

## **Informal Leftover Ecosystems. Processes of recognition and re-signification of urban nature in the contemporary city**

The dissertation investigates the presence of informal leftover ecosystems in the urban context, institutionally neglected spaces where the spontaneous ecological activity defines new ecosystems that thrive in a state of informality. Produced by socio-economic dynamics that transformed the urban space, such as de-industrialization and shrinkage, these spaces emerge as ambivalent across multiple dimensions: institutionally, they are framed as "voids", while hosting informal reappropriation practices that attribute them new meanings; their physical degradation interferes with the ecological spontaneous process, defining assemblages that have to be evaluated site-by-site, as they can host critical species that challenge biodiversity conservation; on the cultural side, they are caught between stigmatization as "degraded" space and romanticization as "free space", which may prevent the full understanding of their complexity.

The gap between the institutional invisibility of these spaces and their ecological existence is the main terrain of inquiry of the work. In a context of centrality of urban biodiversity in urban agendas and planning practice, these spaces challenge the mechanisms through which planning defines what counts as urban nature, framing them as voids. The work focuses on the role of civic practices that produce new knowledge of informal biodiversity and foster new processes of recognition, navigating the ambivalences these processes carry and the risks that institutionalization poses to the spontaneity that gives these spaces their ecological and civic significance. Drawing on the theories of Urban Political Ecology, more-than-human and ecological justice frameworks, the research investigates how the invisibility of these spaces is politically constructed and how civic practices contest it, practicing recognition as a form of justice that encompasses the ecosystems. The stories of these spaces reveal a double encounter with humans: first neglect, driven by economic interest, and then care, driven by collective responsibility. This second force works as a re-signification of these natures, operating across discursive, epistemic, and material dimensions through which active communities co-produce with the emerging ecosystems new meanings, opening alternative imaginaries of urban nature that emerge as new actors in the urban space and enacting planning to cultivate attention for more-than-human relations

The empirical investigation of the work is grounded in six practices across different European contexts, ranging from contested to more collaborative civic-institutional interactions, and a historical focus on Milan's development in relation to the emergence of urban nature. Through the analysis, the recognition of these spaces emerges as a continuous, relational, and negotiated process in which civic actors, scientists, institutions, and the ecosystems themselves participate. The work suggests the potential for integrating these spaces into urban green infrastructure, working through situated approaches that acknowledge human responsibility for defining these spaces and their spontaneous emergence as bottom-up recognized commons, and navigating their ambivalences towards more just and inclusive urban governance.