



Varieties of Possibility: Perspectives on Nature and the City



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Natural What?



Rethinking what counts as “Nature”

We need to embrace the full continuum of a natural landscape that is also cultural, in which the city, the suburb, the pastoral, and the wild each has its proper place, which we permit ourselves to celebrate without needlessly denigrating the others.

William Cronon “The Trouble with Wilderness or, Getting Back to the Wrong Nature”
in *Uncommon Ground: Rethinking the Human Place in Nature* (1995)

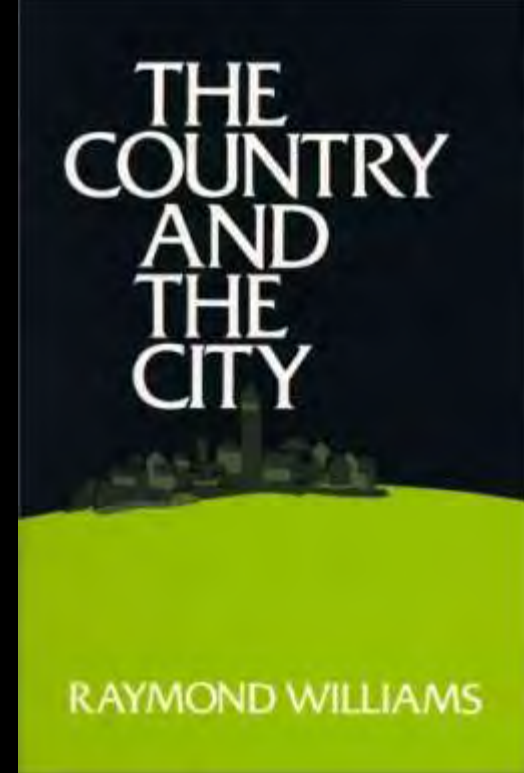


Nature

The literary critic Raymond Williams famously observed that the “nature” is perhaps the most complex word in the English language because,

"The idea of nature contains, though often unnoticed, an extraordinary amount of human history."

Raymond Williams, "Ideas of Nature" 1983



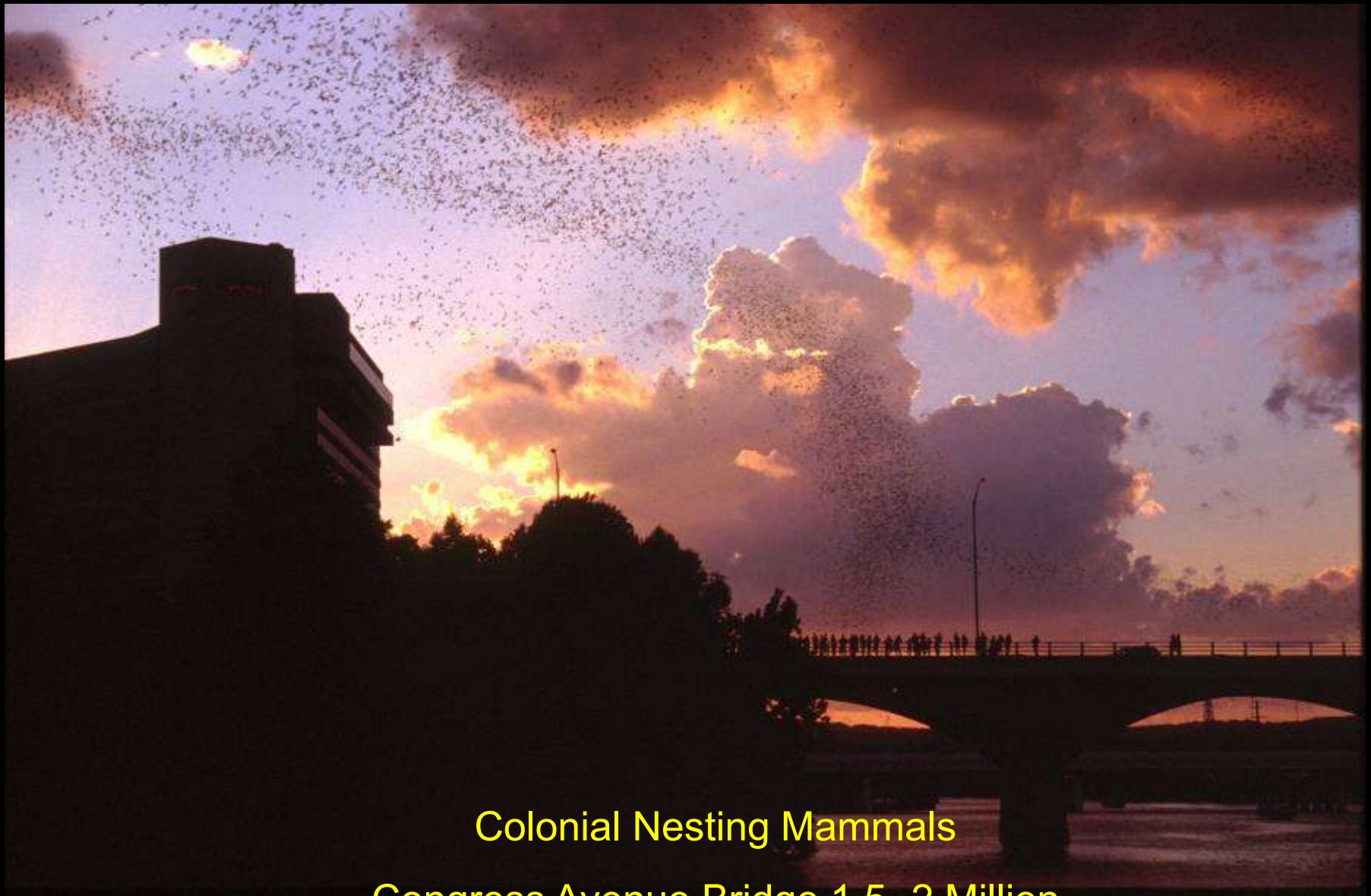
What is a City?



Urban Ecology

What is a City? An Ecosystem





Colonial Nesting Mammals
Congress Avenue Bridge 1.5 -2 Million
Mexican Free-tailed Bats

Colonial Nesting Mammals



Black-Tailed Prairie Dog

Colonial Nesting Mammals



Culture

Environmental Perception of Nature and the American City

The Sacred and the Mundane

Wilderness and the City

Natural vs. Artificial

Pristine vs. Degraded

Native vs. Non-native

Invasive
Non-native
Species



Once a rock dove,
now the winged rat
of the city

Non-native species
and Biodiversity?

The Varieties of Possibility for American Nature - The Conceptual Framework

Myths are foundational narratives used by humans to make sense of the world.

Language

We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation.

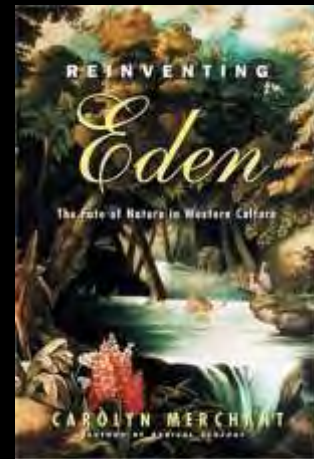
- Edward Sapir (1949) *The Status of Linguistics as a Science*



Narratives, Stories, and Myths

Narratives form our reality. We become their vessels. Stories find, capture, and hold us. Our lives are shaped by the stories we hear as children; some fade as we grow older, others are reinforced by our families, churches, and schools. From stories we absorb our goals in life, our morals, and our patterns of behavior.

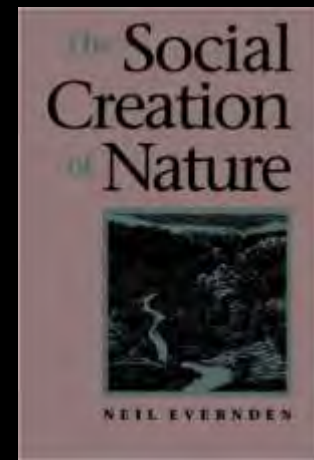
- Carolyn Merchant (2003) *Reinventing Eden*



Metaphor

We evolve, so to speak, through metaphor: one day the world is respoken, and a new being is released. Whether or not we have reached this point, whether there actually is the possibility of a re-imagining of things, we cannot know: perhaps our constant mass-media chatter is sufficient to drown out any rival vocabularies.

- Neil Evernden (1992) *The Social Creation of Nature*



The American Myth of Nature

In the United States, the kinds of nature that we celebrate are wilderness and pastoral arcadia.

They are the foundation of the American myth of nature from which we assess the value of nature in America.



However, we are now predominately a country of urbanites who have only occasional contact with wilderness or pastoral nature.

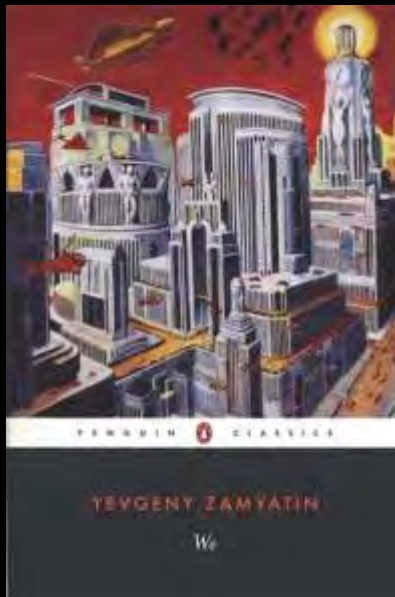


Varieties of Possibility – Kinds of Nature

Nature and Culture

Oh, how great and divinely limiting is the wisdom of walls. This Green Wall is, I think, the greatest invention ever conceived. Man ceased to be a wild animal the day he built the first wall; Man ceased to be a wild man only on the day when the Green Wall was completed, when, by this wall we isolated our machine-like, perfect world from the irrational, ugly world of trees, birds, and beasts.

- Eugene Zamyatin, *We* (1921)



The Iterative Natures - Classical Western Ideas of Nature

1. First nature - wilderness or pristine (untrammelled by humans)

Wilderness is the realm of the gods or “primitive” humans

2. Second nature – pastoral arcadia – pastures, farms, settlements

Virgil is credited in the Eclogues with establishing Arcadia as a poetic ideal



3. Third nature – Renaissance formal gardens

Jacopo Bonfadio wrote in 1541 that formal gardens make a “third nature, which I would not know how to name.”



The illustration shows a distant mountain (first nature) giving way to cultivated agricultural land (second nature) and then a formal garden (third nature).

Frontispiece to l'Abbé de Vallemont's *Curiositez de la nature et de l'art* (1705)

From Positive to Negative Narrative of Second Nature

From Pastoral Arcadia

Cicero *De natura deorum* (45BC)

We enjoy the fruits of the plains and of the mountains, the rivers and the lakes are ours, we sow corn, we plant trees, we fertilize the soil by irrigation, we confine the rivers and straighten or divert their courses. In fine, by means of our hands we essay to create as it were a second world within the world of nature.



to Urban Decay

Henri Lefebvre *The Production of Space* (1974)

Nature, destroyed as such, has already had to be reconstructed at another level, the level of “second nature” i.e. the town and the urban. The town, anti-nature or non-nature and yet second nature, heralds the future world, the world of the generalized urban. Nature, as the sum of particularities which are external to each other and dispersed in space, dies. It gives way to produced space, to the urban.



19th Century Re-invention of Nature

The British Romantic Concept of Nature

The Romantic period, begins in 1798, the year of the first edition of *Lyrical Ballads* by Wordsworth and Coleridge. For the Romantics, Nature was closer to a spiritual experience, a natural religion of the sublime, as opposed to traditional institutionalized religion.

Romantic "nature" is a vehicle for self-consciousness. The Romantics' preoccupation with natural phenomena amounts to a search for the true self, for one's real identity.



American Transcendentalism

The Romantic idea of Nature transformed into the American Transcendentalist idea of Nature in Ralph Waldo Emerson's essay, "Nature" (1844).

Nature is a source of sensations--healthy feelings. It is therapy for a diseased, overcivilized heart. Humans can discover emotional health in nature. Such health leads to moral and spiritual clarity.

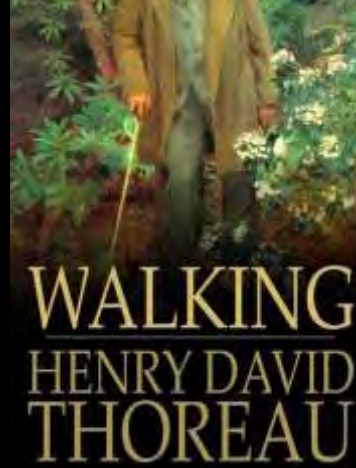


Thoreau's *Walden*

Nature is a refuge from the artificial constructs of civilization.



Thoreau – Essay on Walking American Nature as Metaphor



**“In wilderness
is the preservation
of the world.”
Thoreau**

The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the world.

Every tree sends its fibers forth in search of the Wild. The cities import it at any price. Men plow and sail for it. From the forest and wilderness come the tonics and barks which brace mankind.

Life consists with Wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him. One who pressed forward incessantly and never rested from his labors, who grew fast and made infinite demands on life, would always find himself in a new country or wilderness, and surrounded by the raw material of life. He would be climbing over the prostrate stems of primitive forest trees.

Hope and the future for me are not in lawns and cultivated fields, not in towns and cities, but in the impervious and quaking swamps.



In American cities, we perceive nature in the urban landscape filtered through a conceptual framework that prejudices its ecological and cultural value.

Our understanding of what constitutes “official” urban nature in cities is shaped by culturally dominant metaphors of nature.

Wilderness

Pastoral

Urban Greenspace



The Proper Places for Nature – Greenspace, Parks, Gardens, Farms, Preserves, Wildlands

In America, we celebrate urban nature that is either deliberately cultivated pastoral “greenspace” like parks, gardens, and urban farms or formally protected as remnants of the “wild” native landscapes obliterated by the creation of the city in preserves, sanctuaries, refuges, and other “wildlands”.

Focused on flora...



Urban Fauna - The Challenge of Urban Wildlife

Urban “wildlife” is another mediated, managed part of urban nature found in the city.

This urban fauna is judged favorably when it in some way fulfills our expectations of wild or pastoral nature or condemned as pestilent when it fails to follow the narrative for good fauna in the city – and stay in the proper places for nature in the city.



This narrative of urban wildlife declares that transgressive coyotes, rats, grackles, and pigeons are urban pests that further degrade the city...



...but nesting red-tailed hawks and peregrine falcons are redemptive wild additions to the urban scene.



Winn, *Red-Tails In Love: A Wildlife Drama in Central Park* (1998)

At least three children's illustrated books about Pale Male have been published, including:

- *The Tale of Pale Male: a True Story*, by Jeanette Winter (Harcourt, 2007)
- *City Hawk: the Story of Pale Male*, by Meghan McCarthy (Simon & Schuster, 2007)
- *Pale Male: Citizen Hawk of New York City*, by Janet Schulman (Knopf, 2008)

Pale Male is the mascot of P.S. 6, an elementary school at the Upper East Side, Manhattan.

Down Here Below

Pale Male the famous red-tailed hawk
Performs wing stands high above midtown Manhattan
Circles around for one last pass over the park
Got his eye on a fat squirrel down there and a couple of pigeons
They got no place to run they got no place to hide
But Pale Male he's cool, see 'cause his breakfast ain't goin' nowhere
So he does a loop the loop for the tourists and the six o'clock news

Got him a penthouse view from the tip-top of the food chain, boys
He looks up and down on fifth avenue and says "God I love this town"
But life goes on down here below
And all us mortals struggle so
We laugh and cry
And live and die
That's how it goes
For all we know
Down here below

Pale male swimmin' in the air
Looks like he's in heaven up there
People sufferin' everywhere
But he don't care
But life goes on down here below
And all us mortals, struggle so
We laugh and cry

Steve Earle
Washington Square Serenade 2007



Proper Place for Urban Wildlife? All of the City is habitat

The mobility of urban wildlife allows them to exploit the entire city as habitat.



Agency of Nature – Fauna

Active subjects using the urban landscape rather than passive objects for human appreciation and use

Non-humans do unexpected things.

They defy our expectations of what nature should be
and how non-humans should behave...



Agency of Nature – Flora

...and where they should thrive.

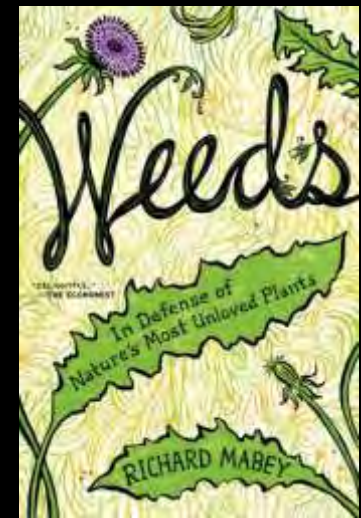


Beautiful flower in your garden
But the most beautiful by far
Is the one growing wild in the garbage dump
Even here, even here, we are

Song by Paul Westerberg, "Even Here We Are" (*14 Songs*, 1993)

"I like it when a flower or a little tuft of grass grows through a crack
in the concrete. It's so ... heroic."

George Carlin



Improper Urban Nature

Nature flourishes through its own agency in neglected urban spaces and margins like vacant lots, garbage dumps, sewage ponds, unmaintained roadway and railway verges, old industrial tracts, abandoned buildings, overgrown urban creeks, crumbling walls, and other urban waste spaces.



Other Types of Neglected Urban Spaces

Wastelands - whole patches

- Vacant lots
- Dumpsites
- Industrial Wasteland
 - Brownfields
 - Greenfields
 - Quarries and Gravel Pits
- Urban Infrastructure Land
 - Power plants
 - Water treatment plants
 - Reservoirs
 - Wastewater treatment plants
 - Sewage ponds
 - Constructed wetlands
 - Stormwater retention structures
- Unusable Land - bits and pieces
 - Slopes, gullies, corners, fragments

Margins – edges and ledges

- Urban waterways
- Canals, drainage channels
- Utility corridors
- Waysides
 - road waysides
 - railway verges
- Alleys – paved, unpaved, grass
- Walkways and pathways
- Fencelines
- Walls and ledges
- Pillars and bridge abutments



The Paradox of Meddling

Managing “Vacant” space for proper urban nature

Parks and Gardens/Farms

The High Line – New York



Putting Vacant Lots into Perspective



The City of Pittsburgh has no easy way of categorizing its vacant land. In fact, there is no one unifying definition used throughout the city. In some databases, vacant land means any land without a structure. Other databases classify it as any structure or parcel with no residents. There is no database that easily defines vacant land (no structure) that is un-maintained and not part of a right of way or park. Most of this variety of vacant land, (estimated between 6,000 and 12,000 lots), is symptomatic of communities with high levels of disinvestment, absentee landlords, and underserved low income residents. Vacant land can also be a cause, however, of many negative characteristics associated with urban blight. Thus, un-maintained spaces in the midst of urban communities create a vicious circle that many communities do not have resources to address.

Negative Influences, Positive Opportunities

A growing body of statistical research revolving around vacant lot issues in urban areas point toward direct, empirical correlations between vacancy and a variety of negative economic, environmental, and social influences. Thankfully, there is a flip side - equally strong evidence that reversing vacancy leads to stronger, healthier neighborhoods.

Negative Influences of Vacant Lots

The impact of vacant lots reaches beyond visual blight and decay, negatively affecting communities across economic, environmental, and social bounds.

Economic Influences

A study of vacant lots in Philadelphia estimated that the city and closely related public agencies spent \$1.8 million annually on cleaning vacant lots.

Neighborhood blocks with higher concentration of unmanaged vacant lots decreased property values by close to 18% (Wachter, The Wharton School)

Environmental Influences

Vacant Lots are targets for litter, illegal dumping, and criminal activity.

Security Influences

The City of Richmond, Virginia found that of all the economic and demographic variables tested, vacant properties had the highest correlation to the incidence of crime. (The National Vacant Properties Campaign)

Positive Influences through Greening Strategies

Strategies that address vacant land through green means are proven to have positive effects on communities in economically feasible ways.

Economic Influences

Cleaning and greening of vacant lots can increase adjacent property values by as much as 30% (Wachter, The Wharton School)

Planting a tree within 50 feet of a house can increase its value by about 9% (Wachter, The Wharton School)

Location of a house within ¼ mile from a park increased property values by 10% (Wachter, The Wharton School)

Vacant properties located near newly constructed parks were the first to sell during a revitalization project in North Philadelphia. (Philadelphia Green - Urban Impact)

Health & Recreation Influences

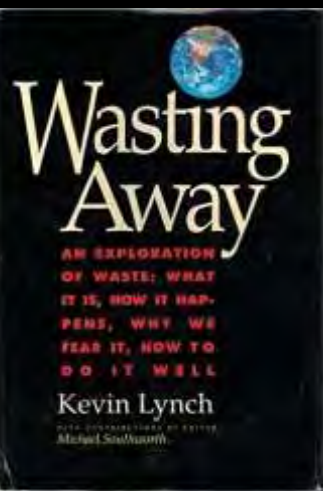
When people have access to parks, they exercise more. Access to places for physical activity leads to a 25.6% increase in the percentage of people exercising on three or more days a week (Trust for Public Land)

Ruinous Attractions of Waste Places

– Social Space

Many waste places have these ruinous attractions: release from control, free play for action and fantasy, rich and varied sensations. Thus children are attracted to vacant lots, scrub woods, back alleys, and unused hillsides...those screened, marginal, uncontrolled places where people can indulge in behavior that is proscribed and yet not harmful to others – are regularly threatened by clean-ups and yet are a necessity for supple society.

- Kevin Lynch *Wasting Away* (1990) p. 26.



What emerges in these urban wastelands is a hybrid type of nature both weedy and wild - the unintended product of human activity and Nature's unflagging opportunism, which I call Marginal Nature.



Marginal nature in the urban landscape is neither pristine nor pastoral, but rather it is a new kind of nature whose ecological and cultural meaning is an open question.

Marginal Nature Blog - <http://www.marginalnature.blogspot.com/>

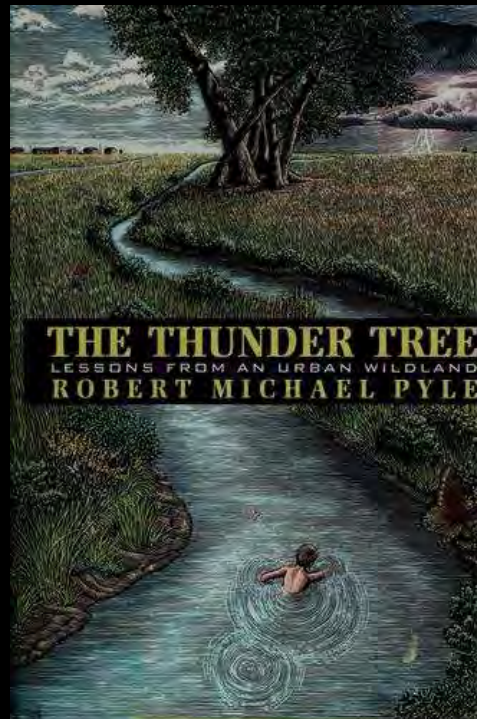
American Urban/Suburban Nature Writing

What do shreds and scraps of the natural scene mean, after all, in the shadow of the citified whole?

What can one patch of leftover land mean to one person's life, or to the lives of all who dwell in the postindustrial wasteland?

Robert Michael Pyle, *The Thunder Tree: Lessons from an Urban Wildland* (1993)

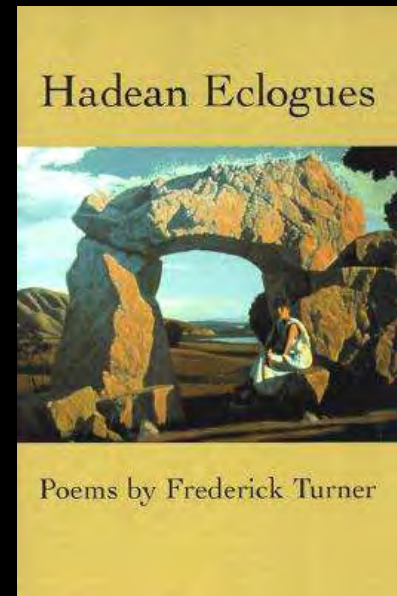
Accidental Wilds



Not Even Natural – What is urban wasteland?

This is the landscape that nobody wants. It's my cup of rejection:
Driven to this unformed scraggly ignored backlot, this not-quite
Prairie, not-quite thicket, not even natural corner of
Texas, the hardscrabble left butt of a demoralized nation,
It is my choice and my pleasure to cherish this haphazard wilderness.
No, it's not even "wild" – it's a neglected product of artifice.
Come, let us walk by an improvised lakeshore, be given a vision:
Beaches of black dust, beautiful white ghosts, this drowned forest...

- Frederick Turner, first stanza "Texas Eclogue" in *Hadean Eclogues* (1999)



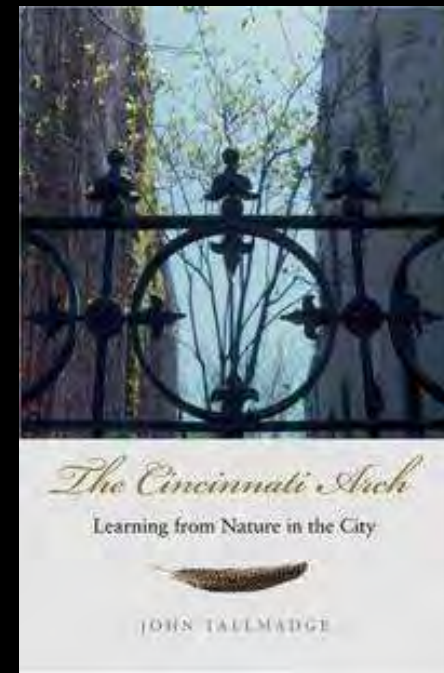
What is Urban Nature? Not a Real Ecosystem

Urban nature is not sublime...There's too much sterility in the form of roofs and pavement, and, oddly enough, there's also too much wildness, too many weeds and wooded borders and tangled banks, not to mention vacant lots going to brush.

Of course, "wilderness" won't do to describe such landscapes either. Despite the degree of wildness, there's too much human impact, too many alien species, too few large animals to meet the legal and cultural criteria.

The fact is that urban landscapes are just too mixed up, chaotic, and confused to fit our established notions of beauty and value in nature.

...Maybe it's not really nature at all, not a real ecosystem, just a bunch of weeds and exotics mixed up with human junk.



John Tallmadge *The Cincinnati Arch: Learning from Nature in the City* (2004)



Varieties of Possibility: Perspectives on Nature and the City

Narratives of Urban Nature

“The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the world. Every tree sends its fibers forth in search of the Wild. The cities import it at any price.”

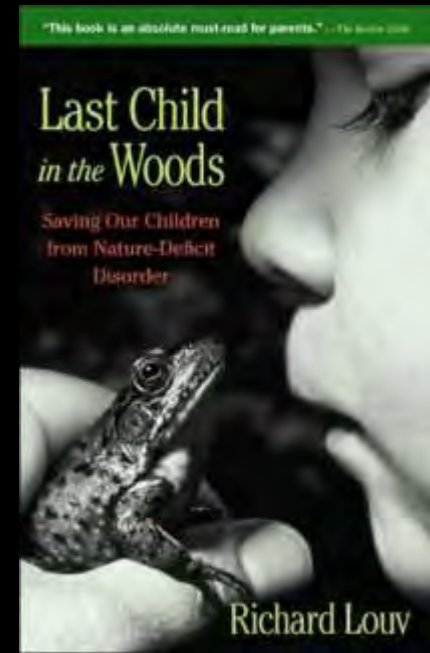
-Henry David Thoreau, “Walking”



Narrative of Redemptive Urban Nature – The Wild and The Pastoral

This narrative presupposes the framework of iterative natures with wildlands, preserves, parks, and gardens established for imaginative urban landscapes of wild first nature and pastoral second nature. The further presupposition is that the urban industrial second nature is degradation in need of redemption.

The narrative of redemptive urban nature uses the Transcendentalist myth of nature as a tonic for body and spirit which is deliberately incorporated into urban design. Space for nature is created to provide recreation for physical health and to allow contact with officially sanctioned nature for mental health.



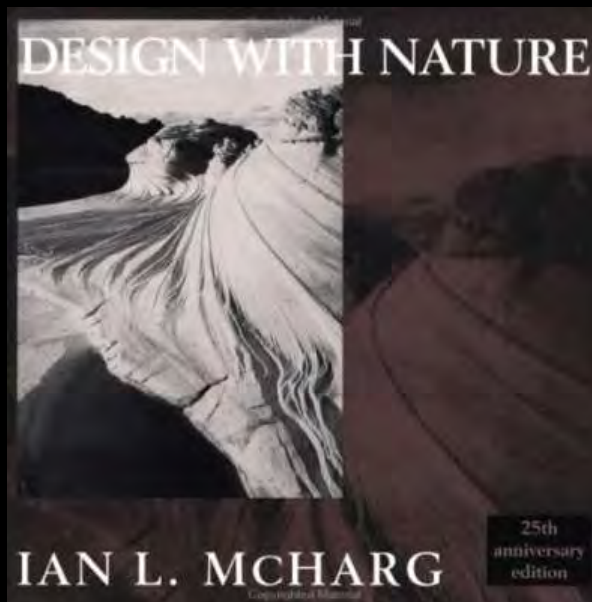
Narrative of Restorative Urban Nature – Biophilic Cities, etc.

Version 1 - Architecture and Urban Design/Planning

Design with Nature - One version of this narrative focuses on urban design and landscape architecture, and Ian McHarg is the main protagonist.

This urban design version of the restoration narrative emerges from a positive view of cooperation with nature and pastoral ideals of improvement of nature. It, also, presupposes that urban industrial second nature is degradation which can be restored to ecological sustainability through design and planning.

It is based on a scientific, mechanistic manipulation of nature for our own ends to produce a functional urban ecosystem overlaid with a “green” aesthetic.



A 'Design with Nature' approach to community design means...



- Develop compact, complete communities
- Increase transportation options
- Reduce the loads on water, waste and energy systems
- Protect and restore urban 'green' space
- Strive for a lighter 'hydrologic footprint'
- Achieve higher levels of stream, wetland and lake protection

THE GRANITE GARDEN

Urban Nature and Human Design
ANNE WHISTON SPIRN



SUSTAINABLE URBANISM

URBAN DESIGN WITH NATURE



DOUGLAS FARR

FOREWORD BY ANDRES DUANY

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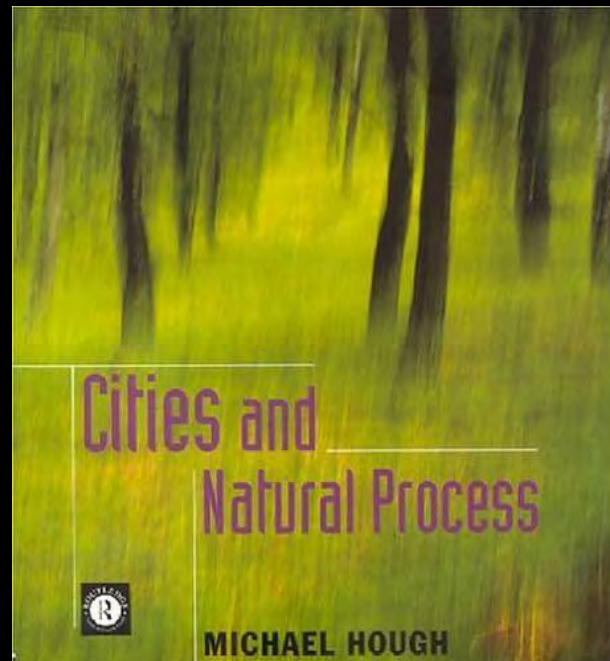
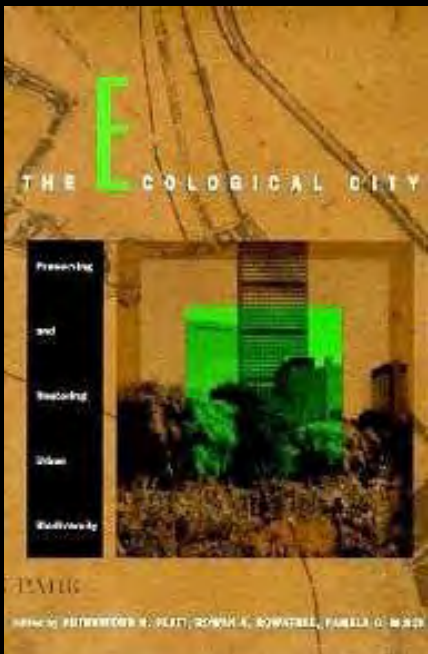
FOREWORD BY E. O. WILSON

BIOPHILIC CITIES

INTEGRATING NATURE
INTO URBAN DESIGN AND PLANNING



TIMOTHY BEATLEY



The Living Landscape

SECOND EDITION

An Ecological Approach to Landscape Planning



FREDERICK STEINER

With a new preface by the author

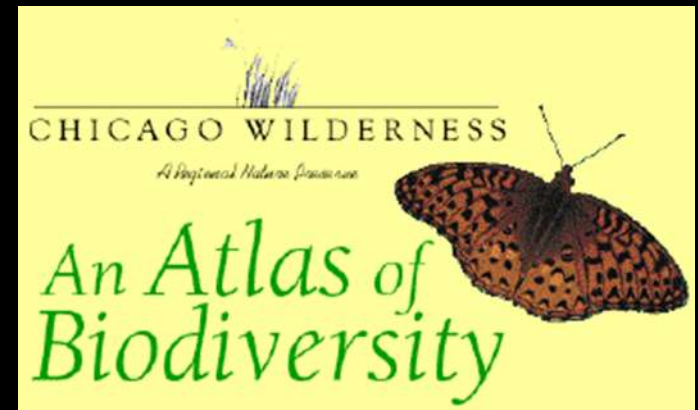
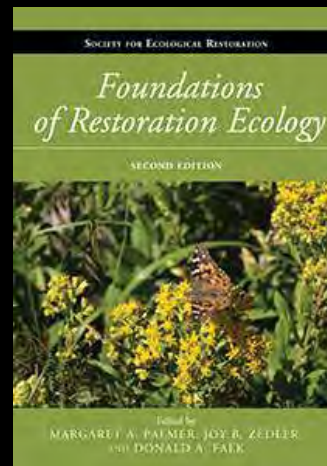
Narrative of Restorative Urban Nature – Native Nature

Version 2 - Restoration Ecology and Conservation Biology

Urban Restoration Ecology - The restoration narrative has another version which has focused almost exclusively on the recovery of native habitats through the restoration of these habitats in urban landscapes.

Restoration ecology developed alongside of conservation biology as a proactive technique not to just conserve remnant habitats and species but to actively restore degraded ecosystems.

In this version of the narrative of restorative urban nature, the transgressive weeds, especially non-native species, must be eradicated because they are disruptive aliens. The most controversial of these aliens are called “invasive species”.

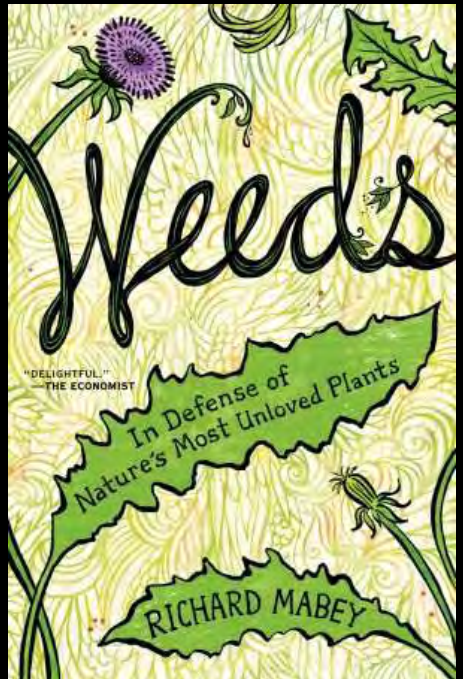
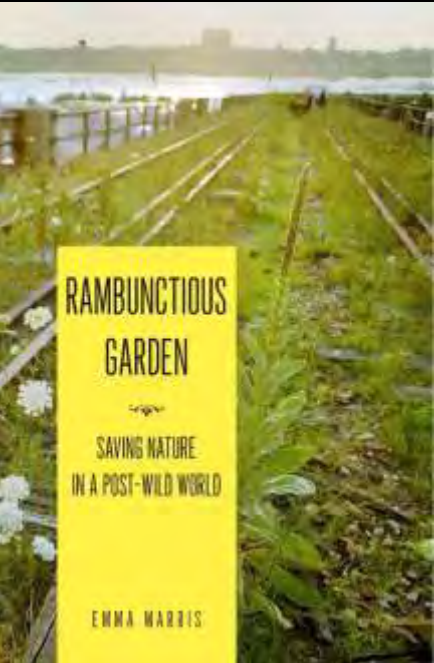


Non-native species - An invading force of alien species destroying the integrity of our homeland

“(Urban growth) replaces the native species that are lost with widespread “weedy” nonnative species. This replacement constitutes the process of biotic homogenization that threatens to reduce the biological uniqueness of local ecosystems.”

Michael L. McKinney, “Urbanization, biodiversity, and conservation”. Bioscience 52(10), (2002)

Urban Biodiversity excludes non-native species



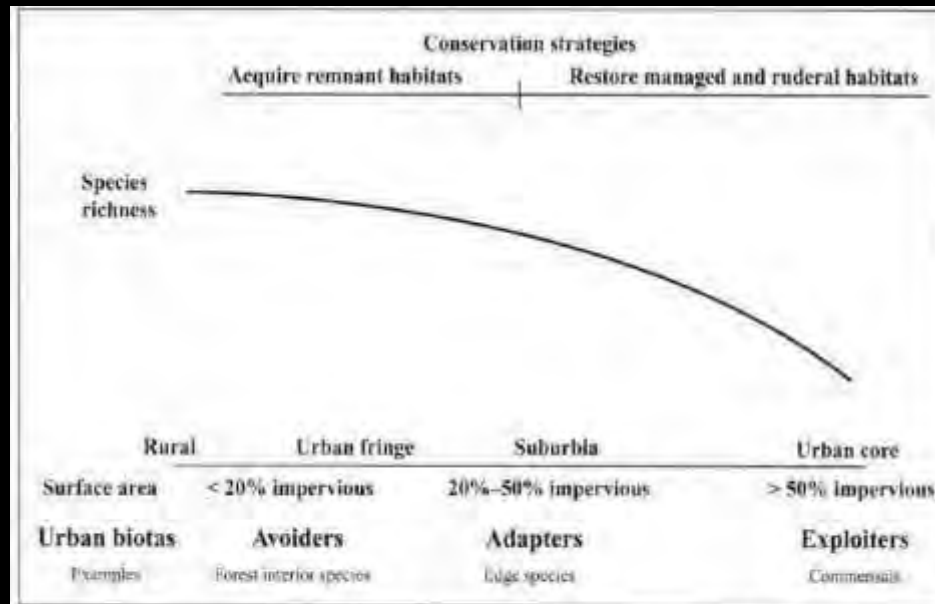


Figure 2. Urban-rural gradient. This is a very generalized and simplified depiction of changes in surface area, species richness, and composition, as compiled from a number of sources discussed in the text. Two basic conservation strategies with respect to urban sprawl are shown at the top.

Urban Biodiversity labelled with other culturally loaded terms
- “Avoiders” “Adapters” “Exploiters”

McKinney, “Urbanization, biodiversity, and conservation”. Bioscience 52(10), (2002)

...and non-native urban flora and fauna (not all) are actively destroyed.

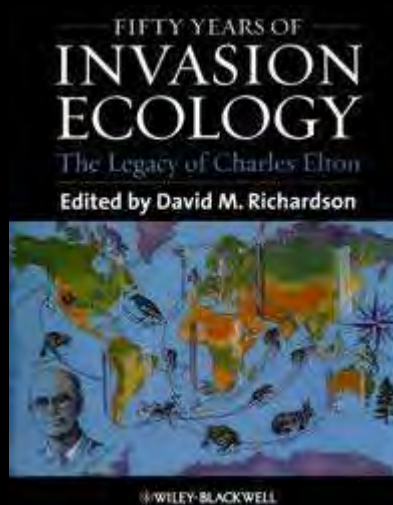
Invaders

of
Texas

a Citizen Science Program to Detect and Report Invasive Species

“Invaders of Texas” website was created by the Lady Bird Johnson Wildflower Center as a tool for mobilizing the public against non-native invaders and the website employs the rhetoric of war and a resistance composed of “citizen scientists” defending the homeland.

The Invaders of Texas Program is a campaign whereby volunteer "citizen scientists" are trained to detect the arrival and dispersal of invasive species in their own local areas.



Narrative of Functional Nature - Urban Ecology

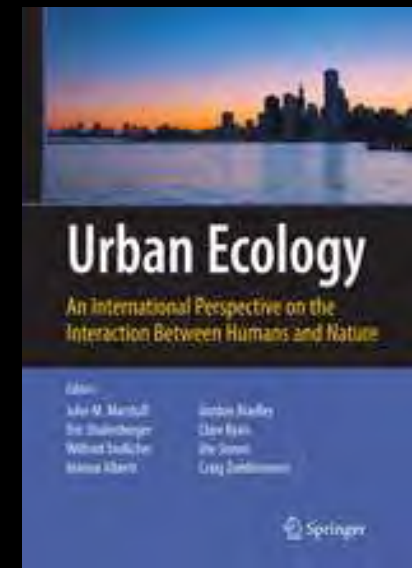
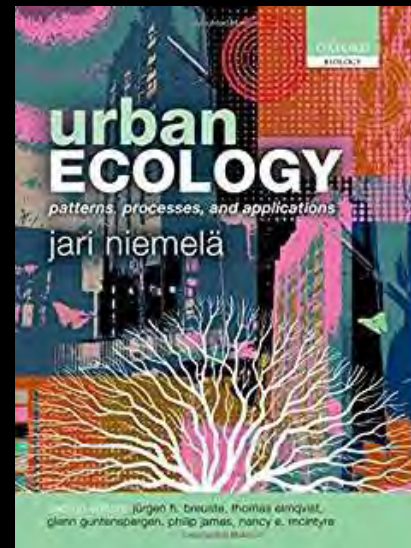
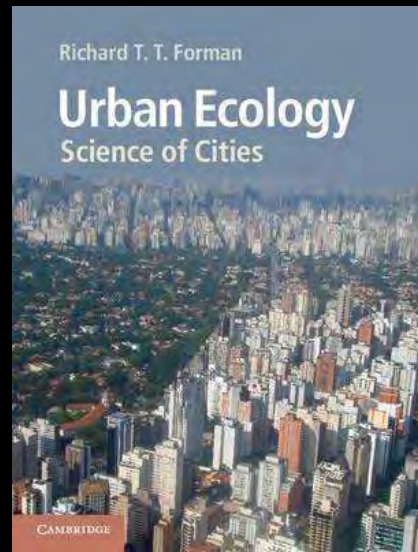
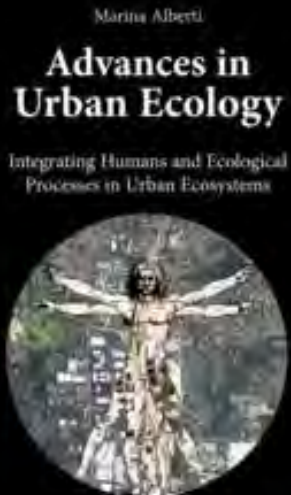
Version 1 – Science and Environmental Management

The Elemental City

Urban ecology is the scientific study of the relation of living organisms with each other and their surroundings in the context of an urban environment.

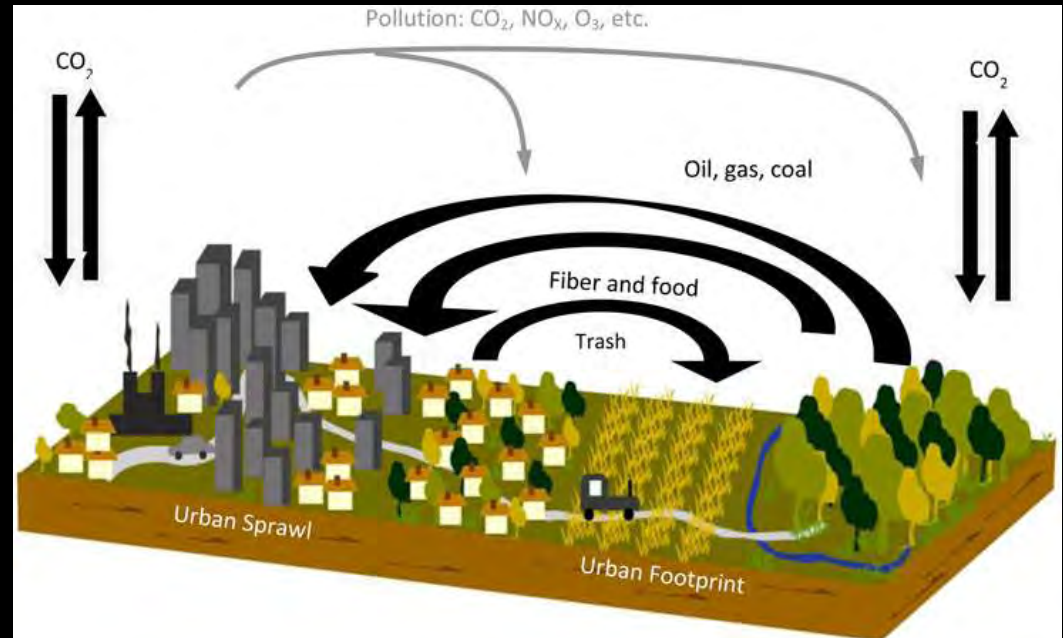
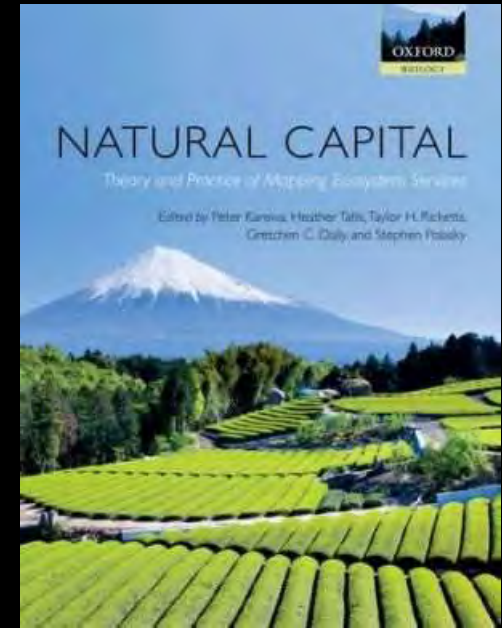
The urban environment refers to environments dominated by high-density residential and commercial buildings, paved surfaces, and other urban-related factors that create a unique landscape dissimilar to most previously studied environments in the field of ecology.

Baltimore and Phoenix - Long-term ecological research (LTER) sites are research sites funded by the NSF that have collected reliable long-term data over an extended period of time in order to identify long-term climatic or ecological trends.

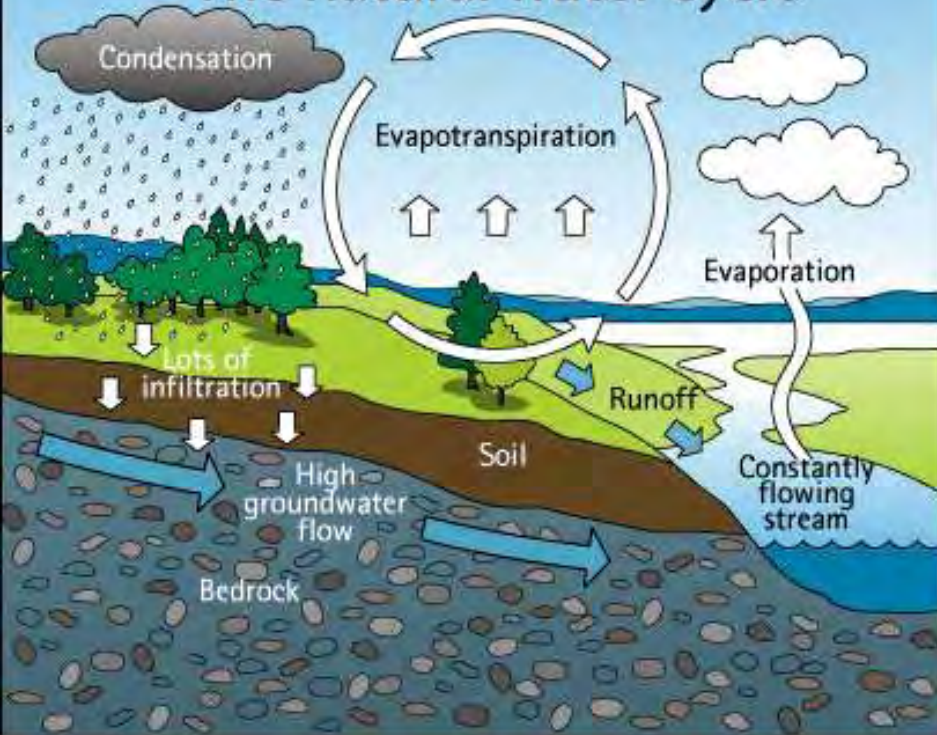


Ecosystem Cycles and Services

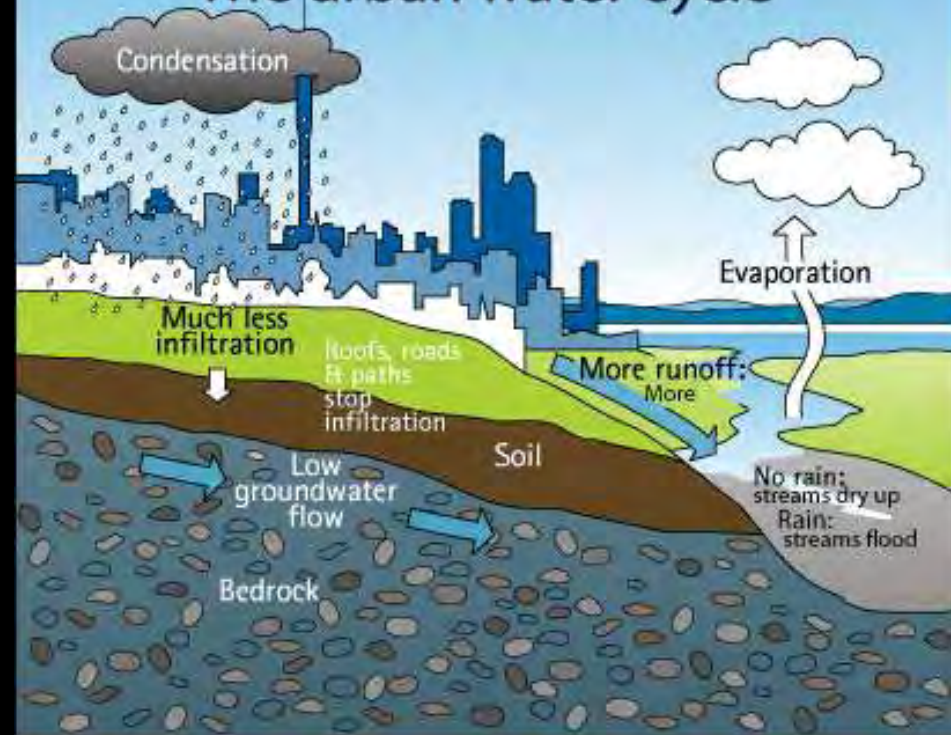
- ✓ Maintenance of atmosphere
- ✓ Protection from ultraviolet rays
- ✓ Regulation of climate
- ✓ Maintenance of genetic diversity
- ✓ Purification of air and water
- ✓ Detoxification and decomposition of wastes
- ✓ Generation of soil and renewal of soil fertility
- ✓ Pollination of vegetation
- ✓ Control of agricultural pests
- ✓ Dispersal of seeds
- ✓ Translocation of nutrients



The natural water cycle



The urban water cycle



Thomas Elmqvist
Michail Fragkias
Julie Goodness
Burak Güneralp
Peter J. Marcotullio
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Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities

A Global Assessment
Foreword by Pavan Sukhdev

Springer Open

Richard T. T. Forman

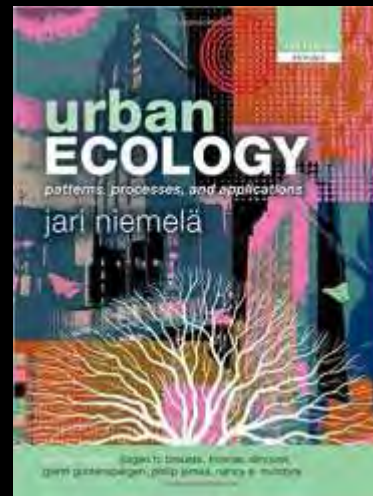
Urban Ecology Science of Cities



Martina Alberti

Advances in Urban Ecology

Integrating Humans and Ecological Processes in Urban Ecosystems



Tony Kendall and Stephen Forbes



Narrative of Functional Nature – Urban Ecology

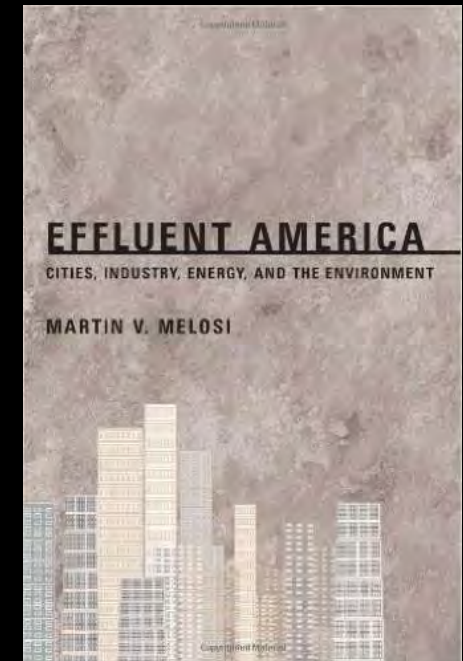
Version 2 – Engineering and Environmental Management

Urban Metabolism

The metabolic requirements of a city can be defined as the materials and commodities needed to sustain the city's inhabitants at home, at work and at play...The metabolic cycle is not completed until wastes and residues of daily life have been removed and disposed of with a minimum of nuisance and hazard.

- Abel Wolman "The metabolism of cities" *Science* (1965) p. 179

Urban metabolism is the study of material and energy flows arising from urban socioeconomic activities and regional and global biogeochemical processes. The characterization of these flows and the relationships between anthropogenic urban activities and natural processes and cycles defines the behavior of urban production and consumption.



Narrative of Urban Political Ecology - Urban Metabolism + Society + Politics

The central message that emerges from urban political ecology is a decidedly political one. To the extent that cities are produced through socio-ecological processes, attention has been paid to the political processes through which particular socio-environmental urban conditions are made and remade.

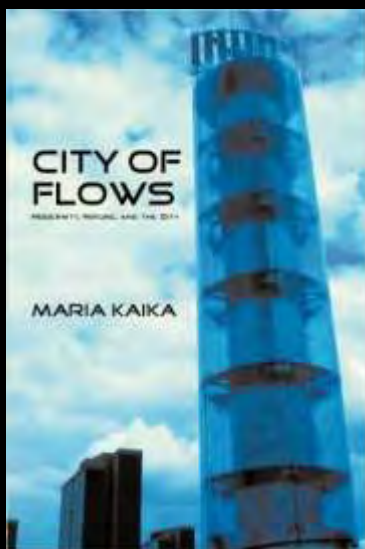
-Nik Heynen, et. al. (2006) *In the Nature of Cities*

Cities are dense networks of interwoven socio-spatial processes that are simultaneously human, material, natural, discursive, cultural, and organic. The myriad of transformation and metabolisms that support and maintain urban life, such as water, food, computers, or movies always combine environmental *and* social processes as infinitely interconnected...this intermingling of things material and symbolic combines to produce a particular socio-environmental *milieu* that welds nature, society and the city together in a deeply heterogeneous, conflicting and often disturbing whole.

-Maria Kaika (2005) *City of Flows: Modernity, Nature, and the City*

Nature is a biophysical fabric or network

-Matthew Gandy (2002) *Concrete and Clay: Reworking Nature in New York City*



What is a City? What is Nature?



Natural What?



Environmental Perception of Nature and the American City

The Sacred and the Mundane

Wilderness and the City

Natural vs. Artificial

Pristine vs. Degraded

Native vs. Non-native



Nature

The literary critic Raymond Williams famously observed that the “nature” is perhaps the most complex word in the English language because,

"The idea of nature contains, though often unnoticed, an extraordinary amount of human history."

Raymond Williams, "Ideas of Nature" 1983

