Organismo

Art in Applied Critical Ecologies

Independent Study Program

Case Studies

Year One

- **PyroEcologies**
  Fire's Potential to Destroy and Ignite Life in the Earth System
  Facilitated by FECYT | Fundación Española para la Ciencia y la Tecnología - Ministerio de Ciencia, Innovación y Universidades, and Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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  Open Intelligence as Digital Archives and Experimental Publishing
  Facilitated by TBA21–Academy

GOBIERNO DE ESPAÑA | MINISTERIO DE CULTURA
THYSSEN-BORNEMISZA MUSEO NACIONAL
T B A Thyssen-Bornemisza Art Contemporary Academy

PyroEcologies

Fire's Potential to Destroy and Ignite Life in the Earth System

Facilitated by Barcelona Supercomputing Center - Centro Nacional de Supercomputación, and FECYT | Fundación Española para la Ciencia y la Tecnología - Ministerio de Ciencia, Innovación y Universidades.

Droughts and climate-change-driven warming are leading to more frequent and intense wildfires. The environmental and ecological impacts of these fires include habitat loss and the emission of substantial amounts of atmospheric aerosols. While fire can be a uniquely destructive element, it is also vital into the evolution of life, ecosystems and human culture. Australian aboriginal communities, among other Indigenous groups worldwide, have promoted the deliberate burning of land to make it recover and re-fertilize for upcoming seasons, according to Indigenous knowledge. Some paleoanthropologists have even proposed that human language and culture appeared as a direct result of our learning how to harness and control fire, which triggered conversations around the fire pit and shed light on the cave's walls—which later became the canvas for the first forms of human art.

Fire from the catastrophic events consequence of the climate crisis could also be contributing to the flourishing of life. Aerosol emissions from wildfires can lead to the atmospheric transport of macronutrients such as nitrogen and bio-essential trace metals like iron. It has been suggested that the oceanic deposition of wildfire aerosols can relieve nutrient limitations and, consequently, enhance marine productivity. Although direct observations are lacking, new investigations by means of different remote sensing measurements and data-collecting technologies are functioning to describe and evaluate the effect of wildfire aerosol deposition on phytoplankton productivity. Whilst anomalously widespread phytoplankton blooms, could this drive a possible rethinking of fire amid climate change's increasing global impacts?

This complex system of bonds will be approached in this case study departing from a recent investigation by Barcelona Supercomputing Center – Centro Nacional de Supercomputación (BSC-CNS), which shows how ash from large wildfires can fertilize ocean life thousands of kilometers away from land. This paradoxical fire-water mechanism illustrates the multifaceted nature of fire and resonates with the open current questions regarding its understanding, management, and communication.

The case seeks to explore the role of fire in the Earth System from a holistic perspective. The proposal is to overcome binaries of destruction–life, or abiotic–biotic, to explore the threshold that constitutes the ecotone constituted by the encounter of fire and water. BSC-CNS's researchers will accompany the case by illustrating fire's relationship with ocean and land ecosystems and its role in the Earth System in the context of climate change. The case will also focus on the human dimensions of fire and the necessity of revisiting our relationships with this natural element particularly in high-risk areas like the Mediterranean Basin. By attending to other cosmologies, situated knowledge, and Indigenous practices, the case aims to expand current fire ontologies to revisit the human-fire relationship towards the imagination of possible desired futures.

about FECYT

The Spanish Foundation for Science and Technology (FECYT) is a public foundation under the Ministry of Science, Innovation, and Universities. Its mission is to catalyze the relationship between science and society, promoting the growth of Spanish scientific culture and fostering the transfer of knowledge through dissemination, education, training, information, and scientific advice. FECYT also collaborates with other agents and actors of the Science, Technology, and Innovation System in the internationalization of Spanish science and the generation and analysis of data, and provides support in the management of scientific information and open science.

www.fecyt.es

about BSC-CNS

The Barcelona Supercomputing Center – Centro Nacional de Supercomputación (BSC) is the central computational infrastructure in Spain and the host of MareNostrum5, one of the most powerful supercomputers in Europe. It is also a research centre with over 700 researchers and students from 47 countries that use high-performance computing for research in artificial intelligence, life, and Earth sciences, as well as computational applications. The PyroOcean study case will be hosted by BSC's Earth Sciences department (BSC-ES), whose lines of research include modelling of air quality and atmospheric composition, climate change and variability, and European climate services.

www.bsc.es

Museum Entanglement

Thyssen and its Social Ecosystem

Facilitated by Museo Nacional Thyssen-Bornemisza

The origin of the Thyssen-Bornemisza collection dates back to the late 1920s. The collection was started by Baron Heinrich Heinrich Thyssen-Bornemisza, and later continued by his son Hans Heinrich Thyssen-Bornemisza, who made the decision to move from the original location in Villa Favorita, Lugano (Switzerland) to Madrid, once the first proved to be insufficient. The Museo Nacional Thyssen-Bornemisza opened its doors in Madrid in October 1992. Just a few months later, the Spanish State reached an agreement with the Baron for the acquisition of the collection, which since then has belonged to all Spaniards.

The social significance of the museum is undoubted. But its geographical and social contexts determine the links it can establish with the society that surrounds, houses, and sustains it. In particular, the Museo Nacional Thyssen-Bornemisza has established complex relations with its public since it opened in 1992. Its location in the center of the city of Madrid, in the so-called “Golden Mile” of museums, has made both access to its facilities and its public reception easier. But this location has also hindered the museum’s interactions with its various networks, and has limited the capacity to incorporate new agents in such a way that would make it truly a space for all. In the specific case of the Museo Thyssen, the idea of “situated museum” is diluted: gentrification and tourist overexploitation hinder its relationship with the immediate social fabric, and force us to understand the neighborhood in an expanded way. The rapidly expanding touristification, which has become one of the clearest representations of global capitalism, is performing a critical expansion in the city of Madrid. How could the museum reformulate its ecological entanglement in order to overcome this planetary pressing dynamic?

By means of a perspective external to the institutional, this case study aims to deepen the knowledge of the social ecosystem of the Museo Thyssen. The proposition is to understand the institution holistically, and to detect the pores through which to speculate infiltrations as gestures, or actions that could contribute to envisioning new bonds. As a body made out of many other bodies, of different natures, the museum can only function thanks to a complex system of relationships that operate by means of interdependence, recognition, and cooperation. The proposition is that by paying attention to the connections within the museum, we can find the threads we need to begin knitting connections from the interior to the exterior, overcoming any sense of a duality between these states. Becoming an organization woven through with a more inclusive and complex system of bonds could lead the museum to become an actual agent of change, and to contribute to a more desirable future for the city of Madrid. Attending both to current challenges and different interconnected realities, as well as observing the museum as an organism subject to influences and interactions beyond the human, could drive the institution to recognize the very humanity of the audiences that circulate it above tourism and economic exploitation. This case study aims to strengthen existing networks, put them in dialogue, and expand them, paying special attention to audiences that traditionally do not visit its rooms. It also seeks to create a model that can permeate into other cultural ecosystems subject to the same tensions and contradictions. In short, the case study offers the possibility of thinking of a model of a museum that is more socially oriented, relevant to all, and in line with the pressing challenges of this century.

Territorio Abadía Retuerta

Forest Epistemologies for Regenerative Practices

Facilitated by Abadía Retuerta

The abbey of Santa María de Retuerta was built in 1146 on the banks of the Duero River, which traverses westwards the northern Castilian Plateau. It is a harsh but agriculturally profitable territory that has been exploited by humans since pre-Roman times, mainly through the cultivation of wine and cereal crops—both of which are still present. It was built by the French Premonstratensian Order and it was constituted as the motherhouse of the monastic order in Spain, in the colonization process of the former no-man land's in the aftermath of the so-called reconquista. Hence Abadía Retuerta presents itself as a territory layered by histories of migrations and contacts, both human and non-human, as a means of configuration of the territory.

Today, Abadía Retuerta sits in the area in between the human-made channel of the Duero and the actual river—rivula torta refers to the torsion of the river, giving name to the Abbey. A forestry and agricultural mosaic of Mediterranean forests and scrublands, wetlands, riverbanks, and vineyard crops that compose an estate that covers an area of 700 hectares, of which 300 hectares are hills and forests, meadows and heathlands, 180 hectares are devoted to vineyards, and the remaining land is used for agricultural production. Birds stand out in the rich biodiversity of the territory, signaling the recurring seasonal transience: from year-round residents such as the the goshawk, to summer species like the European bee-eater, and wintering visitants such as the merlin—while nocturnal birds of prey, owls and scops, have a positive impact through reducing damage to the grapes.

Departing from the learnings in the previous iteration of this case study, the proposal is to continue navigating the deep time of the forest, exploring the shifting relations of the different beings that have circulated it. Two core questions consolidated in the last year's studio will guide this second chapter. Firstly, the case aims to challenge the idea of renaturalization by examining the process Abadía Retuerta is undertaking in 90 hectares of a territory previously dedicated to crops. These renaturalization works have already been initiated by planting autochthonous species such as Mediterranean pines and holm oaks. However, the proposal tests the boundaries of this work, asking what else might arise from paying attention to species that seem less central, but which are still completely essential, like scrubs and weeds, funghi, or microorganisms of all types. Secondly, the case aims to delve into the understanding, formulation and provocation of the idea of the intelligence of a forest, through the integration and provocation of the data gathered by Abadía Retuerta—such as meteorological readings and other indicators and technologies directed to the management of the vineyards—which also reflect in the changes in the climate system of the region. Thus, this case study asks what a forest can be, and what the many forms of recovery forest can generate are. The case aims to introduce an exploration of regenerative practices and forms of convivial conservation in this specific context, by integrating the communities of the territory, both human and non-human, in the process.

about ABADÍA RETUERTA

Abadía Retuerta in Sardón de Duero, Valladolid, central Spain, is more than a winery and hotel—it is the base of a vital natural, historical, and cultural heritage. The organization's core values of sustainability, social responsibility, and a commitment to preserve and develop its legacy of nine centuries continues to write the chapter that concerns us: the twenty-first century. Abadía Retuerta, in an effort to be consistent with its time, continues to add layers of meaning to expand, preserve, share, and disseminate this common heritage. An example of this is the revival of the gardens and the monks' historic orchard, regenerating the land and respecting the integrity and history of the abbey, and adding layers of value to the whole patina that surrounds and protects it through the creativity of the twenty-first century, which drives the Organismo project.

www.abadia-retuerta.com

Ocean Futurisms

New Storytelling Devices for Radical Imagination

Facilitated by TBA21–Academy

Covering more than 70% of Earth's surface, the Ocean is a cornerstone of the planet's future, serving as a crucial force in shaping global climate, a vast reservoir of biodiversity, and a provider of essential resources that sustain life. Yet as we grapple with escalating challenges like overfishing, Ocean acidification, deep-sea mining, and ecosystem degradation, the future of the seas hangs in a delicate balance. By not being constrained to any sovereign body, this maritime landscape has become a new horizon for neoliberalist fantasies in need of urgent ecological action. In fact, current structures of oceanic governance often fall short in their struggle to predict and manage the complex interwoven evolution of marine ecosystems and their threats. Traditional scientific tools like sensing, modeling, and simulation systems, while invaluable, are limited in their ability to fully capture the range of potential future scenarios, often missing the mark on deep uncertainties and the unpredictable and complex interplay between human and environmental dynamics.

In this context, could the future of the hydrosphere be less a matter of scientific hurdles and more a question of political and ecological imagination? If we lack the tools to envision alternative ways of governing maritime ecosystems, a shift towards new cosmologies, beyond the confines of modern and contemporary thought, might be what is truly needed. For centuries, the Ocean has always been a vast canvas for radical imagination, inspiring everything from myths of sea monsters to visions of utopian underwater cities. Now, its future might hinge on the capacity to channel this imaginative power once again. By stirring new bold realities through speculative thinking, we can unlock possibilities that break free from conventional constraints, envisioning not only what is plausible but exploring the full spectrum of what is possible.

Founded upon the belief that sometimes science fiction might succeed where scientific papers fall short, this case study invites participants to prototype new storytelling devices to radically reimagine the future of the Ocean. Promoted by TBA21–Academy, this case study is designed for presentation at the United Nations Ocean Conference in 2025, where it will serve as a catalyst for global discussions on marine futures. Participants will engage in a worldbuilding initiative merging scientific rigor with speculative fiction, using film, moving image, and interactive mediums to develop non-conventional narratives. These narratives will blend the factual with the fictional to delve into the complexities of potential oceanic scenarios, acting as navigation tools for the design of counterintuitive futures for the aquatic ecosystems and their human and non-human communities.

Participants will engage in conversation with an expanding network of experts and practitioners, leveraging on a wide range of conceptual tools and methodologies—from digital dramaturgy to new worlding techniques using AI or game engines—along with scientific knowledge, to foster radical possibilities while remaining anchored in the latest scientific insights. By aligning empirical data with creative speculation, this case study reconceives fiction as a recursive force—one that does not merely sketch out alternative worlds, but actively engineers their feasibility. In a reality where scientific truths are increasingly overshadowed by alluring yet deceptive counter-narratives, it is crucial for researchers to wield storytelling as a tactical instrument for future-making. This method galvanizes our collective agency to transform these visions into reality, driving bold strategies for envisioning and safeguarding the future of the planet's most essential ecosystem.

Non-Archives

Open Intelligence as Digital Archives and Experimental Publishing

Facilitated by TBA21–Academy

In times of governance crises, it seems essential to reassess all types of institutions and challenge their structures to foster their evolution. The open access and open source movements were conceived with the aim of provoking the governance systems of our digital environments. These initiatives question traditional power dynamics by proposing alternative distribution of bonds and decision-making agency among users. While open access is a set of principles to promote openness to knowledge by distributing research outputs online, free of access charges or other barriers, the principle of open source is to seek transparency in decision-making, releasing products whose source code is made available for use, study, modification and distribution to anyone and for any purpose. There are important values and goals shared and achieved by the open source movement practitioners. However, the transformation of digital environments is not always aligned with ownership and authorship schemes that perform differently in other arenas. This scenario leads to ambivalent scenarios that require the exploration of protocols, for instance, defining the role that creative practitioners play as they navigate their practice within the frameworks defined by copyleft but maintained by copyrights.

Ocean-Archive.org (OA) is a digital platform, storytelling medium, and pedagogical tool established by TBA21 that was created as a device for this exploration. OA invites a broad community of audiences and participants with the aim of expanding archival practices through community building, storytelling, and programming. The platform integrates layers of digital tools and formats to process materials from diverse fields and sources, with a primary focus on artistic thinking and transdisciplinary collaborations. This approach allows us to engage with ecological sustainability through the lens of oceanic thinking. Designed as a storytelling and pedagogical tool, Ocean-Archive.org translates current knowledge into a shared language that fosters synergy among art, science, policy, and conservation, and enables us to make better decisions for urgently needed policies.

Embracing an open-source environment, this case study is organized to advocate for experimental publishing as a means to participate in the creation of content within political and sociological frameworks—essentially, the act of making information public. Participants will engage in content creation, as well as in the development and co-creation of the platform's infrastructure. Rooted in both old and new technologies, human and machine networks, and the blend of physical and digital experiences, experimental publishing views, artistic research, reading, writing, documenting, archiving, and prototyping as methods for empowerment, knowledge preservation, and critical thinking.

Archives are never complete, and inherently biased. OA began as an archival initiative, a database that has since evolved with the layers of community and storytelling layers. The most recent layer introduces online exhibitions as a form of community gathering. Now, the aim is to expand the existing infrastructure inviting creative practitioners to co-create the platform. The goal is to develop digital tools that interact with real-life scenarios. To this aim, some of the inspirational horizons envisioned are a feral water data-based interface, bacterial homepage rendering, and remote biodata sensing to influence search results. The case study will approach experimental publishing to activate Ocean-Archive.org for provocations and/or investigations into governance models, archival practices, and ownership relations by introducing notions of open access, creative commons, the economy of open licensing or "Wild interfaces."