

Desired and Unwanted Non-Humans in Urban Environments

The concept of "non-humans" in the human-dense city demands a radical expansion of our perception, moving beyond the occasional squirrel or pigeon to encompass a vast community of life that inhabits, utilizes, and persists within our urban environments. This community includes the foundational, often invisible tiers of the ecosystem: the microbial and fungal networks that condition the soil, the lichens and bryophytes that colonize stone and concrete, and the immense diversity of insects and invertebrates that form the base of the urban food web. These entities are not merely visitors; they are full-time residents that have adapted to the unique and often harsh conditions of the metropolis. They find their footholds in what might be termed the city's "third landscape"—the accidental wilderness of cracked pavements, railway embankments, forgotten corners, and building facades. These interstitial spaces are the *de facto* sanctuaries where non-human life asserts its presence without formal invitation, revealing the city not just as a human project but as a complex, layered habitat.

Recognizing this, the paradigm of urban management is fundamentally shifting. The goal is no longer simply to control or remove nature, but to consciously and intelligently integrate it. This is where the powerful synergy between technological innovation and Nature-based Solutions (NbS) emerges. Technology, in this context, becomes a facilitator of coexistence. Advanced tools like sensor networks can map the movement of bats through city canyons or monitor the health of soil microbiomes, while AI and data analytics can help optimize the design of green corridors to ensure they are functional for a wide range of species. This technological lens makes the needs and presences of non-human life measurable and legible, transforming abstract concepts of biodiversity into actionable urban data.

The ultimate objective is to transition from a model of control to one of co-design. Through this lens, the city's infrastructure is reimagined not as inert matter, but as a potential novel ecosystem. A rainwater gutter becomes a temporary stream for aquatic insects, a green roof becomes a meadow for pollinators, and a specially designed seawall becomes a habitat for marine life. NbS, underpinned by technological insight, allows us to proactively create these "constructed wildernesses." We move from tolerating pests to inviting partners, consciously weaving the needs of non-humans into the very fabric of the city. This approach fosters a more resilient and authentically biodiverse urbanism, where non-humans are acknowledged as essential co-inhabitants of our shared future.