epistemic light (Schwab 2018).

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