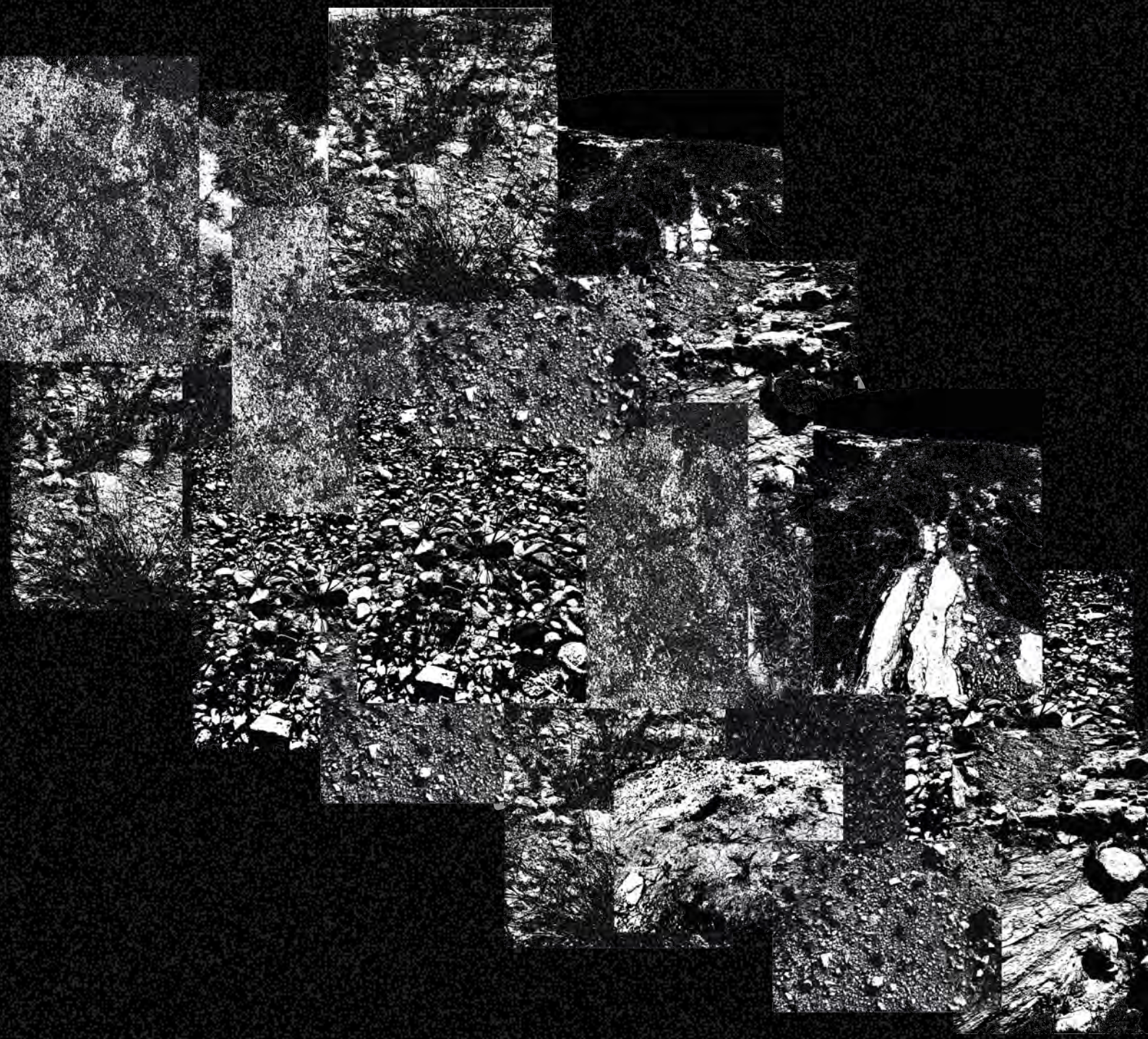


Landscape Pyrography. Fire and the Production of a New Mediterranean Landscape

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Fire and the Production of a New Mediterranean Landscape

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Abstract

The thesis explores the role of fire as an agent of landscape production through a framework of chemical and alchemical processes. Beyond visible flames and wildfires, fire expands in ‘embodiments’, to energetic combustion and warfare, producing lands. As such, the research territorialises in the Mediterranean region through speculative cartographies, a terraqueous pyroscape of blurred shorelines. Amid a global ecological emergency, the thesis investigates the area affected by the largest wildfire in the last half-century in Cyprus (in July 2025), an island significantly nested in conflagration. Understanding its Mediterranean fire ecology and the unfolding of historical landscape-extractive policies, it invites reflection: How do we live amidst progressively flaming landscapes? Drawing upon vernacular architecture systems, artistic practices, and political ecology literature, the project recognises fire as the ‘architect of landscapes’, engaging with the concept of Pyrography, aiming to explore different means of inhabitation amidst flames, ashes, and residue.

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00 Introduction

We are uniquely fire creatures on a uniquely fire planet. Other planetarbodies in the solar system have elements of combustion-Jupiter has an ignition source in lightning; Mars, traces of free oxygen; Titan, a methanebased fuel. Only Earth, however, has all the essential elements and the means by which to combine them-only Earth has life. Marine life pumped the atmosphere with oxygen, and terrestrial life stocked the continents with carbon fuels.

How do we live on a progressively burning planet? Fire has always been a fundamental element of existence. Yet, it is becoming an increasing concern in many parts of the world that seem to meander amid eternal flames. 2025 has been recorded as the most destructive year for wildfires in Europe, adding to staggering statistics emerging from Central Africa, Australia, Canada, the United States and Latin America. While (wild)fires are a direct and obvious form of fire on land, it is necessary to acknowledge the ecocide of territories as a consequence of other *embodiments* of fire, meaning the different forms in which fire materialises across territories, such as energetic extraction and warfare. Amidst global pyroscapes, the thesis recognises fire as the architect of landscapes, transforming and reshaping them through its multiple embodiments. The thesis, therefore, explores the role of architecture, which is no longer perceived as an agent of creation but must find ways to meander through flames, learning to inhabit fire, while residue and ashes acquire new meanings.

The research approaches fire as an element of dual and ambivalent nature, a chemical one and an alchemical, inspired by Walter Benjamin, developing in the first chapter. The chemical nature of fire refers to the element's composition and nature directly, while the chemical interrogates webs of relations and interactions that ignite the flame, often ecological, social and political. Thus, the thesis begins with the presupposition of deconstructing multiple layers that compose the territories, traversing through complex timelines. Ecological conditions, such as the soil, ground, land, and atmosphere, as well as geopolitical power webs, exploitative mechanisms, and ever-industrialisation, are explored through multiple-layered cartographies, aiming to comprehend territories and investigate them in a volumetric way, beyond simplistic representations. With cyclic thinking, the thesis raises questions about pre-ignition periods, conflagration, thus the exact moment of fire and pyrolysis, and the meaning of remnants, products and aftereffects.

In the research, fire is explored in various forms, referred to as *embodiments*, through a literature review. The term embodiment acts as a conceptual framework for different manifestations of fire, such as combustion energy and battlefields. This allows the spatialisation of fire to expand beyond the obvious flames, tracing the production of space through ecological transmutations and matrices of extractive systems, assembling a combination of historical accounts, archival materials, film and artistic practices.

In the second chapter, the research is territorialised within the Mediterranan, a *hearth for an eternal flame.*[5] There, fire unfolds through its primitive geologic origins to the first human settlements. The transmutation, synergy, and conflict among humans, land, and fire are exposed through territorial fatigue and legacy. Agricultural revolution, energy technofetishism and constant battlefields deconstruct the shoreline and, through instrumental cartographies,

1 Pyne, S. J. (1997). *World fire : the culture of fire on earth.* University of Washington Press.

2 European Commission, Joint Research Centre, *2025 was EU's most destructive wildfire season on record,* March 31, 2026.

3 Copernicus Atmosphere Monitoring Service, *Southern Hemisphere hit by intense wildfires during January,* January 29, 2026.

4 Walter B. (1996). Goethe's Elective Affinities. In M. Bullock & M. W. Jennings (Eds.), *Selected Writings* (Vol. 1: 1913–1926). Harvard University Press.

5 Pyne, S. (2009). *Eternal Flame: An Introduction to the Fire History of the Mediterranean.*

frame the Mediterranean as a terraqueous, hostile territory of fire.

Traversing in scale in the third chapter, the focal territory becomes the pyroscape of Cyprus, an island shaped by the different embodiments of fire, further intensified as a central part of the Eastern Mediterranean. Stratifying the island through Mediterraneanity, in terms of climatic characteristics and water scarcity, the research explores fire as the aftermath of colonial oppressive policies, present political ecology, and recurrent patterns of landscape exploitation. Thus, the aim becomes to comprehend these mechanisms to develop different visions that do not reproduce and proliferate the extractive systems and interventions that land and society have already endured.

In the fourth chapter, the thesis takes as its central reflection the largest (wild)fire of the last half-century, which occurred on the 23rd of July 2025, burning 120 square kilometres in rural northern Limassol. A significant amount of the work was therefore undertaken in Cyprus at the sites of the fire's aftermath, through site explorations, interviews, and the gathering of photographic, videographic, and archival material. Site visits were primarily conducted in the villages and areas affected by the specific fire, where it was possible to meet local communities and perform informal interviews with four residents. Traversing the residue area allowed for the sensorial and hands-on exploration of the landscapes, soundscapes and vernacular architecture, developing a site diary of each day and what is referred to as a *Fire Herbarium.* Through the time spent therefore on site and the material gathered, the thesis redraws the landscape through *pyro*-cartographies, thinking of different ways of possible inhabitation in areas of constant and growing *fires*. Moving between a *Fire Herbarium,* a *Museum of Pyrophytes,* and *a Landscape Pyrography,* the thesis engages with ecological readings, local artistic practices, going deeply into the root systems of bulbs and rhizomes, depicting the areas as an abundance of complex ecosystem interactions, rejecting narratives of *empty landscapes*, dilapidation, destruction, and endless development opportunities.

Finally, the project translates the ecological analysis and spatial information gathered during site investigations into a speculative landscape design for inhabiting fire-regime territories. The proposal is organised through *bulbing* and *rhizoming* areas, layered shield landscapes that act as refuges, and areas where succession and fire cycles are allowed to proliferate. Recognising fire as a recurring ecological cycle rather than an exceptional event, the project draws upon existing elements of the territory as well as local knowledge and practices, rather than imposing intensive engineered modifications. In doing so, the project becomes a *pyrography*, working in harmony with the landscape and perpetuating an architecture of coexistence. During increasing global fire catastrophes, it provides a landscape framework that aims to extend beyond the Cypriot context to other fire-prone areas, seeking to reframe inhabitation amid flames.

The approach and contents of the thesis contribute to a wider architectural discussion and spatial disciplines within a political ecology framework. By speculating on territories considered "damaged" and "ruined", it develops methodological tools for reading these landscapes beyond narratives of repair, productivity, or profitability. Focusing on a *scorched* area and developing different understandings through critical cartographies and interdisciplinary methods, it seeks to demonstrate the complex and interwoven relations as *webs of life* and possibilities beyond capitalogenic extraction and accumulation.

On a personal note, as a researcher from Cyprus, the thesis has offered the opportunity to connect academic knowledge with lived experience, delving into topics that have long shaped the territory and its people. Using fire as a lens has been significant in understanding deeper ecologies, mechanisms and systems present within its terraqueous territory. Thus, this work represents an initial step towards further developing the political ecology research and practice on the island.



Fig 1



Fig 2



Fig 3
Photographs taken by the author during site visits, March 2026.

01 Fragments of fire: Assembling an Inquiry

Fire, between chemistry and alchemy

If, to use a simile, one views the growing work as a burning funeral pyre, then the commentator stands before it like a chemist, the critic like an alchemist. Whereas, for the former, wood and ash remain the sole objects of his analysis, for the latter only the flame itself preserves an enigma: that of what is alive. Thus, the critic inquires into the truth, whose living flame continues to burn over the heavy logs of what is past and the light ashes of what has been experienced. [1]

To begin with, the thesis approaches fire through a dual nature -a chemical and an alchemical one- inspired by Walter Benjamin's writings, indulging in its "enigma", their ignition and residue, incorporating them in the landscape. As for landscape terms, the essay approaches fire through *embodiments*, exploring different forms through which fire materialises in the landscape and shapes them entirely. The embodiments which will be explored are wildfires, energy infrastructure, and warfare, forming ever-flaming landscapes. Drawing upon literature ranging from fire historians such as Stephen Pyne to existing fire policies around the globe, it will aim to assess different ways of inhabitation in a progressively flaming planet.

Fire, as a natural element, has always been a fundamental component of ecological cycles, assuming variant forms. Walter Benjamin's account of alchemy and chemistry however, reveals that apart from its chemical structure, which can result in the direct combustion of "wood" to "ashes", it has also an alchemical character which preserves quite an "enigma", one that has been there before the first spark and that will continue burning even when the fire has ceased, being present in what is left. By therefore using this duality of fire's nature, this thesis will attempt to examine its ambivalence, as an element fundamental for existence, and one that at the same time is ever-threatening it, assessing its different spatial and temporal embodiments, aiming to analyse different spatial strategies for a symbiotic existence with it, amidst progressively flaming landscapes.

The thesis meanders through a framework of the "chemical" and "alchemical" nature of fire. The chemical nature of fire refers to its scientific and structural aspects, and incorporates physical characteristics that set the conditions for its ignition. Fire is a visible, self-sustaining exothermic chemical reaction that converts fuel and oxygen into carbon dioxide and water,[2] releasing heat and light.[3] In territorial terms, fire events involve different fuels present, such as the four major groups, grasslands, shrublands, timber and slash in dead or alive stock, and their behaviour also depends on their load and density.[4] Certainly, these conspire with other features of an area, like the climate conditions, soil morphology and chemical content, drought, humidity and winds. These characteristics could therefore be used in forming mathematical models of fire behaviour, like its spread and intensity, providing information for its prevention, risk and management.[5]

Alchemy, however, can be interpreted beyond the scientific and structural definition of fire as an element. Alchemy, according to Walter Benjamin, looks into "the mystery of the flame", exploring the allegory of the process, questioning the oxidation reaction, the heat, and the residue. Fire with an alchemical thinking is examined beyond "obvious conclusions and mere description of technical procedures".[6] The esoteric meaning that it contains is inseparable from its material nature. According to Aristotelian *hylomorphism,* matter [hyle-ύλης] does not individually have a shape, but it obtains it, along with its properties, through the means of form [morphe-μορφή], conveyed by hot, cold, dry and humid, giving birth to the combustion of the four elements: water, fire, earth and air.[7] Similarly, in alchemy, the importance is not solely given in the resulting outcome but in the infinite interrelations of the transmutation process.

Therefore, this thesis explores fire as both chemistry and alchemy, examining the way, the temporality and the grounds where these aspects intersect. Taking fire as a chemical phenomenon, grounded in accurate parametric practice based on quantitative predictions and solutions, it will question its alchemical nature, examining the network of complexities and relations that cause the emergence, existence, and echo of a fire. While these characteristics are inseparable and indistinct, the research will assess them through landscape-based territorial investigations, examining their different materialisations in space and the links between geopolitical and ecological thinking. Hence, drawing on fire as alchemy and chemistry, the research will explore fire as the transformative, transmutative, landscape-producing force. It will examine fire and combustion as notions emerging from excessive extraction, exploitation, and industrialisation of land and sea, as well as an integral, everlasting part of the ecosystem, thereby revealing fire's ambivalence.

Therefore, assessing fire through a chemical and alchemical nature allows for the next sections of the methodology to develop. This chapter explores the duality of fire and its *esoteric meaning*, tracing literature from different cosmologies and mythologies and studying their impact on cultural practices and corresponding landscape formations. Through *commentary* and *critique,* it eventually outlines the framework of *embodiment*, looking at fire not only as a direct phenomenon on landscapes but also as a fusion of other practices.

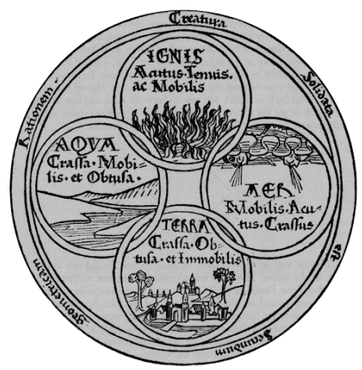


Fig 4 The four elements of the ancients: Fire, Air, Earth, Water from St.Isidore, De Responsione Mundi Et Astrorum Ordinatione (Augsburg, 1472)/(Alchemy to Chemistry in Picture and Story, Arthur Greenberg)

1 Walter B. (1996). Goethe's Elective Affinities. In M. Bullock & M. W. Jennings (Eds.), *Selected Writings* (Vol. 1: 1913–1926). Harvard University Press.

2 New Scientist. (n.d). *What Is Fire?*

3 Chazan, M. (2017). Toward a Long Prehistory of Fire, *Current Anthropology 58*(S16).

4 Anderson, H. E.(1982). *Aids to Determining Fuel Models for Estimating Fire Behavior.* U.S. Forest Service.

5 ibid.

6 Tramer, A., Voltz, R., Lahmani, F., & Szczepinska-Tramer, J. (2007). *What Is (Was) Alchemy?*

7 ibid.

The Ambivalence of Fire

i. Fire: Cultures and Representations

It comes as no surprise then to learn that among human societies the belief in a world-creating and world-ending fire is nearly universal. From the Nordic Ragnarok to the Aztec New Fire, from the Great Fire of the Stoics to the Christian Apocalypse, from the chained Prometheus to the Aboriginal Dreamtime, the pine-pitch torch to the nuclear firestone, the fate of humans and the fate of fire have joined.[8]

As much as fire has been an integral part of the ecology, it has also been part of human history. This section provides a brief recollection of cultural cosmologies revolving around fire, narrated with awe and fear through aeons of mythology, religious imagery, literature, and arts worldwide. The representations of fire recount as much its dominance as a phenomenon, as the human attempts to interpret it and perceive it, often attributing different sacred and spiritual symbolisms. As Pyne suggests, “the threat of a world overwhelmed with fire was not greater than the threat of a world without fire”.[9] As a result, diverse cultural cosmologies untangle through fire, where the element becomes a source of destruction, annihilation, purification, regeneration, and rebirth.

Starting with Nordic mythology, fire represents the tension between rebirth and purification through the apocalypse. Surtr, the guardian of Muspelheim, punishes and overthrows the gods for their catastrophic actions by wielding a flaming sword, “[spewing] fire across the earth and burning the entire world”.[10] Hence, in Ragnarök, fire is understood as an agent of creation, emphasising not only its annihilative force but also its regenerative and creative role in establishing a new cosmic equilibrium. On the other hand, fire in the Aztec New Fire Ceremony, held every 52 years, symbolised both an ending and a beginning, marking the completion of the Calendar Round, formed by the synchronisation of the solar and ritual calendars. Overseen by the fire god Xiuhtecuhtli, the successful lighting of the new fire would guarantee the continuation of the Fifth Sun, preventing the annihilation of humanity.[11] Further, in the Aboriginal Dreamtime, Fire also plays a central role as an agent for survival. Fire becomes the driving force for land management and hunting on traditional Aboriginal lands, and finds its origin in ancestor spirits or animals seeking warmth and community gathering.[12] Lastly, in the myth of Prometheus, the Titan defies Zeus by stealing fire from the Olympian gods and giving it to humanity. This act has endured as a symbol of civilisation, culture, knowledge, and enlightenment, for which Prometheus is brutally punished and condemned to eternal torment.

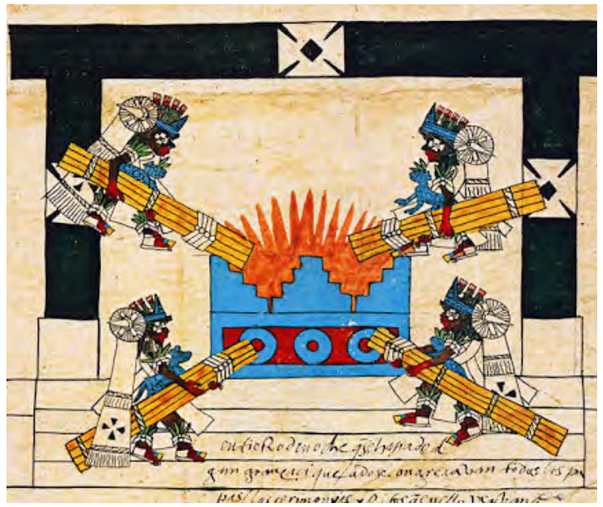
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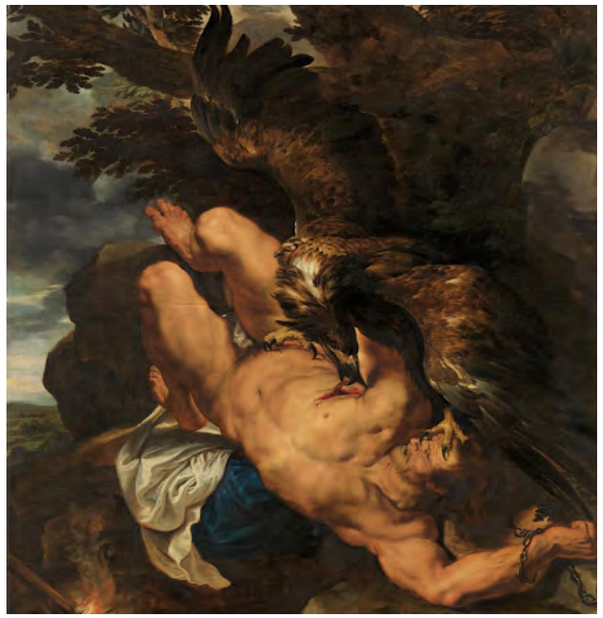
Fig 5 Fire Dreaming Waru Tjukurrpa, by Jorna Newberry. (source: https://japingkaaboriginal-art.com/articles/fire-dreaming-wa-ru-tjukurrpa/)

Fig 6 New Fire Ceremony, found in Codex Borbonicus. (source: https://www.mexicolore.co.uk/aztecs/moctezuma/death-of-moctezuma-2/1000)

Fig 7 Prometheus Bound, by Peter Paul Rubens (1611-1612).







8 Pyne, S. J. (1997). *World Fire: The Culture of Fire on Earth*. University of Washington Press.

9 ibid.

10 Berg, M. (2025). The Myth of Ragnarok: Reflections on Polarization and Destructive Forces. *Journal of Analytical Psychology, 70*(4), 556–574.

11 Encyclopaedia Britannica, s.v. *New Fire Ceremony*. In Encyclopaedia Britannica.

12 New South Wales Rural Fire Service. (n.d.). *Traditional Fire Stories* [PDF], [accessed December 13,2025].

Ninety aeons ago, before even the gods had danced upon its pointed peak, that mountain had spoken with fire and roared with the voices of the inner thunders. Now it towered all silent and sinister, bearing on the hidden side that secret titan image whereof rumour told. And there were caves in that mountain, which might be empty and alone with elder darkness, or might -if legend spoke truly- hold horrors of a form not to be surmised.[13]

Thus, fire is an element ever-present in human culture and history, woven into fantasy, imagination and invention. According to John Berger in Ways of Seeing, “the way we see things is affected by what we know or what we believe. In the Middle Ages when men believed in the physical existence of Hell the sight of fire must have meant something different from what it means today”.[14] As in myths and historical practices, so today, the way fire is narrated reveals an abundance of interconnections with humanity’s evolution, means of inhabitation and the environment. Some more contemporary personifications of fire might include *Calcifer* from *Howl’s Moving Castle*, rendering the living flame a source of life-dependency yet secretly vulnerable itself.[15] Moreover, David Lynch’s short film *Fire (PoZar)* narrates the tragedy of fire through an unknown, mysterious figure who lights a match, that spreads throughout the landscape. Along with a dramatic soundtrack, it conveys fear and agony through absurd burnt-tree figures that dance over a macabre landscape.[16] Last but not least, another modern portrayal of catastrophic fire events, and one of the first eco-conscious depictions in cartoons, forms the wildfire scene in *Bambi* (1942), which shows woodland animals fleeing amid the flaming forest.[17] While having an anonymous, careless man as the arsonist raises critical questions about coexistence and equal sharing of responsibility for modern forest and wildfire destruction, it has become an iconic scene of the beginnings of environmentalism in cinema.

Fig 8 Still from Fire (PoZar) (Short, 2015), David Lynch, depicting dancing tree figures in a macabre landscape.



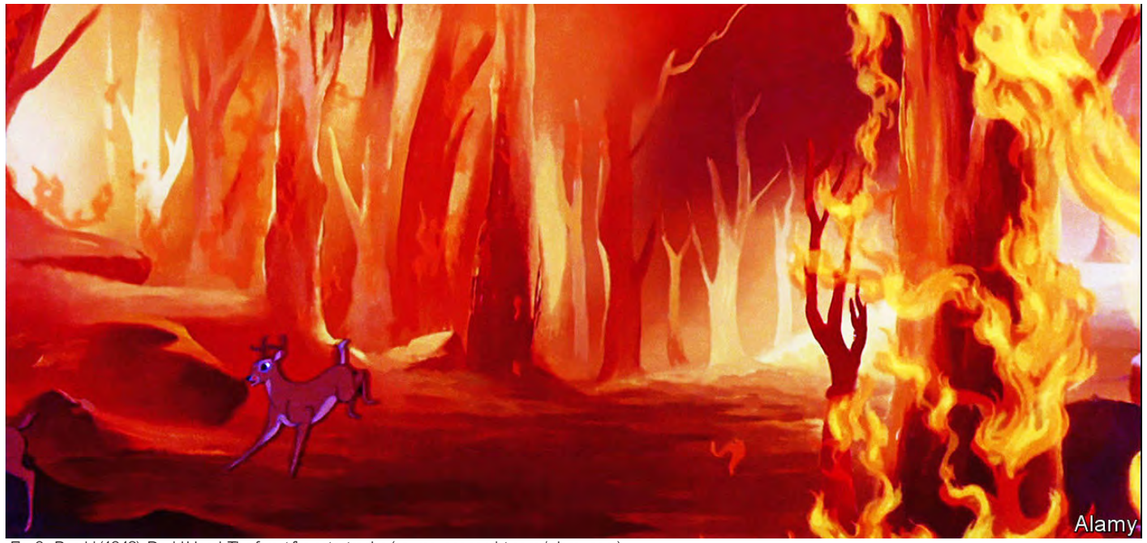


Fig. 9a Bambi (1942), David Hand. The forest fire catastrophe (source: economist.com / alamy.com)



Fig 9b Calcifer, Howl’s Moving Castle (2004), Ghibli Studio.

13 Lovecraft, H. P. (2014). *The Dream-Quest of Unknown Kadath.* PS Publishing. (Original work written 1926–1927)

14 Berger, J. (2008). *Ways of seeing.* Penguin books.

15 Miyazaki, H. (Director). (2004). *Howl’s Moving Castle* [Film]. Studio Ghibli.

16 Lynch, D. (Director). (2015). *Fire (Pozar).* [Animated short film]. David Lynch Theatre.

17 The Economist. (2022, August 11). *Bambi Offers a Horrifying Portrait of Eco-Catastrophe*

Consequently, what one can derive from myths and other cultural projections of fire is that, as an integral part of the ecosystem, it has always influenced human perception, imagination and behaviour around it, setting the ground for social customs and cultural practices to arise across diverse civilisations, dating from prehistory to today. Fire, as an essence, has been used to testify to the destruction of any form of life, as well as the rebirth of it. Fire has inspired annihilation, catastrophe, apocalypse, and chaos, while also safeguarding warmth, protection, survival, and progress. It is an element of profound ambivalence, and as it unfolds in the folklore, so it does in its physical form and landscape manifestation.

ii. Fire: cultural practice and landscape

The coevolution of human nature with fire comprehension and technology is already asserted by archaeological discoveries, as in early representations of fire technology in hieroglyphics in the excavations, as for instance at the Tomb of Ti, showing in detail the art of bowl making or the discoveries of early forms of bakeries near the Giza pyramids.[18] Further, in geological terms, the traces of fire date to the Devonian as part of the ecosystem, and in the Triassic, with beliefs of fire having a fundamental role in plant ecology.[19] Moreover, cooking meals, warming dwellings, taking care of land, and practising religious rituals are recurrent customs found across different cultures worldwide. In any case, warming around a fire appears to be the oldest form of assembly. These findings advocate that fire has always been an inherent ecological, human, and environmental feature, with a long prehistory to be traced, contradicting narratives of "discovery" and "invention".[20] Rather, it reveals a history of coevolution with human nature, amplifying its ambivalence as an agent of life and creation rather than solely of destruction. In addition, it is a fundamental part of accounts of landscape production, which vary significantly depending on the context. Tracing different applications of fire, the essay will deconstruct the socio-cultural and alchemical uses in landscape transmutations.

Through a series of essays, the environmental historian Stephen Pyne provides an in-depth analysis of the reciprocal unfolding of human nature, landscape production and fire, in a global perspective, revealing their indispensable and inseparable attributes. Starting with *Fire Flume*, he analyses the Aboriginal Australian context, where fire regimes have been a main driving force of symbiosis amidst dense forested landscapes. According to Pyne, Australia is as much a fire continent as Antarctica is an ice one, where fire has existed in all kinds: archetypal, oracular, defiant, and ineffable,[21] engraving Australian history on the terrain. The ambivalence of fire can be understood by examining its origins, the ways it has been used and the consequences of those uses, as well as the purposes it has served and the outcomes it has produced.

On the one hand, fire has been a fundamental agent for Aboriginals to navigate and produce landscapes of inhabitation, which as a common practice, also rendered the landscapes more fire-prone, ensuring seasonality and preserving the cycle of fires. However, following the same strategies, fire also became an instrument of European colonisers for acquiring land. This demonstrates another aspect of fire landscape embodiment: warfare, manifesting as the production of land through flames, particularly evident during the Black War.[22]

Australia, however, has not been the only context in which fire produced landscapes, through its presence as well as its absence. The African biota is considered not to have emerged from natural fire, but through anthropogenic fire. The fascinating wildlife has thrived thanks to the distinguished veld, which has been strongly enriched by anthropogenic burning.[23] Nevertheless, the burning is not about human power domination over the landscape, but about a history of traditional knowledge passing, coevolution and care. This can also be witnessed in the survival of several species, for instance, the fire lily, a flower that blossoms only after a fire. The characteristic biota of the fynbos is mostly found around the Cape and is part of the sclerophyllous vegetation, often shared on coasts between other Mediterranean climates. Throughout the history of human coevolution with fire, as vulnerable a tactic as it may seem, humans have managed to domesticate these fire regimes. That is why what devastated the fynbos biota seems not to be the fire but its absence. The absence of fire traces a very specific path of foreign settler populations arriving, imposing Eurocentric models of agriculture and land policies, often with life-threatening penalties for those who did not comply. Fire regimes have then settled down, leaving the biota exposed to higher risks, uncared for, neglected, and torn down, unable to follow methods which have been followed over centuries.[24]

18 Chazan, M. (2017). Toward a Long Prehistory of Fire, *Current Anthropology 58*(S16).

19 Byers, B. A. et al. (2014) First Known Fire Scar on a Fossil Tree Trunk Provides Evidence of Late Triassic Wildfire. *Palaeogeography, palaeoclimatology, palaeoecology 411*, 180–187.

20 Chazan, M. (2017). Toward a Long Prehistory of Fire, *Current Anthropology 58*(S16).

21 Pyne, S. J. (1997). *World Fire: The Culture of Fire on Earth*. University of Washington Press.

22 ibid.

23 ibid.

24 ibid.

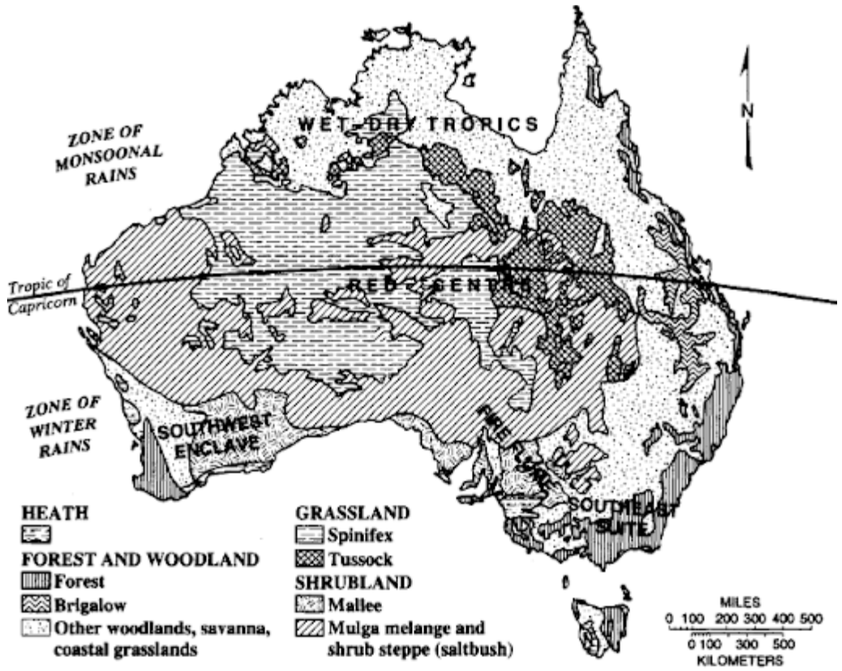


Fig 10 Burning Bush, biotic types of Australia, Cycle of Fire, Stephen Pyne.

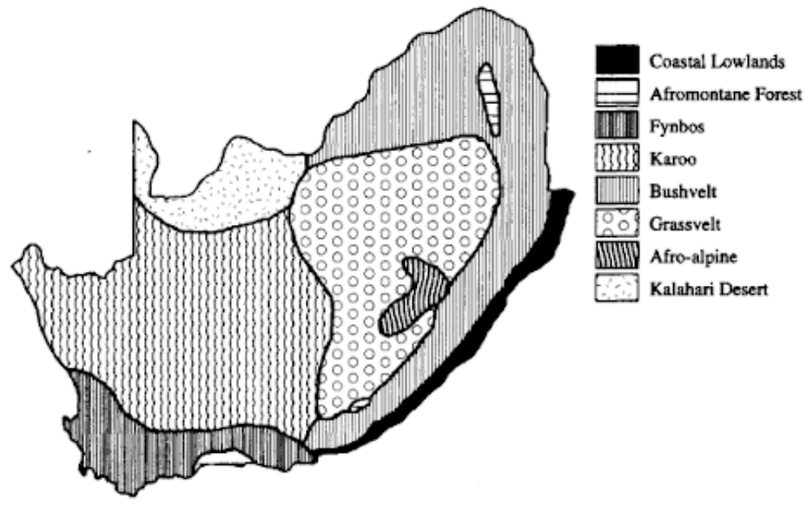


Fig 11 Flaming veld: the biomes of South Africa, Cycle of Fire, Stephen Pyne.

Similarly, other biomes have coevolved with fire and are classified as fire-influenced, while others are fire-independent and fire-sensitive.[25] This distinction owes to the evolution of vegetation structure, species composition, and speciation in regions with long-standing natural fire regimes.[26] Brazil contains both fire-influenced and fire-sensitive biomes. Fire-dependent ecosystems include the Pantanal, Cerrado and Pampa, which have developed over repeated fire events throughout the ages.[27] On the contrary, the Atlantic forests are classified as fire-sensitive and fire events would seriously harm their ecosystems due to their lack of adaptation.[28]

What is interesting is the evolutionary strategies that the ecosystem, both flora and fauna, has developed over the ages, to cope with natural fire regimes. As for the flora, some of the ecosystem's natural defences include root suckering, which involves resprouting from underground perennial buds,[29] the development of a widespread underground network of woody stems,[30] and the acquisition of a solid bark to safeguard the buds and permit efficient healing after a burn.[31] Considering the fauna, species of fire-dependent ecosystems have adapted in various ways, such as benefiting from the regrowth of biomass, which promotes flowering and fruiting after burning.[32] On the other hand, the species' architecture has evolved, including the creation of burrows, and moving into gallery forests during wildfire events.[33] Notably, human adaptation to wildfires could potentially benefit from insights gained from these evolutionary strategies.

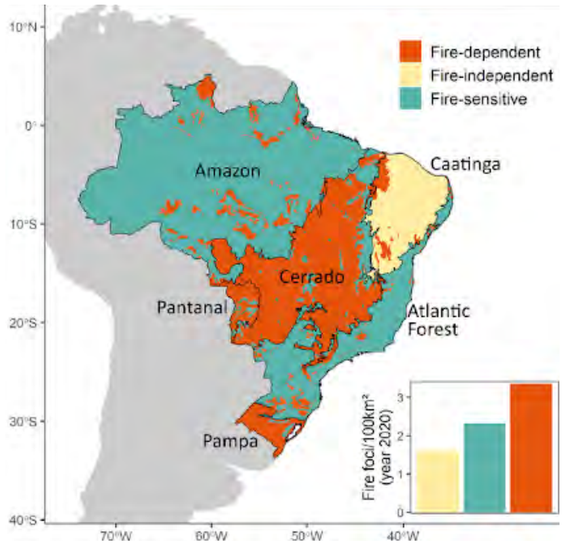


Fig 12 Brazilian vegetation types; fire-dependent, fire-sensitive and fire-independent (Pivello et al., 2021)

Last but not least, it is also worth examining how Indigenous populations have domesticated and inhabited fire regimes. Diverse cultures across multiple geographical contexts, including Brazil, North America and Australia, have practised custodianship and stewardship of their traditional territories through cultural burning,[34] a practice that has, however, been significantly disrupted by colonisation and the loss of land.[35] Some of the techniques included the creation of landscape mosaics, patches of burnt land amidst unburnt, which would prevent the spread of a catastrophic wildfire, while also being beneficial for crop productivity, hunting, gathering, and ensuring visibility in navigation.[36] This was, of course, accompanied by place-based cultural knowledge rooted in the connection to the land, understanding seasonality and land type. Often, mosaics were created through cool burning, meaning the use of fire in colder seasons, which slowed its spread compared to hot seasons and

25 Hardesty, J., Myers, R., Fulks, W. (2005). Fire, ecosystems, and people: A preliminary assessment of fire as a global conservation issue. *George Wright Forum 22*, 78–87.

26 Pivello, V. R., et al. (2021). Understanding Brazil's Catastrophic Fires: Causes, Consequences and Policy Needed to Prevent Future Tragedies. *Perspectives in Ecology and Conservation, 19*, 233–255.

27 ibid.

28 ibid.

29 Pausas, J. G. et al. (2018). Unearthing Belowground Bud Banks in Fire-Prone Ecosystems. T*he New Phytologist 217*(4), 1435–1448.

30 Siebert, F. (2021). Open Ecosystems: Ecology and Evolution Beyond the Forest Edge. *Bothalia - African Biodiversity and Conservation, 51*(1)

31 Coutinho, L. M., (1990). Fire in the ecology of the Brazilian Cerrado. Goldamer, J.G.(Ed.), *Fire in the Tropical Biota Ecosystem: Processes and Global Challenges.* (Ecological Studies, Vol. 84, pp. 82–105). Springer.

32 Pausas, J. G. et al. (2018). Unearthing Belowground Bud Banks in Fire-Prone Ecosystems. T*he New Phytologist 217*(4), 1435–1448.

33 Marini-Filho, O.J. (2000). Distance-limited recolonization of burned Cerrado byleaf-miners and gallers in Central Brazil. *Environmental Entomology, 29,* 901–906.

34 Maclean, K. et al. (2023). Revitalising Indigenous Cultural Fire Practice: Benefits and Partnerships. *Trends in Ecology & Evolution.*

35 Lake, F. K. et al. (2021). Indigenous cultural burning and fire stewardship. *Fire Science from chemistry to landscape management.* Springer Nature.

36 Maclean, K. et al. (2023). Revitalising Indigenous Cultural Fire Practice: Benefits and Partnerships. *Trends in Ecology & Evolution.*

37 ibid.

38 Welch, J. R., Coimbra C. E. A., Jr. (2021). Indigenous fire ecologies, restoration, and territorial sovereignty in the Brazilian Cerrado: The Case of Two Xavante Reserves. *Land use policy 104.*

39 ibid.

allowed animals and insects to escape.[37] Amid the uncontrollable global wildfires, intercultural land practice knowledge exchange is crucial, and it has been proven that some approaches have indeed been shifting. An example is the UNESCO Heritage Site Canaima National Park in Venezuela, where managers and forest firefighters have engaged in intercultural dialogue with the Pemón people for over a decade,[38] now valuing and willing to implement cultural fire practices in agriculture and wildfire prevention.[39]

Therefore, fire as ambivalence reaches out to diverse meanings. The ambivalence encapsulates cultural cosmologies, mysticism, practices, and traditional knowledge around fire, while serving as a means to perceive and translate contradictory sentiments and experiences, such as destruction and creation, as well as fear, agony, and at the same time, warmth and light. Its inheritance to the ecology has also meant that humanity and the environment have coevolved with it, finding ways to navigate amid flaming landscapes, domesticating it and learning to utilise it as a means of preserving and caring for land and territories. In the words of Pyne, "The earth's fire problem is one of maldistribution. There is too much of the wrong kind of fire in the wrong places or at the wrong times, and not enough of the right kind of fire at the right places and times. Probably there is too little fire and too much combustion".

Fire embodiments: Literature Review

The following section is structured into three main parts, each representing a different embodiment of fire and, therefore, another way fire is extended and spatialized across different territories. The three embodiments analysed are wildfires, energy combustion, and warfare. The chapter unfolds as a multidisciplinary research through and literature review composed by scientific scholarship, archival material, artistic projects, and films in order to encapsulate the concept, idea, and essence of fire from various perspectives, aiming to reconceptualise fire as not only a chemistry between elements but as an alchemy of infinite interrelations that restructures landscapes, ecosystems and societies.

i. (Wild)fires

Wildfire increasingly dominates discussions across ecological, climate, political, social, and environmental domains. Before going deeper into the subject, however, it is important to acknowledge that it is a term contested in scholarship. According to the literature, *wildfire* is often used with diverse perceptions in mind by multidisciplinary experts,[40] and therefore describes and implies events that differ. International institutions, global datasets, political entities, and governments define wildfires as natural hazards.[41] Nonetheless, wildfires have also been classified as a socio-ecological hazard, a climate-sensitive hazard, a disturbance, and a socio-ecological disturbance.[42] What this abundance of terms demonstrates is varying perceptions, leading to miscommunication and a lack of understanding of fire events. This often makes it difficult to establish appropriate place-based policies for sustainable management, prevention, and control.[43] Therefore, research has shown that a much broader, appropriate multidisciplinary knowledge framework of fire can yield more effective methods for managing both beneficial fire in fire-dependent ecosystems and destructive fire in fire-sensitive ecosystems, which severely harm vulnerable biomes and communities. Correspondingly, this section investigates how multiperspective climatic, socio-political and ecological scholarship has conceptualised wildfire as a phenomenon, and how this literature has shaped fire policy, management practices, and spatial organisation strategies.

Wildfires today are an inseparable part of ecological discourse amid the climate emergency, and that is why much of the scholarship focuses on the relationship between wildfires and the climate crisis. Studies focusing on the chemistry of fire have shown that no single factor is solely responsible for an extreme wildfire event. It is rather a matter of several components intersecting more often during extreme weather conditions. This can thus explain their present frequency and scale, their unruliness, and their urgency. Amid global change, the threshold for phenomena such as natural ignitions, droughts, fuel accumulation and transformation, and anomalous weather conditions is crossed more frequently, significantly increasing the likelihood of wildfires.[44] As a consequence, fire seasons and fire weather prolong. Nevertheless, as aforementioned, fire is also the consequence of numerous complex interrelations, such as social and political shifts, which the essay refers to as alchemy. Hence, the liability of anthropogenic factors, over-industrialisation and excessive exploitation of wild landscapes, is not to be omitted, often debated in the context of land-use change, induced drought or desertification, and fire suppression.[45]

A significant body of research emerges from fire-prone areas, including studies on land cover types and fire in Portugal,[46] landscape-wildfire interactions in southern Europe,[47] and Mediterranean desertification and land degradation.[48] The common focus of these is the composition of a wildfire, deconstructing it through the stratigraphy of a landscape, the fuel-vegetation present, and topography, analysing the interactions between elements in different layers, such as the ignition resources, weather conditions, and land cover. Based on emerging studies of the Mediterranean context, scientific knowledge has shown that certain landscapes are more flammable than others, highlighting the importance of the fuels present and their linkages to social and economic shifts that alter land use and cover. For instance, cultivated landscapes tend to be less fire-prone;[49] however, as agricultural and pastoral activities gradually decline, unmaintained landscapes[50] increase. This “rural exodus syndrome” contributes significantly to the degradation and desertification of rural areas,[51] resulting in increasing wildfire cases. In addition, territories that have already suffered from fire tend to reconfigure into homogenous shrublands, which are highly flammable. Again, the emergence of shrublands is linked to morphological characteristics, such as shallower soils that prevent the growth of denser forests, as well as to anthropogenic practices, such as distancing from mechanised terraced cultivation, leaving behind more hazardous zones.[52] Hence, the correlation between human-related activities and fire-proneness is obvious, particularly in Mediterranean landscapes. What these studies have tended to offer is data that could lead to improved fire regulation and prevention management strategies and policies, demonstrating that the spatial, compositional, use, and pattern are fundamental to understanding fire behaviour.

It is therefore evident that policy-making and governance constitute another field of constant evolution and influence affecting wildfires. A significant portion of the literature emerges from the United

40 Tedim, F. et al. (2020). The Dilemma of Wildfire Definition: What It Reveals and What It Implies. *Frontiers in Forests and Global Change, 3.*

41 ibid.

42 ibid.

43 ibid.

44 Pausas, J. G., et al. (2021) Wildfires and Global Change. *Frontiers in Ecology and the Environment, 19*(7), 387–395.

45 ibid.

46 Nunes, M. C. S., M. J. Vasconcelos, J. M. C. Pereira, N. Dasgupta, & R. J. Alldredge. (2005). Land Cover Type and Fire in Portugal: Do Fires Burn Land Cover Selectively? *Landscape Ecology, 20*, 661–673.

47 Moreira, F. et al. (2011). Landscape: wildfire interactions in southern Europe: Implications for landscape management *Journal of Environmental Management, 92,* 2389 - 2402.

48 Hill, J., Stellmes, M., Udelhoven, T., Röder A., & Sommer, S. (2008). Mediterranean desertification and land degradation: Mapping related land use change syndromes based on satellite observations. *Global and Planetary Change, 64,* 146–157.

49 Nunes, M. C. S., M. J. Vasconcelos, J. M. C. Pereira, N. Dasgupta, & R. J. Alldredge. (2005). Land Cover Type and Fire in Portugal: Do Fires Burn Land Cover Selectively? *Landscape Ecology, 20*, 661–673.

50 Moreira, F. et al. (2011). Landscape: wildfire interactions in southern Europe: Implications for landscape management *Journal of Environmental Management, 92,* 2389 - 2402.

51 Hill, J., Stellmes, M., Udelhoven, T., Röder A., & Sommer, S. (2008). Mediterranean desertification and land degradation: Mapping related land use change syndromes based on satellite observations. *Global and Planetary Change, 64,* 146–157.

52 ibid.



Fig 13 1956 LA Wildfires Turning Point. (source: The Ecology of Fear: Los Angeles and the Imagination of Disaster, M. Davis)

States, Australia, and Latin America since the early 2000s. Critical research in the U.S. analyses the political role and responsibility in shaping wildfire narratives and responses, emphasising how decisions on fire suppression, land management, and settlement patterns have produced higher risks.[53] An example is Charles Davis' critique of wildfire management programs regarding the autonomy and influence of the United States Forest Service and Department of the Interior, as well as the instrumentalisation of specific strategies in relation to logging approaches.[54] More recent U.S-based studies have analysed the significance of a more historical approach influencing policies, laws, and governance, by taking into consideration different actors and institutions. An example is the 2017 insight by Steen-Adams et al., which explores the linkage between policies, decision-making, and timing in relation to multiownership of land, adopting a social and ecological approach to private corporate, tribal, and national forest land property and ownership.[55] Further, in the Latin American context, research has approached the dynamics between governance systems and actors using Argentina as a case study.[56] Huidobro et al.'s (2025) research demonstrates how bureaucratic conflicts and interests directly affect fire control systems. Collectively, these studies illustrate how policies are not solely determined by the "chemistry" of wildfires, but are influenced by complex networks of governmental, institutional, and social actors. As much as policies regulate legislative and administrative actions, they also entail the final production and shaping of land, as well as the distribution of responsibility for its care. Finally, the historical evolution of fire policies, as highlighted by Steen-Adams et al. and previously discussed in Pyne's analysis of colonial policies in the Australian and African contexts, demonstrates a direct correlation between land production through governance structures and ownership, which continues to affect and shape wildfire risk today.

To a greater extent, wildfire alchemy materialises beyond the immediate moment of combustion, but also through long-term atmospheric consequences. Accordingly, wildfires can also be analysed through their residue. A recurring field of study constitutes the degradation of environmental health through toxification, and the associated health hazards in surrounding territories. A comprehensive review by Bolan et al. (2025) presents a multilayer perspective on volumetric environmental health across atmospheric, terrestrial, and aquatic layers, highlighting the impacts of toxic substances emitted during wildfires.[57] The research presents a standpoint on how travelling ashes, volatile organic compounds, and particulate matter penetrate various layers, posing long-term ecological and health hazards. Some of the areas investigated include alterations in the chemical composition of the environment, for instance, elevated concentrations of nitrogen (N), dissolved organic carbon (DOC), and phosphorus (P) in burnt areas, which affect soil and watersheds.[58] Evidently, wildfires should also be considered in light of their long-term aftereffects, which severely affect crops, water quality, and the livelihoods of diverse species.

Lastly, a milestone in political ecology around wildfires shapes Mike Davis' account, in *The Ecology of Fear*: *The Case of Letting Malibu Burn*. Davis, in his report on the Los Angeles wildfires, makes it clear that the alchemy of fire surpasses a natural catastrophe and becomes a direct testimony of environmental discrimination.

Late August to early October is the infernal season in Los Angeles. Downtown is usually shrouded in acrid yellow smog while heat waves billow down Wilshire Boulevard. Outside air-conditioned skyscrapers, homeless people huddle miserably in every available shadow. [...] Thirty miles away, the Malibu coast-where hyperbole meets the surd-basks in altogether different weather. The temperature is 85 (20 degrees cooler than Downtown), and the cobalt blue sky is clear enough to discern the whipfish from Santa Barbara Island, nearly 50 miles offshore [...] Indifferent to the misery on the "mainland", the residents of Malibu suffer through another boringly perfect day.[59]

53 Davis, C. (2006). Western Wildfires: A Policy Change Perspective. *The Review of Policy Research, 23(1),* 115–127.

54

55 Steen-Adams, M. M., et al. (2017). Historical perspective on the influence of wildfire policy, law, and informal institutions on management and forest resilience in a multiownership, frequent-fire, coupled human and natural system in Oregon, USA. *Ecology and Society 22*(3)

56 Huidobro, G. et al. (2025). Beyond Wildfire Crisis: Explaining Policy Changes in the Wildfire Governance Subsystem in Argentina through Longitudinal Analysis. *Journal of environmental policy & planing,*1–24.

57 Bolan, S. et al. (2025). Wildfires under changing climate, and their environmental and health impacts. *Journal of soils and sediments 25*.11, 3173–3197.

58 ibid.

59 Davis, M. (2022). *Ecology of fear : Los Angeles and the imagination of disaster.* Verso.

Davis provides a vivid yet strikingly contrasting imagery of Los Angeles, from downtown to Malibu. The first scene is painted in “acrid yellow” from “smog” with the only salvation -for some- being air-conditioned environments in skyscrapers, while others compete for a space in the shadow. On the other hand, a few miles away, the sky is “cobalt blue” and “clear”. Davis immediately achieves to describe the environmental injustice based on social class. His aim is to use these two contexts to show their common suffering from fire in the “wildfire capital” -California-,[60] yet in an “existentially” different way during the “infernal season”. The passage demonstrates that the reality and consequences of fire are deeply embedded in social class discrimination, providing a political ecology framework.

“The Ecology of Fear” is also narrated through a historical account of landscape policies and urban planning, directly related to wildfires. Los Angeles records a destructive series of wildfires, dating back to the 1920’s, corresponding to its introduction of speculative subdivision, and offering an abundance of literature since. As one of the most fire-impacted investigated ecologies globally, it resonates with many present cases of neoliberal planning in Mediterranean contexts, which will be analysed in succeeding chapters. “Ocean front lots, sites for villas, hotels, golf clubs, estates, beach and yacht clubs, income and business lots, small summer homes places”[61] are only a few of the elements that Davis brings as examples, which have monetised, exploited and finally compromised Malibu landscapes, rendering it a global wildfire phenomenon. The quixotic development strategy, along with the violent, erratic and extreme fire behaviour, as described by the Forest Service in 1930,[62] does not leave any margins of fire prevention, and transmutates the production of a new landscape. Nevertheless, in many cases, what has followed a conflagration is an aperture for further lucrative land exploitation by the private real estate sector, in the absence of established fire-risk zoning,[63] ignoring the chaparral cycle.

On the other hand, Los Angeles’s dreadful fires occur not only on hillsides but also in urban areas as such as downtown Westlake. What should be highlighted is the introduction of a double standard for prevention, management and control. Drawing on the social and environmental injustices outlined above, fire catastrophes manifest as precarious settlements, bypassed fire-safety inspections, and disparate budget allocations. However, unlike Malibu hillside homeowners, urban residents have few alternatives and are forced into “instant slums” fabricated by speculators who take advantage of the urgent demand for low-cost shelter.

In summary, what Los Angeles fire literature can teach us is to look beyond the neutralised, camouflaged “natural hazard” discourse of a fire. Its distinctive geographical contexts, which we could argue form the chemistry of wildland fires, are magnified by a set of anthropogenic and market processes, resulting in recurrent wildland fire destruction. It has been argued that an effective strategy to mitigate the fire hazard is “prescribed burning”, managing hills by controlling flammable residue,[64] before resorting to technological fixes, such as advanced firefighting methods. Nevertheless, property values, exclusiveness, and the privatisation of its natural heritage have been allowed to determine its fate, with exponential housing growth in the foothill firebelts.[65] In the words of Richard Lillard, LA environmental writer:

> *It is not habitation amid wilderness. Mankind has conquered nature instead of adjusting to it.*[66]

60 ibid.

61 Robinson, Rancho. (Quotation from Rancho Malibu, *An Historic Real-estate Offering*, p. 38.)

62 Pyne, S. J. (1982). *Fire in America: A Cultural History of Wildland and Rural Fire.* Princeton University Press.

63 LAE. (1960, August 14). *W. David Corn, Environmental Management in the Malibu Watershed: Institutional Framework*.

64 F. LAT (1993, November), & Los Angeles Daily News 14 November

65 Gordon, Growing Migration.

66 Davidson, R. Mountain Men and Women in the New West of Los Angeles, *South Dakota Review 19* (spring/summer 1981).



Fig 14 A Malibu Castle (The Ecology of Fear: Los Angeles and the Imagination of Disaster, Mike Davis)

ii. Energy Infrastructure and Politics

As early as 1288 people were bothered enough by the smell of coal fires for campaigns to arise against their use. Stink or no stink, however, coal had its adherents: energy-hungry industries like brewing and dyeing were early adopters, and its greater intensity of heat was better for blacksmithing and for making lime.[67]

This section analyses fire through combustion, not solely in its physical and technological processes, but also as an agent of territorial production that plans space, organises labour, composes atmosphere and defines political power. Utilising speculative accounts, cultural representations, political and historical reports, this section redefines combustion as a tool for infrastructure, extraction networks, and atmospheric alterations, producing specific spatial and social matrices. The following projects and literature offer a lens towards three intersecting fire research fields: combustion as an atmospheric condition, combustion as infrastructural power, and combustion as contested territorial practice.

Combustion forms another key territorial embodiment of fire, materialising through energy infrastructure and extraction. Understanding the history and implications of combustion and extraction in the territories requires understanding the history of fossil fuels first. Environmental historians, such as Barnabas Calder, have untangled the history of fossil fuel mining -what was eventually going to become the history of the industrial revolution- in the "most unhealthy town in England", toxic, and cholera-hit Liverpool.[68] Calder's account links the coal mining to the atmosphere created in territories, grey, dusty, and fire-clouded, produced by the burning of coal and responsible for a lot of lung epidemics, which have devastated the population. Whilst a time of colonial expansion, naval warfare, and shipbuilding trade, coal was strongly encouraged by 17th century monarchies, setting the stage for great industrial cities such as Manchester, Birmingham, Glasgow, and Newcastle [69] to develop, with leading infrastructure such as ports and commercial centres. That is also where "fossil capital" finds its origins, according to Andreas Malm,[70] linked to the reconcentration of industrial production in metropolitan cities, the transition to steam engines, the reconcentration of industrial power in the upper classes, and the reinforcement of capitalist domination. Cultural representations can testify to the spatial and atmospheric realities of industrial cities shaped by coal, such as *Brassed Off* (1996) by M.Herman. The movie portrays both realities of coal mining shaping the city, framing the 80s political opposition to the mines' closures in Northern England, while unfolding the story in a grim background of an ill-producing, toxic atmosphere endured by the working communities.

Consequently, other historical accounts concern what was to eventually succeed and lead the energy and geopolitics from the beginning of the 20th

67 Calder, B. (2021). *Architecture: From Prehistory to Climate Emergency.* Penguin Books.

68 ibid.

69 ibid.

70 Moore, J. W. (2023). Our Capitalogenic World. *Annales Universitatis Paedagogicae Cracoviensis. Studia Poetica, 11.*

71 Mitchell, T. (2011). *Carbon Democracy: Political Power in the Age of Oil.* Verso.

72 ibid.

73 ibid

74 ibid.



Fig 15 Buttersea Power Station London, Pink Floyd's "Animals" album cover, 1977.

century: the discovery and exploitation of oilfields. As Timothy Mitchell argues in *Carbon Democracy: Political Power in the Age of Oil,* in contrast to the coal industry, the way oil shaped territories through a network at a great distance from its ends, aiming to create an interrupted and extended chain of production.[71] According to Mitchell, this appears to be mainly due to the involvement of extraction companies and their concerns about alliances forming between mining and transporting workers. In the case of coal, the proximity of the production chain has resulted in high political power and solidarity movements, enabling workers to organise and sabotage the energy flow.[72] In this context, oil companies established at that time started weaving a global web of power around drilling sites, terminals, pipelines, shipping routes, distribution points, refineries, investment houses, boardrooms and governmental offices.[73] Another myth that Mitchell deconstructs concerns the spatially unconventional choices of the initial oilfields explorations, questioning the narrative of "heroic pioneers on a remote and empty plateau".[74] According to his report, at the beginning of the last century, the oil industry had developed in isolated locations so that rival companies could delay its progress, having the ability to control or block the creation and operation of railways, pipelines and other infrastructure necessary to reach the fields. This can reflect today, a century-old narrative; the rivalry of



Fig 16 Still from Brassed Off. Directed by Mark Herman, 1996.

companies presenting actions as state prosperity, to battle their competition. The combustion shaping of territories also takes the form of exploitation of indigenous land, and no matter the geographical context, the turbulence of energy infrastructure implementation is an ever-present and globally extending phenomenon. In literature, the transmutation of the landscape through fire and fossil fuel combustion is narrated not only through conquests but also through conflicts and defeats. Dana Powell analyses an exemplary case of a collapsed project of the early 21st century, the Desert Rock Navajo Coal plant. Despite its non-fulfilment, its legacy is a contemporary testimony to landscape-imposed power and resilience, as it studies the field of tribal land exploitation through energy development. In her book, Powell reshapes the megaproject from its conception to its gradual dismantling through a lens of false energy-sustainability promises, criticising the controversy of the green transition as advocated by energy regimes. To do this, the researcher chronicles through a quadrant way of mind, derived from the cardinal directions, echoing the Diné Native American population's Fundamental Law. Powell understands the territory through four entangling concepts: cultural-political, knowledge-practices, material-subterranean and ethical-cosmological.[75]

The material-subterranean axis explores themes such as the evolution of the landscape through the exploitation of its mineral resources, which are transmutated into energy, involving major infrastructural developments. Navajo becomes a geographical-historical framework for oil, gas, uranium and coal, in the remote consumer and producer market, shaping and extracting value from its territory. The Navajo project, however, is one that failed, and it is important to examine its path through Diné's ethical-cosmological concepts, which brings us to Powell's third axis. Navajo is an area shaped by its four sacred mountains, integrating ancestral, animal, botanical and metaphysical traces. A dynamic set of interrelations perceiving the territory, through the complexity of its layers, minerals, soil, terrain and atmosphere and contrasting the colonial stance of industrial capitalism as mere plain landscape ready to be conquered. Yet even the internal debates over their extraction have been acute, between the population that pledged to protect them and those who trusted in the promised increase in political power for the Diné and economic development. What has anticipated however, the final defeat and cancellation of the coal plant is a powerful artistic expression of activism, that depicted the reality of the area to come.



Fig 17 "Bleeding Sky" by James Joe, from the exhibition "Connections", showcasing the resistance to the proposed Desert Rock power plant in northern New Mexico. (source: https://fourcornersfreepress.com)

75 Powell, D. E. (2018) *Landscapes of Power: Politics of Energy in the Navajo Nation.* Durham, NC: Duke University Press.

76 Territorial Agency. (2021). *The Museum of Oil* [Exhibition], ZKM Center for Art and Media, Karlsruhe.

77 ibid.

78 Carson, R. (2003). *The sea around us.* Oxford University Press.

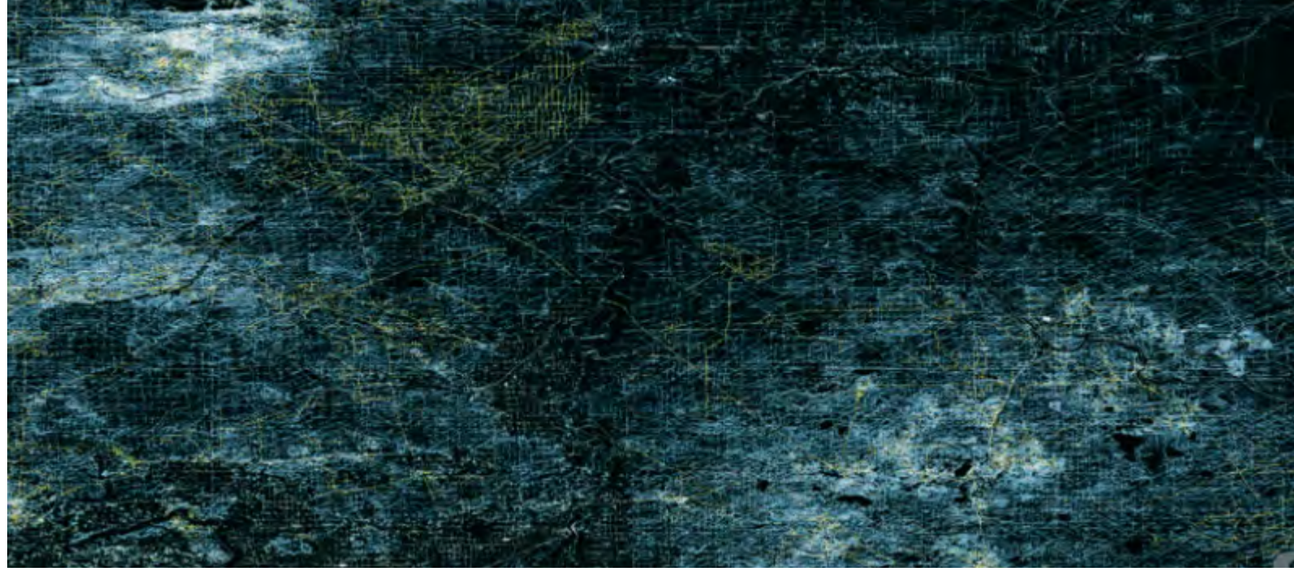


Fig 18 Seismic lines, drilling pads, and pipelines cutting through the boreal forest in Northern Alberta, Canada. GIS data elaborated by Territorial Agency/ Graham K. Smith

Today, as a large part of the literature and discourse on energy production landscapes is shifting, in light of the presumed agreement for a 2050 net-zero carbon planet under the Paris Agreement, the discourse on production territories remains vague. A thought-provoking project that challenges the in-between lines of these agreements comes from the Territorial Agency, The Museum of Oil Project. *We shall need to keep oil in the ground,*[76] is what the speculative museum for the age of oil declares. The Territorial Agency questions the meaning of oil as power, both in physics and in political terms, through its presence in territories and its transmutation of them, both geopolitically and geomorphologically, as well as through its absence. Its absence is loudly echoed in blurred references in international negotiation documents on protecting the planet and climate change.[77] Paradoxically, given an ever-growing influence of energy companies in global political agendas and financial markets, the same companies bear a grim past of climatic catastrophes such as the BP Deepwater Horizon disaster in the Gulf of Mexico. The Museum of Oil, therefore, comes as a reconceptualisation. A reconceptualisation of oil becoming quasi a museum artefact, in the sense of being guarded beforehand, maintained, and protected, with detrimental consequences in the event of loss or destruction. The conceptualisation of oil as a museum artefact can also be reflected in the territories which the Territorial Agency explores, territories produced through the alchemy of crude oil, petroleum, or natural gas, and the implementation of a corresponding infrastructure, pipelines, drilling pads, and transportation systems. A series of layered mapping explorations and satellite data is provided to portray the idea of oil as an alchemical transmutation agent of a territory, expanding from the Permian Basin in Texas and Midland, USA, to gas drilling in North Dakota, Canada and Nigeria.

It is important to record that oil extraction not only transforms and shapes land, but also shapes water and sea, industrialising and "solidifying" vast areas of exploration and extraction. The early energy industrial shift towards the sea and oceans is evident in Rachel Carson's words in The Sea Around Us (1951). The large petroleum reserves in the Gulf of Mexico, and the speculations on the Arctic, Northern Alaska, and Siberia, are emblematic of the seas' industrialisation to follow. As early as 1951, Carson critiques the tendency of geologists to focus on undersea exploration as the latest development. The search for mineral wealth "leads us back to the seas of ancient times," where organic matter was compressed into oil and stored in the subterranean pools even from the Palaeozoic era. It is once again an entangling of multiple fossil timelines, demonstrating how energy and fossil fuels have long shaped territories, while signalling the emergence of increasing capitalisation of marine reserves and the formation of oceanic extractive frontiers.

> *The ancient seas gave us the oil that is now being drawn out of the earth. Can the ocean today be induced to give up some of the oil that must be trapped in sedimentary rocks under its floor, covered by water scores or hundreds of fathoms deep?* [78]

To a greater extent, the temporality of energy transmutation affects landscapes not only at the time of extraction, combustion, production, or transfer but also through their long-lasting aftermath. Needless to say, the Chernobyl explosion was a turning point in the energy industry's history. Through the lens of *Chernobyl Herbarium*, composed of the rayograms of Anaïs Tondeur and accompanied by the words of Michael Marder, radioactivity is projected through traces left on plants, equating all living beings at a distance to the explosion through exposure to radioactive matter. One of the most characteristic territories is the red forest, found in the zone of exclusion, an area of close to infinite transmutation if considered in atomic-decay terms. As a temporal manifestation of energy alteration, the forbidden zone is populated with pine trees -now turned reddish- and their fallen trunks, which have ceased the process of decay and composting to the ground as a consequence of the devastating impact on insects, fungi and microbes responsible for these processes.[79] The red forest, hence, manifests the spatio-temporal energy dynamics on the landscape, with a zone still present and quasi-fossilised in time. Apart from that, as stated by Marder in *Energy Dreams,* life after the explosion is life after the end of the world, or at least, one of the many worlds' ends, whether it is time's ends, space's ends, or border's ends.[80] Marder characteristically affirms that by the scenes of soldiers and firefighters burying once and forever radioactive trees, houses, and debris. After all, for the writer it becomes a commitment to dedicate the book to those elements, who are affected and "suffer" invisibly, the air, soil, water, earth, animals, plants and people, those to whom the effects of such technologies are not questioned enough unless they could become beneficial.

It is beyond the scope of this thesis to summarise the ways in which energy politics, infrastructure and their logistics are shaping the territories. However, what can be derived from the historical examples, struggles, accidents and speculations is that there is a strong spatial and temporal entanglement between fossil capital, atmosphere, labour and capital, not only obvious but also registered in ways inconceivable to human perception. Atmospheric radioactive alteration, for example, has been made visible through rayograms, while others require narrating by overlapping different mappings to recreate the territories. Hence, future *Energy Dreams* are already foreshadowed and shaped by the afterlives of past and ongoing systems. Carrying already bygone effects and memories, they find their ways in an ever-more precarious state in exhausted territories and finite reserves.

Modern humanity [...] can be considered a collective of arsonists who set fire to the underground forests and moors. If Prometheus were to return to earth today, he might regret his gift; after all, what looms is nothing less than Ekpyrosis, the demise of the world in fire.[81]

79 Marder, M. & Tondeur A. (2016). *The Chernobyl Herbarium: Fragments of an Exploded Consciousness.* Open Humanities Press.

80 ibid.

81 Sloterdijk P. (2022). *Promytheus Remorse Speech.*



Fig 19 Highly contaminated forests around Chernobyl, since 1986 Chernobyl nuclear disaster. (source: livescience.com / Sergey Kamshylin / Shutterstock.com)

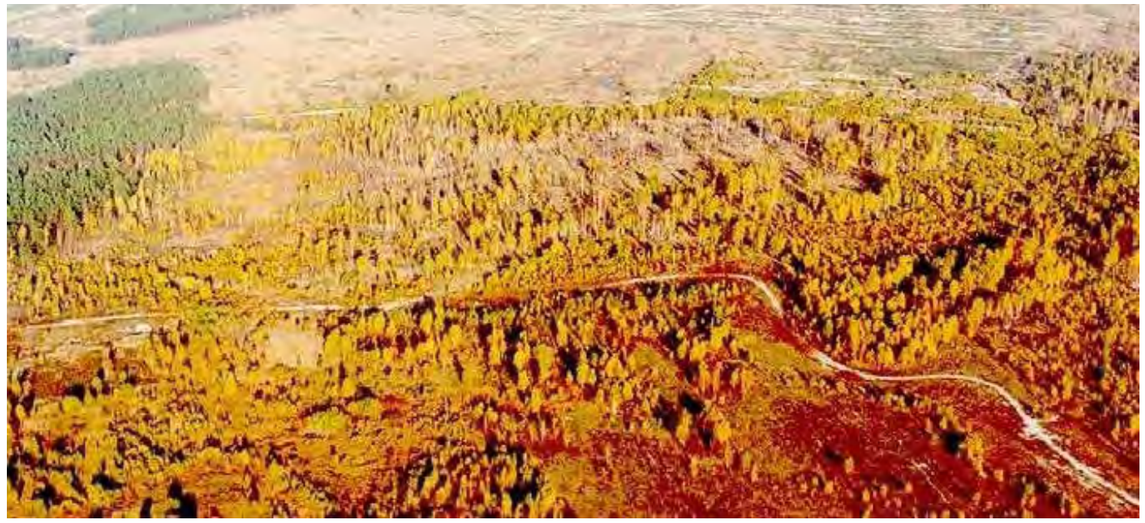


Fig 20 Red forest, Chernobyl (source: Mortensen (2013), ResearchGate, original image credited to Texas Tech University (2001)).

iii. Warfare

Our conceptual vocabularies, however, are lagging behind this world-conflagration, geared as they are toward the analyses of geopolitics, or, at best, of maritime politics. The time has come to update the political lexicon so as to account for the elements that do not fit into the simple opposition of land and sea.[82]

[...] the motif of fire serves as a prism, a single motif through which, like superpositions in quantum mechanics, all the antagonisms and threats of our predicament appear in their interconnectedness.[83]

In Pyropolitics, Michael Marder offers "fire" as a key for discussing the effects on lands of a conflagrant world. Whether this concerns marine or land territories, Marder notes the evident lack of vocabulary and linguistic resources to address unfolding geopolitical realities. Fire therefore, becomes a "prism" that can possibly connect all warfare frictions and hostilities. Fire and warfare can encapsulate trials of excessive land militarisation and dispossession, to technologically-induced geographies of surveillance; the examples are numerous in the existing literature. By analysing the production of military spaces through various scholars on land, toxicity, and power, this section explores the production of territories through the element of fire and its affinity to warfare.

Athshe is an interstellar, densely forested planet that Yumens (for humans in Athshean) have colonised primarily for logging extraction to Earth, a planet where trees have been annihilated. Its indigenous inhabitants, the Athsheans, are seeing their lands, despoliated, extracted, and conquered, enduring violent displacement, torture, and burning of their homes and soil by the conquerors. But "the Athshean word for world is also the word for forest".[84] Through a manifesto fantasy, anti-militaristic, and anticolonial novel, Ursula K. Le Guin introduces us to an imaginary world, occupied and exploited by humans, who turn its inhabitants into slaves, "Creechies," steal and capitalise upon their resources. Through allegory, Le Guin creates an imaginary world inspired by the Vietnam War, describing how the land of the Athsheans is transformed through colonisation, leading to the guerrillas and resistance by its indigenous inhabitants battling against the powerful Yumens, who have in their possession "fire-jellys", "flamethrowers", and large machine guns. What also underlines the narration is the transformative relation of warfare and land. While Yumens are turning Athshe into a "dry beach", - the word "desert" did not exist in Athshean-, for Athsheans "Athshe, [...] meant the Forest, and the World. So Earth, Terra, meant both the soil and the planet, two meanings and one [...] soil, ground, earth was not that to which the dead return and by which the living live: the substance of their world was not earth, but forest." [85] The 1972 novel, therefore, is a depiction and denouncement of colonisation, how land is produced through an oppressive system, both upon the struggles endured by the populations as well as the ecocide as a result of war.

The toxicity and coloniality of France's nuclear program – which severely damaged and contaminated the human, animal, vegetal, and mineral lives of the desert – did not disappear with the departure of the French colo - nial authorities and with Algerian independence. On the contrary, they are engraved on the particles of the desert for thousands of years, if not forever.[86]

Another striking example of colonial regimes producing landscape is the study Colonial Toxicity by the architectural historian and researcher Samia Henni. Henni indulges in an archival reconstruction of classified, deducted, and leaked material concerning the nuclear program of the French government in the colonised Algerian Sahara from 1960 to 1966. Focusing upon the detonation of seventeen nuclear bombs, Henni reconstructs a military landscape, largely inaccessible to civilians, demonstrating the on-site effects of radioactivity and its afterlives, aiming to comprehend the real impact of it stretching thousands of kilometres away.[87] Henni's research is proof that the production of landscape through warfare and colonial violence does not belong to the past but has a continuous presence with radioactive dust and debris still travelling today. By combining available military dossier materials and photographs, the nuclear weapons system is spatialized, with underground laboratories, towns for military personnel, and nuclear centre bases such as CSEM and CEMO, [88] which also resulted in the forceful relocation of Algerian populations. Henni's research not only concerns the built environments and infrastructure of the French government, but also how coloniality constructs territories in ways that are much more expansive and distant from its centre. Through sensorial and performance, Henni shows that toxification and afterlives of past radioactivity, still decaying in dust particles, have a strong presence in the Sahara, Algeria, North and Central Africa and all of the Mediterranean,[89] entrapping territories in an environmental colonial toxicity infinitely.



Fig 21 Documents that detail the construction of the Reggane base by France (included in the forthcoming book of the exhibition), mage: Courtesy of Framer Framed (https://www.stirworld.com/inspire-conversations-historian-and-curator-samia-henni-on-staging-acts-of-performing-colonial-toxicity)

82 Marder, M. (2015). *Pyropolitics: When the world is ablaze.* Rowman & Littlefield International.

83 Žižek, S. (2015). Foreword: A hologram of our present. In M. Marder, *Pyropolitics: When the World Is Ablaze,* p.11. Rowman & Littlefield International.

84 Le Guin, U. K. (1972). *The Word for World Is Forest.* Berkley Publishing.

85 ibid.

86 Henni, S. (2022). *Deserts are not empty.* Columbia University Press.

87 Henni, S. (2023). *Performing colonial toxicity* [Exhibition handout]. Framer Framed.

88 Barrillot, B. (2003). *Les irradiés de la république: les victimes des essais nucléaires français prennent la parole.* Éditions GRIP.

89 e-flux Architecture. (2023, September 18). *Samia Henni: Performing colonial toxicity.*

However, the conceptualisation of military and militarised landscapes differs in the literature. Rachel Woodward's work provides a comprehensive framework of terms, based on their effects and consequences across spatial, social, economic, political, and temporal characteristics. Woodward supports that, succeeding a century of global armed conflicts and amid an era of rapidly evolving military technologies, the meaning of what constitutes a military landscape has been significantly expanded and reshaped. Thus, military landscapes should not be understood as firm and solid spaces but as expanses of continuous movement, particularly during war operations, which cause a continuous landscape transmutation and production. Similarly to Marder, Woodward also problematizes the linguistics of such territories, criticising specifically the term "landscape". For the writer, it is a conflictual term as it falsely depicts a static scenery.[90] For the writer, it is a conflictual term as it falsely depicts a static scenery. Her work thus engages with the concept of a "landscape" beyond human geography,[91] understanding territories as a complex patterning of materials, relations and morphology, entangled with social and cultural representations,[92] as a palimpsest to be read.

In the abundance of historical examples of such territories, literature has explored landscapes as former battlefields, for instance, the Ardennes in Belgium during WW2[93] and the Alps in WW1.[94] These territories have been interpreted and depicted through lenses of "terrain and tactics", as a normative, long-standing perspective on the interlinkage of geomorphology and military strategies, or through the imprint of after-effects. According to Woodward, landscapes that carry such imagery have allowed for the legitimation of any further military or militarised intervention, inevitably leading to further toxification and residue. Cases are numerous, such as the Bikini Atoll, which still contains decaying radioactive isotopes, and bunkers, liminal spaces, and radar testing sites, as in the UK's East Anglia.[95]

Building upon Woodward's ideas, Giacomo Spanu also describes the production of urban military geographies as "the shaping of civilian space and social relations by military objectives, rationales, and structures, either as part of the deliberate extension of military influence into civilian spheres of life and the prioritising of military institutions, or as a byproduct of those processes"[96]. Through Lefebvre, Spanu builds on the theory of spatial production, arguing that the presence of military forces in seemingly peacetime contexts lays the foundations for spatial production,[97] turning urban spaces into fields of war preparation. Control and surveillance of space are increasingly becoming the main features of such territories, strengthening imperialistic and colonial practices. Through these strategies, military geographies are produced and expanded in "civilian" spaces, reinforced by ever-advancing mapping and spatial data collection.

Lastly, it is important to note that warfare transmutates territories, affecting each layer of their stratigraphy. Terror from the Air by Peter Sloterdijk, extrapolates the invention of "gas-warfare" in what he describes as the 20th century invention of "atmoterrorism".[98] By drawing back to WWI, in the Battle of Ypres, Sloterdijk chronicles the first use of chlorine gas. An invention that was stated explicitly at the time as a violation of Article 23 of the 1907 Hague Convention.[99] A "monstrous", "yellowish smoke" of 150 tons was formed and released into the air, creating a 6-kilometre-wide, 600 to 900-metre-deep cloud, becoming one of the first direct weaponisations of the atmosphere.[100] Documenting the Ypres gas attack by the German military on the French Canadian troops, Sloterdijk remarks how the atmosphere was now becoming the main aim for the attacker, a destruction of all fundamental requirements for any form of life. Sloterdijk comments on The Merchant of Venice's line as a prophecy: "You take my life/When you do take the means whereby I live."[101] Nevertheless, more than a century later, however, and international convictions, atmoterrorism tactics are still present and being used, affecting civilians, lands and atmosphere, toxifying ever-more atmospheres and ecosystems, condemning humankind to genocide and ecocide.

90 Woodward, R. (2014). Military Landscapes: Agendas and Approaches for Future Research. *Progress in human geography 38*(1), 40–61.

91 ibid.

92 ibid.

93 Harrison S. et al, (2008) The Ardennes campaigns of 1944: Some theoretical considerations on the role of topography. In C. P. Nathanail, R. J. Abrahart, & R.P. Bradshaw (Eds), *Military Geology and Geography: History and technology* (pp.199-206). Land Quality Press.

94 Keller, T. (2009). The Mountains Roar: The Alps during the Great War. *Environmental history* 14(2), 253–274.

95 Woodward, R. (2014). Military Landscapes: Agendas and Approaches for Future Research. *Progress in human geography 38*(1), 40–61.

96 Spanu, G. (2023). Urban Military Geographies: New Directions in the (Re)Production of Space, Militarism, and the Urban. *Geography compass 17*(12).

97 ibid.

98 Sloterdijk, P. (2009). *Terror from the air* (A. Randol, Trans.). Semiotext(e). (Original work published 2002)

99 ibid.

100 ibid.

101 Sloterdijk, P. (2009). *Terror from the air* (A. Randol, Trans.). Semiotext(e). (Original work published 2002)

Fig 22 Aerial view of the chlorine cloud released by the German troops on April 22, 1915 at Ypres. Photo: Martinetz 1996, VIII



The production of landscapes through fire and *regimes of emptiness*

As a conclusion of this section, the question is raised whether the ground where fire happens is empty, and whether it is only produced through fire's embodiments. Scintillating from wildfires to energy combustion infrastructure and warfare, militarisation of lands, the concept of an empty desertified land is often recurring. Samia Henni explores the discourse, forming a statement "Against the regime of emptiness".[102]

[...] among the most common platitudes about the desert are ideas that "deserts are empty", that the "desert is absent of life", or that "there is nothing at all in the desert". This misleading conceptualisation of the desert has served to legitimise its transformation, manipulation, toxification, and destruction. [103]

Integrating the above, the desert can therefore be a metaphor and a vessel for all previously referenced cases and grounds where exploitation and excessive industrialisation of landscapes takes place, under the alleged presupposition that deserts are empty spaces "to be filled" through extraction, production, mining, accumulation, and occupation.[104] Differentiating vastly in contexts, yet from California's wildfires becoming a new development hotspot to the first explorations in hostile hill terrain of Persia to the militarised Alps, there is an underlying connotation that the ground is empty, unreachable and hostile, and the land is there, ready to be exploited and conquered. As Henni expresses, these mechanisms cause the disturbance and distortion of the landscape for humans and non-humans, racialising it, toxifying, damaging and destroying webs of ecosystems. Finally, by representing the land as a desert, or desertified, any act of dispossession, forced displacement, and extraction is concealed or even legitimised. Therefore, it can be deduced that the production of a landscape through fire reflects back on alchemy. Fire is not only a means of chemical reaction and a natural phenomenon, but a transmutation and complexity of infinite reactions between flames, power, extraction, colonisation, and toxification of land.

> *Humankind can not gain anything without first giving something in return. To obtain something of equal value must be lost. That is Alchemy's first law of Equivalent Exchange.*[105]

However, in contrast to the alchemical law of Equivalent Exchange, territorial losses are not driven by an anonymous "humankind" or a generic Anthropocene but develop as products of well-resourced states, corporations and heavy industry. This can reflect J.D. Demos argument against the term Anthroposcene to a more representative one, such as Capitaloscene[106] or Corporatoscene[107], integrating Andreas Malm's reading of the Anthroposcene Myth.[108]

102 Henni, S. (2022). *Deserts are not empty.* Columbia University Press.

103 ibid.

104 ibid.

105 Bones. (2009-2010). *Fullmetal Alchemist: Brotherhood*. [TV series]. Aniplex.

106 Demos, J. D. (2017). *Against the Anthropocene: Visual Culture and Environment Today*. Berlin: Sternberg Press.

107 ibid.

108 Malm, A. (2015, March 30). *The Anthropocene myth.* Jacobin.

02 The Mediterranean:
‘The hearth for an eternal flame’

The landscapes of the Mediterranean bum. They have burned as long as people have recorded history, and they have continued to bum through wars, famines, droughts, floods, eruptions, epidemics, the advent of farming and livestock, and that wrenching upheaval in social order, economics, and fire practices known as Industrialization. [...] Among the landscapes of Earth, the Mediterranean is a kind of prytaneum, the hearth for an eternal flame (Frazer 1885).[1]

The chapter moves into the Mediterranean. A flaming sea, constantly surrounded by wildfires, combustion and warfare, *the hearth for an eternal flame*, as Frazer suggests.[2] This raises methodological questions in finding suitable means to approach the territory: archival, experiential, or sensorial, while understanding where these chronicles and accounts come from, who produces them, and who has had the right and opportunity to narrate them. This chapter, therefore, moves between readings and accounts of the Eastern Mediterranean, developing a series of redrawn and reinterpreted maps by the author, using GIS, remote sensing data, and open-source information. It finally asks the question: what if the Mediterranean is no longer a marine territory, but a terraqueous region, a continuation of its surrounding lands and inhabitation among fire, ignition, and residue?

1 Pyne, S. (2009). *Eternal Flame: An Introduction to the Fire History of the Mediterranean*.

2 ibid.

The hearth for an eternal flame

Fire as geologic history

To firstly understand the origins of rendering the Mediterranean as a pyroscape, we must first look into its geological history and time, the alchemy between water and land. There lie the explanations of Mediterranean fire regimes, as Stephen Pyne chronicles in Vestal Fire.[3] The temporal interaction between arid and wet conditions has created the appropriate conditions for fire, alternating between fuel accumulation during rainy years and burning during dry seasons. These conditions have found solid ground amongst mountainous shorelines, experiencing drought and strong winds, ensuring extensive wildfires once summer arrives.[4] During the primordial Mediterranean, meeting these climatic conditions made fire a driving force, fueled by the alchemy of dryness and water, ignited mainly by lightning. Other geological formations of the Mediterranean have also assisted in the sculpting of its landscape ,such as volcanoes, combustion in caves, and sun-dried bogs, but only light has universally penetrated the geological times.[5] Therefore, by the Holocene, similar to early frosts, drought, swampy soils and strong winds, the Mediterranean flora and fauna have developed with relevant survival and protection mechanisms. Some of the most common flora examples are the oak, peat, fir, pine, maquis and steppe. From a geological perspective, Pyne unfolds the ancestral formation of the Mediterranean territory as a land of fire cycles, *an eternal flame*.

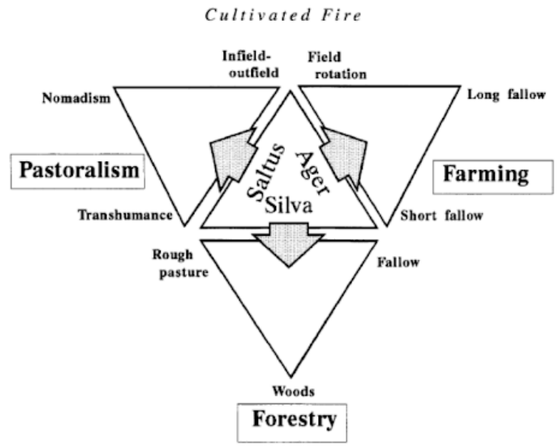


Fig 23 Europe's agricultural fire triangle, three prime land uses: ager, silva snd atus.(Eternal Flame: An Introduction to the Fire History of the Mediterranean, Stephen Pyne).

3 Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World.* University of Washington Press.

4 ibid.

5 Hough (1926) survey on the technology of fire pp. 84-85. Rossotti (1993: 21- 32), and Viosca, Jr. (1931: 439-442) and Chistjakov et al. (1983: 259-272).

Anthropogenic fire

Nevertheless, the flaming landscape has not been untouched and left to naturally proliferate through geological periods, but has been significantly interrupted, moulded and sculpted by anthropogenic factors.

> *[...] a forager along the ice edge, a hunter in periglacial steppes, an opportunist amid birch and pine, a resident within woodlands, a transient visitor to bog and heath and fens. Humans were seizers of disturbed sites who had the capacity to further disturb. Restlessly, compulsively, Homo reorganized the biota—adding and subtracting species, reshaping biomes as he did coarse flint into arrowheads; harvesting, pruning, plucking, draining, planting, digging, watering, and through proxy fauna, grazing, browsing, fertilizing, trampling; and above all, burning.*[6]

According to Pyne, the history of the pyrophilic Mediterranean is decisively shaped by the Neolithic Revolution, hence the domestication of humans. The alteration and interference of the biota for the purposes of hunting, agriculture, and defence have directly shaped the surrounding settlement landscapes, using fire as their main tool. Almost a competition between natural and anthropogenic, Mediterranean landscapes were alchemised and controlled, multiplying (and destroying) interrelations amongst ecological webs and systems. As Pyne suggests, “the anthropogenic fire segregated wild from the human”,[7] making them work sometimes against and sometimes in synergy for the control of reservoirs and fuels.

6 Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World*. University of Washington Press.

7 ibid.



Fig 24 Mediterranean Fire Danger Forecast as on 15th August 2025, (screenshot from forest-fire.emergency.copernicus.eu)

Fire as fatigue

The result of human domestication was the formation of an entirely Mediterranean anthropogenic landscape. The fusion of lightning and human-induced fire has produced over aeons the legacy of fire, as well as the landscape fatigue. One of these legacies is characterised by the emergence of pyrophytes, which will be discussed in detail subsequently in the thesis. Soil, water, and residue alchemies and chemistries have thus assisted in the development of the fire-prone ecologies, which Pyne describes as “phoenix flora”. Due to the Mediterranean fire regimes, the territory has accumulated significant species variation compared to regions in proximity, such as temperate Europe. A strong example is the 15000 flora types in the Mediterranean and more than 100 tree species, in comparison to temperate Europe, which has only 30. As will be expanded, these mechanisms have built resilience to propagate in various modes, such as the seeds’ release assisted by heat and ignition-induced germination.

The fatigue on the other side, following Pyne’s argument, is caused by the relentless human interventions, repeated, selective and strategic burnings, reaching the ecosystems up to a critical level of exhaustion and quasi-beyond recovery. Domestication and anthropogenic alteration have imposed farming, intensive cultivation, expansion of settlements and warfare. How exhaustion and fatigue can be expressed is the depletion of soils, the reduction of spontaneous ecosystem regeneration, and the narrowing of biota communities. The maquis flora forms an example of this fatigue. A dominant type of Mediterranean landscape vegetation, a result of fire regimes, sclerophyllous and evergreen shrubs, resilient enough to resist and regenerate through cycles of burning.
Therefore, the history of fire in the Mediterranean is an eternal one, as old as the origins of time. Fire has forever sculpted, altered, and manipulated the Mediterranean ecosystems, integrating as a fundamental aspect of ecology and succession. Historical anthropic interferences, however, have caused fatigue and exhaustion, intervening in cyclic processes peaking to a limit. Through the reading of Vestal Fire, the geological against the anthropic production of landscape can be traced, becoming a milestone in laying the foundations for explaining the intensification and catastrophic nature of wildfires today.

Fig 25 Mediterranean maquis vegetation (visititaly.eu)



How do we map fire (today)? Instrumental Cartographies

Integrating with the fire embodiments analysed in the previous chapter, the Mediterranean region expands beyond geological and anthropogenic fire regimes, a paradigm of an ever-flaming territory of energetic industrialisation and warfare. Thus, the following part is a series of instrumental cartographies elaborated by the author, territorialising different forms of fire in the region. What the reading and result become is a Mediterranean shaped as a continuous terraqueous territory. A blended shoreline between land and sea, a territory smelted by fire, through continuous collisions, refineries, warfare, military transportation, surveillance, and frontiers.

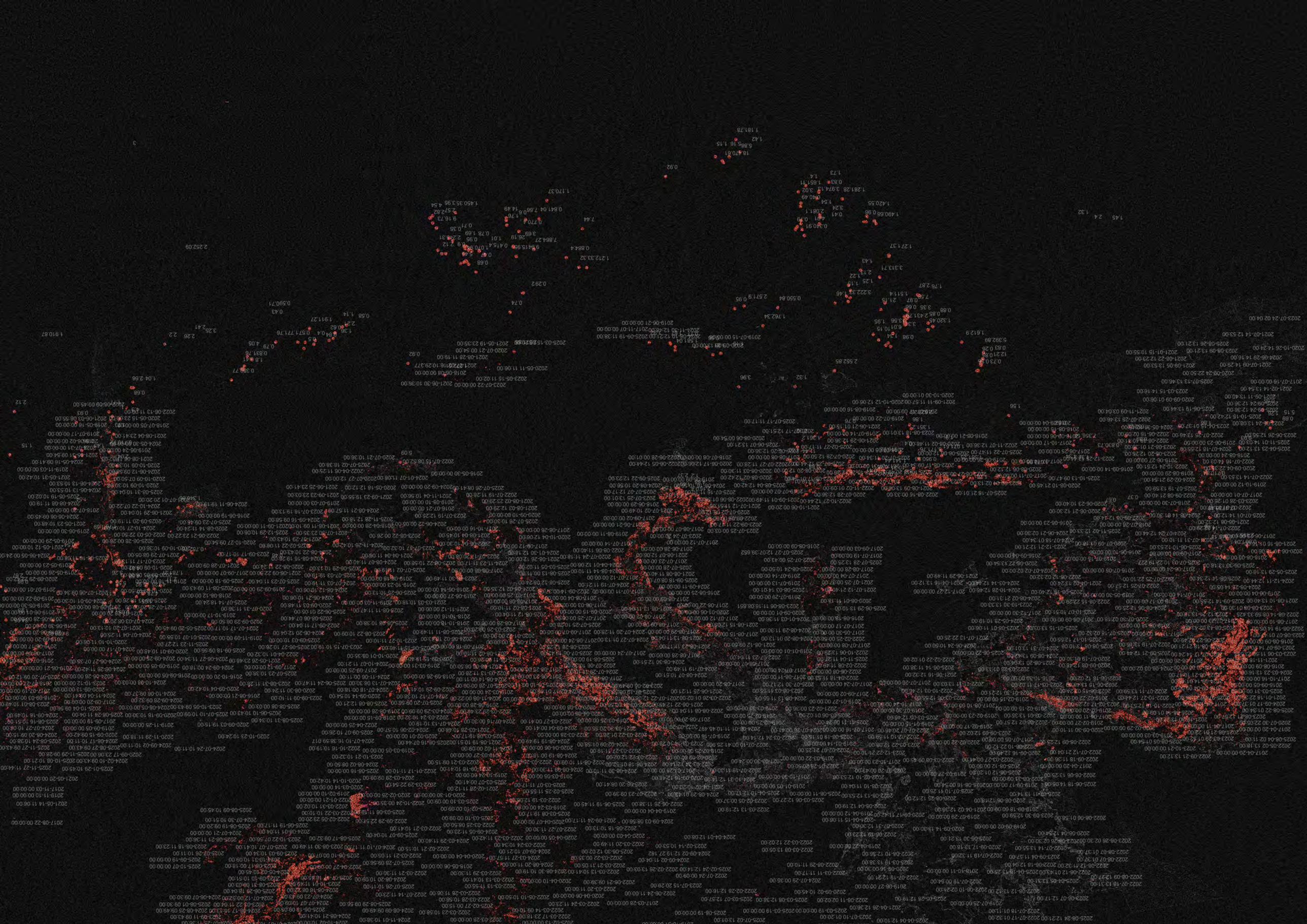
In the following section, the cartographies spatialize factors regarding the Mediterranean ecology, energy geopolitics, and warfare. All cartographies have been developed using GIS systems, processing different information layers, consulting available open-source data from governmental and institutional sources, and drawing on research reports. Starting with the ecological mapping, consulting monitoring programs such as Copernicus,[8] and superimposing the last decade’s (since 2016) wildfire spatial data with land uses, drought, precipitation and prevailing winds, indicating a chemistry of factors leading to fire. Regarding the energy map, it draws on open-data GIS sources, association reports such as *Étude territorialisation des espaces maritimes* by Mediterranean Foundation of Strategic Studies,[9] and newspaper articles from *Le Monde (diplomatique)*,[10] laying out oil and natural gas basins and fields, along with existing and proposed pipelines. Further, through public marine trafficking intelligence, it locates movements of tugs and special craft vessels.[11] Lastly, warfare mapping indicates areas of ongoing conflict, domestic and foreign naval bases, main migration routes and major investment transhipment hubs, again using public data sources. More specific information about the data sources of each drawing can be found at the end of the thesis.

8 Copernicus Programme, https://www.copernicus.eu/en

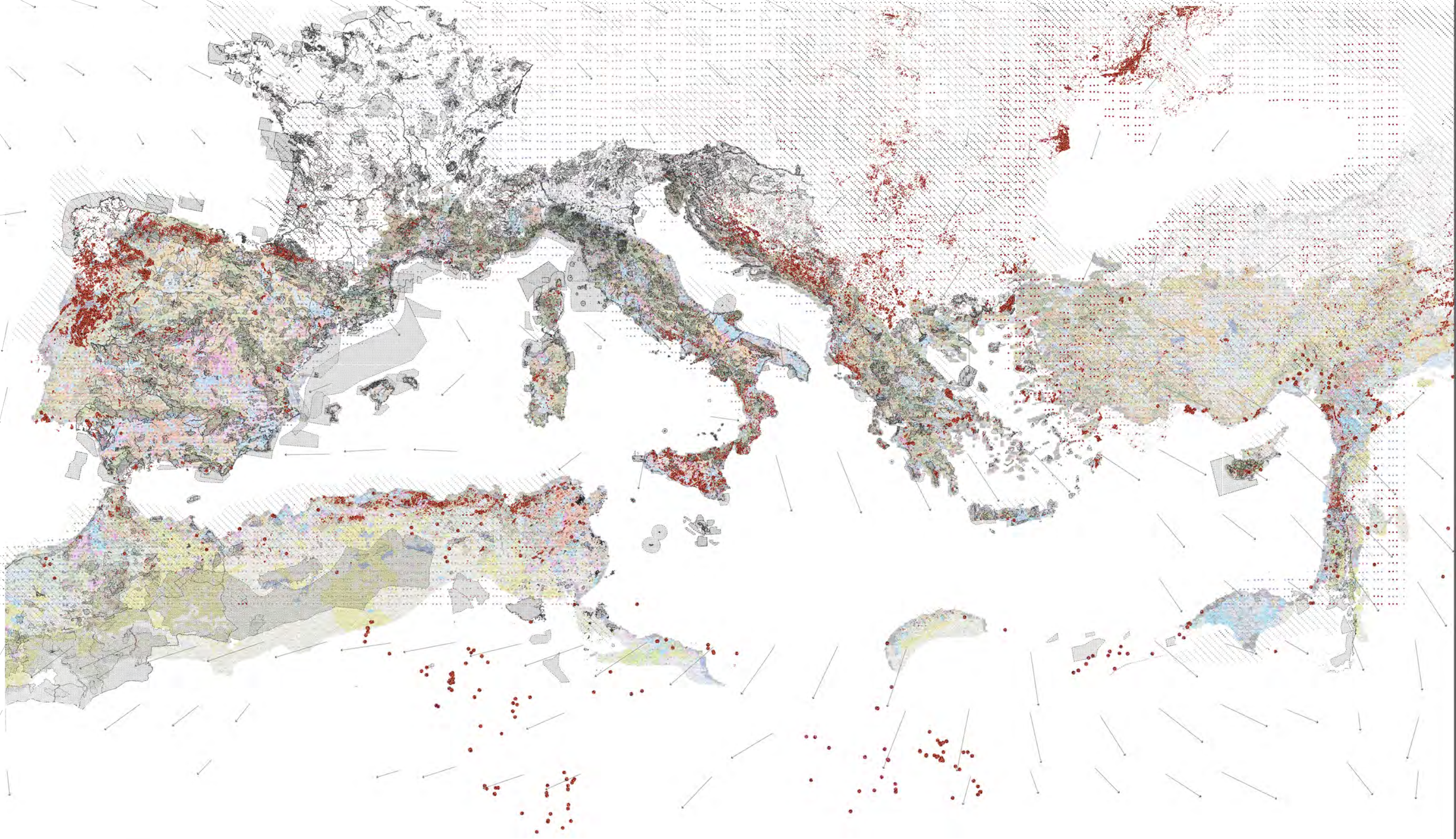
9 Fondation Méditerranéenne d’Études Stratégiques (FMES). (2022). *Strategic Atlas of the Mediterranean and the Middle East.*

10 Marin, C. (n.d.) *Conflict and tension in the Mediterranean*. Le Monde diplomatique – Maps.

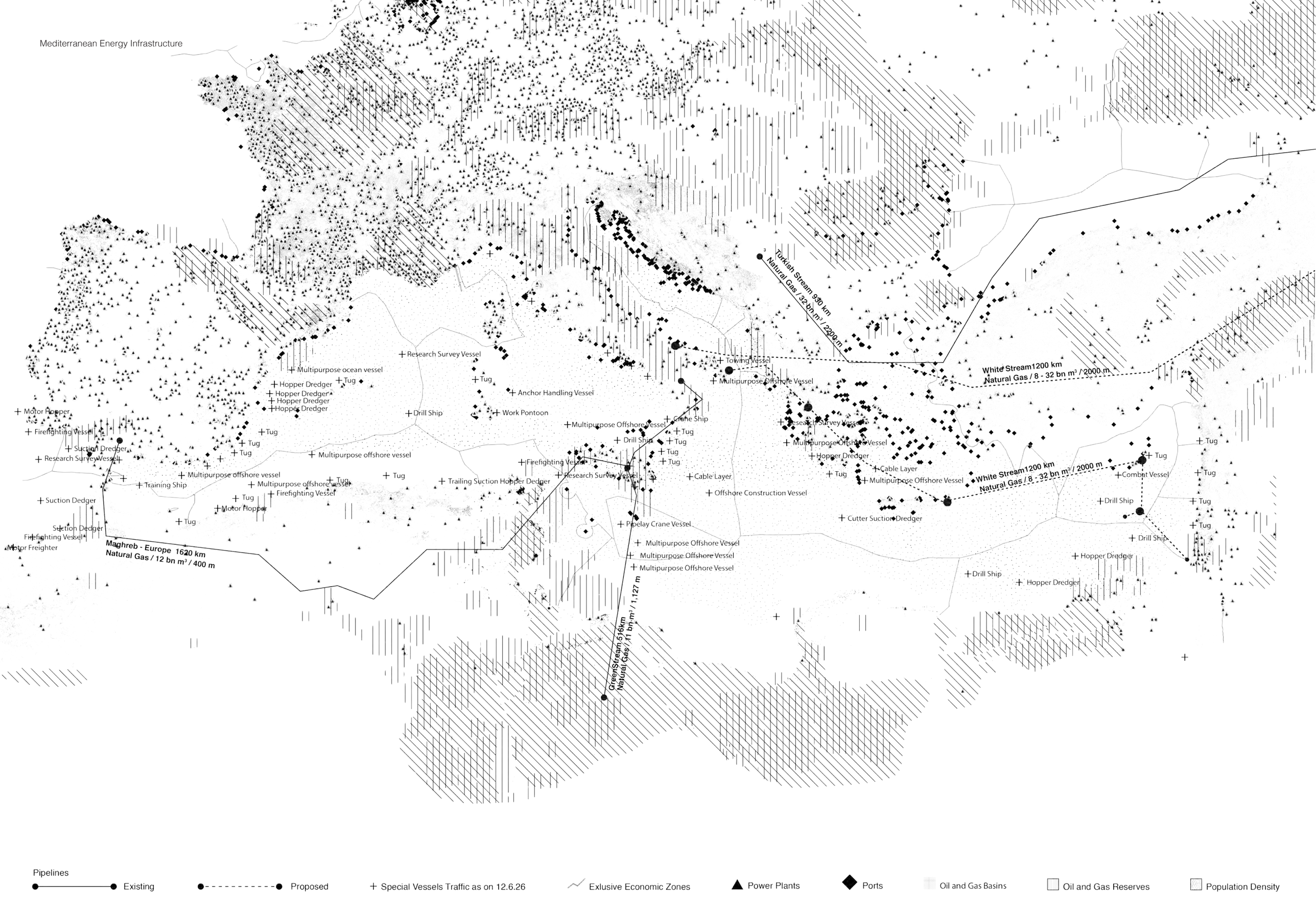
11 MarineTraffic, AIS vessel tracking platform.



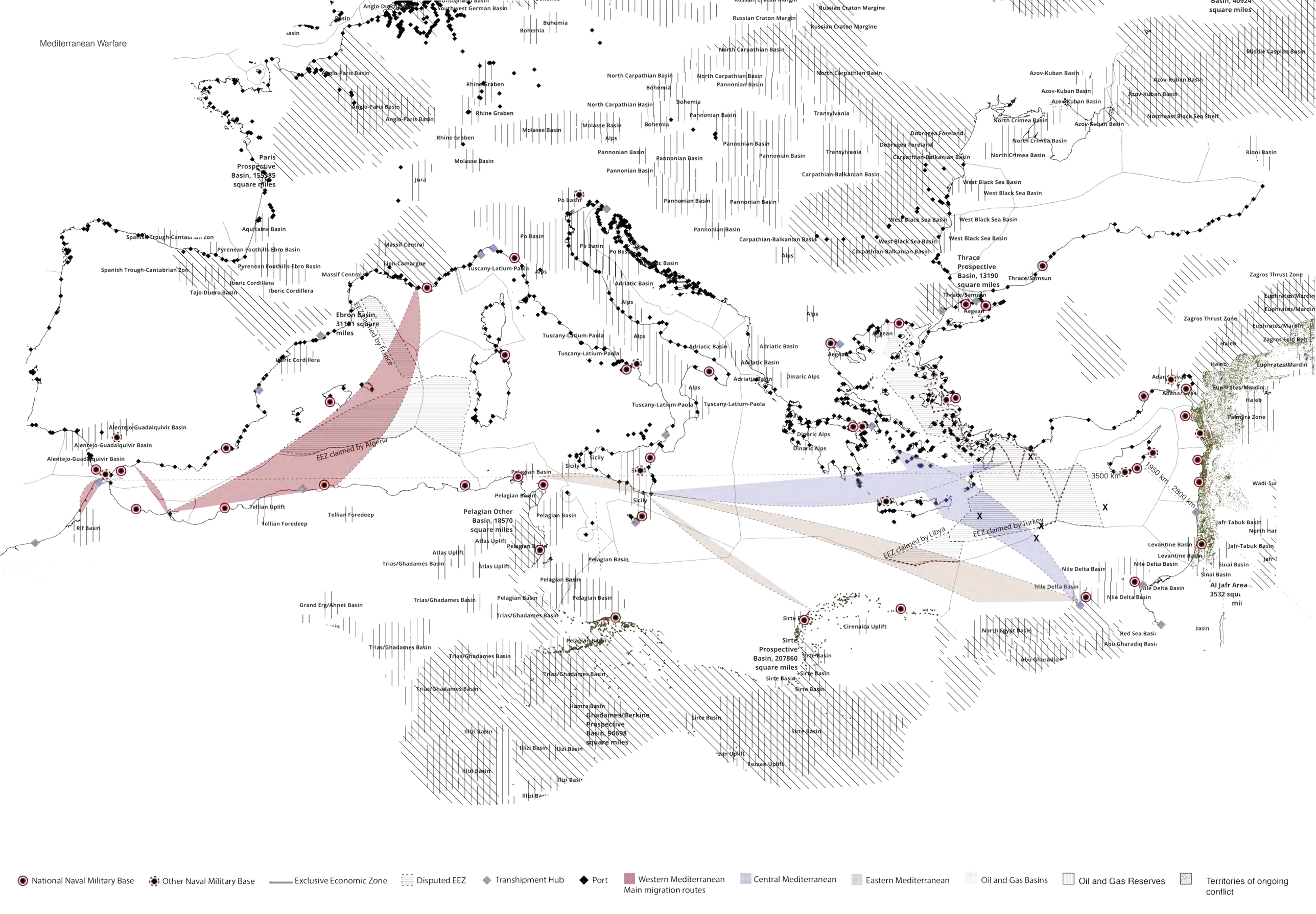
Mediterranean Ecology



Mediterranean Energy Infrastructure



Mediterranean Warfare



03 Cyprus as a Pyroscape

Encapsulating the above, the framing of fire as landscape, warfare and combustion, eternal regenerative cycles of fire observed from Australia, the African fynbos to the Mediterranean, Cyprus emerges as a central territory shaped by the alchemy of fire, as well as its complex interaction with water. The island's long colonial history and present, alongside political division, are inscribed in the society and landscape, producing spaces of ignition, restriction, ashes, toxicity and residue. At the same time, Eastern Mediterranean geopolitical energy strategies surrounding the island, both literal and metaphorical, contribute to the fragmentation of the territory, becoming a vivid reality not only through maps but also experienced in everyday spaces. Further, the characteristic Mediterranean climate of arid and semi-arid conditions, drought and strong winds renders it increasingly vulnerable to wildfires, with flames devastating different regions once the temperatures rise.

Στην Κύπρο η πιο μεγάλη μοναξιά, εν η λαλλάρα του Ιούλη [Cypriot]. [1]

[In Cyprus, the greatest loneliness is the burning sun of July]

Island and Fire - A Historical Landscape Evolution

Mediterraneity

As illustrated in the historical cartographies, Cyprus has formed a distinctive node in the Mediterranean, both through its ecology and through the different arrivals of civilisations. In an inward-facing Mediterranean, as Pyne suggests,[2] islands were highly strategic, especially during maritime conquests, opening the routes for colonies, commerce, movement, trade, and warfare. Similar cases are Sicily, Corsica, Sardinia, and Crete. Sailing through different timelines, regimes and colonisers, the island has experienced fire and disturbances in different ways apart from the area's climatic conditions, serving geopolitical, religious, commercial, or extractivism. As a result, the island has been significantly shaped by different forms of fire, whether these were caused by invasions or ecological cycles of the Mediterranean, resulting in what now forms a mosaic of maquis, buffer zones, energetic and military landscapes.

1 Achniotis, P., & Anastasiades, A. (2020). *Tongue* [Documentary Film].

2 Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World.* University of Washington Press.



Fig 26 Map prepared by Jodocus Hondius in 1606. (Published by the Cyprus Department of Lands & Surveys Cyprus 1982, portal.dls.moi.gov.cy/).

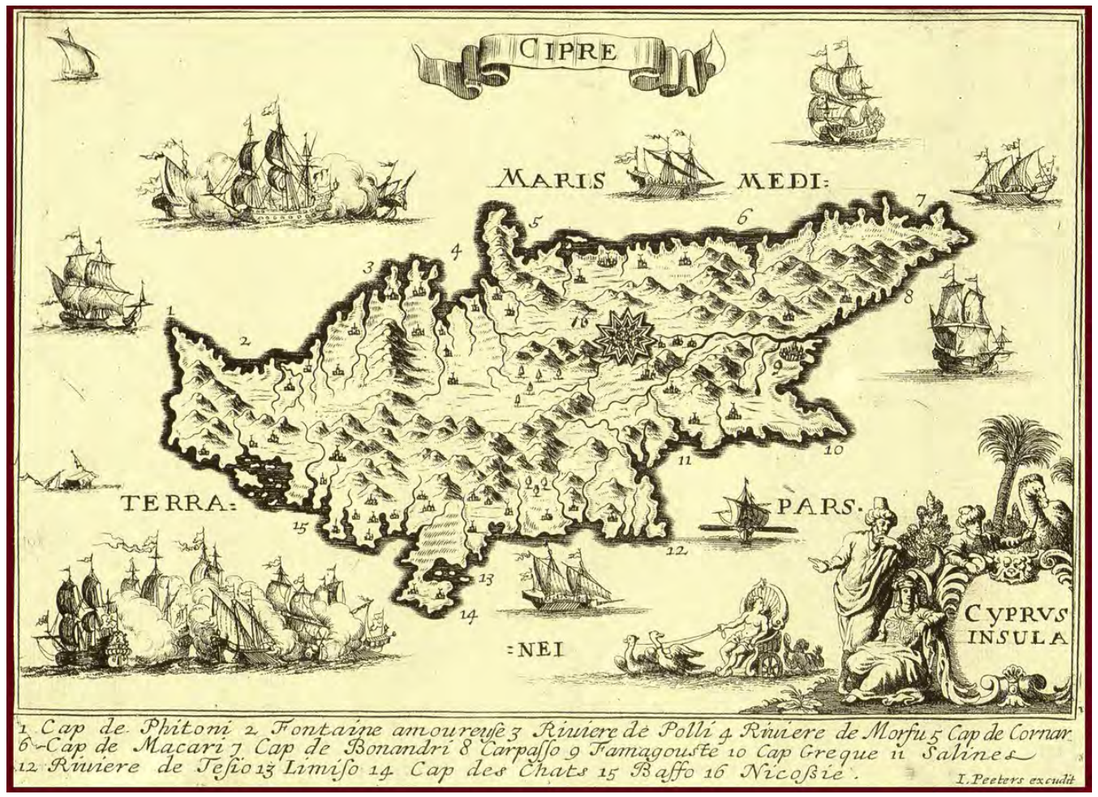


Fig 27 Cyprus map by Jacob Peeters (17th century). (geonoma.gov.cy)



Fig 28 Isles de Cypre, by Alain Manesson Mallet, published in Description de l'Univers (Paris, 1683) (geonoma.gov.cy)

Fire as Colonial Ruling

A century or two of peace might pass between major outbreaks, but the invaders always returned-Hittites, Egyptians, Greeks, Phoenicians,Assyrians, Persians, Macedonians, Romans, Byzantines, Arabs, Franks, Genoese, Venetians, Turks, and British--each killing, colonizing, ruling, extracting, taxing, kneading new ingredients into the Cypriot dough. Every practice, every shockwave, every point of contact threw sparks, and in the maquis and aromatic pine of its mediterranean mountains, those sparks kindled fires.[3]



Fig 29 Map of the Levant, Giuseppe Rosaccio, 1598 (geonoma.gov.cy)

Following the treaty between the Ottoman Empire and the British that established the island under British rule, fire once again became a central agent of landscape transformation, throughout tensions between the colonisers and the indigenous population. As Britain was already a leading industrial empire, it viewed forestry in Cyprus as another opportunity and imposed strict punitive rules. As documented in Samuel Baker's travelogue, *Cyprus as I Saw in 1879*, forests were in a state of wreckage, exhaustion, burnt, grazed and abandoned.[4] Therefore, forestry was gradually instrumentalised to extend governance control and restrictions on rural populations. This resulted in opposition to local practices, such as goat grazing and selective fire by herders, and the introduction of the Forest Ordinance Law in 1879. The law aimed to promote agriculture, regenerate forests, and prevent floods and soil erosion. With the arrogance and dominance of the colonial authority, laws have looked down upon the population's practices. J. V Thirgood quotes Baker in *Cyprus: A Chronicle of Its Forests, Land and People:* "Be he Christian or Musselman, the Cypriot peasant is convinced that wood, like air or water, has no other master than the God who made it. It seems as natural for him to go where he will and cut wood as to drink at the brook hard by when he is thirsty".[5] Nevertheless, Cypriot pastoralists believed the forestry measurements to be lethally ephemeral and oppressive. Pyne highlights the direct contrast between a pastoral population adapted to cycles of extreme natural phenomena and hence scarcity, and an empire of long-industrial agricultural ambitions.[6]

Despite punitive law enforcement regarding forestry protection, the colonial rule has resorted to mass timber exportation at the outbreak of its operations in the Near East war,[7] undermining the legitimacy of all efforts. Ever since wartime felling has had catastrophic and irreversible outcomes, with one-sixth of forests being cut down. As a result, the colonial fire mosaics propagated. The suppression of fire, the colonial industrialisation, warfare exportations, punitive law enforcement, and restriction of pastoral populations in collision have largely been engraved by the means of fire, yet another expression of the colonisation of land against its indigenous population. Additionally, in a J.W. Moore framework, the imposed policies of "forestry protection" could become part of the Civilising Projects,[8] as ways aiming to "educate" the indigenous population upon their land, part of colonial exploitation of resources.[9]

3 Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World.* University of Washington Press.

4 Baker, S. W. (1879). *Cyprus as I saw it in 1879.* Macmillan and Co.

5 Baker, quoted in Thirgood (1987b: 113); *Cyprus: A Chronicle of Its Forests, Land and People.* By J. V. Thirgood. University of British Columbia Press

6 Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World.* University of Washington Press.

7 ibid.

8 Moore, J. W. (2023). *Our Capitalogenic World. Annales Universitatis Paedagogicae Cracoviensis. Studia Poetica, 11.*

9 ibid.

10 Cyprus Forestry Department (1991). *Annual Report*. Ministry of Agriculture, Natural Resources and Environment.

Fire as a Weapon

What has succeeded in history has been guerrilla warfare, resistance, and war, putting fire again as a central element and weapon. Mountains and the impenetrable forest of Paphos became the main sites for ambuscades against colonial rule and refuges for fighters. Further, during the intercommunal conflicts of 1963, rural areas met new disturbances of incendiarism. Years of fire suppression policies and drought have only increased the amount of forest fuel and, hence, magnified the catastrophes. More specifically, by the time of independence in 1960, as a consequence of the islands' warfare, 30 per cent of productive forces and 16 per cent of state forests were scorched. According to the report of the Forestry Department in 1991, in practice, apart from natural fires, this was also heavily due to the increasing troops arriving from Greece and Turkey, military exercises and the introduction of United Nations operations of peacekeeping forces.[10]

Legacy and fatigue

The above is a brief introduction narrating the history of the Cypriot landscape through fire. However, what remains of today is the legacy and fatigue of the landscape, with division, off-limits spaces, buffer zones, minefields and military bases, still smoking from the past. In the "post-colonial" context, landscape mosaics become fluid and solid at the same time. While each year wildfires traverse different areas of the island, other fires remain immobile and solid for decades. Situated in the Eastern Mediterranean, the territory experiences all the effects of fire significantly, including warfare operations and being used as a launchpad, or connected to geopolitical energetic alliances. Drawing similarities with the regimes of emptiness concept developed by Samia Henni, dilapidation, destruction and development are often portrayed on "empty" territories to serve exploitative interests. Therefore, the following part follows the structure of the thesis, recognising the spaces of fire, but rejecting their nature as destruction. The aim is to look further, seeking the ways in which they affect human and non-human ecosystems, questioning possible inhabitations and symbiosis among perpetual fire landscapes and emerging-recurring patterns.

Recurring Patterns

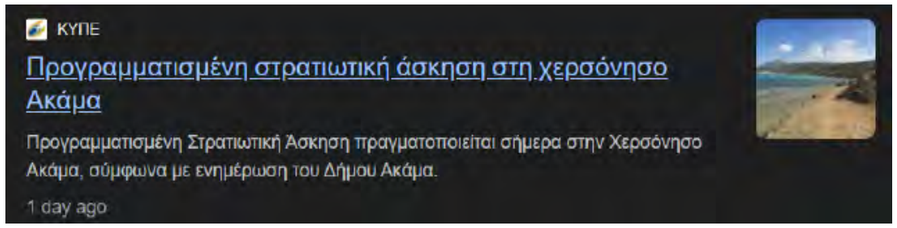


Fig 30 “Planned military excercise in Akamas pensinsula”

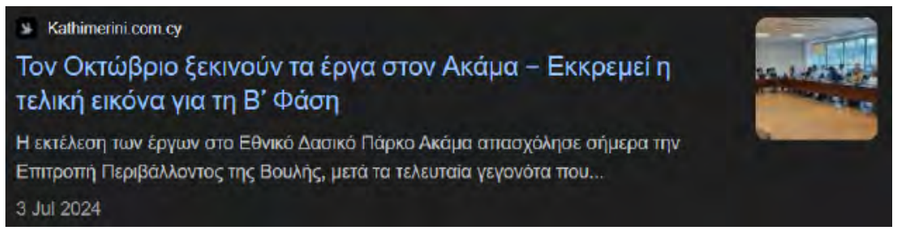


Fig 31 “Works at Akamas begin in October. Second Phase pending”



Fig 32 Pentakomo: Six months without decision while the environmental deterioration continues”



Fig 33 The Department of Environment has “woken up”, initiating on-site inspections in Trosena, with administrative penalties expected to follow. (politis.com.cy)

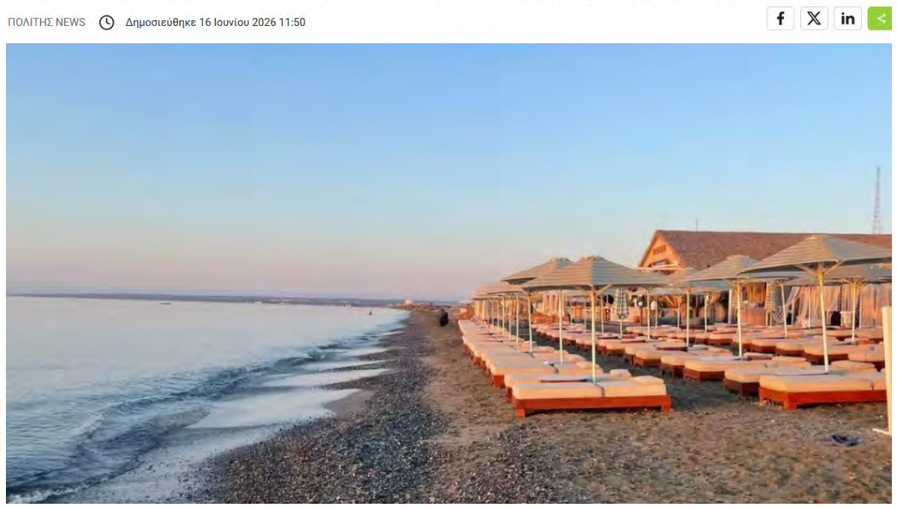


Fig 34 Terra Cypria issues urgent appeal regarding Lady’s Mile beach: sea turtles are being sacrificed for private interests. (politis.com.cy)

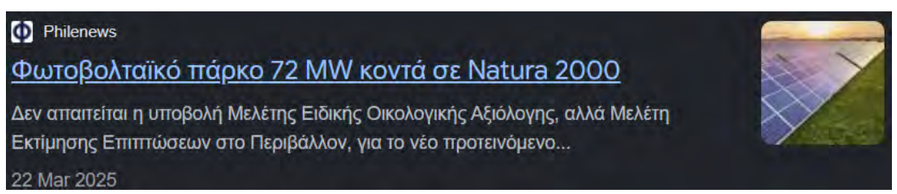


Fig 35 Photovoltaic park of 72 MW near Natura 2000 Area.

Photographic archive





Fig 36 RAF - Royal Air Force British Military Bases, Akrotiri and Dekhelia (white outline), (Google Earth)

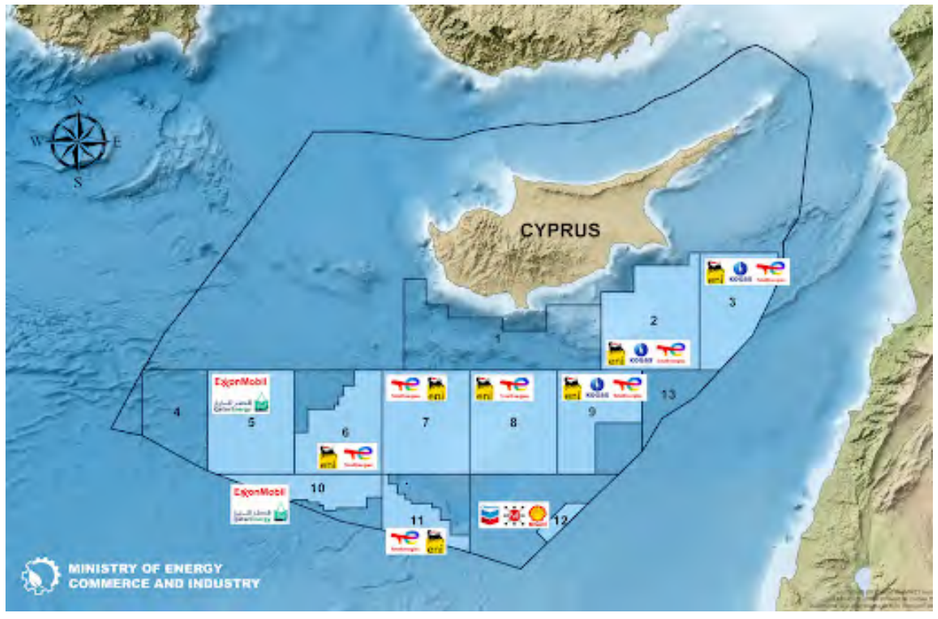


Fig 37 Cyprus EEZ field and Natural Gas exploration and extraction operations (energy-pedia.com)



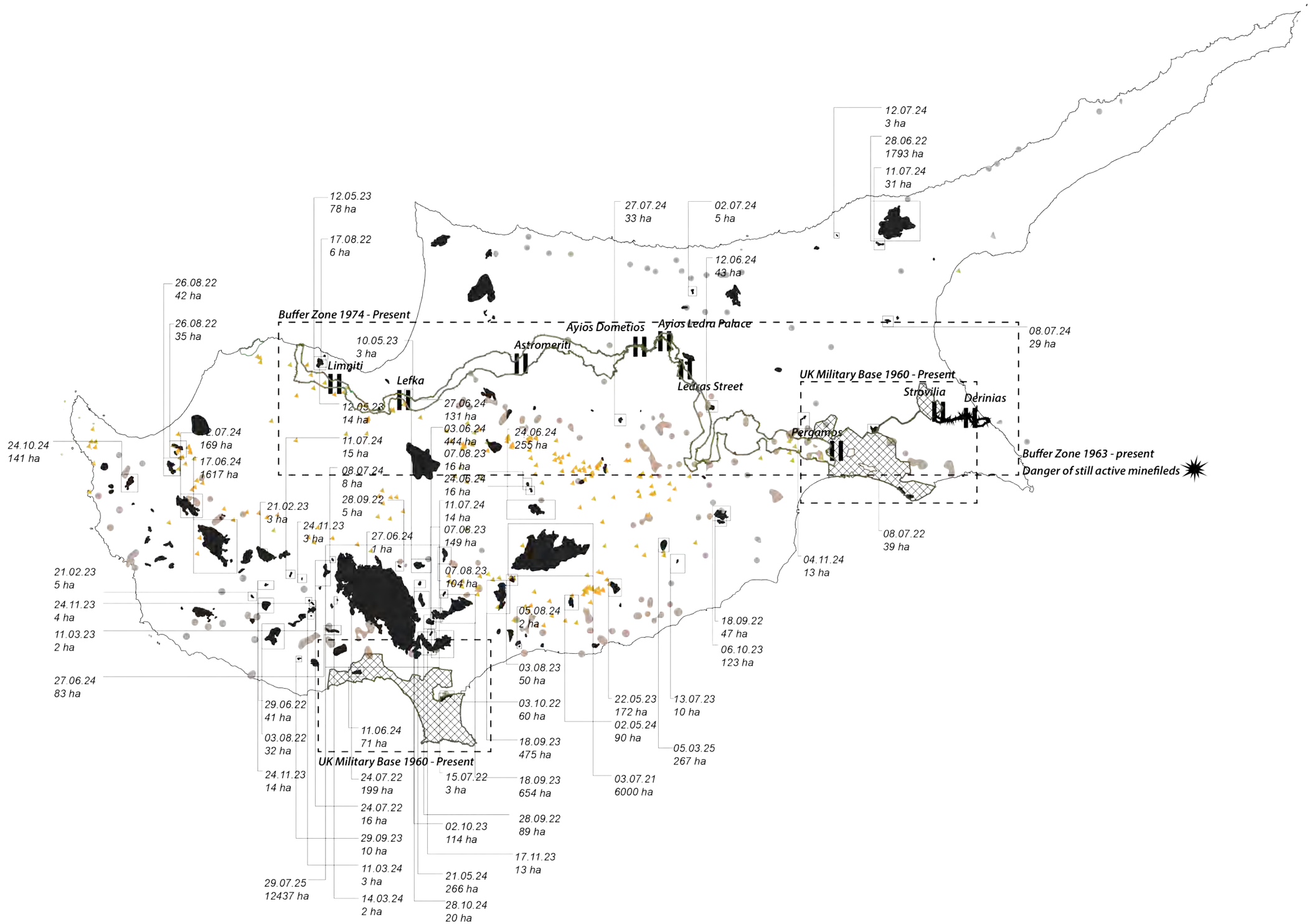
Fig 38 No - entry zone in Famagusta Ghost Town, photograph by author, January 2025.



Fig 39 Operations to deactivate still existing minefields inside Cyprus buffer zone (philnews.com)



Fig 40 Minefields inside Cyprus buffer zone (CNA/ kathimerini.com.cy)


Buffer Zone 1974 - Present
Limniti
Lefka
Astromeriti
Ayios Dometios
Ayios Ledra Palace
Ledras Street
UK Military Base 1960 - Present
Strovilia
Derinias
Pergamos
Buffer Zone 1963 - present
Danger of still active minefileds
UK Military Base 1960 - Present
12.07.24
3 ha
28.06.22
1793 ha
11.07.24
31 ha
12.05.23
78 ha
17.08.22
6 ha
27.07.24
33 ha
02.07.24
5 ha
12.06.24
43 ha
26.08.22
42 ha
26.08.22
35 ha
08.07.24
29 ha
10.05.23
3 ha
12.05.23
14 ha
27.06.24
131 ha
03.06.24
444 ha
07.08.23
16 ha
24.06.24
16 ha
11.07.24
14 ha
07.08.23
149 ha
24.06.24
255 ha
24.10.24
141 ha
2.07.24
169 ha
17.06.24
1617 ha
11.07.24
15 ha
08.07.24
8 ha
28.09.22
5 ha
21.02.23
3 ha
24.11.23
3 ha
27.06.24
1 ha
07.08.23
104 ha
08.07.22
39 ha
04.11.24
13 ha
21.02.23
5 ha
24.11.23
4 ha
11.03.23
2 ha
27.06.24
83 ha
05.08.24
2 ha
18.09.22
47 ha
06.10.23
123 ha
03.08.23
50 ha
29.06.22
41 ha
03.08.22
32 ha
24.11.23
14 ha
11.06.24
71 ha
03.10.22
60 ha
18.09.23
475 ha
22.05.23
172 ha
02.05.24
90 ha
13.07.23
10 ha
05.03.25
267 ha
15.07.22
3 ha
18.09.23
654 ha
03.07.21
6000 ha
24.07.22
199 ha
24.07.22
16 ha
29.09.23
10 ha
11.03.24
3 ha
14.03.24
2 ha
02.10.23
114 ha
28.09.22
89 ha
17.11.23
13 ha
29.07.25
12437 ha
21.05.24
266 ha
28.10.24
20 ha
Fire Event
UK Sovereign Base Areas
Mining Activity
Quarry Area
Checkpoints
Buffer Zone

A landscape evolution, an alchemy of fire and water;
Politics and Spatial formation

Beyond fire itself, the transformation of the land, the alchemy of water has had a crucial role. Water on the island also ranges through multiple forms. From its absence, aridity, droughts and dryness of the Mediterranean context, to Cyprus' natural border, the shoreline has also been a colonial tool for planning to become today an indicator of social politics and inequalities.

Similarly with fires, water on the island has been planned, and carries with it long histories of conquest and colonial rule, still visible in the infrastructure. Ancient settlements narrate the climate conditions and habits of the Stone Age to the Neolithic Era, reaching to the Copper Age structures built as frontiers in higher altitudes. Each of the ancient settlements, like Engoi and Salamina, was built close to water bodies and rivers, which today lie dry and filled with wild vegetation. Most of the still existing water infrastructure systems were built during the British colonial period, again with imposed policies recalling forestry protection. Repairs and irrigation works were built upon a commodification Eurocentric model, upon running rivers, waterways, and streams, intervening in the natural paths of water flow.[11]
Nevertheless, today's water scarcity, directly related to the uncontrollable wildfires, remains a political issue. Cases are numerous where precious amounts of water are being diverted from dams in order to supply private elitist infrastructures. One example is the tourist complexes in rural Limassol, with artificial ponds and aquaculture, which have consistently stolen water from the Kouris dam.[12] Further, other examples form the 6.68 million tons of water destined to golf clubs, linked to the booming real estate sector and luxury tourism.[13]



Fig 41 2019: Saint Nicholas church ruins, an indicator of the dam's capacity. (photo by The joy of all things - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=84961825



Fig 42 2019: Saint Nicholas church ruins, (photo by author)



Fig 43 Green golf resorts and pool residences set amid Cyprus's arid landscape (Google Earth screenshot).

11 Cyprus Representation - Venice Architecture Biennale. (2025). *(to the stones) we lent you our breath, and you whispered it back to the earth.* Fisherwomxn & Cyprus Deputy Ministry of Culture – Department of Contemporary Culture.

12 AlphaNews. (2023, December 14). Chrysanthou, G. *Έκθεση-φωτιά για ορεινό τουριστικό θέρετρο – Εντοπίζουν παρεμβάσεις στον Κούρη.* [Scathing report on a mountain tourist resort – interventions identified in the Kouris area].

13 Philenews. (2025, 8 November). Nicolaou, *Α. 6.679 τόνοι νερού για 5 γήπεδα γκολφ* [6,679 tons of water for 5 golf courses].

Against dilapidation, destruction and development

Summarising the above, the island is portrayed as a product of constant conflicts and alchemy interactions between fire and water, their presence and their absence. Going through colonial oppressive extractive policies, continuing up to today in different means, the landscape is becoming ever more exhausted. Nevertheless, exhaustion is often used as the limit, the edge, and termination of not having a future or life in the present and future. Portrayals as such are then leveraged by the same mechanisms that are causing them in the beginning. Dilapidation of landscapes, destruction beyond healing and development as a solution are the current recurring patterns and strategies of increasingly aspiring extractive systems operating on the island.

To borrow a phrase from Fatima Ouassak, what goes against this exhaustion and fatigue is a *Pirate Ecology-So we can be free!.*[14] Ouassak assimilates people's liberation to firstly, the liberation of their territories. In order to get rid of the colonial space production system in Cyprus, we must first acknowledge it, in order not to reproduce it.[15] That is why tracing *fire* policies which have led to today's territorial situation, whether these concern wildfires, exclusion or energetic extractivist zones, need to be understood deeply in synchrony with the Mediterranean ecologies, in order to be able to comprehend, recode, and materialise different realities of the territories and societies. The following are screenshots from the documentary *Tongue* (2020), in which the narrator finds the bunker across the buffer zone in Nicosia province, appropriated by the children and converted to their house. A similarity can be drawn with Ouassak's discourse on the *One Piece* anime, to which she centres the young protagonists of an ecological liberation.[16]

È da i bambini pirati che impariamo a sognare di sorpassare ogni confine, a partire dai muri di cemento che disegnano la mappa ostile.[17]

14 Ouassak, F. (2024). *Per un'ecologia pirata: E saremo liberi* (V. Gennari, Trans.). Tamu.

15 Decolonial Cypriot. (2025, June 30). *British colonial environmental policies: Resistance legacy, and ecological consequences in the context of British colonies.*

16 Ouassak, F. (2024). *Per un'ecologia pirata: E saremo liberi* (V. Gennari, Trans.). Tamu.

17 ibid.

Fig 45 Screenshots from documentary Tongue (2020) by Panayiotis Achniotis and Andreas Anastasiades





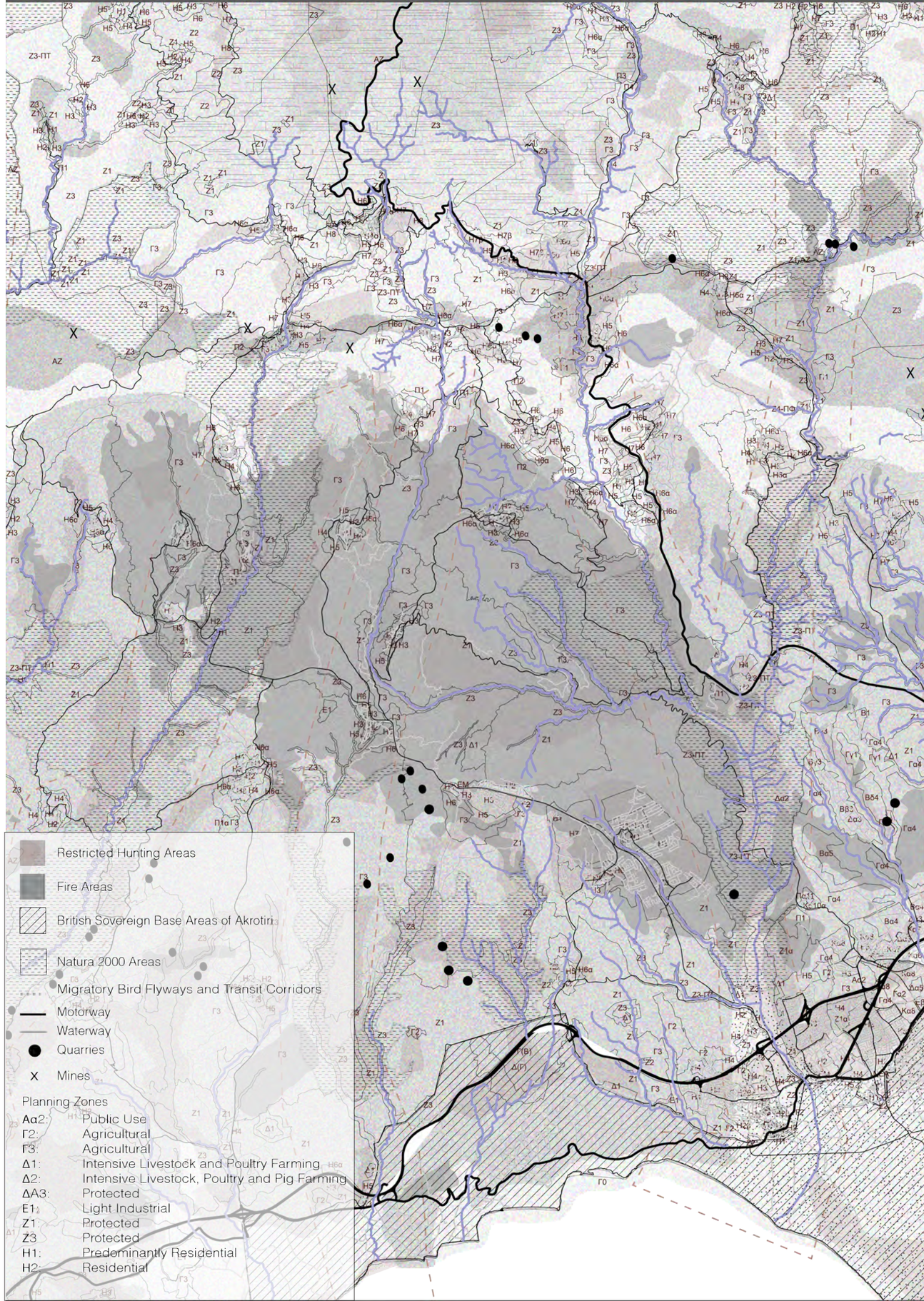


04 Living with Fire

Tracing the aftermath

Synthesising the spaces analysed, the thesis chooses to focus on the areas of (wild)fire, challenging the future possibilities of a planet with a deteriorating climate. Drought, global warming, and even more extreme fire events are expected in the coming seasons, which lead to the thesis aim of questioning and exploring possibilities for inhabitation amidst fire and coexistence with it. This, of course, can take multiple meanings, whether it is self-enclosure, protection, or escaping. The selection of the area was done for accessibility and to allow close examination of the site, as previously referenced areas of fire, such as the buffer zone, minefields, energy production facilities, and military bases, are restricted and off-limits.

To understand the relationship of the island with fire, it is also important to draw upon its alchemy with water and the colonial history of planning, understanding the vulnerabilities. The chemistry manifested then, the aridification or desertification caused by the absence of the element, is entangled with what the thesis calls alchemy, involving a larger complexity of interrelations through resource water distribution politics and more generally, resource management.



The research animates with on-site visits in the areas of northern rural Limassol, including the villages of Malia, Vasa Koilaniou, Potamiou, Vouni, Lofou, Kissousa, Agios Amvrosios, Agios Therapon, Kivides, Souni, and Zanatzia, an area of 120 km^2, ravaged by the fire started on the 25th of July 2025. Having performed the site visits with Lefteris T., Forestry Specialist, it has been extremely beneficial to understand further the mechanisms and formations of landscape from a different expert's perspective. Mandatory to accomplish the on-site work was driving to the area, which required traversing kilometres of burnt nature, agricultural fields and some built structures, mostly houses. Per se the experience of travelling through the areas has started painting the grim landscape, making the extension of the wildfire distinct, but closer attention was paid through hikes and walks, observing what was left -or succeeded- eight months after the catastrophic fires, comprehending better natural mechanisms and anthropogenic interventions.

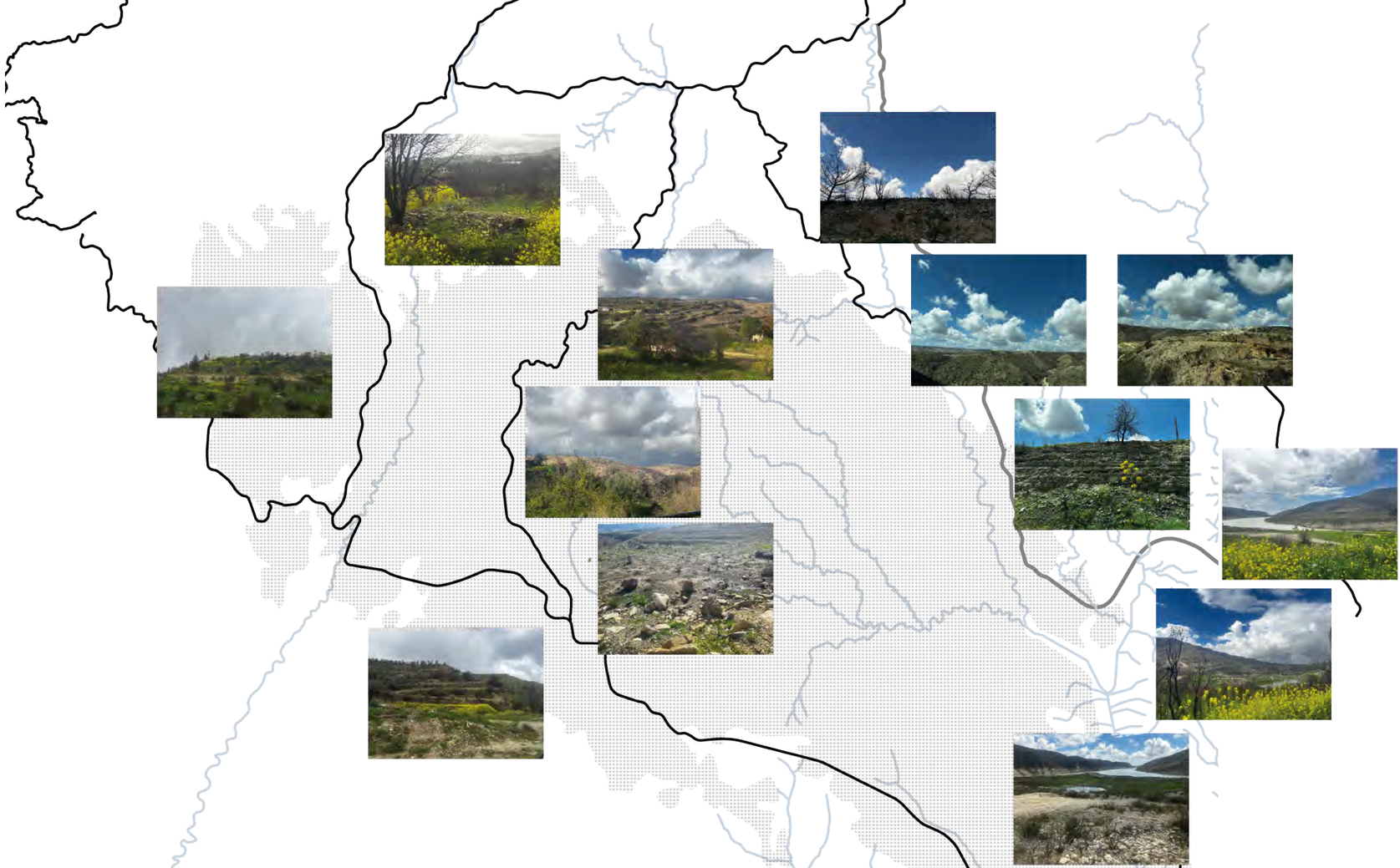
Distance was a crucial factor as what stood far appeared as desertified, mountains and hills, still with a charred presence. Nevertheless, it was mandatory to observe more closely at human eye level. Just eight months later, and with scarce rainfall, natural processes of revitalisation, succession, and regeneration became very evident. Further, different sensorial experiences, such as examining the conditions of the soil through touching or listening to the fauna present, were verifying the natural ecosystem cycle. Having a Forestry Expert as a companion in the journey, we have explicitly analysed different patterns of burning, whether more intense or lighter, where landscape mosaics have played a crucial role, forming natural barriers for fire. Expansive Mediterranean planted areas, mostly with vineyards, have been significant in hindering the flames. On the other side, compelling was the role of the vernacular architecture, which despite current underestimation against advanced technologies and geonegineering interventions, has proved decisive for controlling the fire extension. Dry-stone walls, formerly vital infrastructure in rural Cypriot areas and built by the local communities collectively, were concealed in the hills.

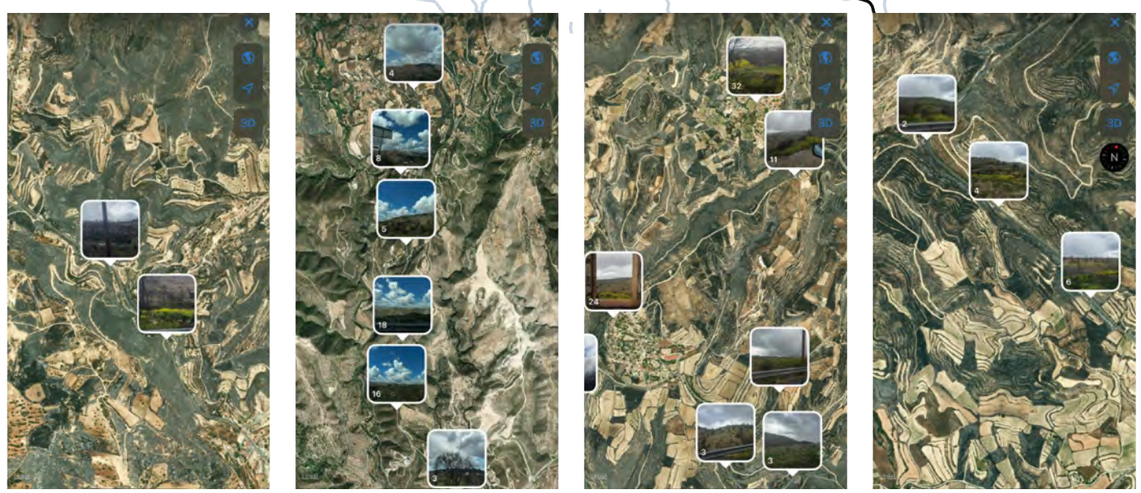
Nevertheless, one of the most dire parts of the visit appeared in the inhabited areas, where houses and other infrastructure had suffered some or total damage, turning into ruins. A characteristic monument affected by the fire, yet already abandoned and left to decay for years, is the mosque in Malia village, which holds decades of Greek Cypriot and Turkish Cypriot bicommunal political, cultural, and social history and identity. Nevertheless, characteristically, a local resident of Souni expressed, "*Whatever happens, the houses can be rebuilt, but how can we ever see the pines and forests again?",*[1] mentioning however clear irritation by other locals when he expressed his sentiment.

Therefore, the question concerning our reality, present and future, amidst a climate and land that is ever burning, and tends to become even more intense in the future, has begun to arise. Hence, we started drawing upon species whose nature consists of cycles of burning, like pines for example, which sprout from pinecones, looking for examples that we as humans could contextualise or mimic in some sense. Eventually, that leads to the ambition of the thesis, shifting the perspective on these stretches, rejecting narratives of *regimes of emptiness,*[2] and seeing them as *pyrographies of land* instead, amalgamated with possibilities.

1 Anonymous local resident, interview by author, Souni, 25 March 2026.

2 Henni, S. (2022). *Deserts are not empty.* Columbia University Press.





Communities Within the Fire Perimeter (24 July 2025)

* *Data source: 2021 census data from City Population (citypopulation.de). Annual population change is calculated for the period 2011–2021.*



Vasa Koilaniou

Population: 168

Area: 8.401 km²

Population Density: 20 /km²

Annual Population Change: 0.30%



Potamiou

Population: 38 Area: 3.517 km²

Population Density: 10.80 /km²

Annual Population Change: 0.54%



Vouni

Population: 155 Area: 14.33 km²

Population Density: 10.81 /km²

Annual Population Change: 0.4%



Lofou

Population: 79 Area: 12.84 km²

Population Density: 6.154/km²

Annual Population Change: 5.6%



Malia

Population: 65

Area: 12.87 km²

Population Density: 5.052 /km²

Annual Population Change: 0.16%



Kissousa

Population: 7

Area: 2.734 km²

Population Density: 2.560 /km²

Annual Population Change: 1.6%

Souni - Zanakia

Population: 1257

Area: 20.95 km²

Population Density: 59.99 /km²

Annual Population Change: 4.2%





Agios Amvrosios

Population: 350

Area: 14.91 km²

Population Density: 23.47 /km²

Annual Population Change: 0.81%

Agios Therapon

Population: 206

Area: 16.27 km²

Population Density: 12.66 /km²

Annual Population Change: 5.1%



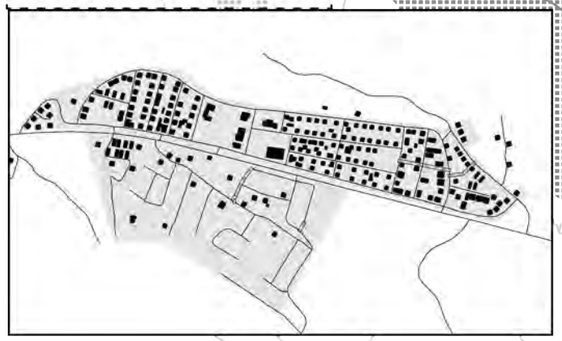
Kivides

Population: 900

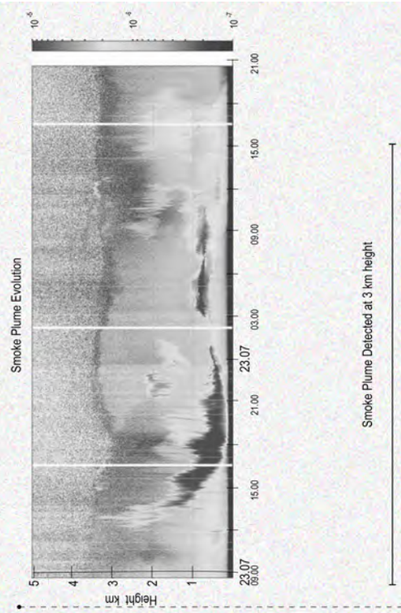
Area: 17.10 km²

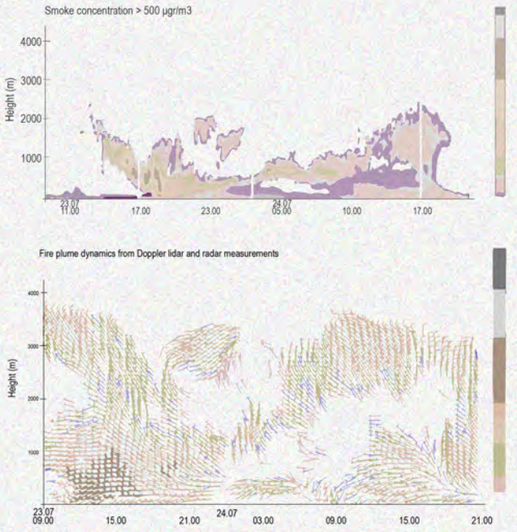
Population Density: 52.62 /km²

Annual Population Change: 2.4%



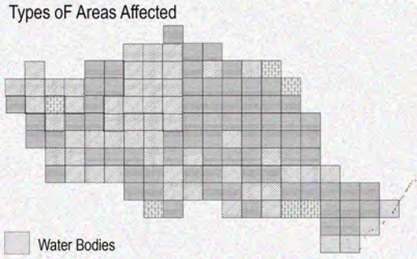
ATMOSPHERE





SURFACE LAND

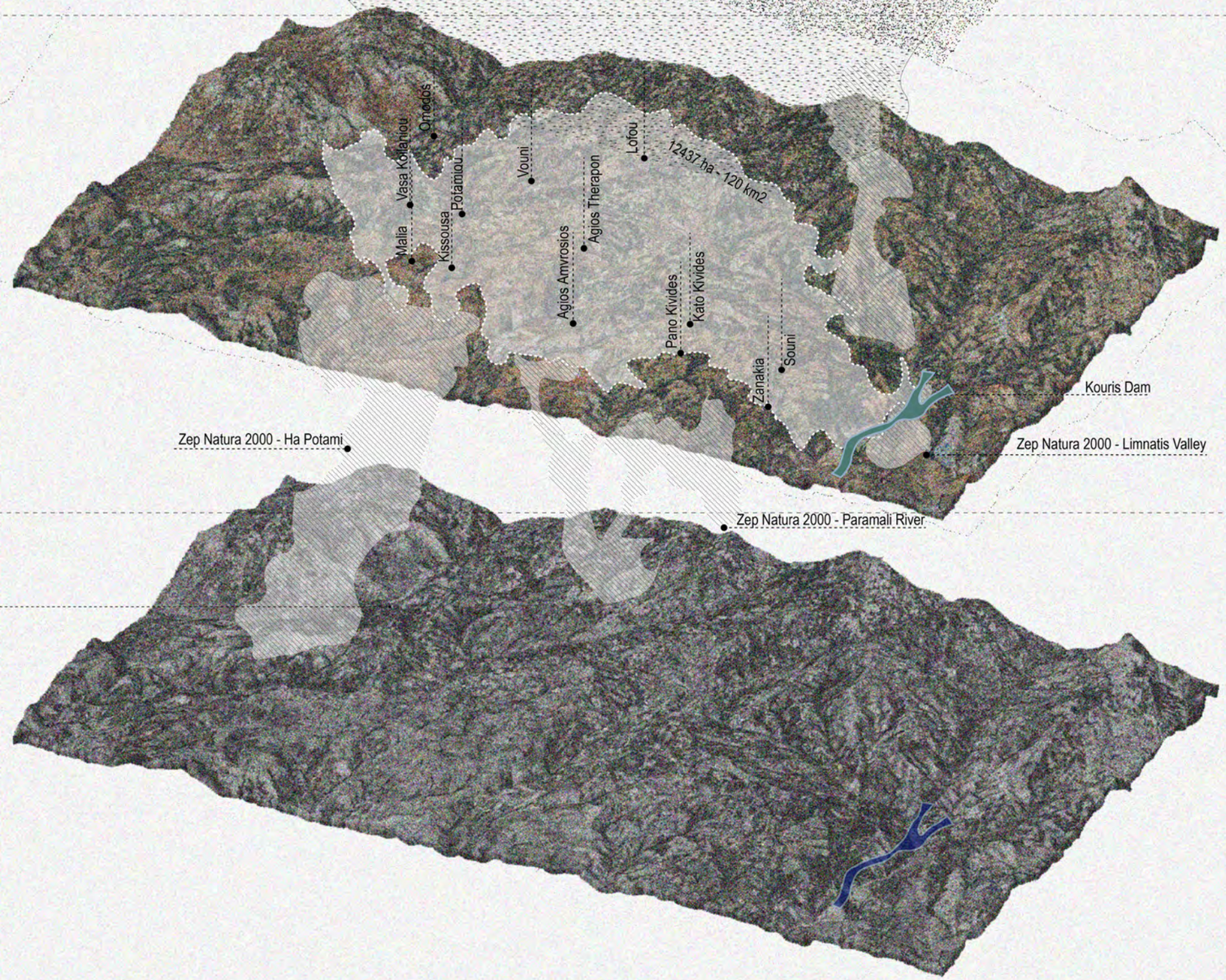
Types oF Areas Affected



Water Bodies

Forested/ Semi - Natural | Agricultural | Artificial

Forest Broadleaves	***0.59 % - 73 ha***
Forest Corniferus	***2.9 % - 361 ha***
Sclerophyllous vegetation	***43 % - 5344 ha***
Transitional Woodland - Shrubland	***1.21 % - 151 ha***
Other natural Areas	***3.25 % - 404 ha***
Agricultural Areas	***45.73 % - 5687 ha***
Artificial Surfaces	***3.03 % - 377 ha***
Other Land Covers	***0.31 % - 39 ha***
Natura 2k Areas	***20.51 % - 2551 ha***



	Inside Fire Perimeter (Estimated Damage)	Inside Buffer Area (Potential Damage)
Estimated built up area	***184825800 m²***	***99776700 m²***
Estimated average population	***40 pop/km²***	***38 pop/km²***
Estimated peak population	***174 pop/km²***	***218 pop/km²***
Estimated total population	***2183***	***2918***

Kouris Dam Fire Assesment

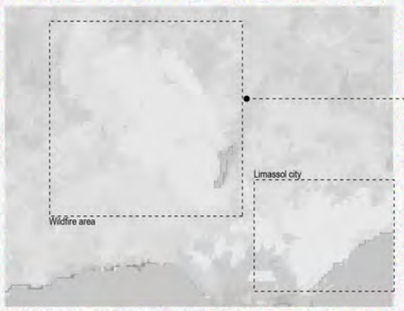


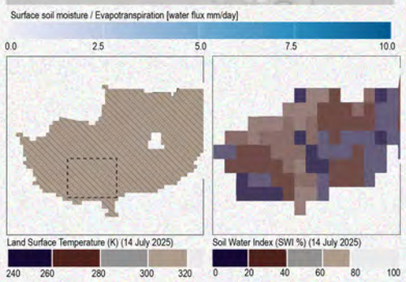
Capacity - ***115,000,000 m³***

Reservoir Levels on ***25.7.25 - 15%***

Low Risk of water contamination - ***Ash, Debris, DOC, NO_3 , PO_4^3, NH_4 , Fe^2, Mn^2, Pb^2, PAHs***

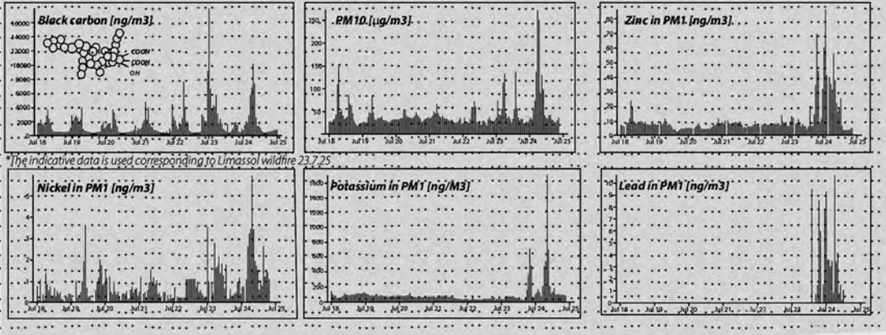
SOIL





The drawing presents a multi-scalar speculative volumetric analysis of the July 2025 Limassol wildfire through an exploded terrain model. It combines datasets from before the event, during its progression, and in the days that followed. The landscape is divided into three interconnected layers, soil, surface, and atmosphere, to reveal the spatial processes of the wildfire beyond its visible effects.

Using GIS software and Copernicus datasets, alongside environmental and topographical information, each layer investigates a different dimension of the wildfire. The atmospheric volume examines smoke concentration and wind dynamics. The surface layer documents the fire perimeter, affected land uses, settlements, and protected areas. The soil layer explores the ecological and hydrological implications.



*The indicative data is used corresponding to Limassol wildfire 23.7.25

Soil Erosion Post-fire

Ochric Soil -Rendzinas, Lithic Phase

Calcaric, Cambisols , Lithic Phase

Pre -Fire Soil

High Microbial Concentration

Post-Fire Soil

5 cm

Water-repellent layer formed at 176–288°C

Acidic

Neutral

Basic

A Site Visit Diary

DAY 1

23.03.26 - 12:25

- Arrival at Alassa, one of the areas most affected by the fires. As seen on the map above however, Alassa has suffered multiple fires during the last years, having formed a landscape strongly linked to fire, drought and heat. Dry shrublands and scattered pines form a highly flammable terrain that has, however, adapted to the cycles of fire.

- Another important point is that Alassa hosts the Kouris dam, the largest in Cyprus with a capacity of 115 000 000 m^3. Nevertheless, it was disheartening upon arrival to see it at only a quarter full, 24.3%.[3]

- At some point, having walked through the area, I checked the phone map, only to realise that I was standing at a point where the dam should have been, submerged in the water.

- Having initially observed the area as a dry, empty dam, and the soil's drought condition, various wetlands have started to emerge, each of them adding to the ecosystem, full of vegetal and insect species.

23.03.26 - 14:39

- After driving towards the north in the area, arrival at Lofou, a village of 79 permanent residents.[4]

- The area around it, the mountains and hills, still had a scorched appearance, evidently affected by the fires.

- Houses in the village centre however, did not seem affected.

- Some vegetation has started emerging in the surrounding landscapes

3 PhilNews / In-Cyprus. (2026, March). *Cyprus dam levels: March 2026 water inflowsecond best decade.*

4 CityPopulation. (n.d.). *Lófou*. Retrieved April 24, 2026,

23.03.26 - 15:33

- Departing from Lofou and heading towards the South to finally reach Limassol, I stopped by the sideroad after noticing a particular landscape.

- Opposite the chapel of Prophet Elias, the scenery looked desertified, with obvious scars and ash -white and black- still left on the terrain.

- On the other side, a fascinating observation was the amount of Asphodelus genus flowers that had grown. A flower related to death and the underworld in Greek mythology.



Fig 47 Wetlands at Kouris Dam.



Fig 48 Asphodelus flowers at Lofou.

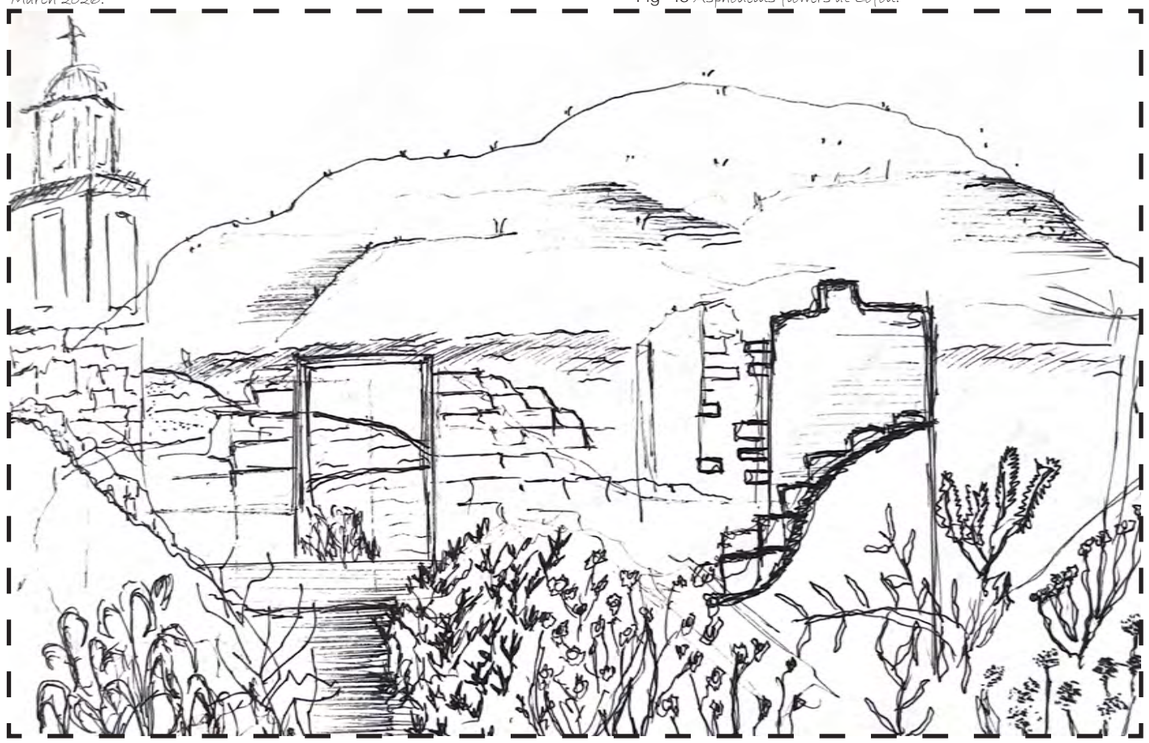


Fig 49 On-site sketch by the author of the ruins of Saint Nicholas Church, once submerged by a full-capacity dam and now overgrown with weeds, 23 March 2026.

DAY 2

25.03.26 - 11:24

- Today, the site visit will be carried out with the help of a Forestry Expert, Lefteris.

- The day began again with a drive towards Northern Limassol. At some point while on the highway, smoke appeared in the distance, rising from fields. This was probably likely by prescribed burning, used for maintenance, protection and enhancing the regrowth of fields. It is March, and the weather is still rainy, gloomy, and cold, so it is still the season when this procedure is allowed.

- This time, I chose to follow a different road inside the area. Taking the turn on E601, we passed from Pano Kivides to Kissousa, up to Vasa Kilaniou and then Mallia before returning from Souni- Zanatzia.

25.03.26 - 11:52

- The first stop was at an off-road point, at the side of a cliff, which allowed a panoramic view of the area. However, it was still raining heavily, which did not allow crossing through the site.

25.03.26 - 12:15

- Later on, we proceeded towards Vasa Koilaniou, where we stopped at a local coffee shop with no clients at the time. Meeting the owner, we have discussed the aftermath of the fires, a topic that seems to arise naturally when one visits these villages. It is still the necessity of the residents to transmit the stories as well as the struggle of readjusting to daily life amidst the ruins.

Fig 50 *Analysing plant fire-protection mechanisms through trunk characteristics, photograph by the author, 25 March 2026.*





Fig 51 *Mallia's mosque, showing the effects of long-term degradation and wildfire damage, photograph by the author, 25 March 2026.*

25.03.26 - 12:54

- At Vasa, we have also observed wide stretches of vineyards, forming diverse landscape mosaics. The Forestry Expert then has described their function as intercepting continuous vegetation, and in this way forming natural fire barriers that set back propagation.

25.03.26 - 13:38

- The next stop was Malia. Driving towards Malia, we also passed point 0,[5] where recent specialists confirmed that the fire had started from there.

- At Malia, we could also witness the damage caused to the Mosque, one of significant bicommunal cultural and political value, once served as a Turkish Cypriot boys' school.

25.03.26 - 14:50

- The site visits ended later on at Souni, at a local coffee shop where we discussed with the clients. Being one of the most populated villages and one of the most affected by the fire, various residents have shared their stories and experiences of the event day as well as coping with the aftermath.

5 PhilNews. (2026, April 23). *Fire in Limassol: At the zero point, American fire investigators begin on-site examination (images).*



Fig 52 *View from a window overlooking the point of origin of the wildfire, photograph by the author, 25 March 2026.*

DAY 3

29.03.26 - 12:26

- On this day, the site visit takes a different path, following the B8 road, passing from Alassa, Doros, Laneia and Trimiklini. Areas not directly affected by the last fire, but are however, very close to the area. This way, a panoramic view from another perspective could be obtained, stretching across the fire-affected mountains on the opposite side.

- The view obtained after kilometres of driving was a deserted and seemingly empty mountain, at a distance, devoid of any form of greenery and vegetation.



Fig 53 Panoramic view of the wildfire-affected area, photograph by the author, 29 March 2026.



Fig 54 Burnt trees seen from the road, in a fire-ravaged landscape, photograph by the author, 29 March 2026.

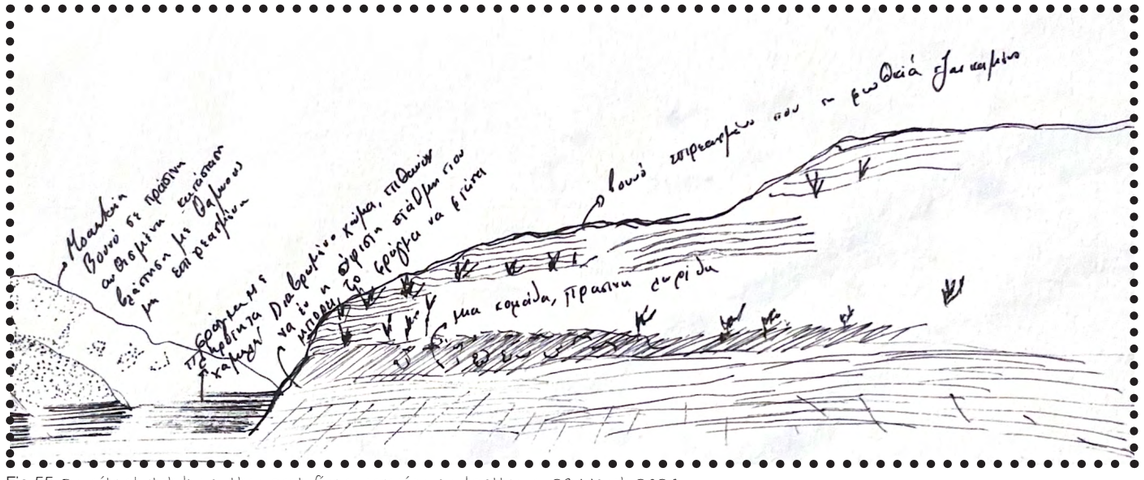


Fig 55 On-site sketch by author, post-fire succession and patterns, 29 March 2026.

DAY 4

31.06.26 - 12:44

- This was the last day of the field study. After having analysed the routes taken on the previous days, I have realised that there was a very crucial site missing. The one crossing in the middle of the wildfire area, which includes the villages of Agios Therapon and Agios Amvrosios, towards Lofou. Therefore, the site visit took place there.

31.03.26 - 13:00

- Around 1 pm, we arrived at the village of Agios Therapon, the smallest one in the area, with 206 residents.[6]

- Walking around the few narrow streets of the centre, there were a lot of signs testifying to the last fire event. Scorched earth, drought-prone soil and burnt vegetation were only some of them.

31.03.26 - 13:10

- Later on, we made our way into the cliffside hill, which consisted of dense post-fire rich biodiversity emerging. Apart from vegetal species, the soundscape revealing the fauna also had a strong presence. A significant factor for this is that the accessibility to humans on this specific site was really challenging.

- Another element of strong presence here, nestling against the cliff, were the "δόμες" [dómes, in Cypriot], a type of drystone wall building, traditional vernacular landscape architecture found in rural villages around Cyprus.

- According to the Forestry Expert, they have a significant role in disrupting the landscape and, as such, protecting it from fire propagation.

6 CityPopulation. (n.d.). *Ágios Therápon*. Retrieved April 24, 2026



Fig 56 Exploring traditional dry-stone walling and vernacular architecture in the landscape, photograph by the author, 31 March 2026.

31.03.26 - 14:42

- Early in the afternoon, we passed from Pano Kivides, from which we could see the most panoramic view of the incident. Kilometres of hills and mountains appeared absolutely dry and desertified, still with visible ashes, grey and black tones. From there, we walked through an off-road which led to some vineyard cultivations.

- The feeling of the area was much different from other parts. In contrast to other sites mentioned, this one seemed to be stuck in the fire event with little or no regeneration at all. Only some weeds could be seen emerging from cracks in the soil, while side rocks and cliffs were so arid that they were slowly falling apart.

31.03.26 - 15:48

- The last stop of the trip was again at Souni. This time, the weather has allowed more exploration into the surrounding areas, as the rain has stopped and visibility was much clearer.

- Therefore, we started walking through the village centre, where houses were still burnt, in a state of ruin. These scenes made the level of the human tragic stories inside the fire better than the other parts.

- Regarding the surrounding fields, similarly to places already visited, the state was an amalgamation of burnt species and Mediterranean post-fire regeneration.

Fig 57 *On-site sketch by author, observing post-fire blooming vegetation, 31 March 2026.*

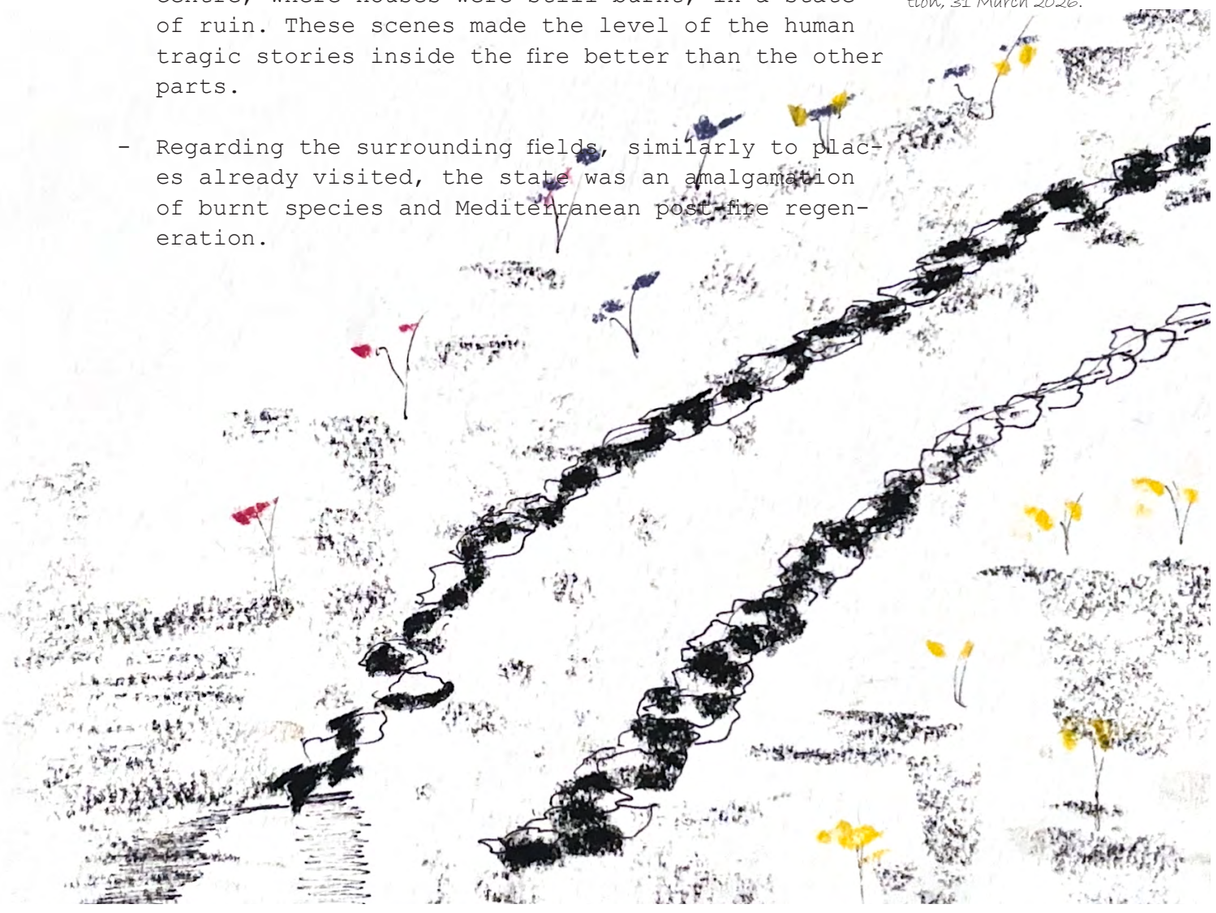




Fig 59 *House ravaged by fire in the village centre, photograph by the author, 31 March 2026.*



Fig 58 *One of the most affected scorched landscapes between Agios Therapon and Souni, photographed by the author on 31 March 2026.*

ii. Community perspectives, stories, experiences.

The fact that the July fire is relatively recent, and has been the biggest one on the island so far forms a very traumatic experience and causes a distressing feeling when talking about the event, especially to many locals. For this reason, there have not been direct forms of interviews with the people of the area, but experiences, information and details were gathered through informal conversations and when residents felt comfortable opening up about the incident. The reality is, however, that residents live in continuous reminders of the fire as the landscape is yet to heal and houses are yet to be restored. Conversations were held with residents from different areas and villages, which revealed varying experiences regarding the magnitude, scale, and extent of fire, aid received, as well as some very common points.

The following are some of the most characteristic statements of the residents, who have preferred to remain anonymous:

"Souni does not exist anymore. Everything was devastated by the fire. Houses, nature, everything, even the two churches were burnt! Do you remember the line of old, beautiful pines driving on the road, coming from Limassol? It's all gone! It was all green, I remember going into the forest picking up to 2,5 kg of mushrooms! Nothing exists anymore! But from my perspective, whatever happens, the houses can be rebuilt, but how can we ever see the pines and forests again? Obviously, when I say this, people get irritated, but I understand why."

From an informal exchange with a resident and his children at the village central square (Age 63, Souni).

"At Vouni, 35 houses were burnt. Whatever was saved was thanks to the volunteers who came to help. At our village in Vasa, no firefighting means arrived, and we escaped to Vouni. Even when they arrived -which was late- they had no access to water! There were no water reserves around, but only pools in houses! They didn't even get water from there [...] Five people however, decided to stay and protect the village. The fact that fire did not pass any further is for sure owed to them [...] The situation was dire for everybody… Older houses burnt utterly, while the newer ones resisted… It is probably because of the type of wood used for construction in the past and today [...] Also we, business owners, suffered huge damages because of the electricity cut-off. Many of our appliances got completely destroyed due to the blackout caused by the fire, but we have received minimal governmental funding support… but regarding food supplies and water, thanks to the volunteers, we did not have any problems on those days!"

Insight shared during a lunch-break chat with a resident who also owns the coffee shop (Age 45, Vasa Koilaniou).

"*...This year it's their turn to burn [pointing at the vegetation on the other side of the hill]. We have witnessed and experienced fires in the area multiple times, but this was something different. It was unstoppable, raging. There was also a lot of wind… But if it's fate to let it burn, it will happen, nothing can save it [...] If there was a lack of coordination? Which coordination? Do you see the electrical pole in front of us? The fire was coming double in height. How could anyone face it? What was "luck" however, was that the fire arrived at night here, so whatever was ignited we could see it. To let you understand what was happening, the tent of A.'s house caught on fire, so we ran and put it out. Then another thing was on fire, so we ran again. But we stayed at our homes, to put out the fire… Whoever stayed managed to protect their houses, but whoever left lost them. For example, if the tent were burning, the fire would immediately penetrate the house. Our houses are all made out of wood. If it did, then it would be over. The house of our neighbour, for example, lasted three seconds! As soon as the wood went up in flames, and you know there's a lot of oxygen in the wood, the first window exploded, and then the whole house was gone… At that point, I burst in tears! But where could we go? There was no escape anymore... [...] If you saw the pines and pinecones, you would think that there was a war. Pinecones were hurling from the trees and with flames, putting everything else in danger [...] At around 5:30 in the morning, we were still fighting to put out the fire, using some branches from carob trees, it was the only way, as there was no water [...] This year I hope we will not have problems with water, I believe we are currently in a better state [than last year]. Yesterday, it rained for 40 minutes, and it flooded… Imagine, even at this altitude… Imagine if it were to rain for an hour or more… Everything would flood, and everything would be gone… At some point, it will though, it will rain a lot, and the river will come and find us. Remember, whatever belongs to the river, the river wants it back!... Do you know Yermasogeia, where there's the bridge in Limassol? If it ever rains that much, that will cascade. Think about it, they turned a river into a parking lot, how is that possible [...] When you go to walk in the fields now, be careful of the blunt-nose viper. Now, with the small lakes forming after the rainfall, they hide in there, waiting for birds to attack. At this point in the year, they are still brumating, but as soon as the swallows arrive -which is soon- they will wake up."*

Account of lived experience shared by a local coffee shop owner (Age 60, Zanatzia).

"Oh, the fires… Do you see that mountain ahead of us? It was all in flames… Everything was burnt down. Mostly pine trees and then the houses… No, firefighting did not arrive; we waited for as much as we could, but we had to escape to Limassol. The fire was devastating; it was really dangerous. Only some people stayed to protect their houses, but we could not risk it. There are not enough firefighting means to face this kind of situation in Cyprus, unfortunately… All the fire trucks went up to Troodos (* Troodos is considered one of the most important Natura 2000 sites in Cyprus)*, to protect the forests [...] . "*

Comment shared during an informal conversation with a local resident on site (Age 75, Agios Therapon).

As far as the accounts, narrations and experiences come from different villages and areas affected, as well as from different age ranges and contexts, some of the topics remain recurring along the lines. Two of the very central themes appear to be the indispensable endeavour of people to shield their homes with the vital aid from volunteers, and the politics of water and, thus, resource management.

i. Dry-stone walls

During the field study in the area, one of the most characteristic structures we observed and discussed with the Forestry Expert was the dry-stone wall [d'omi in Greek-Cypriot, v'omi in Turkish-Cypriot[7] or xerol'ithkia], a type of local landscape architecture strongly linked to the surrounding natural mechanisms. Their leading role and function were very obvious in the traces of fire on the terrain, as observed in the burnt patterns, intensity, direction, and untouched and regenerated areas. According to research by the landscape architect and researcher Sevina Floridou, the question is whether this form of vernacular structures could serve in fire protection and confinement.[8] Moreover, the importance of other forms of landscape mosaics and specific flora was equally evident in the aftermath of the fire.

First of all, the dry-stone walls are a typical form of traditional vernacular architecture, which simultaneously holds significant archaeological, heritage and agro-environmental planning value.[9] They comprise a millennium-old history in the region, and the ones still visible and intact today count centuries. According to the UNESCO Cyprus National Commission, they are found in multiple semi-mountainous or mountainous areas of the island, where the terrain is shaped by dry rocks, a possible accumulation after years of landslides, like Pitsilia, Marathasa, Villages of Akamas and in the specific case, in the Limassol Wine Villages [Krasochoria in Greek].[10] The dry-stone walls are assembled without the use of mortar and are associated with community traditional building techniques. The structures are set against the hills, and the stones, chosen meticulously for their shape and size, finding the perfect positioning during assembly, compose the wall in complete harmony with the scale of the landscape. Therefore, in this way, not only is plasticity achieved, but also permeability, which allows water to run through them, a technique that has been used in the past to channel it to different cultivations.[11] Another important element is the biodiversity forming in cavities. Networks of fungi, nests for serpents, like lizards and snakes, and herbs and weeds with medicinal properties, sometimes used by the local population, form only part of the picture. More than a way of construction, they are a living archive of the past, revealing information about past populations. Being a demanding form of structure, it was often built by the local communities, strengthening the bonds between them, while taking active and direct care of the environment and land. For example, in many cases, they were constructed in an environmental engineering mindset, as a way of protection against landslides, floods, or desertification, by keeping the strips of ground fertile.[12] This is achieved by retaining water in their cavities, which is mixed with dry leaves to make a compost. Characteristically, a few metres further, the soil might be completely dry.[13] Thus, they remain as century-old environmental planning practices testimonies, dealing with the watering of fields, irrigation and drainage, at a time when agriculture was the principal and most popular activity on the island.

In 2025, the project *(to the stones) we lent you our breath, and you whispered it back to the earth*, was presented at the Cyprus Pavilion in the Venice Architecture Biennale, curated by the architect and landscape researcher Sevina Floridou.One of the main elements of exploration was exactly this ancient practice of dry-stone building. The team of artists and curators collaborated with stonemasons from Terract Salamiou, with specialised knowledge. This form of art is one that can be acquired through years of experience and direct contact with the land, as well as passed through generations. An aim of the project was to exhibit the dry-stone wall heritage and cultural value, and at the same time reveal stories, from their construction and maintenance, that bit by bit shape a history of Cyprus.A place suppressed for the last 500 years by various colonisers (Venetians 1489, Ottomans 1571, and the British Empire 1878 to 1960) integrates numerous architectural identities, practices, and elements, as already mentioned in the history of water planning.[14] Therefore, the project becomes an opportunity to draw upon these various systems, their ecological role and whether there could be a way of turning back to "initial foundations".[15] However, further than their planning and environmental role, this type of construction has left behind a trace of history, engraved in the landscape. For instance, areas with wider and more extensive networks of walls are areas where the population was much higher as a result of fertile soil and vice versa. Even more, they show important demographic information, as specific areas reveal kilometres of walls, suggesting a much greater labour force. Additionally, as per their year of construction, they manifest the environmental history, as some are completely constructed manually, while others show hints of the use of animals and ploughs.

Lastly, their significant role in fire control was evident in the landscape. How do they function, though? One of their main strengths in limiting the fire is by fragmenting continuous horizontal vegetation. It was also evident how strips of land between the dry-stone walls were greening again, in contrast to other areas where the soil was completely dry and deserted. As discussed above, their function extends to pre-fire management as well as post-fire regeneration by keeping the soil more fertile and rich in nutrients and microorganisms.

7 Floridou, S. (2024). *Recommendation for the restoration of traditional dry-stone walls: Methodology and significance of dry-stone terraces in the wider mountain landscape following the fires of 2021.* Laona Foundation.

8 ibid.

9 ibid.

10 Cyprus National Commission for UNESCO. (n.d.). *The art of drystone.*

11 Sevina Floridou, Laona Foundation. (2024). Recommendation for the restoration of traditional dry-stone walls: Methodology and significance of dry-stone terraces in the wider mountain landscape following the fires of 2021.

12 ibid.

13 Cyprus Representation - Venice Architecture Biennale. (2025). *(to the stones) we lent you our breath, and you whispered it back to the earth.* Fisherwomxn & Cyprus Deputy Ministry of Culture – Department of Contemporary Culture.

14 ibid.

15 ibid.



Fig 60 Panoramic view of the dry-stone wall complex outside the village of Agios Therapon. Photograph by the author.



Fig 61 Close-up view of the dry-stone wall complex, surrounded by emerging natural vegetation. Photograph by the author.

Another important observation during the field study, in relation to the fire footprints on the terrain, was the agricultural fields and the type of cultivation found in the area. The area is known as *Krasochoria* (wine villages), and its agriculture is primarily composed of vineyards. It was clear that the level of damage suffered in the vineyards was severe. It is also demonstrated by the immediate actions recording losses by the Department of Agriculture in up to 28 communities,[16] as 15,000 ten-acre vineyards are in the area.[17] Further, producers have mentioned that the 2025 and 2026 production will be much lower, with individuals mentioning 20% losses in their cultivations, complete devastation of 80-year-old vines, managing to save only 12 out of the 600 ten-acre plots, and further long-term damages that extend as a consequence of the extreme temperatures, dust-filled air, and smoke.[18] Characteristically and resonating again with the conversations with the locals, a producer expresses, *"As far as I know, none of the winery infrastructure suffered any damage. Truth is, however, that damages would be much more serious for the Z. winery, if a colleague with his son were not there [...]"* [19] *"At Omodos, Vasa, Arsos, Mallia areas, everything is almost gone".* [20] Nevertheless, despite the losses suffered, vineyards had played a crucial role in containing fire and acting as a barrier. Nevertheless, despite the losses suffered, vineyards hold a crucial role in containing fire and acting as barriers. Interdisciplinary research examining the role of short cultivation in fire spreading suggests that wildfires often seize at the limits of well-maintained vineyards, given that they are clean of overgrown weeds.[21] This is also suggested by Cypriot vine cultivators, who explain that because of the vine species' nature, which has a lot of moisture as well as their placement close to dry-stone walls, they are resilient to fires and create a fire-protection zone.[22]

In Europe, which is responsible for around 60% of global wine production, [23] there have already been initiatives exploring viticulture as a tool for wildfire protection. Many of the region's most prominent wine-producing areas, including Cyprus, Greece, Italy, Spain, and Portugal, are also among the Mediterranean's wildfire hotspots. Beyond its potential role in mitigating wildfires, viticulture has also been widely discussed as a driver of rural development, contributing to local economic growth and community resilience. An example is Fire Wine, part of the program Fire-Res, exploring social, economic, and ecological strategies in fire-prone areas of Europe. The program has explored the behaviour of vineyards in fire-prone landscapes and their value in increasing resiliency. Part of the research was conducted in Catalonia, with ever-more devastating fires in recent years, extending these insights further into Mediterranean areas facing similar fire risks. One of the main elements that came out was that vineyards indeed had the ability to obstruct the fire's path,[24] or acted as a critical access point for firefighting means.[25] More specifically, in the Bages Comarca, a program took place called "Interfaces between vineyards and forests: strategic locations for planning a resilient territory",[26] which examined the place-based role of the vineyard cultivations,[27] through systems that are not only native to the landscapes, but integrated as part of a long heritage and tradition, similar to what we have witnessed for the dry-stone wall. The field research has also contributed to a better understanding of the communities' struggles in sustaining cultivation in Catalonia. Obviously, there has been a significant abandonment of the activity, related to socio-political shifts and economic struggles. It is interesting that some of the community's concerns echo the Cyprus situation, as many of the challenges are caused by a lack of institutional funding support in cases of catastrophic events, deterioration of soil and infertile seasons, and the politically complex water management and crisis of arid climates.[28] Other impediments had to do with the isolation of such fields and their exposure to wild fauna, destroying the yield. That eventually leads to the conclusion that a network of relations and interdependencies is mandatory to support viticulture as a possible fire-resilience strategy.

Nonetheless, it is important to note that strategies as such should be well studied according to specific cases individually, recognising the capacity of the landscape, scale and location characteristics. On the contrary, it should be kept in mind that any sort of intensive and industrialised cultivation could seriously harm and exhaust the ecosystems instead of benefiting them, destroying any type of biodiversity.

16 Philenews. (2025, July 25). *Αρχίζει άμεσα καταγραφή ζημιών σε καλλιέργειες 28 κοινοτήτων Λεμεσού* [Damage assessment in crops across 28 communities of Limassol begins immediately].

17 ibid.

18 PhilNews. Aza, D. (2025, July 26). *Πυρκαγιά στα κρασοχώρια Λεμεσού: Η επόμενη μέρα στην αμπελουργία* [Fire in the wine villages of Limassol: the next day in viticulture].

19 ibid.

20 ibid

21 European Commission. (2025, July 1). *Vineyards as wildfire prevention.*

22 PhilNews. Aza, D. (2025, July 26). *Πυρκαγιά στα κρασοχώρια Λεμεσού: Η επόμενη μέρα στην αμπελουργία* [Fire in the wine villages of Limassol: the next day in viticulture].

23 European Commission. (2025, July 1). *Vineyards as wildfire prevention.*

24 Fire Wine. (n.d.). *Fire Wine: Resilient landscapes and wildfire prevention in wine territories.*

25 Darnay, S., & Gorriz-Mifsud, E. (2023). Wine producers as landscape wildfire stewards against wildfire. *Fire in the Earth System (FES 2023).*

26 Fire Wine. (2025, March 10). *Viticulture: A lever to prevent the risk of fires in Bages.*

27 ibid.

28 ibid.

Fig 62 Vineyards at Vasa Koilaniou. Photograph by the author.



Fig 63 Vineyards at Vasa Koilaniou. Photograph by the author.



Fire - resilient vegetation and pyrophytes

The last form of protection witnessed during the field study that manifested the path and behaviour of fire was the different vegetation typology. For instance, prickly pear cacti were visibly affected but not completely burned, proving to be very resilient to high temperatures and fire due to their high water concentration. Moreover, lines of pines (Pinus brutia) and carob trees (Ceratonia Siliqua) had acted as obstacles. This is also explained by D. Tsalta, professor of Agricultural Microbiology and Biotechnology at CUT (Cyprus University of Technology), and president of the Department of Agricultural Sciences, Biotechnology and Food Science, supporting that there are species in Cyprus and ways of planting that could genuinely contribute to more fire-resilient landscapes, while supporting the biodiversity, in contrast with opportunistic and hurried replanting.[29]

Therefore, as much as hurried replanting and extensive interventions on the landscape should be avoided, some strategies and practices could benefit building resilient refuges from fire. As we observed, and according to Tsalta, species with succulent leaves, like the prickly pear, aloe, and pacifica cactus, can act as a hindrance to the flames, and could be especially useful around houses and settlements.[30] On the other hand, types of Mediterranean trees are also resistant to fire, as they have adapted over long cycles of burning. For example, carob trees (Ceratonia Siliqua) have a thick bark developed as an evolutionary mechanism against fire, which can resist extreme temperatures. The same stands for some types of Eucalyptuses, but they should be avoided close to settlements, as high concentrations of essential oil make them highly flammable.[31] Further, Pinus has a critical role, especially in post-fire adaptation, as apart from having a thick bark, pine nuts open with the high temperatures, sustaining the natural cycle of reforestation.[32] Other species which could describe a naturally reforested Cypriot post-fire landscape are the Holly Oak (Quercus Coccifera), Strawberry Trees (Arbutus Andrachne), Mastic Tree (Pistacia Lentiscus), and the Myrtle (Myrtus Communis), which have the ability to regrow from their roots and trunk.[33]

29 Politis. Hadjikosta Y. (2025, Aug 24). *Τα δάση δεν φυτρώνουν με βιασύνη - Πώς ξαναχτίζουμε τη φύση της Κύπρου μετά τις καταστροφικές πυρκαγιές;* [Forests do not grow in haste — how we rebuild Cyprus's nature after the devastating wildfires?].

30 ibid.

31 SigmaLive. (2024, June 14). *Δέντρα που μπορούν να αξιοποιηθούν ως «αντιπυρικοί φράκτες»* [Trees that can be used as 'firebreak barriers'].

32 Politis. Hadjikosta Y. (2025, Aug 24). *Τα δάση δεν φυτρώνουν με βιασύνη - Πώς ξαναχτίζουμε τη φύση της Κύπρου μετά τις καταστροφικές πυρκαγιές;* [Forests do not grow in haste — how we rebuild Cyprus's nature after the devastating wildfires?].

33 ibid.



Fig 64 Fire-damaged prickly pear cactus at Agios Therapon, with the internal structure of its pads exposed by burning. Photograph by the author.

How to leave in Fire; Future Possibilities:

The Museum of Pyrophytes and the *Landscape as a Pyrography*

As aforementioned, an equally dreadful state of a flaming landscape is the unknown aftermath. How the reality will (be) shape(d), by whom and to what. Often, the lack of alternative scenarios and imagination regarding areas of fire leads directly to their limited interpretation as areas of development, dilapidation and destruction, forming significant boundaries to present and future possibilities. Architecture becomes exploitative and often adopts “salvation”, presenting “solutions”. According to Laura Conti, the problem of the *architect* is that they present themselves as the expertise, of having the capacity in using natural resources infinitely, believing in the unlimited capacities of nature.[34] What could, however, be found beyond an architecture and architects that profess to always have the solution and reparative capacity through geoengineering interventions?

The following passage explores proposals that emerge from on-site research, visits, observations of landscapes, species analysis, and people’s testimonies, as well as the multiple interactions between them. The scenarios, as one can describe them, combine the engagement with the reality of fire, amalgamated through ecofeminist literature, philosophy, memoirs, and folklore, depicting plural understandings of what *nature* and *landscape* are. Therefore, the following methodologies and tools used, as the *Museum of Pyrophytes* and *A Pyrography of Landscape* are explored, unfolding, rethinking, and envisioning spaces further than ashes and toxicity, and (re)learning to exist along them, inhabit them, or protect ourselves from them.

Research Question: *So what if we recognise fire as the architect of the landscape, which through different embodiments (re)produces it? Taking into consideration the inexorable climate deterioration, extended fire seasons, drought, even more intense wildfires foreshadow the realities to come. What would then be the architecture’s role, as it is not perceived anymore as the agent of creation, but needs to find a way to meander through flames, learning to inhabit fire, escape, or avoid it? What would it be like living with residue and ashes?*

To traverse that, it is necessary first to recognise and comprehend the “architecture” that fire produces, along with its temporality. Then we can look for new meanings and roles of the project to come, as fire will now be the architect. Fire then becomes the author and the meaning of the ashes, toxicity and residue lie in ambivalence. The (re)discovery of diverse paradigms is now needed to read and perceive landscapes.

34 Braga, E. (2023). *Moleculocracy : ecologie, conflitti, turbolenze.* Nero.

Introductory Note, reflections behind the project

Unavoidably, in Cyprus, an island charcterised by a Mediterranean climate, fire needs to be understood within the framework of natural cycle phenomena that will eventually become more intense and destructive amidst global warming. Further, the excessive extraction and ever-industrialisation of the island's landscapes through different forms of fire, became a central part of the latest decades, leading the island to its current state of rapid, excessive, and destructive "development". Additionally, consulting scientific scholarship predicts the extension and intensification of fire seasons, and thus the continuous cycles of land production and alteration. Suppression of fire, through ever-advancing technologies or the sole aim of aftermath relief, does not correspond to a Mediterranean context nor to long-term resilience. Additionally, the increase in investments aiming only at putting out fires and rehabilitation addresses only a very limited aspect of the issue. On the other hand, geoengineering examples have consistently proven their failure, if not the further worsening of an issue. Every ecosystem, whether fire-dependent or fire-prone, pyrophilic or pyrophobe, needs to be understood differently so that actions do not exhaust it, resulting in ultimate deterioration.

Taking pyrography as a metaphor and paragonizing it to the land production by fire, we can interrogate what becomes the meaning of what is revealed after ignition, and of what remains between the ashes and residue. A pyrography of the landscape allows the ecosystem to recover by itself, while recognising and keeping alert of other forms of fire that threaten it, other than natural cycles, alien to the ecosystem, anthropogenic, or more accurately, capitalogenic. [35] Such as could be recognised in the excessive privatisation of "wilderness", becoming hubs of over-development, exploitation and extraction, resonating with the history of the Malibu hills that Davis unfolds. Then architecture's role amidst wildfires becomes one of symbiosis, not one of competition and overpowering, learning to inhabit the landscapes and safeguarding livelihoods, populations, and critical cultivation. That is where new imaginations and alternative visions of landscapes are needed, and the only way to achieve them is to understand fire deeply, its mechanisms and behaviour, while also looking at other forms of species' adaptations to it and survival strategies.

For example, starting with the Pyrophytes analysed above, we can examine their long evolution and adaptation to fire cycles through their thick bark and regeneration from seeds, trunk and roots. Eventually, architecture could mimic similar mechanisms and thinking or use the species as protection shields. To understand how these mechanisms and strategies could function in space, it is fundamental to redraw and imagine the cartographies as pyrographies, so that we can then visualise the emerging landscapes, not subjected to exploitation over the portrayal of emptiness. Emptiness in Cyprus has served developments over the past decade, such as hotels,[36] golf clubs [37] and other elitist infrastructure to expand, which constitute other forms of fire, along with exclusive aquaculture farms that have consistently stolen water.[38] How could the perspective be changed then, securing a solid protection of the areas, away from fire and extractivism? Could it be a new form of a *Pyrophyte Museum* or *A Nation of Pyrophytes (La Nazione delle Piante)*?[39]

In due course, the creation of new imaginaries, wording, terms and concepts becomes a source for not *Learning to die in the Anthropocene*[40] but rather, a *Fighting Despair*, in the words of Andreas Malm,[41] which forms a connection to the aftermath of a fire, an equally dreadful state as the fire itself, what comes after. The resilience, traditional knowledge and bond between people and earth gained over centuries must become central in this narrative. In the case of Limassol fires, they are once again proven through the accounts and experiences of people returning to their land, working again with the earth and recreating what has been lost, an element evidently lacking in projects of an extractivist gaze upon the earth. Customs like that bring healing to both the earth and people, through a laborious process.

If we study the case of Cyprus through its cartography, it reveals a heavily fragmented landscape. Borders, buffer zones, and sovereign bases compose the land mosaics, spaces of exclusion and fire. Reflecting on these exclusions, the project reconceptualises the fragments of cartographies into mechanisms of protection and trespassing, which are consolidated through the pyrography, in the area of fire. Even spikes from barbed wire could echo the thorns and spines used to confine. What exists under the earth, the reserves of species, microbial organisms, burrows and roots, are not planned by human actors. They are spontaneous, chaotic formations following their own rules. Maybe then, an idea of reversing and reorienting this system on the ground can help us to think otherwise, that *as below, so above.*

35 Moore, J. W. (2023). Our Capitalogenic World. A*nnales Universitatis Paedagogicae Cracoviensis. Studia Poetica, 11.*

36 Elemesos. (n.d.). *Παραχωρείται νερό από φράγματα σε γήπεδα γκολφ και κόβεται από τους αγρότες* [Water is allocated from dams to golf courses and cut off from farmers] .

37 Philenews. (2025, 8 November). Nicolaou, A. *6.679 τόνοι νερού για 5 γήπεδα γκολφ* [6,679 tons of water for 5 golf courses].

38 Philenews. (2023, 10 October). Nicolaou, A. *Εκτροπή νερού από τον Κούρη για ιχθυοτροφείο: Σημαντικές παρανομίες* [Diversion of water from the Kouris Dam for a fish farm: significant illegalities].

39 Mancuso, S. (2019). *La nazione delle piante. Laterza.*

40 Scranton, R. (2015). *Learning to die in the Anthropocene: Reflections on the end of a civilization.* City Lights Books.

41 Malm, A. (2021). *How to blow up a pipeline : learning to fight in a world on fire.* Verso.

Interpreting the landscape



Fig 65 Systema Ideale by Athanasius Kircher's in Mundus Subterraneus, 1664–1668.



Fig 66 Illustration by Athanasius Kircher's in Mundus Subterraneus, 1664–1668.

The landscape is a monster, is the title of Annalisa Metta's book, exploring themes of "the landscape" through various lenses such as the supernatural, counter-natural, fantastic and mythological.[42] Starting with the writings of Athanasius Kircher, Mundus Subterraneus, she investigates the hidden structures of the landscape, the chthonic depths, until the bowels of the earth. The landscape and subterranean are therefore depicted as entities in continuous transformation, a result of the countless interrelations and reactions of movements, currents, and jolts which happen underneath the earth, never to be seen by human eyes.[43] This vision also informs the argument above about subterranean spontaneity and chaos, following quite inexplicable rules. It defies a "state of nature" as a firm substance, but as a world pendulating between its own harmony and disharmony.[44]

Pan is the mythological creature that Metta chooses among others to animate the landscape. Pan does not inhabit the Olympus, but he roams through forests, along with the company of Dionysus and the Nymphs. Pan, from the Greek πάν, meaning "all", and thus distances their meaning from fixed interpretations. It is a Dionysian creature, dangerous, seductive, terrifying, and transgressive as Hillman described it.[45] Therefore, the landscape for Metta also embodies these characteristics; it inhabits contradiction, and leaves us to decide whether encountering Pan is a form of salvation, a temptation, or a danger to be avoided.[46]

Similarly, another classic example of ambivalent natures is Mary Shelley's Frankenstein. The novel meanders through contradictions such as "man" and "nature", "natural" and "unnatural", "monster" and "creature", "creature" and "creator", "good" and "evil", through the story of the Creature created by the scientist Victor Frankenstein. While forming a monstrous figure, counter-nature like Metta's argues,[47] the Creature appears deeply vulnerable and sensitive, with a romantic urge to explore the world. Nevertheless, it has never been given a name and has been subjected to degradation, taking away its individuality, a fact that, according to the National Theatre's character study of the play, is a main tragedy of the story.[48] Similarly to Pan, it is again a complex character between human and non-human, with multiple ambiguities, controversies and realities. "Even broken in spirit as he is, no one can feel more deeply than he does the beauties of nature. The starry sky, the sea, and every sight afforded by these wonderful regions, seems still to have the power of elevating his soul from earth. Such a man has a double existence".[49] Using then Metta's argument of The landscape is a monster, the creature reflects yet another persona of the landscape and what is considered "nature". Suppressed and feared, it has its own temperament of acute ambiguity, fluid transformation, harmony and disruption. In both the cases of Pan and the creature, then, it is left up to interpretation if meeting or experiencing them is a sort of blessing or menace.

In addition, significant cultural and social values, representations and perceptions of nature emerge from Michela Zucca's exploration of Europe's primordial forests in *Donne delinquenti: storie di streghe, eretiche, ribelli, rivoltose, tarantolate*. As Zucca supports, before becoming physical spaces, primordial forests were first "mental universes", alive and animated entities, without any borders, encompassing different forms of life interacting, interweaving, and entangling.[50] In medieval forests, stories of witches are recorded, females with a rooted connection and wisdom of the land, and folklore legends and myths of fairies come alive. Along with fantastic and past realities, stories as such, for Zucca, are cultural depictions that have significantly shaped general social perceptions, superstitions and ways of experiencing forests and nature up to now. These territories have also been a fundamental source of life for the communities through providing nourishment, plants and herbs for healing, and wood for building or staying warm. However, the arrival of statal imperialist forces and the need for significant expanses of land for cultivation and military purposes is a turning point in their gradual vanishing with excessive industrialisation and extraction to follow.[51] Nonetheless, primordial forests have acted as "refuge of wild and lawless men, of heretics and pagans, brigands and witches, fairies and ancient deities, forests have



Fig 67 Still from Pan's Labyrinth (2006) by Guillermo del Toro



Fig 68 Frankenstein performance, 2011, National Theatre Live.

42 Metta, A. (2022). *Il paesaggio è un mostro : città selvatiche e nature ibride.* Derive-Approdi.

43 ibid.

44 ibid.

45 Hillman, 1972.

46 ibid.

47 Metta, A. (2022). *Il paesaggio è un mostro : città selvatiche e nature ibride.* Derive-Approdi.

48 National Theatre. (2015, September 1). *The Creature: A Character Study | Frankenstein* [Video]. YouTube video.

49 Shelley, M. (2012). *Frankenstein*. Penguin Classics.

50 Zucca, M. (2004). *Donne delinquenti: storie di streghe, eretiche, ribelli, rivoltose,tarantolate.* Simone.

51 ibid.

for centuries represented the other face, the dark side, the ‘heart of darkness’ of the civilized and orderly world: an outward projection of the primordial chaos of vital forces, of telluric impulses, of animal instincts that are uncontrolled and uncontrollable. The ‘dark forest’ thus becomes a metaphor for disorientation and for the danger lying in wait for rational, cultivated humanity”.[52]

Therefore, as mentioned before regarding Pan and the Creature, Zucca also gives the “territory” its own idiosyncrasy, not fitting characteristics such as good or evil, a pulsing entity of continuous fluctuations. Resonating with Metta’s words, territory cannot exist as completely natural or untouched, as it has been shaped and moulded over centuries, following human peasant interventions to exploitative industrialisation. A past paradigm that Zucca brings is the “close-to-nature silviculture” practice, rooted in the farmers’ care for woodlands by managing species and favouring some rather than others. It is a practice ingrained in a long tradition of land knowledge gained through direct contact and application, yet it is claimed as a more recent scientific practice, without acknowledging the impact of primordial forestry and erasing witches’ histories. Additionally, another conflict or contrast of “nature” and “civilisation” is ever-present and manifested through time and temporality. Nature does not yield to a linear progression of time, which mandates the “civilised” and “human” society and spatiality. Instead, it flows in cyclic rhythms, and Zucca draws an interesting parallelism of roads of well-established directions against pathways of forests, or Pan’s Labyrinths, which are instead effortless to meander for the “delinquents” of the forest. Eventually, for Zucca, echoing locals’ words in Limassol, the mountains for those who inhabit them are not merely a geographical location, but histories and traces of past generations, rendering slopes cultivable and livable. Dwelling is not limited to houses but is extended to the mountains and hills. Thus, the researcher critiques the fact that nature is no longer a living organism to dialogue with. What can be the interesting take from this research is the strong entanglement of the mythical, fantastic, and obscure aspects of forests that have shaped the experienced reality. As for the writer, the real cannot exist without the imaginary. Imaginary and representation, hence, have always been tools for contrasting dominant narratives as acts of resistance.

To return to the Cypriot context and see how these perceptions have existed in the land and in the general mentality, we could take a perspective from an exemplary literary piece, the poem by the prominent poet Vailis Michaelides, *Ανεράδα* [Cypriot] - *Anerada*, *The Fey Enchantress*, written in 1893. According to the poet G.Moraris, Anerada, a lyrical and visionary poem, forms “an adventure of a wayfarer in the abyss of the subconscious”.[53] Looking at the poem through a historical perspective, the expression used according to Moraris, is strongly linked to Michaelides having lived under the Ottoman occupation and the British occupation, narrating this way a poetry that delves through centuries of folklore storytelling, narration and poetry,[54] to conclude that it is the last living myth that exists in Cyprus[55]. To connect the poem Anerada to landscape visions, it is interesting to analyse it further than its verses, through the artworks of the local printmaker Hambis Tsangaris. The poem, according to sources, is potentially about the poet’s love story, but it unfolds when the wayfarer meets a fey enchantress at the lake. It depicts a fantastic scenery of “paradise”, “elves”, “rivers”, “lambs”, through which the poet follows the fey through “thorns” and “valleys”, but then the fey vanishes, leaving the wayfarer in pain and fear. Characteristically, Tsangaris’s prints depict the stories unfolding in the Cypriot landscape.

52 Zucca, M. (2004). *Donne delinquenti: storie di streghe, eretiche, ribelli, rivoltose, tarantolate.* Simone.

53 PhilNews. (2017, December 11). Yangkou, G. *Ποιητικά αποκλίνον σε μακρόκοσμο* [A poetic divergence into the macrocosm]

54 ibid.

55 ibid.



Fig 69 Hambis Tsangaris, print illustrating Vasilis Michaelides’ poem ‘The Fay Enchantress’, 1999.

Οἱ πλῆξες πού μέ τρώασιν
ἀκόμα `ν' ἀφανέρωτες
τζ' εἰς τα πουλιά πού τζηλαδοῦν
ἔσει πού τότες ὅπου δῶ
τές ἀνεράδες τρέμω τές
τζαί πογυρίζω μέν μέ δοῦν.

The pains consuming my body
are not yet revealed
even to the singing birds
since then, every time I come across
fairies I ‘m dying out of fear
and I turn away so that they cannot see me.[56]
Vasilis Michaelides

56 Michaelides, V. (1888). *The Fey Enchantress (Η ανεράδα).* LyricsTranslate.

Concluding, returning to the areas of fire, all the above perceptions of landscape and territory, distant or not, could assist and inform new imaginaries of the areas of fire. Imaginaries constitute a necessity today to oppose dominant narratives that such areas only exist as development, destruction, and dilapidation. Landscapes need to be understood as complex networks of fluctuating, ever-changing relations between microorganisms that interact before, during and after fires, which is what has been referred to as the alchemy of the landscape. Lastly, this section concludes with an image from the fire areas, taken eight months after near Lofou, one of the main areas severely affected. The landscape now, after arid months with minimal rainfall, has sprouted with Asphodels. Asphodels, nowadays, are linked with territories of fire, intense drought or grazing. However, in Greek Mythology, they acquire a deeper connection with Hades, the underworld and mourning, as in Homer's Odyssey, it is believed that the dead reside in "Asphodel Meadows". Fields, as such, are also depicted in paintings of the underworld, with an example being Orpheus Leading Eurydice from the Underworld by Camille Corot (1861),[57] evoking the idea of asphodel meadows through vegetation, again offering further readings for ambiguous landscapes.

57 Encyclopaedia Britannica, *Orpheus*. In Encyclopaedia Britannica.



Fig 70 Post-fire landscape in Lofou, blooming with Asphodelus, photograph by the author, March 2026.



Fig 71 Orpheus Leading Eurydice from the Underworld, Jean-Baptiste-Camille Corot, 1861. (Photograph: The Museum of Fine Arts, Houston)

Interspecies as a form of postcolonial-anticolonial resistance:

'Active imagination as a methodology of resistance' *

This section analyses diverse projects, acting as a source of inspiration for new imaginaries and collective visions, based upon which a *Museum of Pyrophytes* could sprout.



Fig 72 Scintilla, Site Specific Performance, Photograph, Fabric Sculpture, 2025 (www.studioarijit.com/scintilla)



Fig 73 Whispering Sea, Site Specific Installation, Video, Fabric Sculptures, Murals, 2024 (www.studioarijit.com/scintilla)

Scintilla (2025) is a site-specific performance blending photography and fabric sculpture taking place in Kolkata, by Arijit Bhattacharyya.[58] By creating space for the interspecies, the artist problematizes the historical and political context of post-colonial Kolkata, reassembling different social systems. The artist centres and questions through a non-linear understanding of the legacy of the end of British colonisation, the current state of prevailing systems, exploitation and industrial colonial imagination. By using social science fiction as a tool, the artist inquires into the notion of apocalypse as a singular phenomenon, which ignores ongoing lived experiences and struggles, and through the recreation of human-plant relation narratives, aims for an anticolonial imaginary that challenges anthropocentric visions and boundaries, dismantling prolonged sociopolitical hierarchies. Similarly, in *Whispering Sea (2024)*, the artist uses the methodology of social science fiction as a way for "envisionsemancipation"[59] for resistance on post colonial land. Traversing diverse limits of interspecies, Bhattacharyya manages to fabricate anticolonial imaginaries, rooted in space making whether through performances or photography, which not only assess the past, but offer forms of present and future interspecies coexistence in contested landscapes, inviting humans to the Plantae Kingdom. The way that Bhattacharyya approaches temporalities colonial and state-performed violence through a collective and non-linear thinking, can actually be used in the case of Cyprus, in another way of thinking the *Nation of Pyrophytes*, where transpecies relations are encouraged, deconstructing the power over land post-fire toxicity and residue.

Regarding the Plantae Kingdom and interspecies relationships, on a different perspective, works the artist Peng Shuai Paolo. The artist's personal term and exploration of "Economadism" offers a perspective of an ecology strongly rooted in migration and diaspora. What the artist explores through his work is a migration that moves away from a sole geographical change of location, but transcends boundaries and notions of ontologies, such as cultural, anthropological, environmental and physiological.[60] Inspired by André Gorz, "Economadism" takes the form of ecology as a complex system of interconnections and interdependencies between humans and non-humans, defying the dualism of man and nature.[61]



Fig 74 Peng Shuai Paolo - Diasporic Ecologies (zero.eu)

Further, from another perspective of symbiosis and cohabitation with nature, a pivotal example is the protests and occupation of Hambach forest. In relation to the thesis, the Hambach protest forms a very relevant case both to its character of fire forming the landscape through combustion, fossil fuels and extraction, as well as the movement of opposition and resistance to it. Following the decision in Germany to initiate intensive logging activities in the ancient forest of Hambach, opening the path for brown coal mining, several groups of environmentalists have "occupied" the forest in a particular mode of inhabiting it, through constructing around 60 treehouses.[62] The environmental, social and heritage value of the forest, according to National Geographic, as it consists of an ancient forest of 12,000 years, one of the very few locations in Europe where actually the soil has not been touched before for farmland,[63] one of the few examples of a pristine ecosystem in Europe, consisting of hornbeams, and oaks, where Peter Wohlleben (German forest scientist and author), has described the mycorrhizal fungi system as a "wood wide web", reminding the importance of the linkages in the ecosystem rather than singularity of species. Further, other than species such as birds and mammals, the project aimed to highlight the importance of other smaller, often overlooked ecosystems such as soil bacteria, mites and worms. Also, according to Further, than the opposition of the groups to the landscape extraction, in an architectural perspective, the activists' intention to actually inhabit the forest by creating housing units in a symbiotic and harmonious attitude towards the forest could offer the opportunity for imagining different imaginaries of inhabitation, reminding us of the words of Ursula Le Guin, *The Word for World is a Forest.*



Fig 75 orkers begin clearing treehouses from an area of Hambach forest. (Photograph: Thilo Schmuelgen/Reuters)

* Quote in title: Studio Arijit. (n.d). *Scintilla*.

58 ibid.

59 Studio Arijit. (n.d). *Whispering Sea.*

60 Qian, L. (2024). Between Land and Sea: The Aesthetics of Diasporic Ecologies: An Interview with Paolo Shuai Peng. Ecozon@ European *Journal of Literature Culture and Environment 15*(2), 297–[end page].

61 ibid.

62 National Geographic. (2018, October 8). *Protesters battle police in a fight for an ancient forest* [Article by Gibbens, S.]

63 ibid.

A Museum of Pyrophytes

One might wonder what a museum has to do with fire, in a post-ignition landscape, and how it might fit a thinking that aims to look further than development and the exploitation of land, once it is portrayed as empty or καμένη γή (scorched earth, as often used in Cypriot Greek, metaphorically or literally). To support a museum in this context, firstly, it is important to understand what can be defined as a museum. The term museum is often perceived as a sterile, fixed, and immobile concept, and thus challenged in museology by various scholars. In this context, Bruno Brulon Soares, museologist and anthropologist, raises the question of what constitutes a museum in the 21st century.[64] Building on the evolving definitions of ICOM's (International Council of Museums), Soares revisits recurring questions: "What is a museum, a permanent institution or a polychronic space?"[65] Is its purpose educational or yet another representation of a general world understanding?[66] As the term museum remains contested, Soares's perspective can bring forward the following question: how can the reality of a century profoundly shaped by fire be narrated and presented? Could a museum of fire exist, and if so, what will be its function, spatiality, archive, research, and communication, avoiding any fossilised approaches? As a result, in this case, the museum becomes a tool and a methodology. Working with and inhabiting an imperfect landscape becomes the strategy itself in an "unsalvageable" pyroscape. The concept of the museum is then adopted to host the different forms of life and bodies, in an attempt to comprehend them at a deeper level, whether this concerns organisms, soil, water, air, human and non-human species.

Chernobyl Herbarium, a collaborative work by the photographer Ana s Tondeur and the philosopher Michael Marder, brings together a thought-provoking series of essays through the use of plant species affected by the radioactive aftermath of the Chernobyl disaster. Through observations of the plant's physiological alterations, the photographer and philosopher built together a critique and a testimony of the Chernobyl event, narrated by species other than humans. The *Herbarium* in this case can be understood as an extended, conceptual or speculative form of a museum, one that through the traces of radioactive ionized atoms, toxicity and residue, unfolds the story of the nuclear catastrophe. A living archive of survival amidst dilapidation, as well as a manifestation of temporality, articulated through half-lives, isotopes decay and ongoing ecological transformation. More specifically, Marder calls fragment 7, *Linum usitatissumum,* a *Silent witnessing.*[67] Recognising the fact that it is extremely difficult as humans to describe and talk in a holistic manner about the nuclear disaster, because of its imperceptibility limited by human senses, despite its death-bearing and gruesome effects, he looks for different types of accounts. Hence, the photograms that Tondeur creates of plants affected by nucleids seem to be the appropriate means of articulation. Evidently, and according to Marder, plants always become spatial records of time and environmental conditions through the spreading of branches or tree rings for example.[68] Thus, when using photograms, Linum usitatissimum pistils appear bright, dotted with white granular radioactive deposits, becoming a place-based narration of soil, land, and atmosphere. Therefore, as Mader raises the question, "Why not delegate testimonial acts to living beings that do not speak, at least in human voices and languages?"[69]

64 Soares, B. B. (2020). Defining the museum: challenges and compromises of the 21st century. *ICOFOM Study Series [Online], 48*(2).

65 ibid.

66 ibid.

67 Marder, M. & Tondeur A. (2016). *The Chernobyl Herbarium: Fragments of an Exploded Consciousness.* Open Humanities Press.

68 ibid.

69 ibid.



Fig 76 Linum usitissimum, Photogram on rag paper 2011-2016, Exclusion Zone, Chernobyl, Ukraine - Radiation level 1.7 microsieverts/h. The Chernobyl Herbarium: Fragments of an Exploded Consciousness, Anais Tondeur and Michael Marder

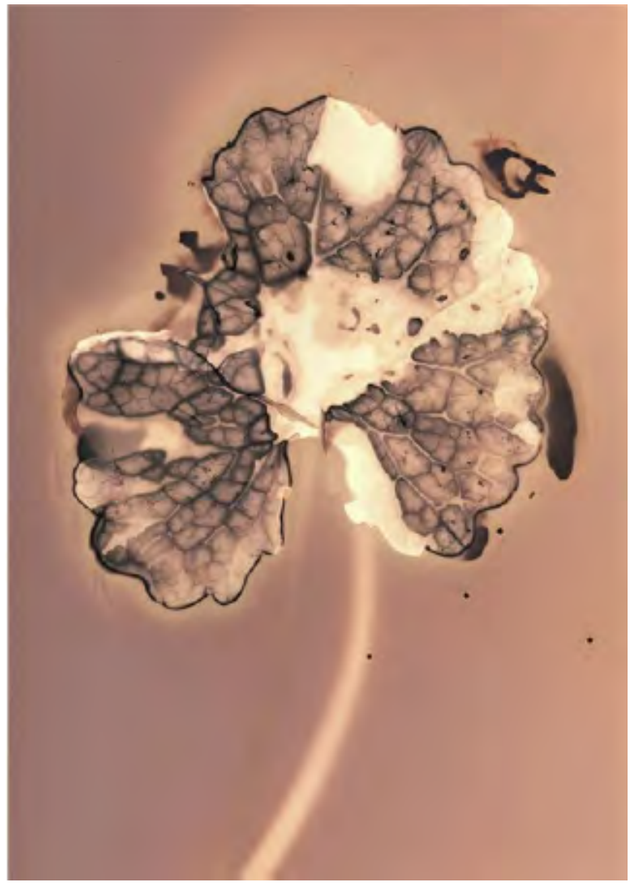


Fig 77 Giuliano Zona ASI, Terra dei Fuochi, Alliaria petiolata, phytography, 15 x 18 cm. Giuliano Zona ASI, Terra dei Fuochi, Alliaire, phytographie, 15 x 18 cm (https://anaistondeur.com/living-herbarium)

In a different form of experiment, yet with the help of plantae ruderal species growing amidst waste in the Land of Fires, Marder and Tondeur collaborate again. In this case the project aims for a transpecies sort of correspondence, in this case between humans and plants, studying a collection of Vesuvian species, which at Roman times assisted in the healing of people.[70] Yet today, the plants have a parallel ability, that of healing the earth from the toxicity and residue resulting from burning waste and resisting in a ground full of heavy metals and traces of a long history of fire.[71] According to various botanists, plants which have grown under such conditions, expose a very high concentration of a chemical called phenol (C_6H_5OH). That is how Tondeur uses phytography, taking photographs without removing the species from the soil, through a process that allows the photochemical characteristics of plants to react with photographic emulsions.[72] Therefore, once again, in a similar way in which they perform in Chernobyl Herbarium, the history of the soil is narrated through another form of language; a strongly place-based chemical and molecular. These encapsulate very efficiently the remains of old fires as well as the marks of most recent ones, through their formation of subterranean and aboveground landscapes. Marder makes an intriguing observation about the concept of "pyrobios" (πυρόβιος, from πῦρ and βίος, fire and life in Greek); fire in this case, is the fundamental part for the reproduction of the specific species, a necessity and a dependency, in a way that can become a direction through a chaos of waste and fire.[73] Then also, ashes and residue acquire new meanings and possibilities, which is what the *Museum of Fire* looks for.

By taking examples of these two projects, the concept of the museum, and especially taking into consideration its meaning and purpose for the 21st century, seems plausible. The question remains however in how this museum takes place architecturally and spatially, what its contents, archive, research and communication ways. For this reason, a week-long on-site research has been carried out in the area of Northern Limassol, including the rural villages of Lofou, Omodos, Souni, Agios Therapon, and others. Inspired by Michael Marder and Anais Tondeur, the aim was to understand, observe, and explore the aftermath of the catastrophic fire of July 2025. Eight months after the conflagration and total destruction of 1243 ha, 120 km^2, what is it that remains, recovered and reemerged? The following mappings, photos, narrations, sketches, and hatchings aim to collectively become an active typology of a museum, a museum that is not narrated through only a human perspective, but puts together a multispecies testimony, presenting the current state of a post-fire landscape as well as building upon the landscape understanding. An understanding that looks beyond destruction, ashes, and emptiness, one that does not form a stand-by for yet another exploitation, but has its own life, biodiversity and ruderal ecology.

70 Marder, M. & Tondeur A. (2026). *Flower of Fire: Traces and Correspondences from the Land of Fires.* Mimesis.

71 ibid.

72 Doing, K. (n.d). *Phytography.*

73 Marder, M. & Tondeur A. (2026). *Flower of Fire: Traces and Correspondences from the Land of Fires.* Mimesis.



Papaver Rhoeas

A FIRE HERBARIUM



Dittrichia viscosa



Prickly Pear



Sinapis Alba



Cyperus Esculentus



Dicerothamnus rhinocerotis



Cynodon Dactylon



Asphodelus genus



Senape Arvensis



Gaillardia megapotamica



Helichrysum stoechas



Teucrium



Sinapis arvensis



Trifolium repens



Orchidea Italica



Vitis Vinifera



Phagnalon Rupestre





Asphodelus Ramosus



Onopordum Acanthium

A Landscape Pyrography

The second part of the project forms the landscape pyrography, and it is a proposal for how the *fire museum* extends spatially. It is a shift in the thinking of ever-flaming and post-fire landscapes, by dissolving the landscape in layers, gradients, stratification, traces and residue, in two main concepts, *bulbing* and *rhizoming* ecologies through the tools of museum and herbarium. Different ecosystem mechanisms, in a way that offers an architectural perspective that is no longer human dominant. Bulbs become spaces composed of layered external structures with the ability to protect a central core through succulent membranes, following a strategy of enclosure and confinement. They are difficult to penetrate and store reserves and energy for future growth cycles. On the other hand, rhizoming have no fixed hierarchies, they proliferate in chaotic networks without any central points. They survive even when individual nodes get destroyed, by rerouting and reorganising though their regenerative complexity. The difference between bulbs and rhizomes is that a central core memory describes the bulbs, while rhizomes encode the experiences of landscape through patterns of interaction, adapting to the environmental conditions, and thus its alchemy.

The methodological approach behind *bulbing* and *rhizoming* emerges from a long study of the specific landscape, its mechanisms and the allegory of pyrography, by posing questions such as what survives, what does it mean to survive, where is the energy stored, and what characterises the succession. Throughout the research, diverse paradigms of concealment against exposure emerge, from the Pinus Brutia which regenerates after fires by seeds kept in soil, to the Asphodelus which blooms from tuberous roots. In addition to these, using as a reference *Moleculocracy*, the project follows Emanuele Braga's thinking of looking for the linguistics of the project from an organic point of view, dismantling hierarchies between the human and non-human conception of the environment.[74] For Braga, *Moleculocracy* is an attempt to indulge into nature concepts that offer the opportunity for a further reading of science, without species' competitiveness and post-human tecno-fetishism,[75] a better understanding and application of the meaning of symbiosis. Hence, for Braga, nature's substance -and hence alchemy- is not different from its matter, its behaviour, and the elementary particles that organise themselves in relation to one another. Matter itself jumps, dances, performs, generates variance and difference, and enters the scene in sudden ways. It behaves in ways that cannot be reduced to the dull laws of linear continuity and of cause and effect. It matters itself -and objects- that are "poetic", "intuitive", "antagonistic", "turbulent", "unstable", "unruly", "revolutionary".[76]

È la stessa materia che salta, che danza, che performa, che crea varianza e differenza, che entra in scena in modo improvviso. Si comporta in modo non riconducibile alle noiose leggi della continuità e della causa e dell'effetto. Sono la materia stessa e gli oggetti a essere "poetici", "intuitivi", "antagonisti", "turbolenti", "instabili", "indomabili", "rivoluzionari".[77]

Therefore, the reading of a pyrography of landscape allows matter and substance to ignite, eradicate, reveal, conceal, perform, and reproduce itself. The alchemy of pyrography inscribed on a landscape is an alchemy of memory writing with fire on an encoded terrain.



Fig 78 Prints at the studio of Hambis Tsangaris (appearing in the third photo) in Plataniskia; the artist is shown in the centre image. Photographs by the author.



Fig 79 Printing workshop at Hambis Tsangaris's studio in Plataniskia, supervised by the artist. Photographs by the author.

74 Braga, E. (2023). *Moleculocracy : ecologie, conflitti, turbolenze.* Nero.

75 ibid.

76 ibid.

77 ibid.



Bulbing

The bulb's primary role is nutrient storage ensuring the plant's survival during unfavorable conditions such as winter or drought. Carbohydrates primarily stored as starch, serve as the energy source during dormancy and regrowth. [...] The biochemical composition of bulbs also includes secondary metabolites such as flavonoids and alkaloids which provide protection against pathogens and herbivores.[78]

The strategy of bulbing mainly informs an idea adapted to the refuges, possibly for human inhabitation environments, amidst fire-prone areas. The anatomy of bulbs has evolved as a structure of resilience to shield the vital tissues of plants in hostile conditions. They are complex configurations that develop underground and are composed of membranes of fleshy leaves that protect the central bud and basal plate,[79] reserving their resources and ensuring their survival. The physiology of membranes is safeguarding the plant, in the lack of water and drought periods, setting it in a dormancy state, and allowing for its regrowth when the environment allows, suggesting their exceptional adaptability to the surrounding environment.

By using the fire herbarium as a reference and analysis tool, and examining the pyrography of what is revealed after the fire, bulbing resilience can be used both literally and speculatively. Literally because as included in the fire herbarium, various are the species that repopulate quite eagerly a scorched landscape, within the cyclic rhythms of chaparral ecology. On the other hand, bulbing as a concept can be applied to the landscape as an area of shielding, safeguarding, and concealing. Bulbing in a broader sense suggests a stratification of sheaths emerging already from what exists within the cultural and environmental context. Therefore *bulbing* is proposed as the anatomy of areas which are threatened by fire, whether this includes human inhabitation or sanctuaries for other species.

Similarly the project draws inspiration from endemic Mediterranean fauna adaptation such as whip snakes, vipers, geckos, lizards and skinks, moulting and shedding outer skin, renewing their layers of protection against aridity and heat, while supporting moisture retention. Further, other adaptive strategies include burrowing or hiding in rocky habitats. In this case, refuges as such resonate with the architect's Nader Khalili earthen structures made with "SuperAdobe" that have attracted attention in the Mojave Desert near Los Angeles amidst wildfire regimes.[80]

Therefore, leveraging on the vernacular architecture of Cyprus, analysed in previous chapters, and taking inspiration from the aforementioned references, the suggested membranes or *scales* are composed of three main layers of varying extents and distances from the *basal plate*, the inhabited core. These layers are dry-stone wall complexes, viticulture cultivation areas and pyrophytes, starting from the exterior layer to the most inner one. These are unfolded as strategies in drawings to follow.

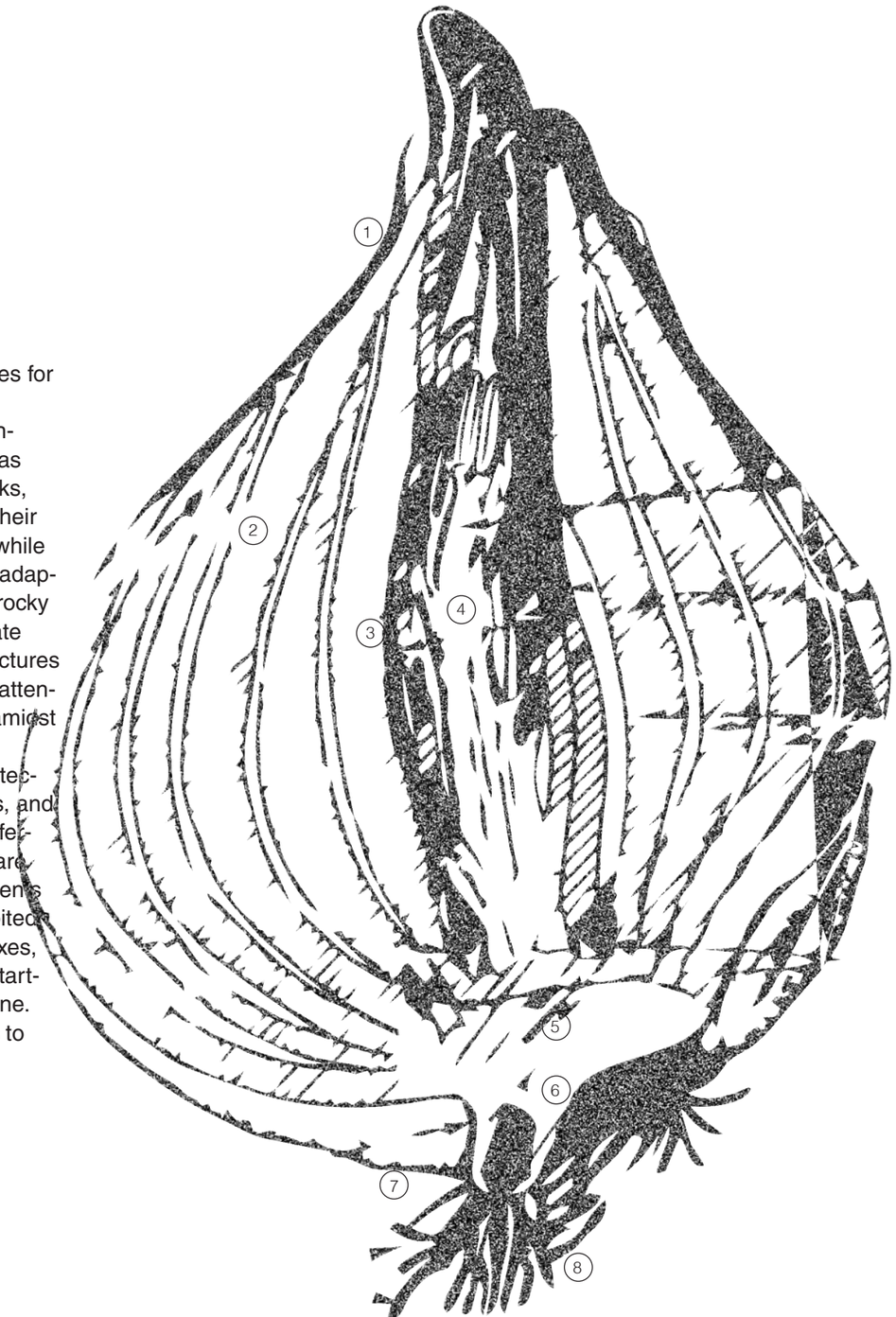




Fig 80 Using Earth to Rebuild a Planet Scorched by Fire , (Photographs by Clara Balzary, Atmos article, 2025).



Fig 81 Using Earth to Rebuild a Planet Scorched by Fire , (Photographs by Clara Balzary, Atmos article, 2025).



Fig 72 Snake shedding skin, (Photograph: Mark Kostich via Getty Images / livescience.com)

1 Tunic - Outer bulb scale
2 Bulb scales
3 Foilage leaves
4 Flower bud
5 Lateral bulblets
6 Main lateral bulblet
7 Basal plate
8 Adventitious roots

78 Plath, H. (2024). The bulb: A vital structure for plant growth and reproduction. *Journal of Plant Biochemistry & Physiology, 12*(6), 326.

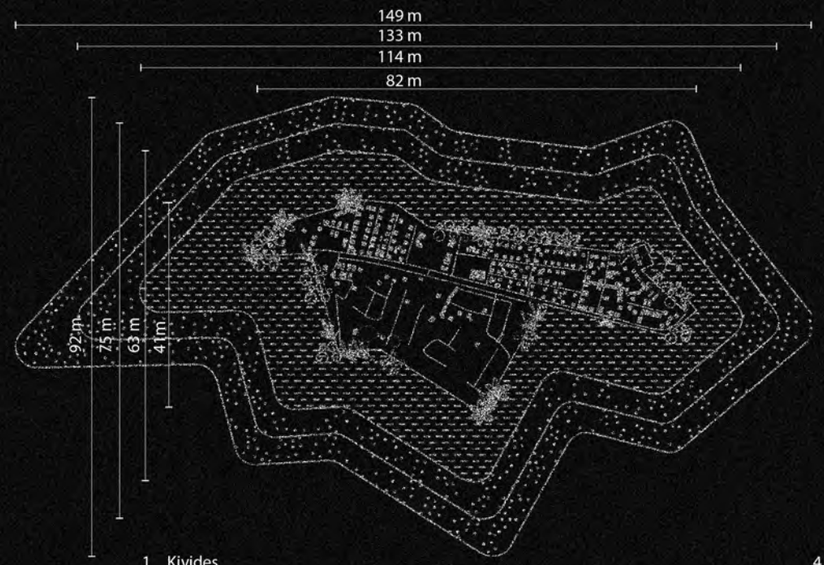
79 Encyclopaedia Britannica. (n.d.). *Bulb*. In Encyclopaedia Britannica.

80 Aspinwall, N. (2025, June 2). *Using earth to rebuild a planet scorched by fire.* Atmos.

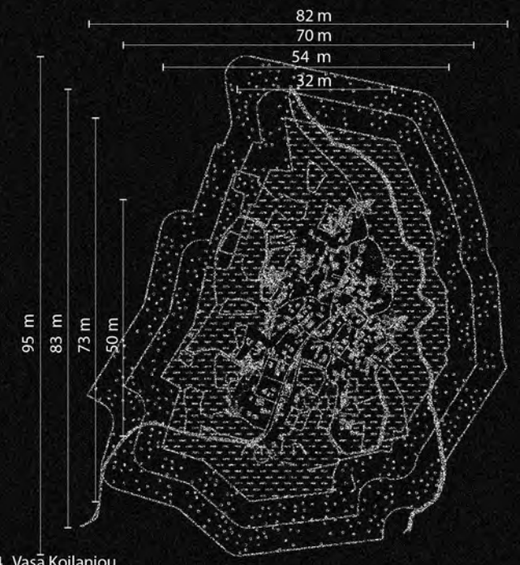
Bulbing

The drawing explains in plan how the ‘bulbing’ zones are structured. The different layers form the protective membranes - scales of the central core - the basal plate. The membranes are analysed on the following page.

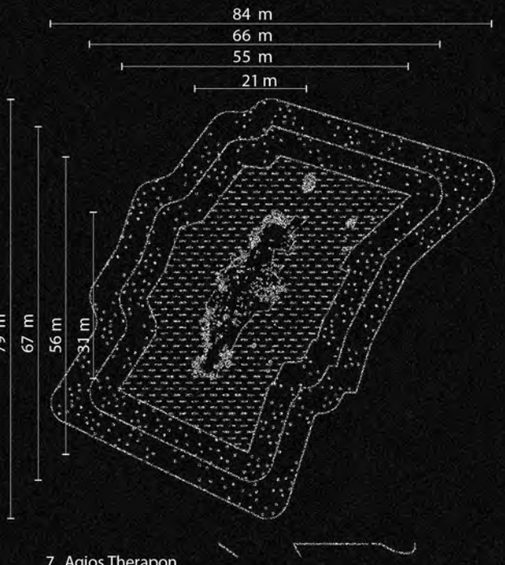




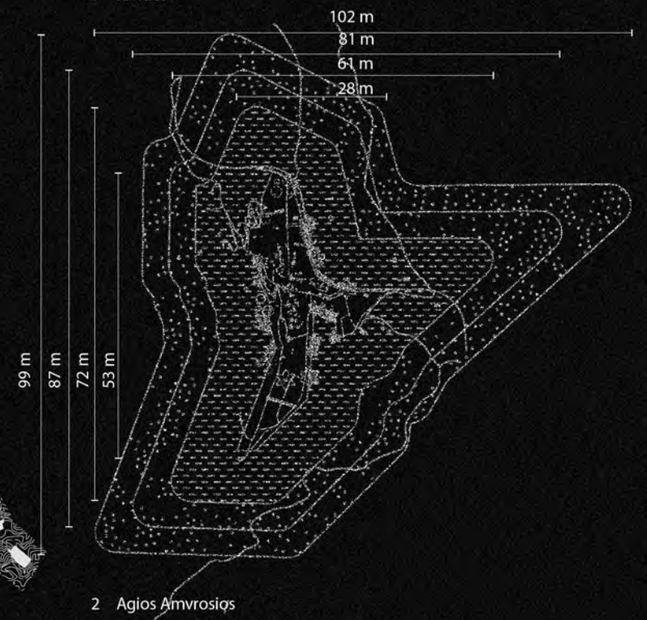
1 Kivides



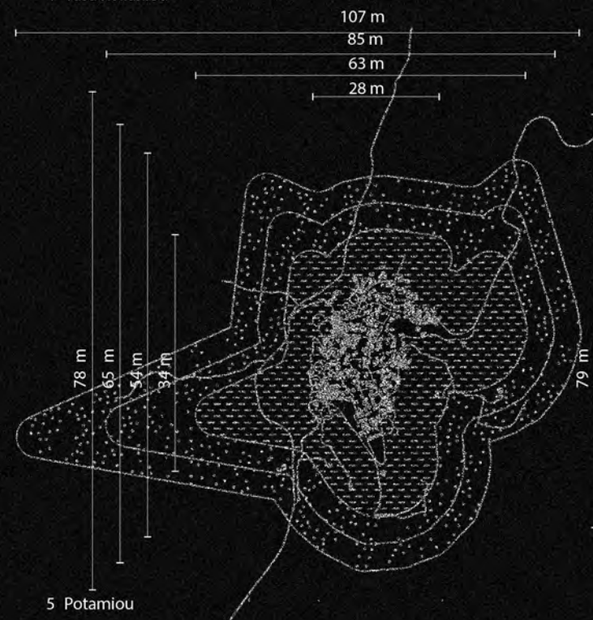
4 Vasá Koilaniou



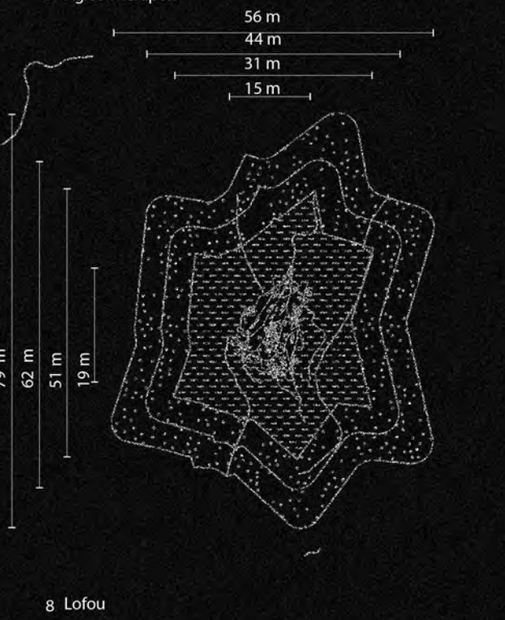
7 Agios Therapon



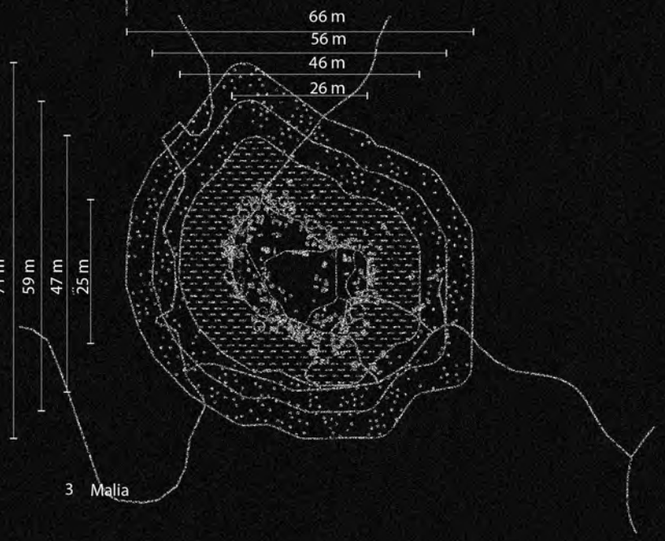
2 Agios Amvrosios



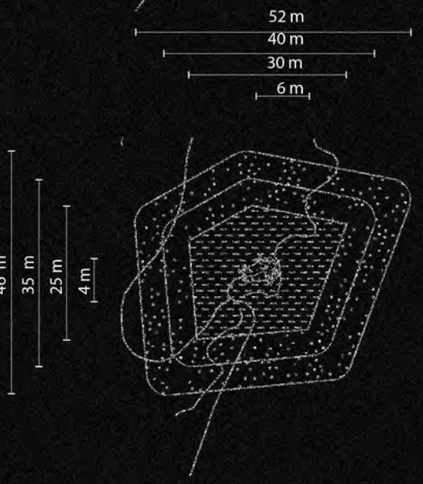
5 Potamiou



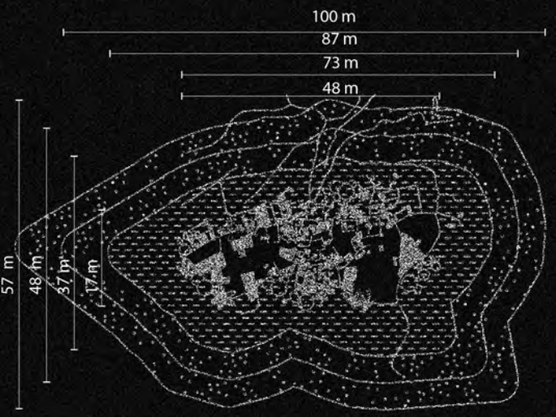
8 Lofou



3 Malia



6 Kissousa



9 Vouni

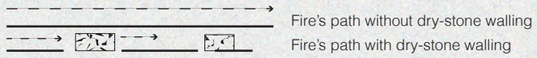
Membranes



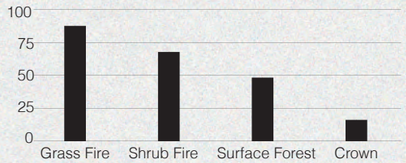




Dry-stone Walling



Synthesis of relative effectiveness of dry stone walls by wildfire type (%)



Typical dry Cypriot limestone
0.9 – 2.3 W/m·K



High thermal mass reducing heat transfer to vegetation

Fire-Resilient Vegetation / Living Fire Breaks



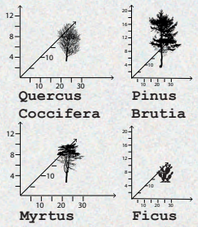
	Fuel Continuity	Flammability	Vertical Structure	Regeneration Strategy	Fire Function
Quercus coccifera	■■	■■	Dense shrub	Resprouting	Fragmenting
Myrtus communis	■■	■■	Low shrub	Resprouting	Disconuity
Olea Europea	■	■	Spaced Canopy	Persistence	Fire Break
Opuntia Ficus India	▮	■	Ground level	Water-storing	Moisture
Pinus Brutia	■■■	■■■	Tall continuous	Seed-based	Fire-barrier

Zone 1: Quercus coccifera, Myrtus communis

Zone 2: Olea Europea

Zone 3: Opuntia ficus-indica

Zone 4: Pinus Brutia



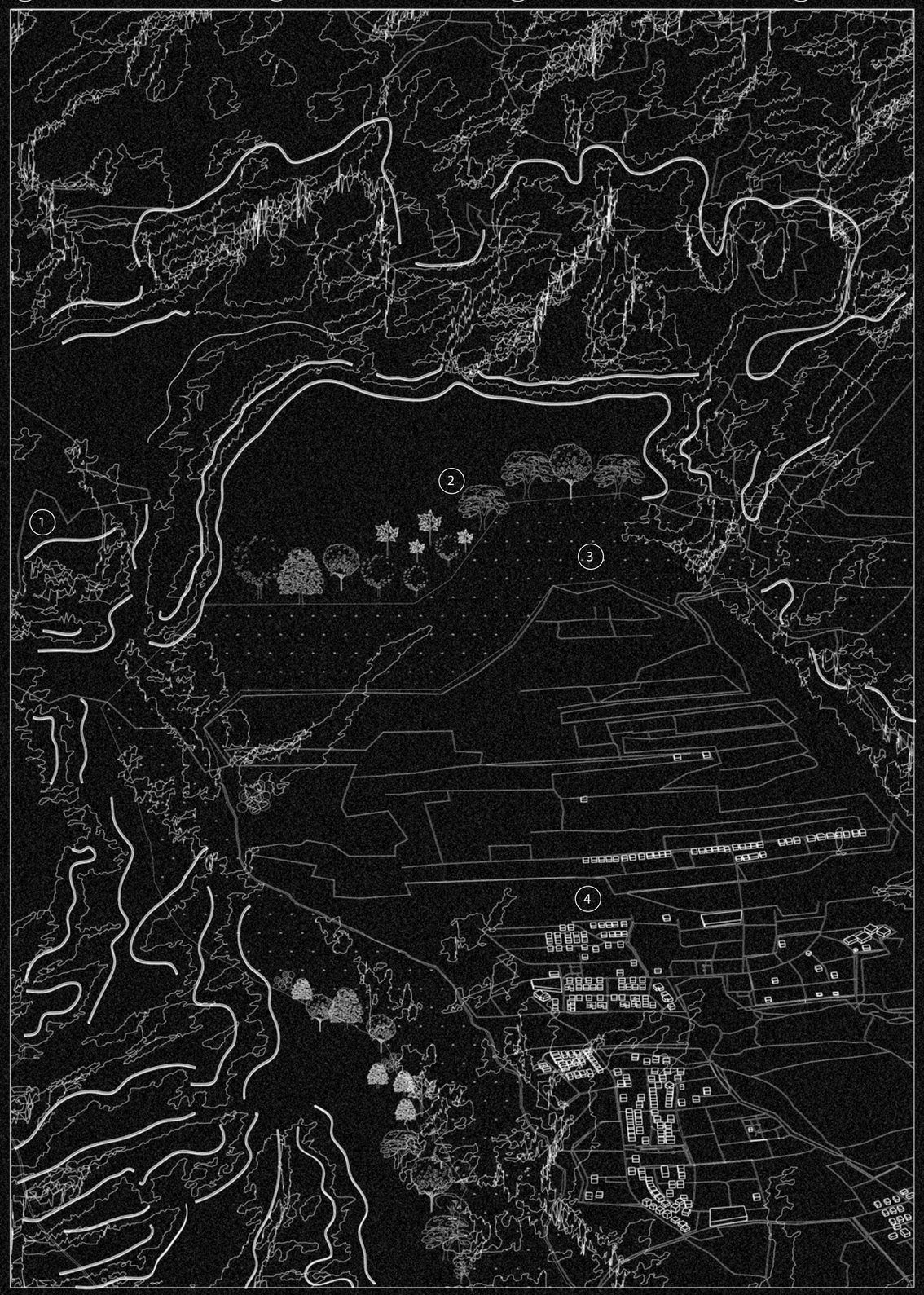
Viticulture cultivations



Natural scrub

vine soil vine

Viticulture cultivation



Rhizoming / Successioning

On the other hand, acknowledging the Mediterranean chaparral cycle is understanding an architecture of temporality, able to dissolve into time and territory. Living with the temporality of fire, means accepting its succession as a strategy of rhizoming. In botanology, rhizomes spread autonomously underground, storing starches and proteins that allow the plants to survive, penetrate the soil and emerge.[81] It is a relentless vegetal propagation of the root system that spreads in a web-like system and network. The term rhizoming, hence, is used in the project to describe the succession of the "exposed" landscape -in a Michael Marder sense",[82] to describe an autonomous process without any human intervention or decision making. Further, in a Gilles Deleuze and Felix Guattari approach, *rhizoming* propagation is unstable, in constant transformation composed of assemblages.[83] Through deterritorialization and destratification, *rhizoming* rejects hierarchies by composing a dynamic synthesis of proliferating interrelated organisms. Then, the ecological thinking of the *exposed* landscapes exists as mutations, conflicts, and entanglements, defying the idea of an ordered nature in harmony.

> *In contrast to centered (even polycentric) systems with hierarchical modes of communication and preestablished paths, the rhizome is an acentered. nonhierarchical, nonsignifying system without a General and without an organizing memory or central automaton, defined solely by a circulation of states.*[84]

Therefore, rhizoming becomes the way of succession for the exposed. The following maps and drawings depict rhizoming and succession as spatial and (de)territorial adaptation. They work with the residue of fire, aiming to understand the connections and interrelations that finally compose the alchemy of the dissolved, burnt, and damaged.

81 Encyclopaedia Britannica. (n.d.). *Rhizome*. In Encyclopaedia Britannica

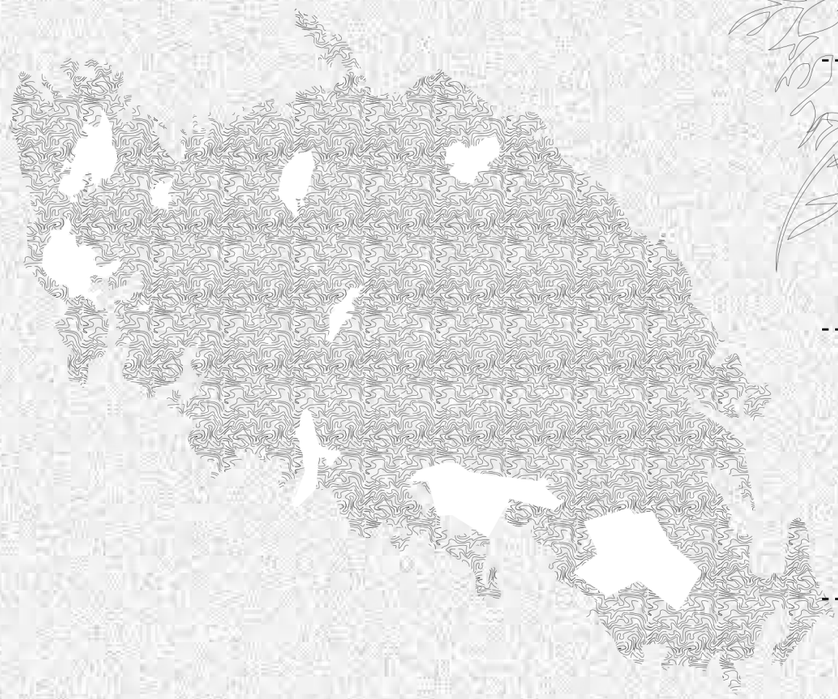
82 *Exposure*, Chernobyl Herbarium p.22, Marder, M. : [...] *Who is the (ex)posing and who or what the (ex)posed? [...] Meaning out in Latin, this prefix conveys the movement of growth, pressing out, toward sunlight or deeper into the soil. [...] Vegetal life is not merely exposed; it is exposure, exteriority, outwardness. Only in limit circumstances can we (ex)perience on our very skin what vegetal being-exposed.*

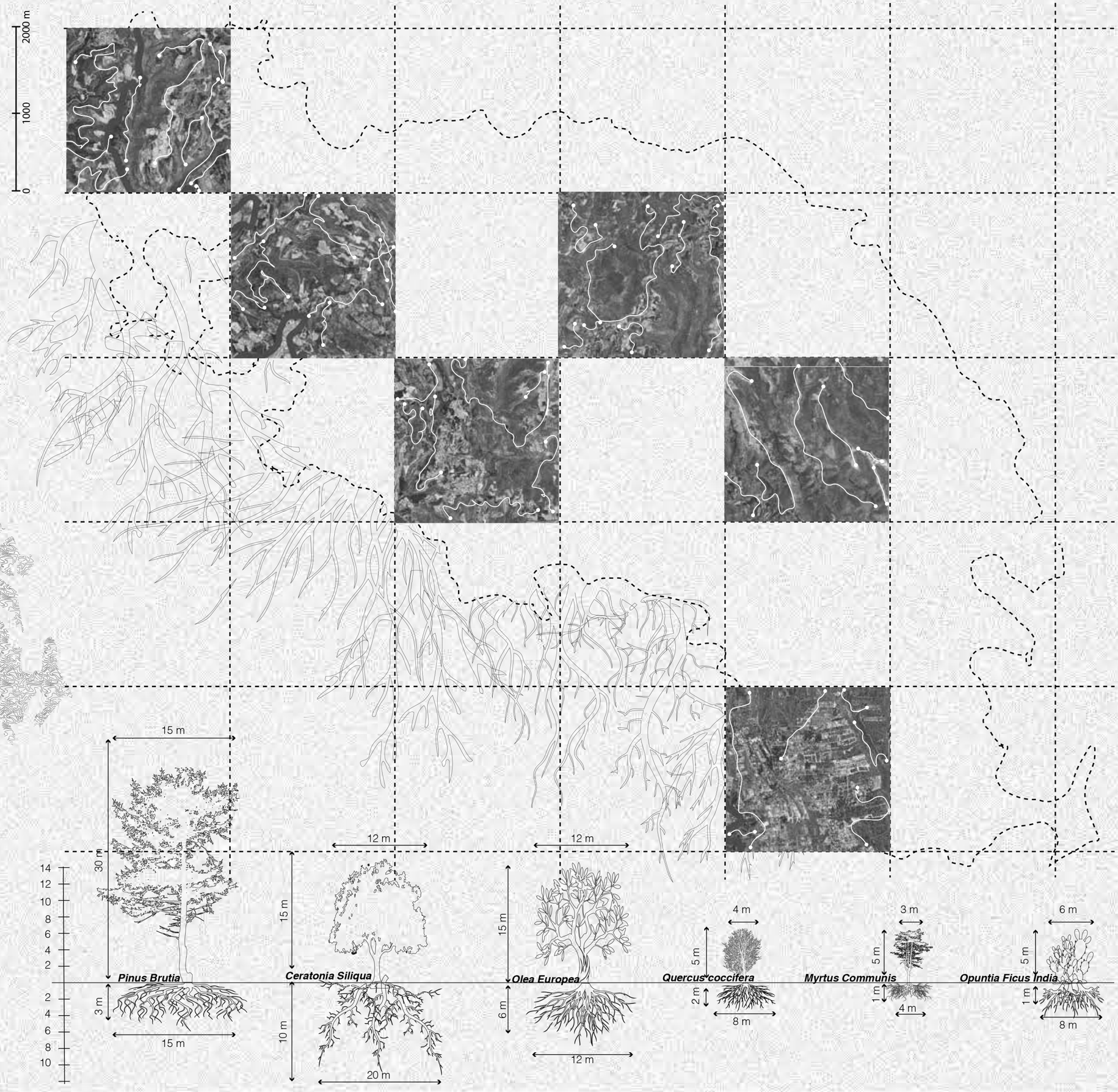
83 Deleuze, G., & Guattari, F. (1983). *Anti-Oedipus: Capitalism and schizophrenia* (R. Hurley, M. Seem, & H. R. Lane, Trans.). University of Minnesota Press. (Original work published 1972)

84 ibid.

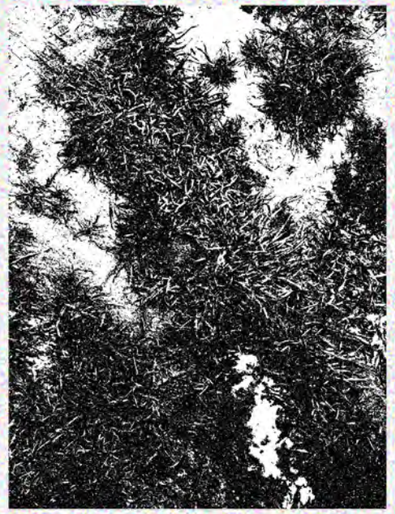


Rhizoming




2000 m
1000
0
15 m
30 m
12 m
15 m
12 m
15 m
4 m
5 m
3 m
5 m
6 m
5 m
14
12
10
8
6
4
2
2
4
6
8
10
Pinus Brutia
3 m
15 m
Ceratonia Siliqua
10 m
20 m
Olea Europea
6 m
12 m
Quercus coccifera
2 m
8 m
Myrtus Communis
1 m
4 m
Opuntia Ficus India
1 m
8 m

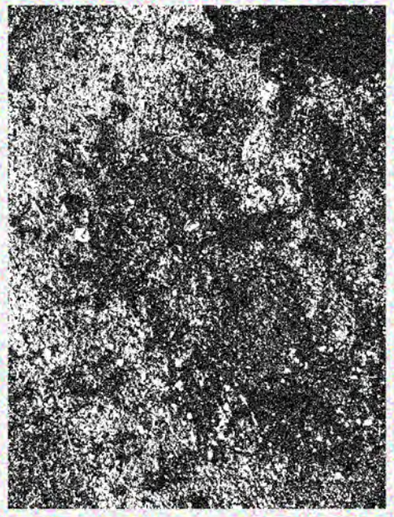
Post-fire Succession and Traced Temporalities



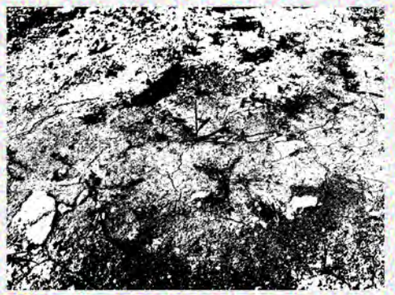
Grass in a Water Pond
Emergent grasses rooted in a shallow post-fire pond.



Vegetation Through Eroded Soil
Coarse vegetation emerging from an eroded soil surface.



Charred Surface
Ash-covered terrain with the burnt remains of vegetation.



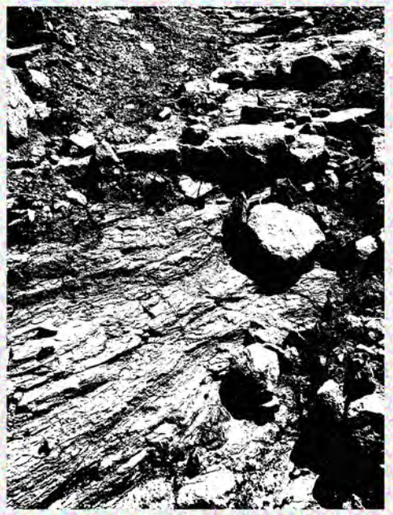
Fractured Earth
Eroded soil with desiccation cracks and sparse regrowth.



Gravel Fragments
Mixed gravel and coarse mineral fragments.



Post-fire flourishing
Wildflowers emerging through a charred surface.



Exposed Rock
Weathered bedrock exposed by erosion.



Limestone Drainage
Drainage channels engraved into limestone along a former dam pathway.



Gravel and Regrowth
Gravel-covered ground with early vegetation emerging.



Species Distribution June 2026

Silene Gemmata

Vicia Lutea

Tripleurospermum Inodorum

Ochthodium Aegiptiacum

Ephedra Nebrodensis

Ochthodium Aegiptiacum

5.6.24 / 131 ha

Phlomis Brevibracteata

Pholmis Cypria

Tussilago Farfara

Celtis Tourneforti

Verbascum Blattaria

Anacyclus Clavatus

Lomelosia Argentea

Lomelosia Argentea

Salvia Sclarea

Salvia Sclarea

Celtis Tourneforti

Ochthodium Aegiptiacum

Lomelosia Argentea

25.7.25 / 12437 ha

Arctium Lapa

25.2.21 / 20 ha

25.7.24 / 8 ha

Hellantheum Ledifolium

Lomelosia Argentea

7.7.24 / 14 ha

Celtis Tourneforti

Lomelosia Argentea

Tulipa Agenesis

Limantis Birds Migration Route / 2892 ha

31.7.22 / 32 ha

Gyps fulvus

27.9.23 / 114 ha

1.10.18 / 80 ha

Sylvia melanothorax

6.8.23 / 654 ha

4.8.23 / 149 ha

Cha potami Bird Migration Route/ 7896 ha

Epilobium Tetragonum

Glinus Lotoides

Falco peregrinus

23.9.22 / 89 ha

Phlomis Brevibracteata

Ranuculus Repens

Buteo rufinus

Heliantheum Ledifolium

Coracias garrulus

Buteo rufinus

6.11.23 / 13 ha

Phlomis Brevibracteata

Buteo rufinus

12.7.21 / 53 ha

Oenanthe cypriaca

Phlomis Brevibracteata

31.5.24 / 444 ha

7.8.20 / 66 ha

9.5.24 / 266 ha

Gyps fulvus

Paramali River and Plateau Birds Migration Route / 2349 ha

20.8.25 / 2 ha

Falco peregrinus

Falco vespertinus

Grus virgo

Grus grus

Coracias garrulus

31.5.18 / 115 ha

24.6.24 / 83 ha

Sylvia melanothorax

Aquila fasciata

Oenanthe cypriaca

Aquila fasciata

05 In lieu of a conclusion

[...] it might not be a place at all insofar as its temporality and habitability have been irreparably disrupted. How does one pass through what does not pass,does not become a past? That is the question.[85]

When temporalities and habitabilities are disrupted, does it stop then being a place? What a territory experienced does not pass, but remains encoded in land and society. Maybe it does not become past, in the words of Marder, but the purpose develops into learning to live with it, sensing all different fragments. It is neither an omitment or a rejection of events, but a synergy through which pasts, presents and futures can coexist, continuously interacting. *Your Name* (2016), by Makoto Shinkai, narrates the story of the destruction of a territory after a comet fall, interchanging between past and present. There, Shinkai unveils the concept of *Musubi*.[86]

Connecting people is Musubi. The flow of time is Musubi. [...] They twist, tangle, sometimes unravel, break, and then connect again. Musubi - knotting. That's time.[87]

85 Marder, M. & Tondeur A. (2016). *The Chernobyl Herbarium: Fragments of an Exploded Consciousness.* Open Humanities Press.

86 Shinkai, M. (Director). (2016). *Your Name* [Film]. CoMix Wave Films; Toho.

87 ibid.

Musubi therefore, is the knot, conflict, and disturbance that brings different timelines and elements together, and thus can be applied in the thinking of a territory. It encapsulates traces of past history, the alchemy of the present, precasting the future. Marder reflects upon territories suggesting that there is a lot of hope, an infinite amount of hope, but not for *this one, not for us.* Maybe for *another,* Marder reflects the plant of the future yet to come, under the condition that the seed does not fall on the affected soil or a bird does not bring it there.[88] As a dissent to this argument however, in the context of Limassol fires, the thesis aimed at looking further than the scorched, dilapidated and destructed, into seeking what Marder calls "hope"*,* and what form this can take in territories of the future. By understanding the infinite interrelations and alchemy that compose the stratigraphy of the area, redrawing the soil, ground and atmosphere allows to surpass limits of what is often bound to the *catastrophe,* indulging to different imaginaries.

Methodologically, the thesis has proposed an architectural framework for inhabiting pyroscapes that extends beyond emergency responses, integrating pre-fire protection, resilience, and post-fire adaptation within a continuous territorial approach. Rather than thinking of fires as isolated events requiring isolated responses, the thesis reflects on fire's recurring nature and how architectural tools and strategies can be integrated in a context of ever more devastating fire seasons. The thesis project becomes, therefore, a *Landscape Pyrography*, considering the constant reconfiguration of territories by fire, reversing roles, and recognising fire as the *architect of landscapes*. That is where the project's architecture is established and activated, by identifying, reinterpreting and adapting existing territorial structures and ecological mechanisms as architectural strategies for wildfire resilience.

Therefore, in the context of Limassol, this methodology has been conducted to work at two different levels: *bulbing* and *rhizoming*, implementing shielding and ecological succession by looking at existing, native practices. The tools consider wildfire phases before and after ignition equally significant moments. Taking the Limassol case as indicative, it achieves *bulbing-shielding* by focusing on three main place-based spatial elements and structures (*membranes*) that operate at different scales: dry-stone walling, viticulture mosaics and fire-resilient vegetation. Dry-stone walling appears as the shielding membrane acting at a greater distance. As an endemic Eastern Mediterranean practice, the project has assessed its value and possibilities, as well as the current abandonment of the practice, through existing research and site investigations, exploring how these structural matrices can delay fire spread and contribute to territorial resilience. Looking at the culture and social context of the place, the *Krasochoria* (wine villages), the *Landscape Pyrography* is assembled with viticulture mosaics which, apart from corresponding to local customs, work as fuel break zones. Lastly, the third element is fire-resilient vegetation, the pyrophytes. Again, through a site-specific lens, they form another element native to the landscape, functioning as a "living barrier" and creating a threshold amid the different membranes. In contrast, the second level through which the project's architecture operates is *rhizoming*, by spontaneity and temporality. This way, it allows ecological succession to unfold rather than prescribing every stage of recovery in a Mediterranean fire-adapted territory that depends on recurring fire as a fundamental part of its ecological cycle. The resulting design is a reintepretation of multilayer territorial drawings produced with fire intended as an element and its interaction with the spatial components.

88 Marder, M. & Tondeur A. (2016). *The Chernobyl Herbarium: Fragments of an Exploded Consciousness.* Open Humanities Press.



Therefore, amid ecological emergencies, the project provides an important perspective for architecture through an analytical framework for working *with* dynamic fire regimes. It places the role of design and the position of the architect as one that engages with what already exists, understanding ecological mechanisms and patterns, rather than replacing them.

On the other hand, what allowed the reinterpretation of fire, is understanding its mechanisms deeply, emerging from both its chemistry and alchemy. From its geological past through influential readings such as Rachel Carson's, *The Sea Around Us,* to historical developments of territories through the lens of fire, by Stephen Pyne. Fire hence, animates in much more than the moment of ignition, but becomes a comprehensive key to different cosmologies, cultures, traditions, knowledge, oppressive colonial policies, that have shaped earth through aeons. That is where fire transmutates from spark, to scintilla, to the torch and pyrolysis, taking various *embodiments* transforming from ecological cycles, to energetic combustion and warfare. Some of the effects and aftermath are already visible, but some of them are yet to be perceived and experienced in the not so far future.

Therefore, by drawing upon different imaginaries and depictions of territories and landscapes, serves also as a means of challenging the concept of Cheap Nature,[89] in J. W. Moore's terms, in which lands, seas, and territories are not reduced to profit-driven mechanisms of resource exploitation. Fundamental to achieving a different analysis and understanding of the conditions that brought the era of climate catastrophes, such as extreme wildfires. Phenomena not only witnessed in Cyprus with the neoliberal exploitative development, but also in other Mediterranean contexts over "scenic charm", resonating with the Mike Davis accounts of Los Angeles development processes in *The Ecology of Fear*. *Our Capitalogenic World* lays the foundations for the understanding of the responsibility of these conditions, for example, as seen in the case of Cyprus deforestation and colonial oppressive policies. Depicting the climate crisis as an "anthropogenic" phenomenon therefore, purposely obstructs its political discriminatory burden.[90] As such, a more holistic understanding is needed, in terms of territorial production, to avoid reproducing systems that are directly part of the reasons of the deterioration, such as Green Authoritarianism, through market fixations, upon technological and technocratic solutions.[91]

Thus, another important part of the methodology of the thesis, is one that has aimed to combine various milestone ecological readings with artistic representational modes. The value of the imaginary in the thesis has been largely influenced by readings such as Ursula Le Guin's, *The Word for World is a Forest.* What has the reading inspired, is the different portrayal of areas. Areas which are not strictly defined as "scorched" or dilapidated but can stream along different social, cultural, ecological, and fantastic meanings. Interchanging words and linguistics, such as world for forest in Athshean, assist in developing understanding further than the "scientization of politics",[92] and epistemic language that can solely refer to the linear and concrete.[93] In addition to this, sensorial and experiential artistic practices such photography techniques used by Anais Tondeur in *Chernobyl Herbarium*, and *Flowers of Fire,* form main reference points to thWe progression of this thesis. Assisting in grasping territories and seeing the invisible to human eye, has allowed for the deconstruction of the stratification, and the recognition of each of the tiniest fragments of it. *Alchemies* of micro and macro-organisms at a constant turbulence, colliding creating disturbances or coexisting in symbiosis.

89 Moore, J. W. (2023). Our Capitalogenic World. *Annales Universitatis Paedagogicae Cracoviensis. Studia Poetica, 11.*

90 ibid.

91 ibid.

92 ibid.

93 Cyprus Representation - Venice Art Biennale. (2024). *On a wildflower lined gravel track off a quiet thoroughfare…* . Archive Books.

Fire, consequently is the main actor, tool, and key of the project, which has analysed the element's interaction and role in the production of the territory. Re-imaginging the production of territory as a practice of pyrography then, is what allowed an alternative visionary project to develop. The art of pyrography requires ignition for the result to be revealed - a concept which was eventually directly linked to the Mediterranean ecological fire cycles, that emerge, sustain, survive, and progress through flames-. Amidst the current climate crisis and increasing extreme fire seasons, the question became one of survival and coexistence amidst flaming landscapes. In that sense, insights on survival mechanisms such as the pyrophytes, contributed in the envisaging of strategies. Constructing a library then -or the *herbarium*- was essential to think in terms of the territory, replicating vegetal resilience, and succession.

Lastly, I would like to come back to the research question, "what if we recognise fire as the architect of the landscape, which through different embodiments (re)produces it, what would then be the architecture's role?" As already mentioned, "architecture cannot be perceived anymore as the agent of creation, but needs to find a way to meander through flames, learning to inhabit fire, while residue and ashes acquire different meanings." In this context therefore, the project has aimed to learn from the vegetal mechanisms and pyro-cartographies. Thinking of a museum of pyrophytes and learning from its "archives" allowed us to think differently upon existing mechanisms, autonomously organising and succeeding below ground, reinterpreting them as landscape strategies. Bulbs therefore, became the refuges, areas of self-enclosure, concealed by membranes of layered shielding. On the other hand, rhizomes reflect on the *Mediterranean* turbulence of landscape mechanisms and ecosystems, and they answer to an architecture that resolves, dissolutes, and reconstructs over time. Through the understanding of its temporalities and cycles, the architecture of fire then becomes one of inhabiting the "destroyed" and "imperfect" territories where *clouds, birds and human tears* [94] coexist.

94 Luxemburg, R. (2025). *Nuvole, uccelli e lacrime umane: Lettere su natura e rivoluzione.* (C. Zamboni Russia, Trans.). Nda Press.

Bibliography

Anderson, H. E.(1982). *Aids to determining fuel models for estimating fire behavior*. U.S. Forest Service. https://www.fs.usda.gov/rm/pubs_int/int_gtr122.pdf

Aspinwall, N. (2025, June 2). *Using earth to rebuild a planet scorched by fire*. Atmos. https://atmos.earth/climate-solutions/using-earth-to-rebuild-a-planet-scorched-by-fire/

Barrillot, B. (2003). *Les irradiés de la république: les victimes des essais nucléaires français prennent la parole*. Éditions GRIP.

Baker, S. W. (1879). *Cyprus as I saw it in 1879.* Macmillan and Co.

Berger, J. (2008). *Ways of seeing*. Penguin books.

Berg, M. (2025). The myth of Ragnarok: Reflections on polarization and destructive Forces. *Journal of Analytical Psychology*, 70(4), 556–574. https://doi.org/10.1111/1468-5922.13118

Bolan, S. et al. (2025). Wildfires under changing climate, and their environmental and health impacts. *Journal of Soils and Sediments 25(*11), 3173–3197. https://doi.org/10.1007/s11368-025-04020-y

Braga, E. (2023). *Moleculocracy : ecologie, conflitti, turbolenze*. Nero.

Byers, B. A. et al. (2014) First known fire scar on a fossil tree trunk provides evidence of late triassic wildfire. *Palaeogeography, Palaeoclimatology, Palaeoecology 411*, 180–187. https://doi.org/10.1016/j.palaeo.2014.06.009

Calder, B. (2021). *Architecture: From prehistory to climate emergency*. Penguin Books.

Carson, R. (2003). *The sea around us*. Oxford University Press.

Chazan, M. (2017). Toward a Long Prehistory of Fire, *Current Anthropology 58*(S16). https://doi.org/10.1086/691988

CityPopulation. (n.d.). *Ágios Therápon.* Retrieved April 24, 2026, from https://www.citypopulation.de/en/cyprus/communes/lemesós/5306__ágios_therápon/

CityPopulation. (n.d.). *Lófou.* Retrieved April 24, 2026, from https://www.citypopulation.de/en/cyprus/communes/lemes%C3%B3s/5307__l%C3%B3fou/

Copernicus Atmosphere Monitoring Service. (2026, January 29). *Southern Hemisphere hit by intense wildfires during January.* European Centre for Medium-Range Weather Forecasts. https://atmosphere.copernicus.eu/southern-hemisphere-hit-intense-wildfires-during-january

Corn, W. D. (1975). *Environmental management in the Malibu Watershed: Institutional Framework.*

Coutinho, L. M., (1990). Fire in the ecology of the Brazilian Cerrado. Goldamer, J.G.(Ed.), *Fire in the Tropical Biota Ecosystem: Processes and Global Challenges.* (Ecological Studies, Vol. 84, pp. 82–105). Springer.

Cyprus Forestry Department (1991). *Annual Report.* Ministry of Agriculture, Natural Resources and Environment.

Cyprus National Commission for UNESCO. (n.d.). *The art of drystone.* https://www.unesco.org.cy/Programmes-The_art_of_drystone,EN-PROGRAMMES-04-02-03-09,EN

Cyprus Representation - Venice Art Biennale. (2024). *On a wildflower lined gravel track off a quiet thoroughfare…* . Archive Books.

Cyprus Representation - Venice Architecture Biennale. (2025). *(to the stones) we lent you our breath, and you whispered it back to the earth.* Fisherwomxn & Cyprus Deputy Ministry of Culture – Department of Contemporary Culture.

Darnay, S., & Gorriz-Mifsud, E. (2023). Wine producers as landscape wildfire stewards against wildfire. *Fire in the Earth System (FES 2023).* https://firewine.eu/images/documents/FES_2023_DARNAY-1.pdf

Davis, C. (2006). Western Wildfires: A policy change perspective. *The Review of Policy Research, 23*(1), 115–127. https://doi.org/10.1111/j.1541-1338.2006.00188.x

Davis, M. (2022). *Ecology of fear : Los Angeles and the imagination of disaster.* Verso.

Davidson, Ra. (1981). Mountain men and women in the New West of Los Angeles. *South Dakota Review 19* (Spring/Summer 1981), 29–40.

Decolonial Cypriot. (2025, June 30). *British colonial environmental policies: Resistance, legacy, and ecological consequences in the context of British colonies*. https://decolonialcypriot.com/british-colonial-environmental-policies

Deleuze, G., & Guattari, F. (1983). *Anti-Oedipus: Capitalism and schizophrenia* (R. Hurley, M. Seem, & H. R. Lane, Trans.). University of Minnesota Press. (Original work published 1972)

Demos, J. D. (2017). *Against the Anthropocene: Visual culture and environment today*. Berlin: Sternberg Press, 2017.

Doing, K. (n.d). *Phytography.* https://kareldoing.net/phy/Phytography.html

e-flux Architecture. (2023, September 18). Samia Henni: Performing colonial toxicity. https://www.e-flux.com/announcements/551980/samia-henniperforming-colonial-toxicity

Elemesos. (n.d.). *Παραχωρείται νερό από φράγματα σε γήπεδα γκολφ και κόβεται από τους αγρότες* [Water is allocated from dams to golf courses and cut off from farmers] . https://www.elemesos.com/parachoreitai-nero-apo-fragmata-se-gipeda-gkolf-kai-kovetai-apo-tous-agrotes/

Encyclopaedia Britannica. (n.d.). *Bulb.* In *Encyclopaedia Britannica*. https://www.britannica.com/science/bulb

Encyclopaedia Britannica, *Orpheus*. In *Encyclopaedia Britannica*. https://www.britannica.com/topic/Orpheus-Greek-mythology

Encyclopaedia Britannica, s.v. *New Fire ceremony*. In *Encyclopaedia Britannica*. https://www.britannica.com/topic/New-Fire-Ceremony

Encyclopaedia Britannica. (n.d.). *Rhizome*. In *Encyclopaedia Britannica*. https://www.britannica.com/science/rhizome

European Commission. (2025, July 1). *Vineyards as wildfire prevention.* https://agriculture.ec.europa.eu/media/stories/vineyards-wildfire-prevention_en

European Commission, Joint Research Centre. (2026, March 31). *2025 was EU's most destructive wildfire season on record.* https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/2025-was-eus-most-destructive-wildfire-season-record-2026-03-31_en

Fire Wine. (2025, March 10). *Viticulture: A lever to prevent the risk of fires in Bages.* https://www.firewine.eu/en/blog/viticulture-a-lever-to-prevent-the-risk-of-fires-in-bages

Fire Wine. (n.d.). *Fire Wine: Resilient landscapes and wildfire prevention in wine territories.* https://www.firewine.eu/en/

Floridou, S. (2024). *Recommendation for the restoration of traditional dry-stone walls: Methodology and significance of dry-stone terraces in the wider mountain landscape following the fires of 2021.* Laona Foundation. https://laona.org/wp-content/uploads/2024/01/Dry-Stone-Walling-Manual_English-PyrAnakampsi.pdf

Hardesty, J., Myers, R., Fulks, W. (2005). Fire, ecosystems, and people: A preliminary assessment of fire as a global conservation issue. *George Wright Forum 22,* 78–87.

Harrison S. et al, (2008) The Ardennes campaigns of 1944: Some theoretical considerations on the role of topography. In C. P. Nathanail, R. J. Abrahart, & R.P. Bradshaw (Eds), *Military Geology and Geography: History and technology* (pp.199-206). Land Quality Press.

Henni, S. (2022). *Deserts are not empty.* Columbia University Press.

Henni, S. (2023). *Performing colonial toxicity* [Exhibition handout]. Framer Framed. https://framerframed.nl/wp-content/uploads/2023/12/www_EN_Performing-Colonial-Toxicity.pdf

Hill, J., Stellmes, M., Udelhoven, T., Röder A., & Sommer, S. (2008) Mediterranean desertification and land degradation: Mapping related land use change syndromes based on satellite observations. *Global and Planetary Change, 64*, 146–157. https://doi.org/10.1016/j.gloplacha.2008.10.005

Huidobro, G. et al. (2025). Beyond wildfire crisis: Explaining policy changes in the wildfire governance subsystem in Argentina through longitudinal analysis. *Journal of environmental policy & planning*,1–24. https://doi.org/10.1080/1523908X.2025.2601124

Hutton, J. (2019). *Reciprocal landscapes: Stories of material movements*.

Keller, T. (2009). The Mountains Roar: The Alps during the Great War. *Environmental history 14*(2), 253–274. https://doi.org/10.1093/envhis/14.2.253

Lake, F. K. et al. (2021). Indigenous cultural burning and fire stewardship. *Fire Science from chemistry to landscape management*. Springer Nature. https://doi.org/10.1186/s42408-025-00393-0

Le Guin, U. K. (1972). *The word for world Is forest.* Berkley Publishing.

Lovecraft, H. P. (2014). *The dream-quest of unknown Kadath.* PS Publishing. (Original work written 1926–1927)

Luxemburg, R. (2025). Nuvole, uccelli e lacrime umane: Lettere su natura e rivoluzione. (C. Zamboni Russia, Trans.). Nda Press.

Maclean, K. et al. (2023). Revitalising indigenous cultural fire practice: Benefits and partnerships. *Trends in Ecology & Evolution.* https://doi.org/10.1016/j.tree.2023.07.001

Malm, A. (2015, March 30). *The Anthropocene myth.* Jacobin. https://jacobin.com/2015/03/anthropocene-capitalism-climate-change/

Malm, A. (2021). *How to blow up a pipeline : learning to fight in a world on fire.* Verso.

Mancuso, S. (2019). *La nazione delle piante*. Laterza.

Marder, M. (2015). *Pyropolitics: When the world is ablaze.* Rowman & Littlefield International.

Marder, M. & Tondeur A. (2016). *The Chernobyl herbarium: Fragments of an exploded Consciousness*. Open Humanities Press.

Marder, M. & Tondeur A. (2026). *Flower of fire: Traces and correspondences from the Land of Fires*. Mimesis.

Marini-Filho, O.J. (2000). Distance-limited recolonization of burned Cerrado byleaf-miners and gallers in Central Brazil. *Environmental Entomology, 29,* 901–906. http://dx.doi.org/10.1603/0046-225X-29.5.901.

Metta, A. (2022). *Il paesaggio* è *un mostro : citt*à *selvatiche e nature ibride.* Derive-Approdi.

Michaelides, V. (1888). *The fey enchantress (Η ανεράδα).* LyricsTranslate. https://lyricstranslate.com/en/i-anerada-fairy.html

Mitchell, T. (2011). *Carbon democracy: Political power in the age of oil*. Verso.

Moore, J. W. (2023). Our capitalogenic world. *Annales Universitatis Paedagogicae Cracoviensis. Studia Poetica, 11*. https://doi.org/10.24917/23534583.11.7

Moreira, F. et al. (2011). Landscape: wildfire interactions in southern Europe: Implications for landscape management. *Journal of Environmental Management, 92*, 2389 - 2402. https://doi.org/10.1016/j.jenvman.2011.06.028

National Geographic. (2018, October 8). *Protesters battle police in a fight for an ancient forest* [Article by Gibbens, S.] https://www.nationalgeographic.com/environ-

ment/article/news-german-hambach-forest-coal-protests

New Scientist. (n.d). *What is fire?* https://www.newscientist.com/question/what-is-fire

New South Wales Rural Fire Service. (n.d.). *Traditional fire stories* [PDF], [accessed December 13, 2025]. https://www.fire.nsw.gov.au/gallery/files/pdf/publications/Traditional%20fire%20stories.pdf

Nunes, M. C. S., M. J. Vasconcelos, J. M. C. Pereira, N. Dasgupta, & R. J. Alldredge. (2005). Land cover type and fire in Portugal: Do fires burn land cover selectively? *Landscape Ecology, 20,* 661–673. https://doi.org/10.1007/s10980-005-0070-8

Ouassak, F. (2024). *Per un'ecologia pirata: E saremo liberi* (V. Gennari, Trans.). Tamu.

Pausas, J. G. et al. (2018). Unearthing belowground bud banks in fire-prone ecosystems. *The New Phytologist 217*(4), 1435–1448. https://doi.org/10.1111/nph.14982

Pausas, J. G., et al. (2021) Wildfires and global change. *Frontiers in Ecology and the Environment, 19*(7), 387–395. https://doi.org/10.1002/fee.2359

Pivello, V. R., et al. (2021). Understanding Brazil's catastrophic fires: Causes, consequences and policy needed to prevent future tragedies. *Perspectives in Ecology and Conservation, 19,* 233–255. https://www.perspectecolconserv.com

Philenews. (2025, 8 November). Nicolaou, A. *6.679 τόνοι νερού για 5 γήπεδα γκολφ* [6,679 tons of water for 5 golf courses]. https://www.philenews.com/kipros/koinonia/article/1642373/6-679-toni-nerou-gia-5-gipeda-gkolf/

Philenews. (2023, 10 October). Nicolaou, A. *Εκτροπή νερού από τον Κούρη για ιχθυοτροφείο: Σημαντικές παρανομίες* [Diversion of water from the Kouris Dam for a fish farm: significant illegalities]. https://www.philenews.com/kipros/koinonia/article/1393932/ektropi-nerou-apo-ton-kouri-gia-ichthiotrofio-simantikes-paranomies/

PhilNews. (2017, December 11). Yangkou, G. *Ποιητικά αποκλίνον σε μακρόκοσμο* [A poetic divergence into the macrocosm]. https://www.philenews.com/politismos/article/111584/piitika-apoklinon-se-makrokosmo/

Philenews. (2025, July 25). *Αρχίζει άμεσα καταγραφή ζημιών σε καλλιέργειες 28 κοινοτήτων Λεμεσού* [Damage assessment in crops across 28 communities of Limassol begins immediately]. https://www.philenews.com/oikonomia/kypros/article/1606741/archizi-amesa-katagrafi-zimion-se-kalliergies-28-kinotiton-lemesou/

PhilNews. Aza, D. (2025, July 26). *Πυρκαγιά στα κρασοχώρια Λεμεσού: Η επόμενη μέρα στην αμπελουργία* [Fire in the wine villages of Limassol: the next day in viticulture]. https://www.philenews.com/kipros/koinonia/article/1606982/pirkagia-sta-krasochoria-lemesou-i-epomeni-mera-stin-ampelourgia/

Politis. Hadjikosta Y. (2025, Aug 24). *Τα δάση δεν φυτρώνουν με βιασύνη - Πώς ξαναχτίζουμε τη φύση της Κύπρου μετά τις καταστροφικές πυρκαγιές;* [Forests do not grow in haste — how we rebuild Cyprus's nature after the devastating wildfires?]. https://www.politis.com.cy/cyprus/perivallon/953002/ta-dasi-den-fitrwnoyn-meviasyni-pws-ksanakhtizoyme-ti-fysi-tis-kyproy-meta-tis-katastrofikes-pirkaghies

PhilNews / In-Cyprus. (2026, March). *Cyprus dam levels: March 2026 water inflow second best decade*. https://in-cyprus.philenews.com/local/cyprus-dam-levels-march-2026-water-inflow-second-best-decade/

PhilNews. (2026, April 23). *Fire in Limassol: At the zero point, American fire investigators begin on-site examination (images).* https://www.philenews.com/kipros/koinonia/article/1610745/pirkagia-lemesou-sto-simio-miden-archisan-tin-aftopsia-i-amerikani-empirognomones-ikones/

Plath, H. (2024). The bulb: A vital structure for plant growth and reproduction. *Journal of Plant Biochemistry & Physiology, 12*(6), 326. https://doi.org/10.35248/2329-9029.24.12.326

Powell, D. E. (2018) *Landscapes of Power: Politics of Energy in the Navajo Nation.* Durham, NC: Duke University Press.

Pyne, S. J. (1982). *Fire in America: A Cultural History of Wildland and Rural Fire.* Princeton University Press.

Pyne, S. J. (1997). *Vestal Fire : An Environmental History, Told Through Fire, of Europe and Europe's Encounter with the World.* University of Washington Press. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/polito-ebooks/detail.action?docID=3444457.

Pyne, S. J. (1997). *World Fire: The Culture of Fire on Earth.* University of Washington Press. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/polito-ebooks/detail.action?docID=3444600.

Pyne, S. (2009). *Eternal Flame: An Introduction to the Fire History of the Mediterranean.* https://doi.org/10.1007/978-3-642-01754-4_2

Qian, L. (2024). Between Land and Sea: The Aesthetics of Diasporic Ecologies: An Interview with Paolo Shuai Peng. *Ecozon@ European Journal of Literature Culture and Environment 15*(2), 297–[end page]. https://doi.org/10.37536/ecozona.2024.15.2.5478

Rabinbach, A. (1979). *Critique and commentary / Alchemy and chemistry.*

Scranton, R. (2015). *Learning to die in the Anthropocene: Reflections on the end of a civilization.* City Lights Books.

Shelley, M. (2012). *Frankenstein.* Penguin Classics.

Siebert, F. (2021). Open Ecosystems: Ecology and Evolution Beyond the Forest Edge. *Bothalia - African Biodiversity and Conservation, 51*(1) 10.38201/btha.abc.v51.i1.12

SigmaLive. (2024, June 14). *Δέντρα που μπορούν να αξιοποιηθούν ως «αντιπυρικοί φράκτες»* [Trees that can be used as 'firebreak barriers']. https://www.sigmalive.com/news/local/1230369/dentra-pou-mporoun-na-aksiopoiithoun-os-antipyrikoi-fraktes

Sloterdijk, P. (2009). *Terror from the air* (A. Randol, Trans.). Semiotext(e). (Original work published 2002)

Sloterdijk P. (2022). P*romytheus Remorse Speech.*

Soares, B. B. (2020). Defining the museum: challenges and compromises of the

21st century. *ICOFOM Study Series* [Online], *48*(2). http://journals.openedition.org/iss/2325 ; DOI: https://doi.org/10.4000/iss.2325.

Spanu, G. (2023). Urban Military Geographies: New directions in the (re)production of space, militarism, and the urban. *Geography Compass 17*(12). 10.1111/gec3.12727

Steen-Adams, M. M., et al. (2017). Historical perspective on the influence of wildfire policy, law, and informal institutions on management and forest resilience in a multiownership, frequent-fire, coupled human and natural system in Oregon, USA. *Ecology and Society 22*(3) 10.5751/ES-09399-220323

Studio Arijit. (n.d). *Scintilla*. https://www.studioarijit.com/scintilla.

Studio Arijit. (n.d). *Whispering Sea*. https://www.studioarijit.com/whisperingsea

Tedim, F. et al. (2020). The dilemma of wildfire definition: What it reveals and what it implies. *Frontiers in Forests and Global Change, 3.* 10.3389/ffgc.2020.553116

Territorial Agency. (2021). *The Museum of Oil* [Exhibition], ZKM Center for Art and Media, Karlsruhe.

The Economist. (2022, August 11). *Bambi offers a horrifying portrait of eco-catastrophe* https://www.economist.com/culture/2022/08/11/bambi-offers-a-horrifying-portrait-of-eco-catastrophe.

Tramer, A., Voltz, R., Lahmani, F., & Szczepinska-Tramer, J. (2007). *What Is (Was) Alchemy?*

Walter B. (1996). Goethe's elective affinities. In M. Bullock & M. W. Jennings (Eds.), *Selected Writings* (Vol. 1: 1913–1926). Harvard University Press.

Welch, J. R., Coimbra C. E. A., Jr. (2021). Indigenous fire ecologies, restoration, and territorial sovereignty in the Brazilian Cerrado: The Case of Two Xavante Reserves. *Land use policy 104.* https://doi.org/10.1016/j.landusepol.2019.104055

Woodward, R. (2014). Military landscapes: Agendas and approaches for future research. *Progress in human geography 38*(1), 40–61. Web. https://doi.org/10.1177/0309132513493219

Žižek, S. (2015). Foreword: A hologram of our present. In M. Marder, *Pyropolitics: When the World Is Ablaze*, p.11. Rowman & Littlefield International.

Zucca, M. (2004). *Donne delinquenti: storie di streghe, eretiche, ribelli, rivoltose, tarantolate*. Simone.

Films

Achniotis, P., & Anastasiades, A. (2020). *Tongue* [Film].

Bones. (2009-2010). *Fullmetal Alchemist: Brotherhood*. [TV series]. Aniplex.

Disney. (1942). *Bambi* [Film]. Walt Disney Productions.

Herman, M., (Director). (1996). *Brassed Off*. Channel Four Films.

Lynch, D. (Director). (2015). *Fire (Pozar).* [Animated short film]. David Lynch Theatre.

Miyazaki, H. (Director). (2004). *Howl's Moving Castle* [Film]. Studio Ghibli.

National Theatre. (2015, September 1). *The Creature: A Character Study | Frankenstein* [Video]. YouTube video. https://www.youtube.com/watch?v=lRxOtaPAx1c.

Shinkai, M. (Director). (2016). Your Name [Film]. CoMix Wave Films; Toho.

Datasets

Mediterranean Ecology Map

Copernicus Land Monitoring Service. (n.d.) *CORINE Land cover 2018*. https://land.copernicus.eu/en/products/corine-land-cover (Accessed: June 2026).

European Forest Fire Information System (EFFIS). (n.d.) *Burnt areas database (real-time and historical fire perimeters).* Copernicus Emergency Management Service (CEMS). https://forest-fire.emergency.copernicus.eu/applications/data-and-services (Accessed: June 2026).

European Centre for Medium-Range Weather Forecasts (ECMWF). (n.d.). *Copernicus climate data store (CDS).* Copernicus Climate Change Service. https://cds.climate.copernicus.eu (Accessed: May 2026).

Humanitarian Data Exchange (HDX). (n.d.) *Data collections and datasets*. https://data.humdata.org (Accessed: June 2026)

Sánchez, P., González, I., Carrillo, C., Cortés, A., Suppi, R., & Margalef, T. (2025). *High-resolution fuel map dataset for southern Mediterranean Europe, ZAFM Europe 1.0, EPSG:4326).* Zenodo. https://doi.org/10.5281/zenodo.18788338

Mediterranean Energy Map

Bell, J. (2021) *Global power plants.* Urban observatory by Esri, ArcGIS Hub. https://hub.arcgis.com (Accessed: June 2026).

Global Energy Monitor. (2025). *Global oil and gas extraction tracker, (February 2025 Release)* (Accessed: February 2026).

University of Minnesota (n.d.) *Global energy production and reserves (1990–2014).* U-Spatial, ArcGIS Hub. https://hub.arcgis.com/maps/ab6b5d9c11134189a592af7dcec68442 (Accessed: June 2026).

Mediterranean Warfare Map

Fondation Méditerranéenne d'Études Stratégiques (FMES). (2023). *Étude : Territorialisation des espaces maritimes – enjeux pour la France et vision prospective.* https://fmes-france.org/wp-content/uploads/2023/08/etude-territorialisation-des-espaces-maritimes.pdf (Accessed: June 2026).

Fondation Méditerranéenne d'Études Stratégiques (FMES). (2022). *Strategic Atlas*

of the Mediterranean and the Middle East. https://fmes-france.org/en/strategic-atlas-of-the-mediterranean-and-the-middle-east/ (Accessed: June 2026).

Marin, C. (n.d.) *Conflict and tension in the Mediterranean.* Le Monde diplomatique – Maps. https://mondediplo.com/maps/tensions-mediterranean (Accessed: May 2026).

Limassol Area of Fire Mapping

BirdLife Cyprus. (2025). *Important bird areas of Cyprus.* https://birdlifecyprus.org/wp-content/uploads/sites/3/2025/07/Important-Bird-Areas-of-Cyprus-by-BirdLife-Cyprus-compressed.pdf (Accessed: June 2026).

Department of Lands and Surveys, Republic of Cyprus. (n.d.) *INSPIRE, Habitats and biotopes (HB).* INSPIRE Geoportal. http://eservices.dls.moi.gov.cy/inspire_downloads/HB/ (Accessed: May 2026).

Republic of Cyprus (n.d.) *Map of mines in Cyprus (LTM - WGS84).* data.gov.cy – National Open Data Portal. https://data.gov.cy/index.php/en/dataset/276 (Accessed: April 2026).

Republic of Cyprus .(n.d.). *Υψομετρία (INSPIRE)* [Elevation (INSPIRE)]. data.gov.cy – National Open Data Portal. https://data.gov.cy/en/dataset/486 (Accessed: June 2026).

Axonometric View of Multilayer Wildfire Terrain

BirdLife Cyprus. (2025). *Position paper: Prevention and restoration measures for wildfires.* https://birdlifecyprus.org

Cyprus Atmospheric Observatory. (n.d.). *Air quality alert: Limassol wildfires trigger pollution spikes at CAO LIM monitoring station.* https://cao.cyi.ac.cy/%F0%9F%94%A5-air-quality-alert-limassol-wildfires-trigger-pollution-spikes-at-cao-lim-monitoring-station/

IQAir. (n.d.). *Wildfire map spotlight: Limassol wildfire, Cyprus.* https://www.iqair.com/newsroom/wildfire-map-spotlight-limassol-wildfire-cyprus

Mamouri, R. E. (2025). *Monitoring wildfire smoke over Cyprus using EarthCARE observations* [Conference poster]. EarthCARE Workshop 2025. https://www.eorc.jaxa.jp/EARTHCARE/event/ws2025/poster-data/ANNEX13-Rodanthi_Elisavet_Mamouri.pdf

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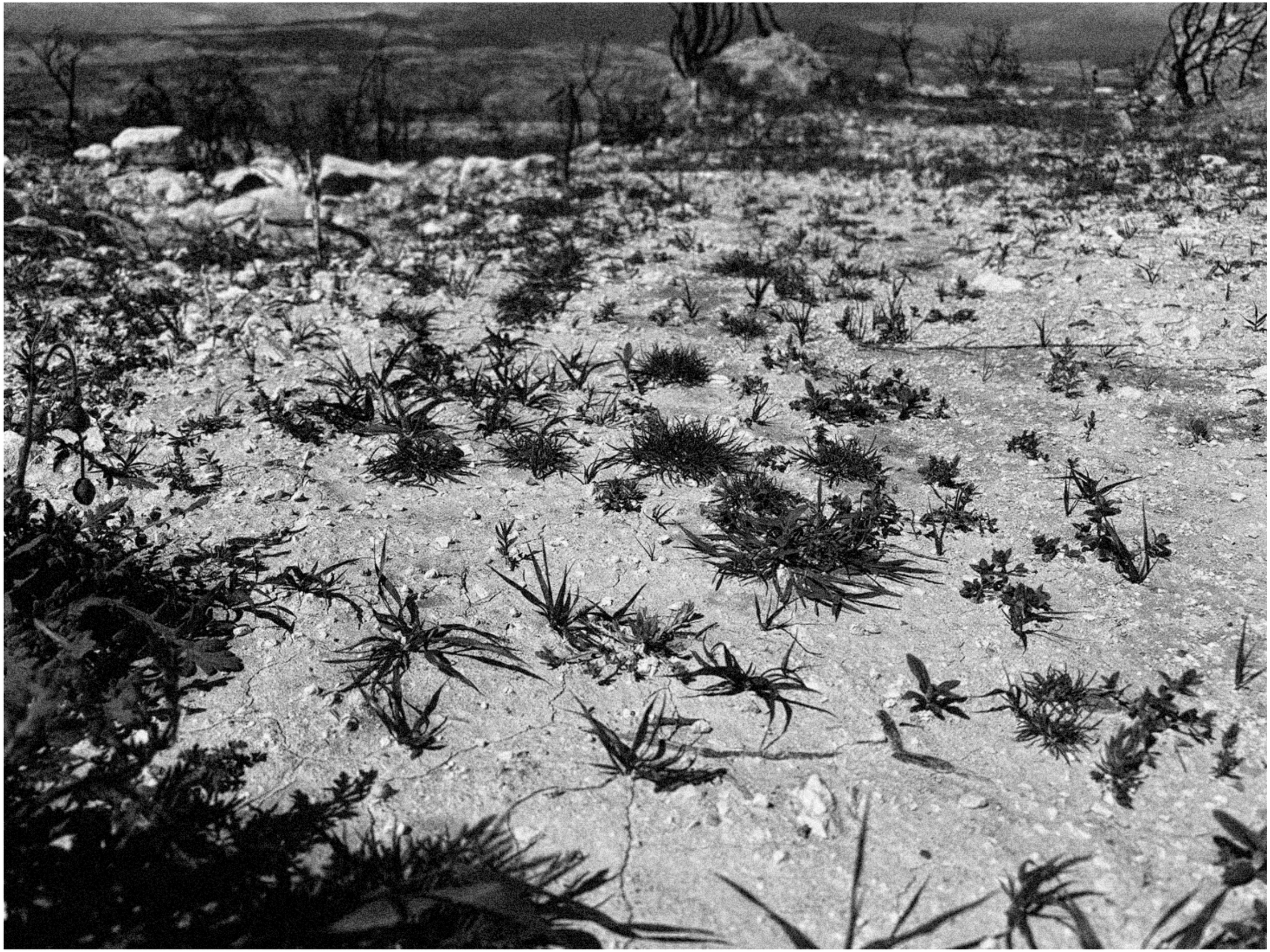
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The thesis explores the role of fire as an agent of landscape production through a framework of chemical and alchemical processes. Beyond visible flames and wildfires, fire expands in 'embodiments', to energetic combustion and warfare, producing lands. As such, the research territorialises in the Mediterranean region through speculative cartographies, a terraqueous pyroscape of blurred shorelines. Amid a global ecological emergency, the thesis investigates the area affected by the largest wildfire in the last half-century in Cyprus (in July 2025), an island significantly nested in conflagration. Understanding its Mediterranean fire ecology and the unfolding of historical landscape-extractive policies, it invites reflection: How do we live amidst progressively flaming landscapes? Drawing upon vernacular architecture systems, artistic practices, and political ecology literature, the project recognises fire as the 'architect of landscapes', engaging with the concept of Pyrography, aiming to explore different means of inhabitation amidst flames, ashes, and residue.