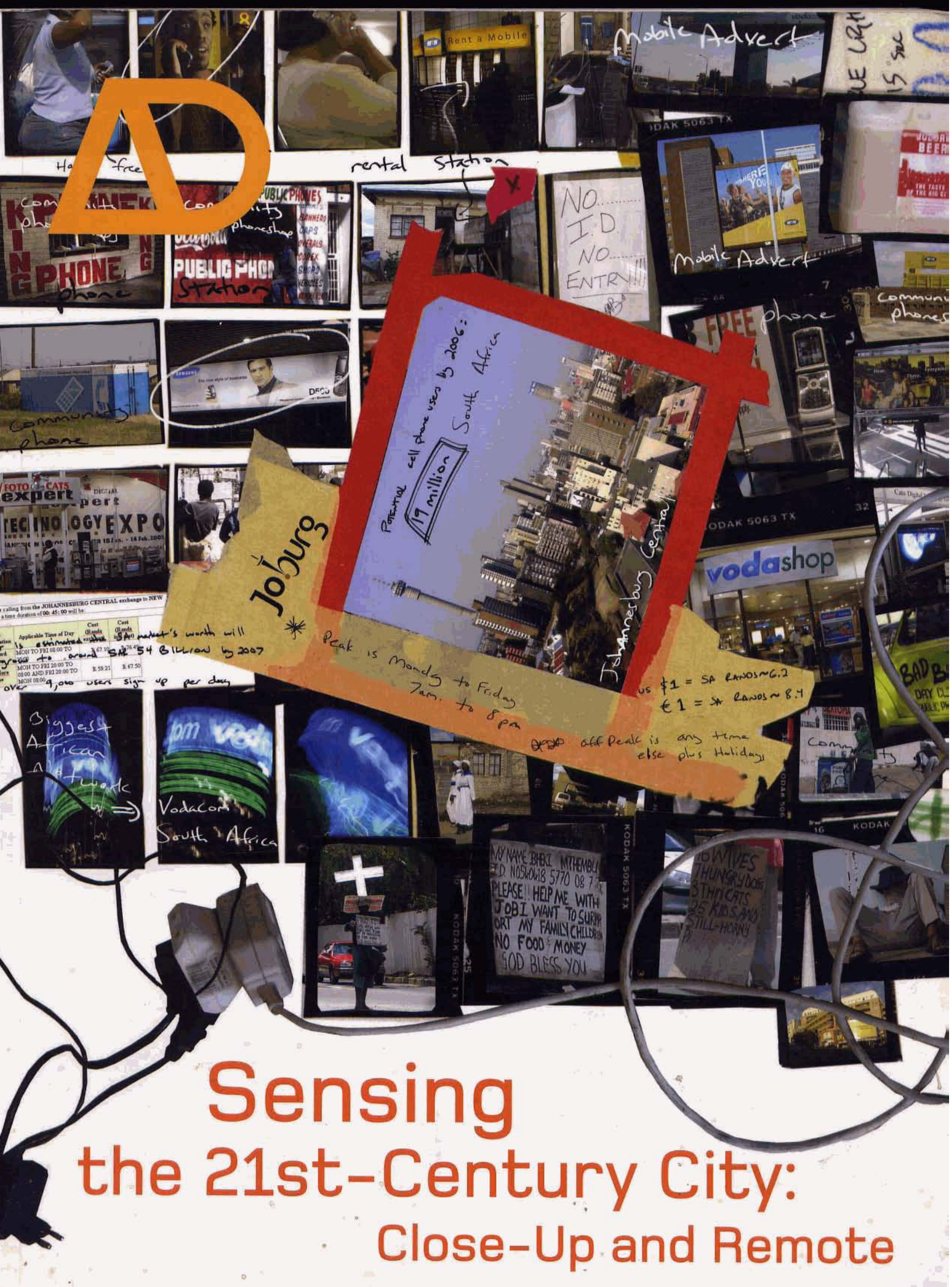


Sensing the 21st-Century City:

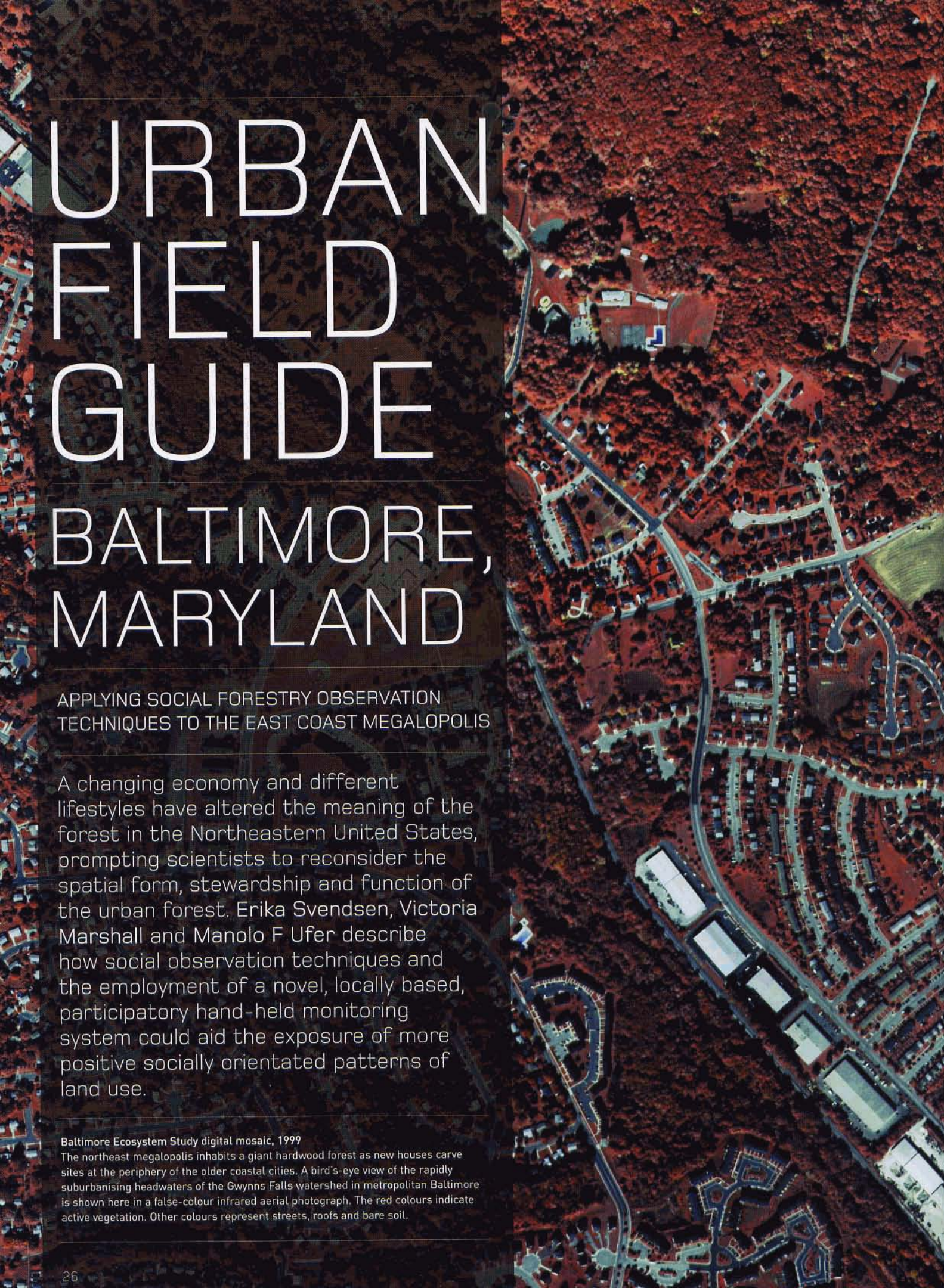
Close-Up and Remote

URBAN FIELD GUIDE

BALTIMORE, MARYLAND

APPLYING SOCIAL FORESTRY OBSERVATION TECHNIQUES TO THE EAST COAST MEGALOPOLIS

A changing economy and different lifestyles have altered the meaning of the forest in the Northeastern United States, prompting scientists to reconsider the spatial form, stewardship and function of the urban forest. Erika Svendsen, Victoria Marshall and Manolo F Ufer describe how social observation techniques and the employment of a novel, locally based, participatory hand-held monitoring system could aid the exposure of more positive socially orientated patterns of land use.



Baltimore Ecosystem Study digital mosaic, 1999
The northeast megalopolis inhabits a giant hardwood forest as new houses carve sites at the periphery of the older coastal cities. A bird's-eye view of the rapidly suburbanising headwaters of the Gwynns Falls watershed in metropolitan Baltimore is shown here in a false-colour infrared aerial photograph. The red colours indicate active vegetation. Other colours represent streets, roofs and bare soil.

1. FORESTRY

Map, Talk and Record

On 13 August 1962, Bill Burch set out at dusk to observe visitors to the Rainbow Camp, in southern Oregon's Winema National Forest. He stayed in the camp, watching the activities, until 10 pm. The following morning, Burch returned to conduct daytime observations. He recorded a range of activities from sunbathing to chopping wood. Observations were confirmed through conversation rather than formal interview. Women approached along the trails often confirmed that they were 'searching for a rest room'. While men claimed to be in the woods to fish and hunt, Burch later observed that only a small percentage of time was spent engaged in these particular sports. Rather, he found these same men to be enjoying less directed activities such as collecting pine cones, reading, rock throwing and socialising. A few more days of research revealed that children were the driving force in the forest: parents were led through the forest as a result of their explorations. And so it went until the entire camp ground, serving as an ecological/administrative unit, was mapped with a detailed inventory including vehicle state-licence plates, popular sunbathing rocks, meditation points and informal trails.[1]

Sixty-five years after the establishment of the US Forest Service, it is highly likely that William R Burch Jr was the first employeed to apply Lynch's 'wayfinding'[2] and Jacobs' 'street ballet'[3] to forest dynamics. For years, ecologists had followed the mantra of *Man and Nature* (1864), in which George Perkins Marsh suggests that humans are not only separated from nature, but disrupt the self-regulating states of natural equilibrium.[4] The bias separating humans from ecological systems was fully exposed in the 1960s, as the forest, long managed for commodity production, had begun to shift to a landscape for home, work and play. From Burch we learn that human interactions with landscape processes contributed to newly emergent natural systems. In a reflective examination of ecological theory at the end of the 20th century, landscape historian William Cronon revealed that the earlier historical bias of ecologists had prevented a full understanding of the positive role of humans in promoting ecological change.[5]

2. THE URBAN FOREST

Street-Corner Interactions: Baltimore and New Haven

Another legacy of the pioneering work by Burch and his colleagues at the Yale School of Forestry and Environmental Studies in the city of New Haven was a method of combining silviculture techniques with socioecological observations and casual conversation – the 'working circle plot'. In a recent interview, Bill Burch confessed that one of the great pains of his life was how 'the horticulturalist hijacked urban ecology'. The working circle method begins with the individual and household unit and connects to larger units of social organisation. It is the ecology *of* the city, rather than ecology *in* the city. While this early 1970s programme may appear similar to the urban horticultural movement, there is a distinct difference in scale and scope. Implicit in the approach is the knowledge that humans are not supraspecies, but, rather, an integrated part of urban ecology. Though it began in New Haven, the programme later spread to Nepal, Bhutan and China. The approach begins from the street corner and connects back out to the traditional forest stand.

An example of the working circle method is the corner of Mount and Fayette streets in southwest Baltimore, which in the 1980s became known as a notorious centre of drug activity.[6] It was also a critical cross-street for neighbourhood children as they passed by, daily, on their way to school, to the corner shop and to the community-managed recreation centre. A staggering number of

Vacant lot, near Mount and Fayette streets, Franklyn Square, Baltimore
Throughout the northeast, shifts in urban population densities and economies disrupt the flow of critical resources such as social and financial capital, creating vacant patches of land. Self-organising systems such as drug dealing, rubbish dumping and invasive flora take over this area of the urban forest located in the southwest Baltimore neighbourhood of Franklin Square.

First day in Ms Shirley's garden
In the summer of 1993, for the first time in many years nearly a hundred children from the neighbourhood summer camp began to redirect the flow of energy and exchange on this same patch in Franklin Square. The children produced new space by appropriating the use and meaning of the vacant properties along Fayette and Mount streets as a garden. In this image the sidewalk becomes a performed garden path.

Trees were planted in back alleys and fallow niches to redirect circulation patterns. Gardens were built on corner plots to signify change, as well as to induce a new rhythm of land use and programme.

Getting started
Children from the Franklin Square summer-camp programme began the work of building this garden in full view of neighbourhood residents as well as close to local drug activities. A new flow of energy is released, connecting critical resources such as land, labour and beliefs.

In full swing
These simple efforts later inspired neighbourhood adults to work towards a unified action of expanding the garden, for example planting trees and creating a new playground. In addition, institutional reforms led to new social programmes. Together, changes in the social production of physical space and behaviours prompted a significant change in the social organisation of the Franklin Square community.

vacant plots and abandoned houses created a porous environment, making it difficult to separate these modes of activity. By the early 1990s, community activists were working alongside student foresters from the Urban Resources Initiative (URI) to observe, inventory, map and devise a landscape strategy for the distinct pathways, plots and alleys used for both drug activity and as children's outdoor play areas. The Department of Recreation and Parks delivered massive amounts of soil for replanting. Trees were planted in back alleys and fallow niches to redirect circulation patterns. Gardens were built on corner plots to signify change, as well as to induce a new rhythm of land use and programme.

The neighbourhood recreation centre developed initiatives to monitor, manage and maintain this emergent urban forest habitat. Although it slowly fell into disrepair as neighbourhood leaders passed away or moved out, a few trees remain and traces of the gardens are still visible. Upon reflection years later, a long-time resident commented: 'At that time, it seemed like anything was possible.'

Disturbance and Resilience

The effects of urban greening in the city can be understood within cycles of disturbance and resilience that exemplify contemporary urban ecological discourse. Disturbance, understood as an event that interrupts the relationship between organisms and their environment, typically radiates beyond the point of impact, and resilience is a natural part of system reorganisation after a disturbance.[7] An example is a forest or prairie where disturbance from fire can actually help stabilise, or even improve overall system health. In a city, disturbance can generate feelings of anxiety and stress causing instability. These feelings can often affect social and economic choices, with populations mourning for a lost neighbourhood or way of life. Disturbance often reveals underlying strengths and weaknesses that, unmitigated, are merely reinforced in the next stage of succession. Humans are a critical part of mitigating disturbance and it is here that urban greening works. Human societies have the unique ability to be reflexive and manage levels of abstraction that can create positive externalities such as freedom of expression, building trust and creating social equity. Local–global interactions shape these resilient processes, or 'feedback loops', constraining and enabling group identities, social networks and shared values.

Metaphor and Feedback

Contemporary urban ecologists have called for integrated concepts to enliven the conceptual framework of 'feedback loops'.[8] Metaphors are useful communication tools that reveal hidden meanings about space. The term 'visual field' is a metaphor that emerges from observations of land where one's field of vision automatically defines a boundary around what can be seen. Visual fields, according to linguistics scholars Lakoff and Johnson, are containers.[9] Imagine the East Coast Megalopolis as a string of cities within a forest. This vision triggers a new image of a city

where everyday decisions are made within a new feedback loop: how to manage a dynamic, constructed, inhabited forest? The first step in forest management is being able to identify critical system processes. For this reason, social foresters do not count trees; rather, they look for interactions, exchanges and resilient processes that hold this inhabited forest together. Their goal is to uncover critical processes that often remain hidden from our core understanding of everyday life. In this scenario, the forest still exists even when one cannot see it, for it appears in our social actions, meanings, words, street-level exchanges and even mode of dress.

flow of water. Rubbish sheds, health sheds or kid sheds are suggested, in this context, to be critical social catchment areas defined by the ability, analogous to the flow and exchange cycles of a watershed, to capture materials, information and energy.

A social forester feedback loop has the unique potential to identify and link these emergent invented garden traditions with management of sheds or patches, towards a hybrid form of stewardship, which may be more equitable, innovative and responsive than traditional urban environmental management. This could allow a metaphorical urban ecological imagination to emerge, so that we are all 'thinking like a forest', no matter where we are.

Ms Shirley's reward
Changes in the meaning of urban space led to a change in social identities for many of the residents of Franklin Square. Ms Shirley's garden (Ms Shirley is pictured here with local children) became both a symbol and a dynamic driver of this identity change – a symbol of neighbourhood resilience and of a respected community leader.

Work in progress
After the first summer, there was still more work to be done in Franklin Square. A work in progress is essential to the process and cycle of resilience. A finished project suggests that the cycle has ended. Greening projects, which are replete with new improvisations, become incubators of emergent and diverse forms of civil society.

3. SCALING UP

Gardens, Parks and Hybrid Governance

Gardens are often the most obvious local starting point for human action in response to a disturbance, and also the most obvious starting point for the work of social foresters. Traditional park typologies have captured only those sites that have vegetation. However, five park types have been defined in the US since 1850: the pleasure ground, reform park, recreation facility, open-space system and, the most contemporary model, the sustainable park. For us, the open-space system continues to hold great force as a conceptual model. It occurred around 1965 when 'recreation came to be seen as something that could take place anywhere – in the streets, on a rooftop, at the waterfront, along an abandoned railway line as well as in traditional plazas and parks'.[10]

Urban greening, understood as an 'invented garden tradition', is nested within the dynamic and emergent open-space system.[11] New ways have been found to expand urban greening for research and monitoring, building on the notion of a watershed – the topographical area that catches the

Urban greening, understood as an 'invented garden tradition', is nested within the dynamic and emergent open-space system. New ways have been found to expand urban greening for research and monitoring, building on the notion of a watershed – the topographical area that catches the flow of water.

Girl with evergreen
By 1999, the tree, the girl and the fence no longer exist at the corner of Mount and Fayette streets in Franklin Square. This suggests the fragile nature of such efforts. The role of the 'advance spotter' is to amplify and connect to another scale of interaction in order to defend and legitimise these efforts within the urban forest. At the same time, these actions exist in the collective memory of the urban forest, and similar efforts are now under way just a few blocks away.

The Field Guide and Advance Spotters

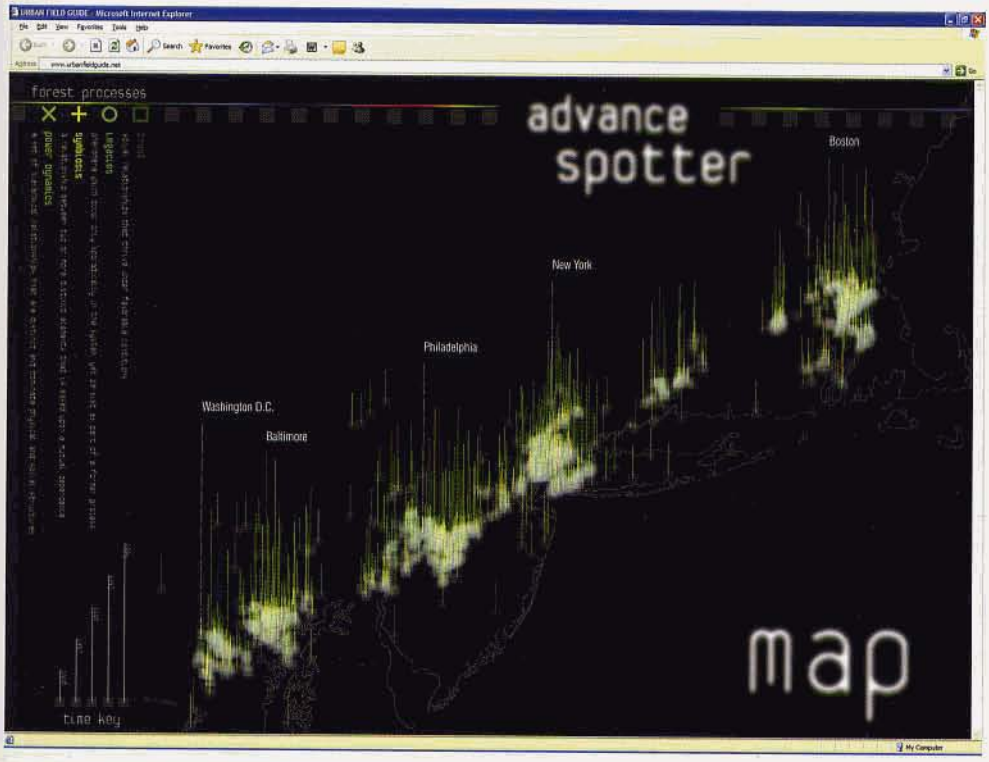
How can urban resilience and feedback be accelerated in the 21st century, given that social ecologists, economists and epidemiologists have found that all systems are 'leaky', particularly at the stage of reorganisation? 'What is lost and what is gained' through reorganisation is traditionally measured in a single time scale or filtered through certain power narratives. To reconceive this 'leaky' dynamic, we have imagined a new role for social foresters.

As 'advance spotters' they will operate under a new protocol of the Urban Field Guide. In a twist to performing duties similar to that of the forest ranger stationed on the prairie or in forest-fire towers, advance spotters are charged with monitoring typically unseen processes occurring in rapidly changing environments at ground level. Through hand-held devices and satellites, advance-spotter observations could be fed into larger databases used by natural resource agencies, which would also be available for use in the field by spotters. Using GPS technology, spots can be located, photographed, described and uploaded in real time. Unlike when observing fish or plants or molecules, spotters can talk to people. Casual conversations and interviews, as used by Burch in the camp, serve to confirm observations.

An advance spotter will be able to identify patches of the urban forest charged with a collective memory, common enjoyment, places that enable trust and equity to emerge as social interactions in response to flows of water, space, light, vegetation, waste and information. The advance spotter, acting within a feedback loop, can choose to continually monitor and observe emergent processes or respond to them, for example, becoming an interactive agent with others, sharing, amplifying, defending, inventing or resisting. To derive patterns from a study of processes, rather than to ascribe processes to observed patterns, is an ecological approach.[12] The Urban Field Guide is, therefore, not only a tool to gather information over time, but also has a role in translating the information into a legible 4-D map – one that allows time to be sorted in simultaneous and multiple ways. In this way, indirect (or leaky) effects can be made legible, tracked and, in turn, responded to. Over time, advance-spotter feedback accelerates, enabling us to become sensitive to the time scales, activities, various forms, sounds, noises, smells and feel of the electronic urban forest. 4

Advance spotter log
Using technology and social forest theory, 'advance spotters' can capture these landscapes of resilience over time and space by mapping the social catchment areas, such as kid sheds, of a larger watershed. The intent is to go beyond creating a collective memory of the invented garden, but to harness the capacity of civil society and government to restore critical feedback loops essential to the larger scales of the forest megalopolis

Available from www.urbanfieldguide.net



Advance spotter map
The entire US northeastern megalopolis is reconceived as a forest system. Critical emergent forest processes of trust, legacy, symbiosis and power have been identified by the 'advance spotter' in this particular time-series rendering of the system. Each spot is recorded with a time-sensitive point. Brighter points and longer lines are recent entries. This prototype is accessible as a real-time, multiscalar web site. The map is designed to be downloadable as a GIS navigational tool for street-level spotting, and uploadable for spotter entries.

Notes

1 William WR Burch Jr, *Observation: As a Technique for Recreation Research*, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station,1964.

2 In *The Image of the City*, urban theorist Kevin Lynch uses 'wayfinding' to explore the relationship between human cognition and urban form. Lynch suggests that humans create mental maps to 'image' the structure of the large-scale city. Wayfinding is navigated by five basic elements: districts, paths, edges, nodes and landmarks. Kevin Lynch, *The Image of the City*, Cambridge Technology Press (Cambridge, MA), 1960, p 196.

3 In *The Death and Life of Great American Cities*, urban theorist Jane Jacobs recognised that street life and public space fostered critical interactions between strangers. In this sense, the city streets are incubators of emergent and diverse forms of social interaction. Jacobs refers to this as the 'street ballet'. Jane Jacobs, *The Death and Life of Great American Cities*, Random House (New York), 1961.

4 George Perkins Marsh, *Man and Nature*, C Scribner (New York), 1864.

5 William J Cronon, 'The turn toward history', in MJ McDonnell and STA Pickett (eds), *Humans as Components of Ecosystems: The Ecology of Subtle Human Effects and Populated Areas*, Springer-Verlag (New York), 1993, pp VII–XI.

6 David Simon and Edward Burns, *The Corner: A Year in the Life of an Inner-City Neighbourhood*, Broadway Books (New York), 1997.

7 Lance H Gunderson and CS Holling, *Panarchy: Understanding Transformations in Human and Natural Systems*, Island Press (Washington DC) 2002.

8 STA Pickett, RS Ostfield, M Shachak and GE Likens (eds), *The Ecological Basis of Conservation: Heterogeneity, Ecosystems, and Biodiversity*, Chapman & Hall (New York), 1997, and Simon Levin, *Fragile Dominion: Complexity and the Commons*, Perseus Books (Reading, MA), 1999.

9 George Lakoff and Mark Johnson (eds), *Metaphors We Live By*, University of Chicago Press, 2003.

10 Galen Cranz and Michael Boland, 'Defining the sustainable park: A fifth model for urban parks, *Landscape Journal*, Vol 23, No 2, September 2004, pp 102–20.

11 John Dixon Hunt, 'The garden as cultural object', in Stuart Wrede and Howard Adams (eds), *From Denatured Visions: Landscape and Culture in the Twentieth Century*, Museum of Modern Art (New York), 1991, p 19.

12 Ashwani Vasishth and David Slone, 'Returning to ecology: An ecosystem approach to understanding the city', in M Dear (ed), *From Chicago to LA – Making Sense of Urban Theory*, Sage Publications (London), 2002, pp 347–66.