

# Reading the Book of Nature

**May Theilgaard Watts' Art of Ecology**



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**Science and Education**  
Interchange Series  
Field Museum of Natural History  
5 June 2014



## **Methods and Contexts:** Sustainability, ecocriticism, and urbanization

### **Urban Nature:** The strange and wonderful wilderness of cities

### **Reading (and Writing) the Landscape:** May Watts and the art of ecology

### **Future Prospects:** Literature, science, and urban sustainability

Image: illustration by M. Watts in *Reading the Lanscape* (1957), p95

# Sustainability

## The 21st Century's Greatest Imperative



**Mr. Will Allen** -- Urban Farmer,  
Founder of Growing Power, &  
Sustainability Entrepreneur

**Climate Change**

**Biodiversity Loss**

**Urbanization & Population Growth**

**Pollution**

**Clean Energy**

**Economic Development**

**Sustainable Agriculture**

**Social Justice & Equity**

**Environmental Stewardship**

# What Would a Sustainable Future Look Like?



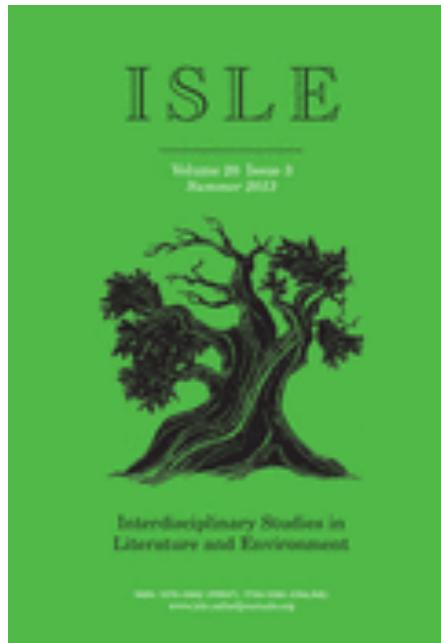
Hiking Northerly Island, 2011  
(photo by L. Bryson)

**Environmental resources** are conserved for both future human generations as well as non-human biota.

**Economic development** occurs not at the expense of the natural environment, but in a way to mitigate ecological costs and impacts.

**Equity** – social, economic, and environmental justice – governs the process of sustainable development.

# Ecocriticism: A Note on Method

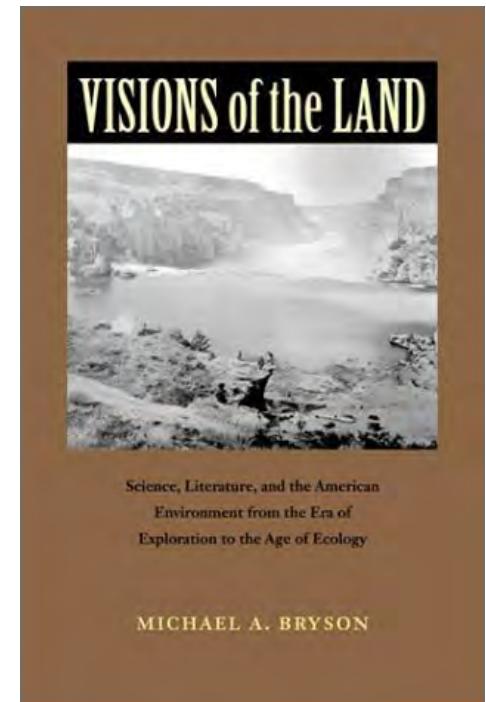


**Interdisciplinary** method of humanistic inquiry informed by science, esp. ecology

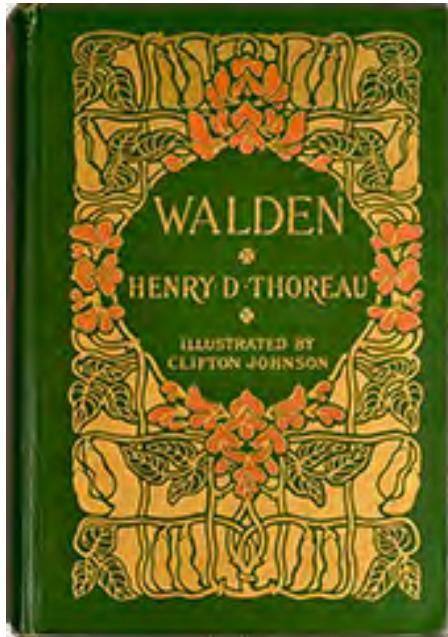
**Critical** interrogation of literature, film, policy, science, and all manner of environmental discourse

**One branch** of the multidisciplinary field of environmental studies

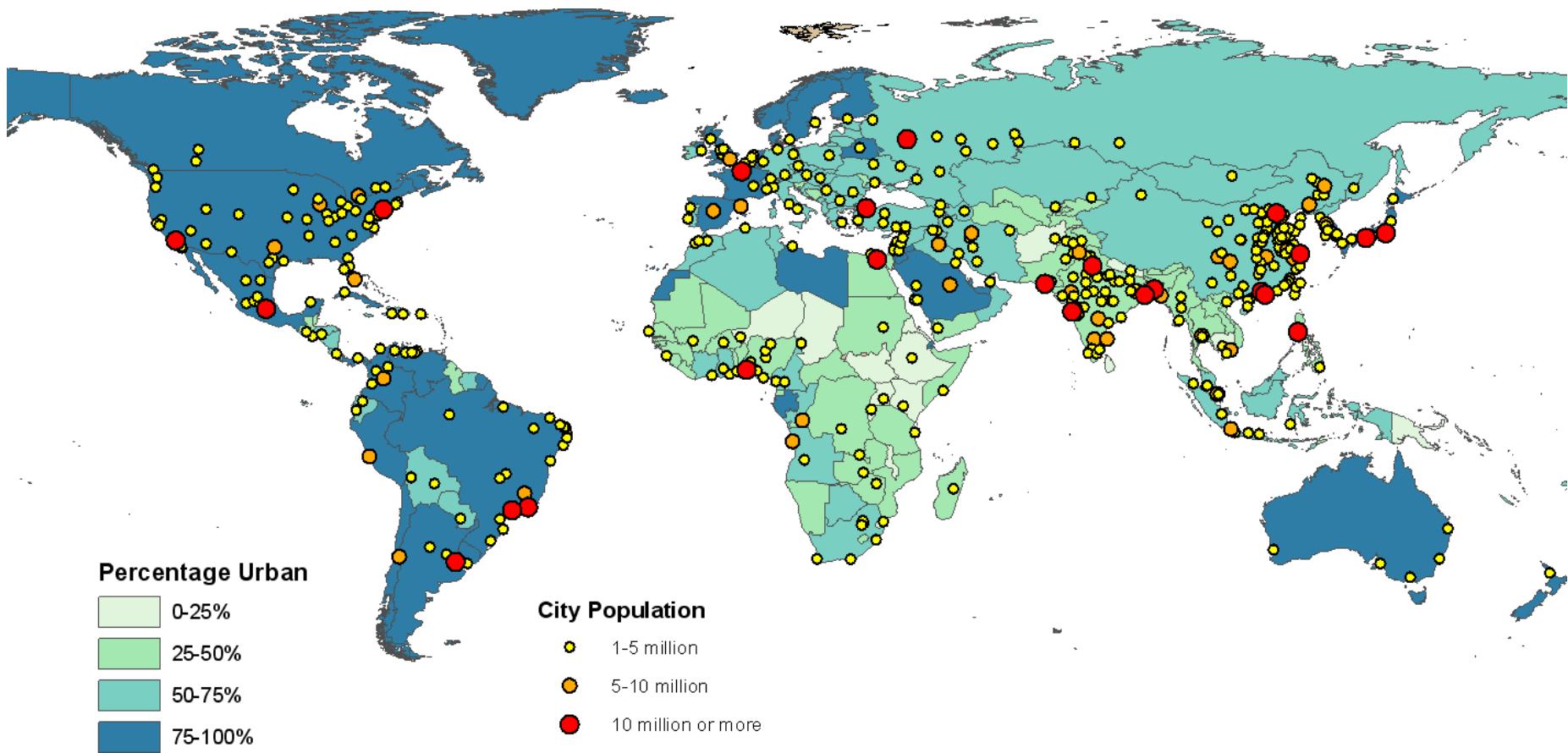
**Rooted** in the engagement of the arts and humanities with ecological problems and environmental issues



# Ecocriticism: All the World's a Text

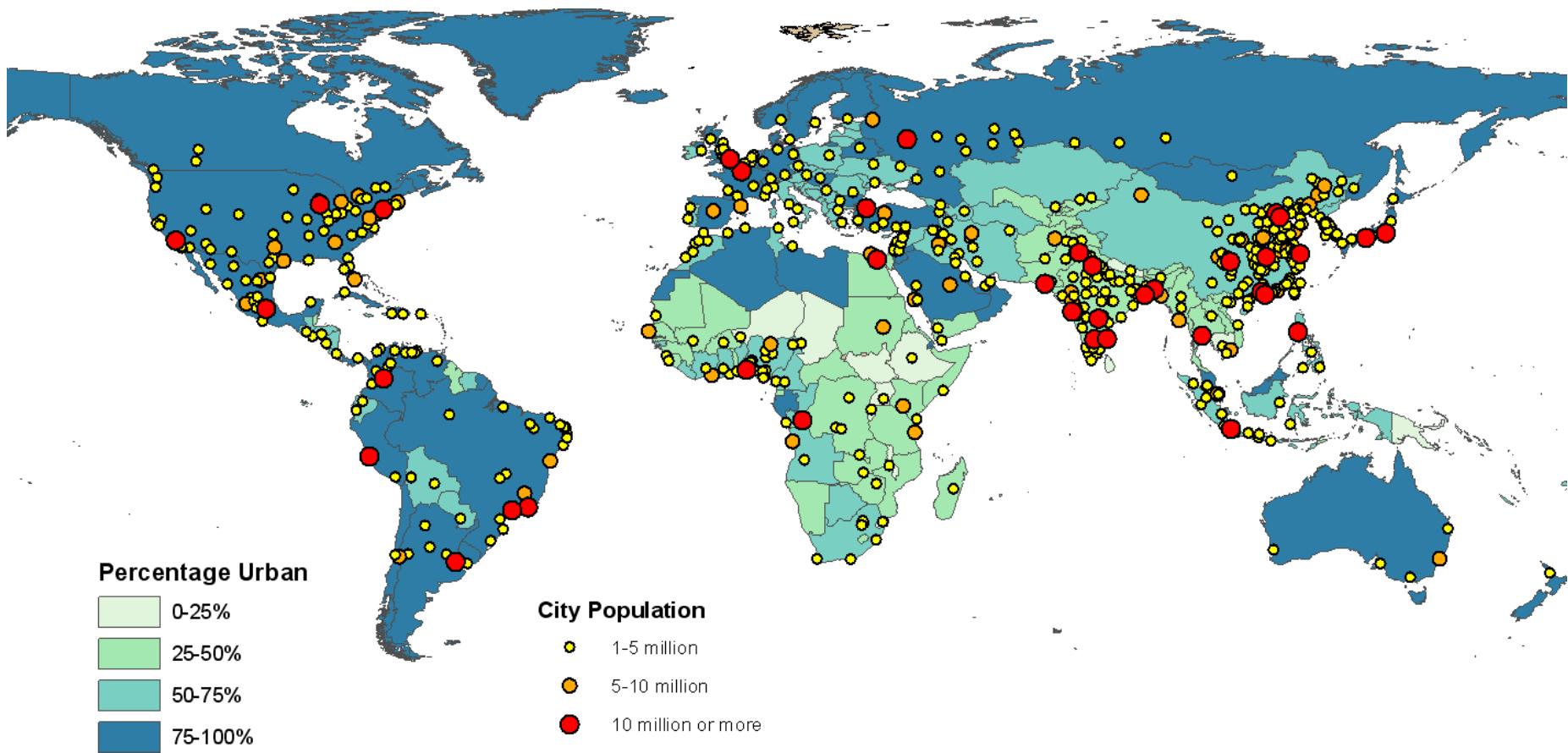


# Global Urbanization in 2011



Source: United Nations, Department of Economic and Social Affairs, Population Division.  
*[World Urbanization Prospects, the 2011 Revision](#)*. New York, 2012

# Global Urbanization: 2025 Projection



Source: United Nations, Department of Economic and Social Affairs, Population Division.  
*[World Urbanization Prospects, the 2011 Revision](#)*. New York, 2012

# Two Persistent Perceptions of Cities



Chicago Loop, seen from "The Brownlands" (Ryan Hodgson-Rigsbee)

## City vs. Nature

Fosters the illusion of technology-mediated independence from the natural world as well as a profound yet often unfulfilled longing for contact with wildness within a polluted and biologically-impoorerished cityscape.

## City as Living Ecosystem

Recognizes that cities and suburbs comprise a complex urban ecosystem, a dynamic mosaic in which imperiled nature interacts with humans and their built environment, and where the idea of "natural" can be interrogated.

# Urban Nature



Chicago Lakefront at Northerly Island, Oct 2011 (L. Bryson)

# Urban Nature



Morton Arboretum, May 2013 (M. Bryson)

# Urban Nature



Stearns Quarry Park (est. 2009), South Side of Chicago (M. Bryson)

# Urban Nature



Chicago Lights Urban Farm, Near North Side, April 2012 (M. Bryson)

# Urban Nature



Detention Basin at Roosevelt University's Schaumburg Campus (M. Bryson)

# Urban Nature



Life on the retaining wall – Bubbly Creek, South Side of Chicago (M. Bryson)

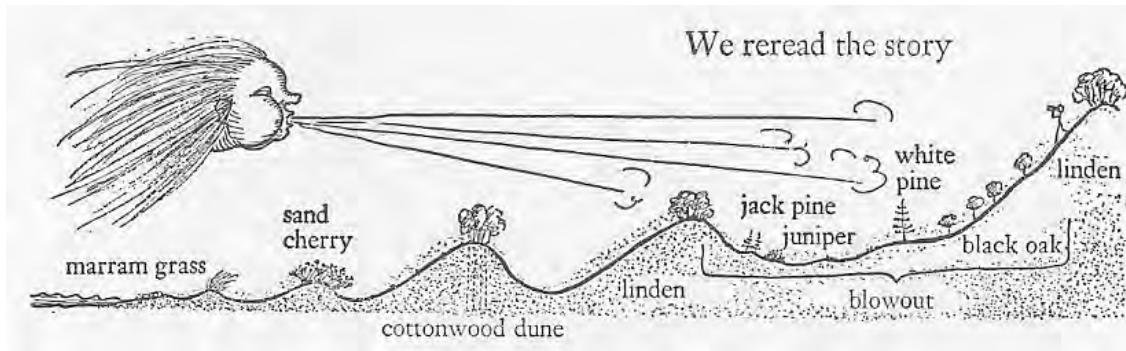
# Urban Nature



Hickory Creek by Washington Jr. High, Joliet IL, March 2011 (M. Bryson)

# May Theilgaard Watts (1893-1975)

Ecologist / Naturalist / Writer / Artist / Educator / Conservationist



# The Morton Arboretum



Sterling Morton Library at the [Morton Arboretum](#)



# Field Ecology in the Dunes, c. 1916



Watts & Hazel Brodbeck

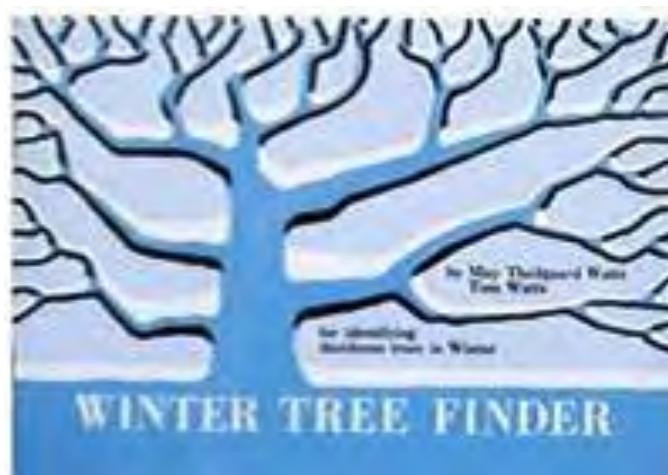
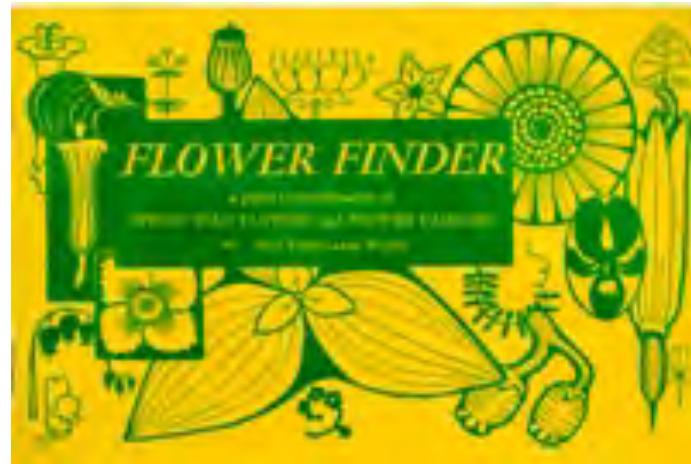
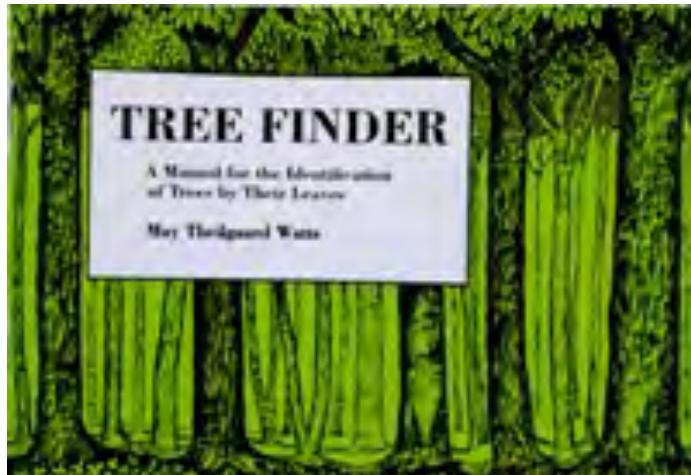


Henry Chandler Cowles & Watts

Library of Congress (American Environmental Photographs Collection, [AEP Image Numbers - MIS174,175; -WIS45], Department of Special Collections, University of Chicago Library).

# A Naturalist's Guidebooks

The "Finders" Field Guides



# A Naturalist's Guidebooks

## Pages from *Tree Finder*

② the HABITAT of a tree, the place where it is likely to grow naturally, is indicated beside the leaf of each NATIVE TREE

lowland.....	the edge of the forest.....	tolerating moderate shade.....
banks of streams and lakes.....	small tree in the shade of tall trees.....	tolerating heavy shade.....
bogs.....	mixed forest of evergreen and deciduous trees.....	eastern mountains.....
upland.....	evergreen forest.....	tolerating the conditions of cities.....
sand and gravel.....	deciduous forest.....	roadsides and fence-rows.....

Most of the habitats indicated in this book are a combination of two or more of the situations shown on this page and the next.

③ the PLACE of a tree in Association with PEOPLE is shown beside the leaves of introduced trees and some native trees

brought from across the sea.....	pioneer in disturbed areas.....	planted in parks, parkways, yards.....
brought from the western mountains.....	pioneer after fire.....	planted about houses.....
tolerating the conditions of cities.....	pioneer after cutting of forest.....	of one sort.....
roadsides and fence-rows.....	pasture pioneer.....	or another.....
as the times and styles change.....		

the same kinds of trees are found in fence-rows, pastures, and the edge of the forest.

④ S H A P E S

The tree shapes shown in this book are the shapes of mature trees. Tree shape can change with age. Below are shown six stages in the life of an American Elm.

The tree shapes shown below have been modified by:

shade	or wind	or cows	or people	or disease
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The leaf shape may depend, in part, on its position on the tree:

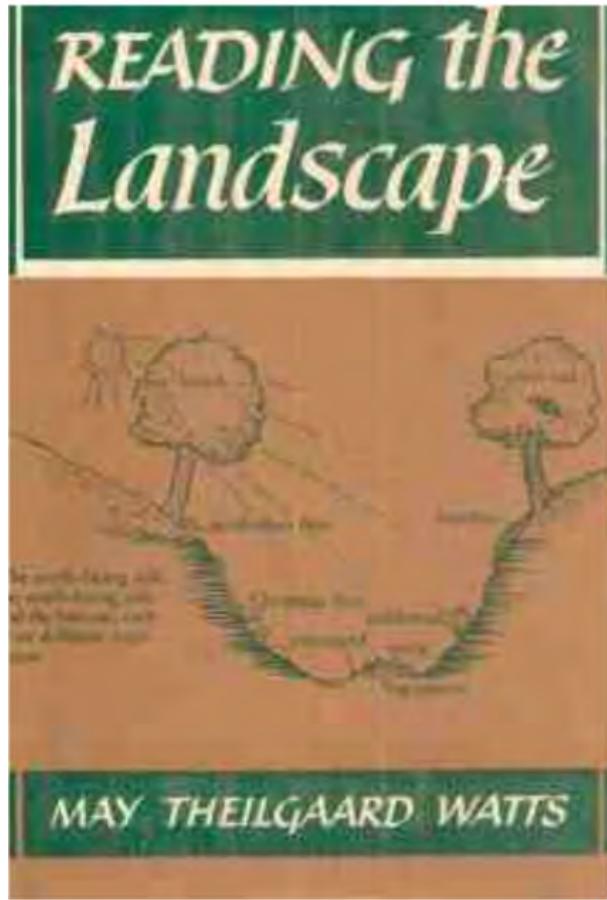
on a vigorous seedling.....	on shaded lower branches.....	on the sunny topmost branches.....
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BUR OAK      BUR OAK      BUR OAK

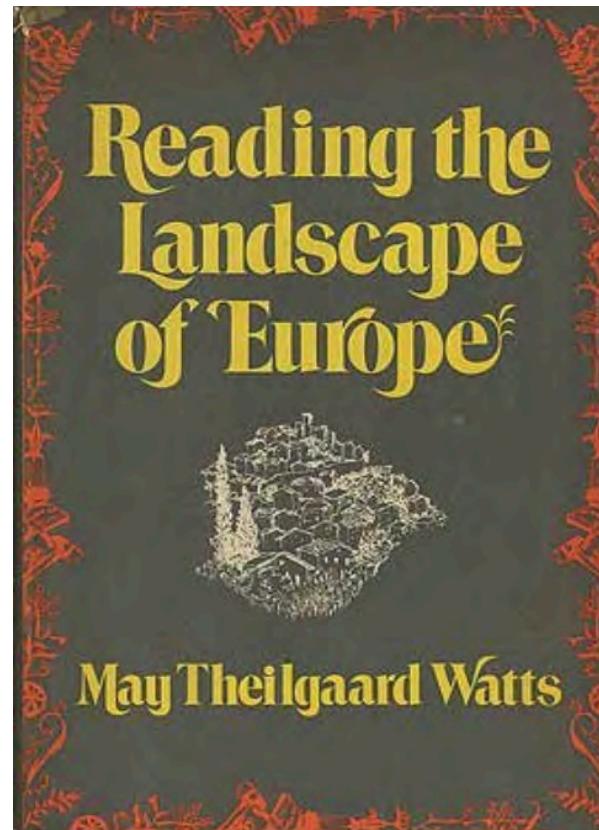
- START HERE** If the tree has needles, start with this symbol, this page  
 If the tree has leaves, start with this symbol, page 14
- If the needles are long,  $\frac{1}{2}$  inch to 18 inches, go below, to   
 If the needles are short, scale-like, overlapping, go on page 13, to
- If the needles are in bundles or tufts, go below, to   
 If the needles are borne singly, go on page 10, to
- If the needles are in bundles of 2 to 5, go on page 6, to   
 If the needles are deciduous, many in a tuft, go on page 6, to

# Reading the Book of Nature

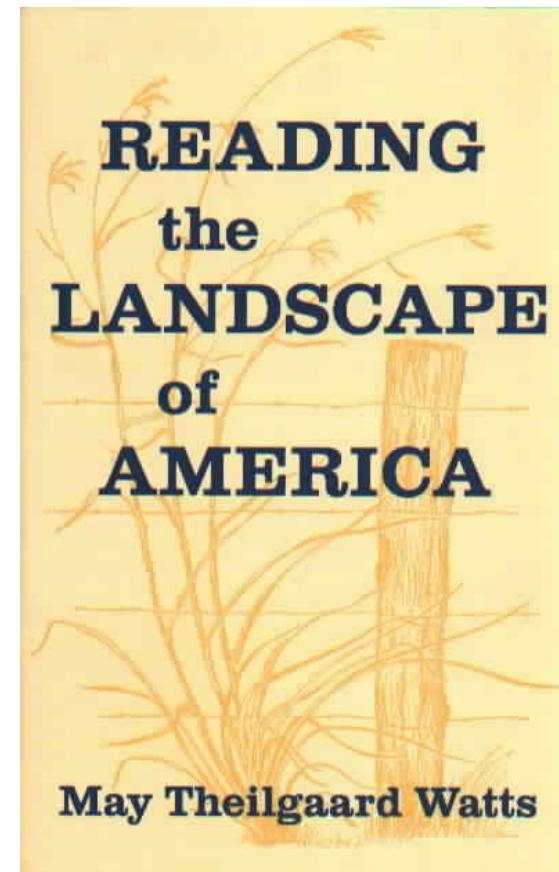
May Watts and the Art of (Teaching) Ecology



1957

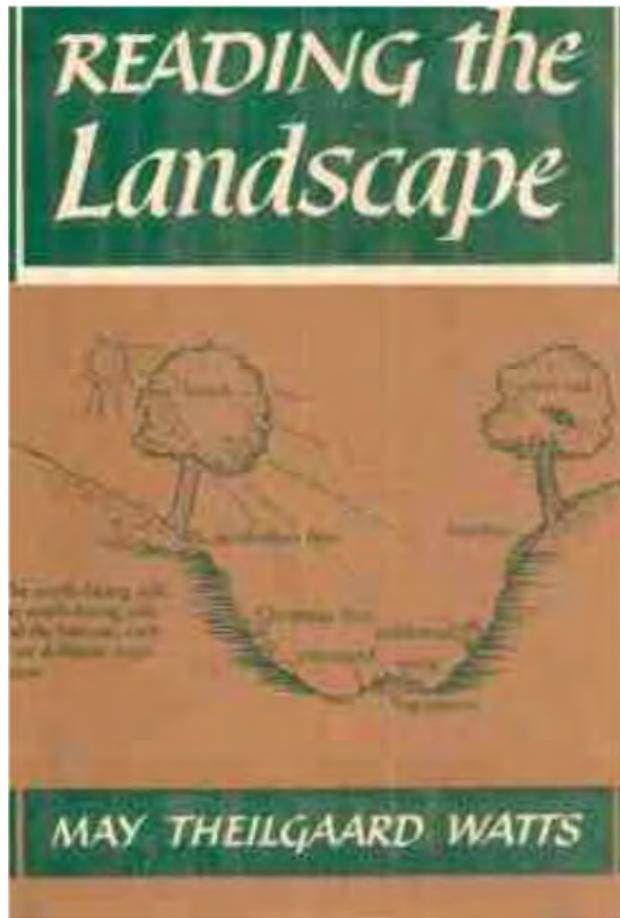


1971



1975

# Ecology as the Study of Change



"There is good reading on the land, first-hand reading, involving no symbols.

"The records are written in forests, in fencerows, in bogs, in playgrounds, in pastures, in gardens, in canyons, in tree rings. . . .

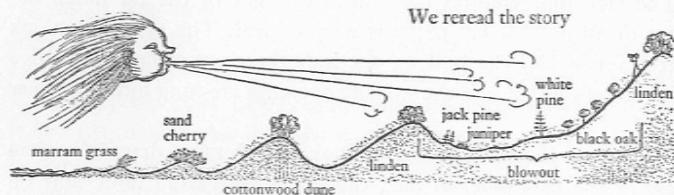
"This ecology . . . [f]inds a story in a schoolyard, in the corner of an old cemetery, in a foundation planting, and even in a window box."

May Watts, *Reading the Landscape*

# Science, Narrative, and Art

This colony is a "relict" of the last glacial invasion. The evergreens that moved south before the oncoming glacier crept north again as the glacier retreated. The deciduous forest crowded them out of places that were fit for deciduous trees, and might, possibly, have already superseded them here had not the persistence of pines been favored by occasional fires and other disturbances(11).

The only places that the evergreens could hold on to, in the face of the northward march of the deciduous trees, were the difficult places, such as the edges of canyons (illustrated in Chapter 6, the Canyon story), the edges of acid bogs (Chapter 4, History Book with Flexible Cover) and the shifting sands of the dunes.



We got up from our rest among the evergreens, and started across the blowout.

I paused to squeeze a leaf of the aromatic sumac to enjoy its pungency. The leaves in the dunes were broader, I noticed, and not so thick-feeling as the leaves on the stunted specimen of aromatic sumac that I had been surprised to find once growing at my feet, far from any other plant, on a sterile gray expanse in the Badlands.

The dunes are certainly a good place for travelers to visit, to revive old friendships with plants met in diverse and distant places.

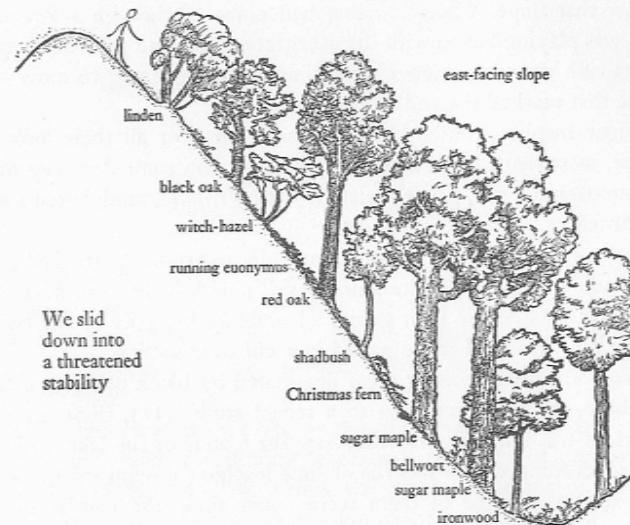
We continued across the restlessness and threat of the blowout, and climbed the next ridge. It was higher than any ridge we had climbed, and we could look back and reread the chapters up to this point.

At our feet lay the long blowout. Beyond it, we could see the gap where the wind had entered. And through the gap, we could see the cottonwood dune, then the sand-cherry dune, then the

marram grass mound, and (with the aid of bird glasses) the beam that the lake had rolled ashore.

Then we turned our backs on the lake, and looked steeply down the leeward slope. We continued to look, for a long time. It rested our eyes.

Beneath us lay a peaceful deep hollow filled with familiar woodland. We had turned our backs on pioneers and relicts and invaders from the arid southwest. We had turned our backs on reduced leaf



surfaces and aromatic oils and succulent leaves; also on milky juices and thick skins and leathery surfaces; and on pubescence, and other characters of plants that endure gritty wind and unrelenting sun.

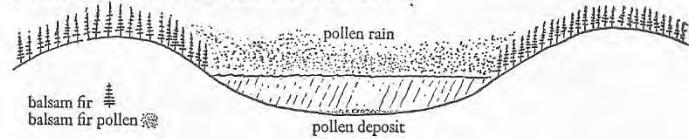
We had turned our backs on the xerophytes, the dry-land plants, because we had found shelter from wind and sun.

We slid down among the mesophytes, the plants occupying the middle ground between dry and wet.

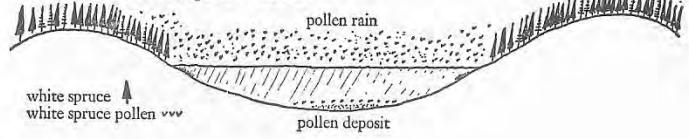
Here were lindens and sugar maples, bitternut hickory and red

# Succession in the Natural Landscape

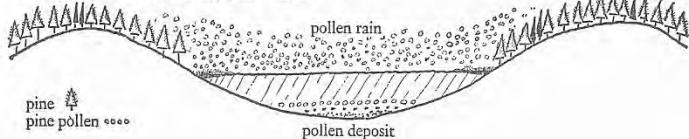
I After the glacier retreated, balsam fir came in



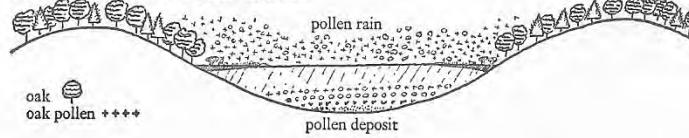
II Fir moved north, spruce came in



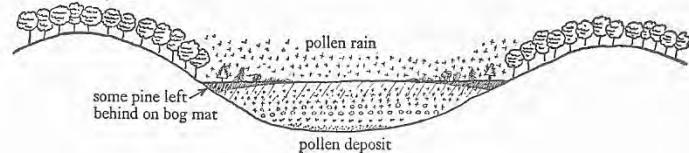
III Spruce moved north, pine came in



IV Pine moved north, oak came in



V Oak stayed



CANYON DISSECTING A BEECH-MAPLE UPLAND FOREST COMMUNITY

Young V-Shaped Canyon

Same plants on both walls

↓ liverworts

↓ mosses: Thuidium, Mnium

↓ fern, bulblet bladder fern

↓ shrub, spikenard

North-Facing Wall

liverworts

mosses:

Thuidium

Mnium

Catharinea

bulblet bladder fern

mitrewort

spikenard

red maple

white ash

American elm

sugar maple

beech

Meandering Stage

Flood-Plain Stage

Bottom

Succession starting at B

aster goldenrod

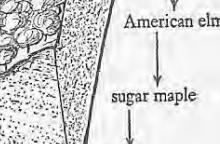
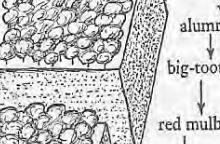
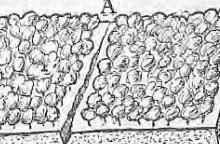
smartweed

sand-bar willow

sycamore

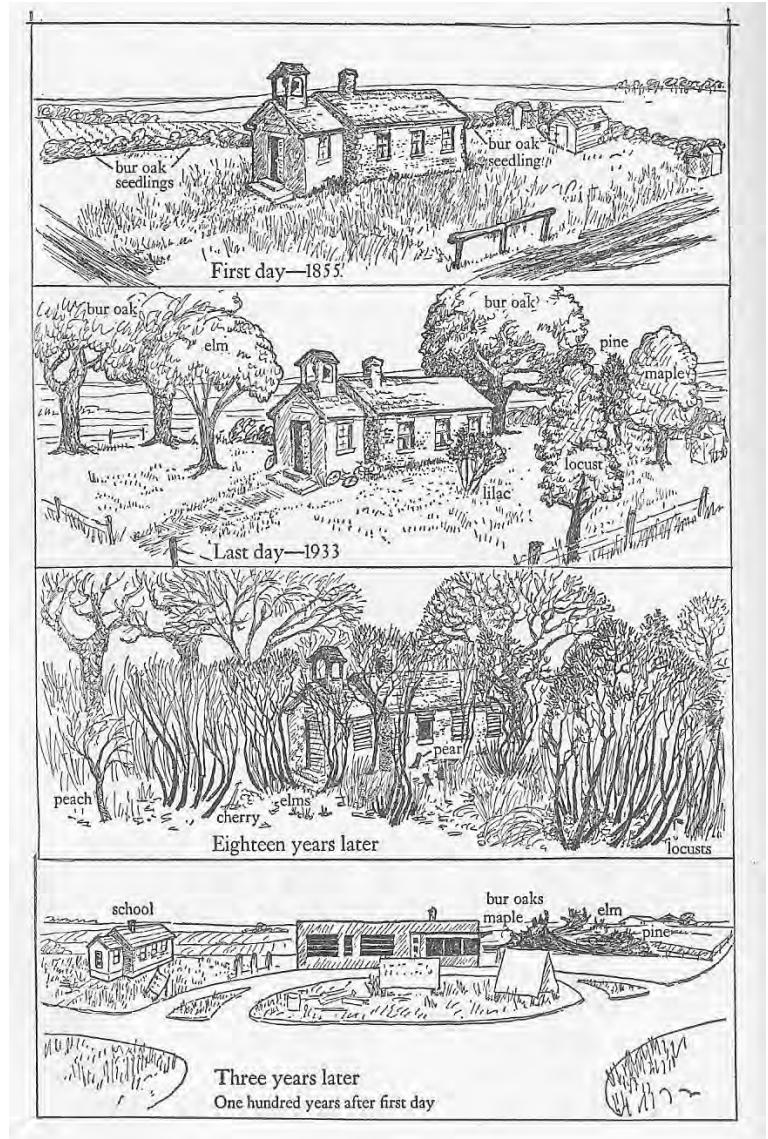
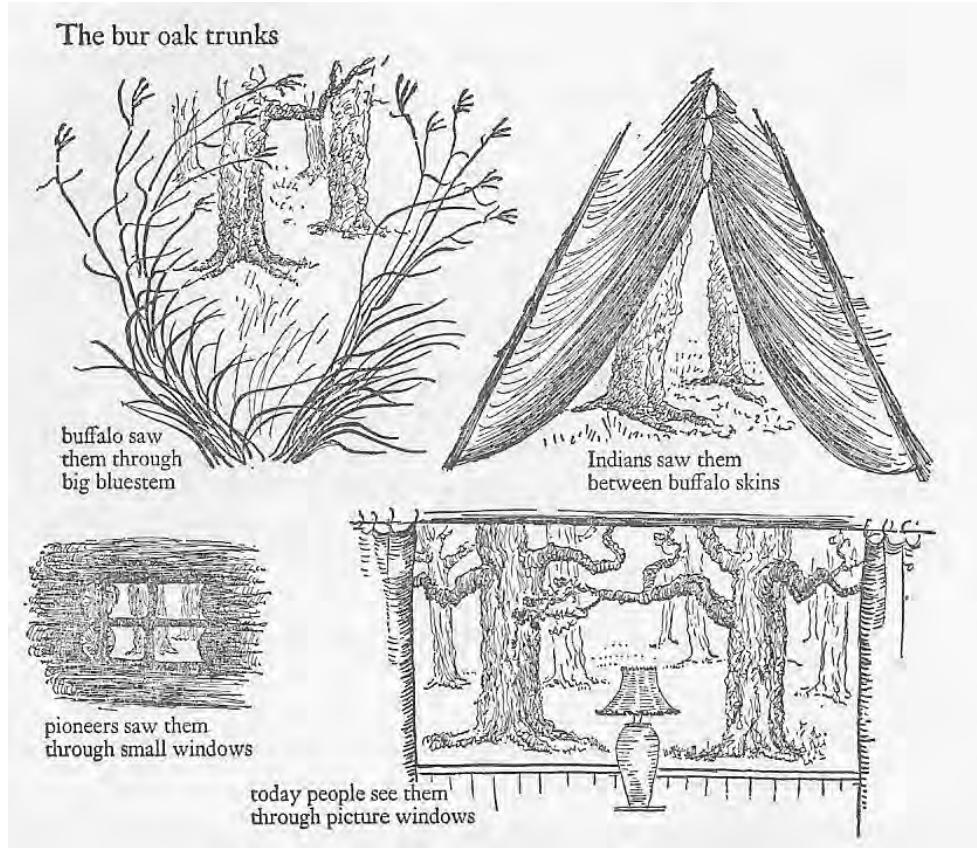
cottonwood and silver maple

black maple



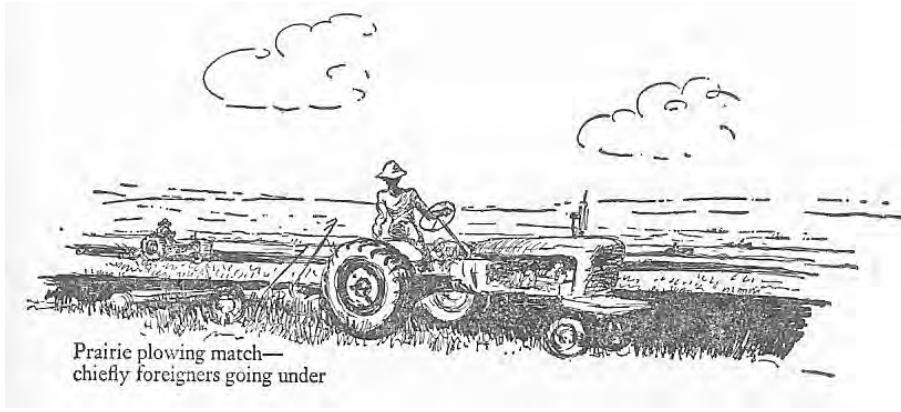
Illustrations from Watts, *Reading the Landscape* (1957), pp. 81 and 99

# Succession in the Human Landscape

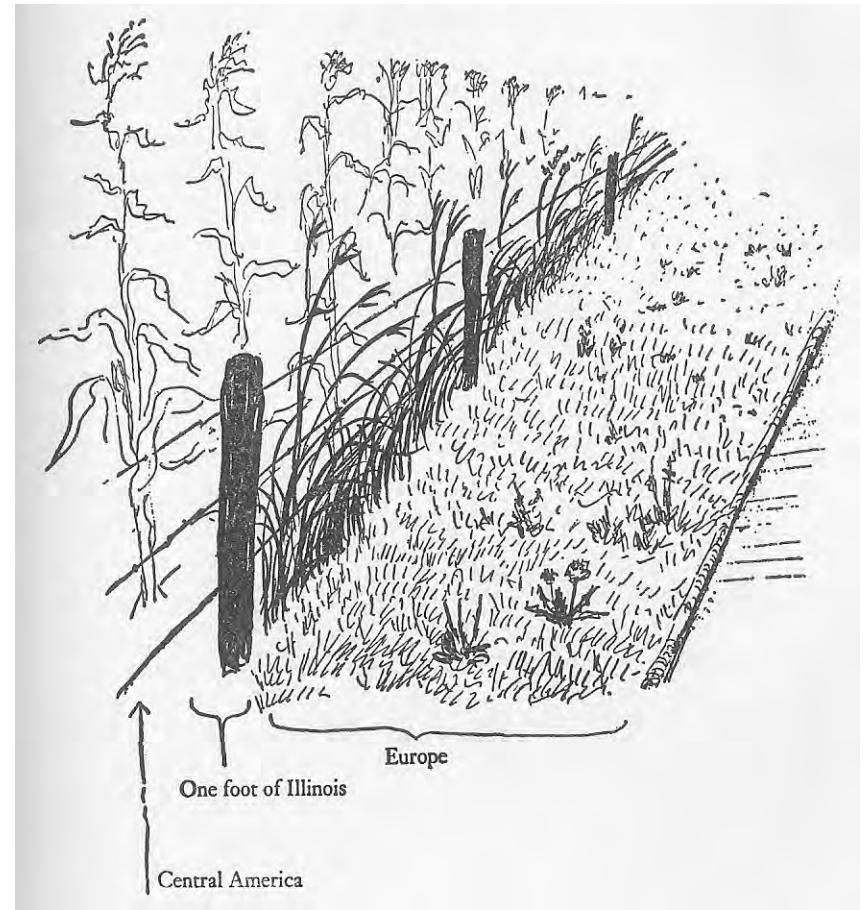


Illustrations from Watts, *Reading the Landscape* (1957), pp. 36 and 186

# Non-native Species



Prairie plowing match—chiefly foreigners going under



Illustrations from Watts, *Reading the Landscape* (1957), pp. 18-19, 27

# Country and City

## "The Story of a Road"

from the essay "Looking Down on Improved Property; or, an Airplane View of Man and Land,"

Horizontal (space) vs. Vertical (time)  
succession

Human alteration of the landscape

Roads as windows onto built environment

Native vs. non-native vegetation

Connection of rural, suburban, and urban environments

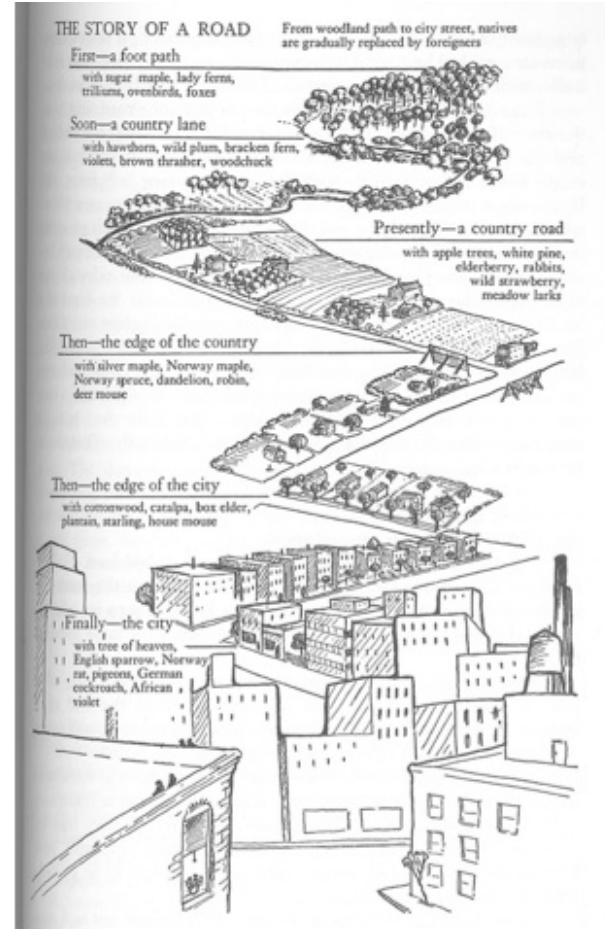
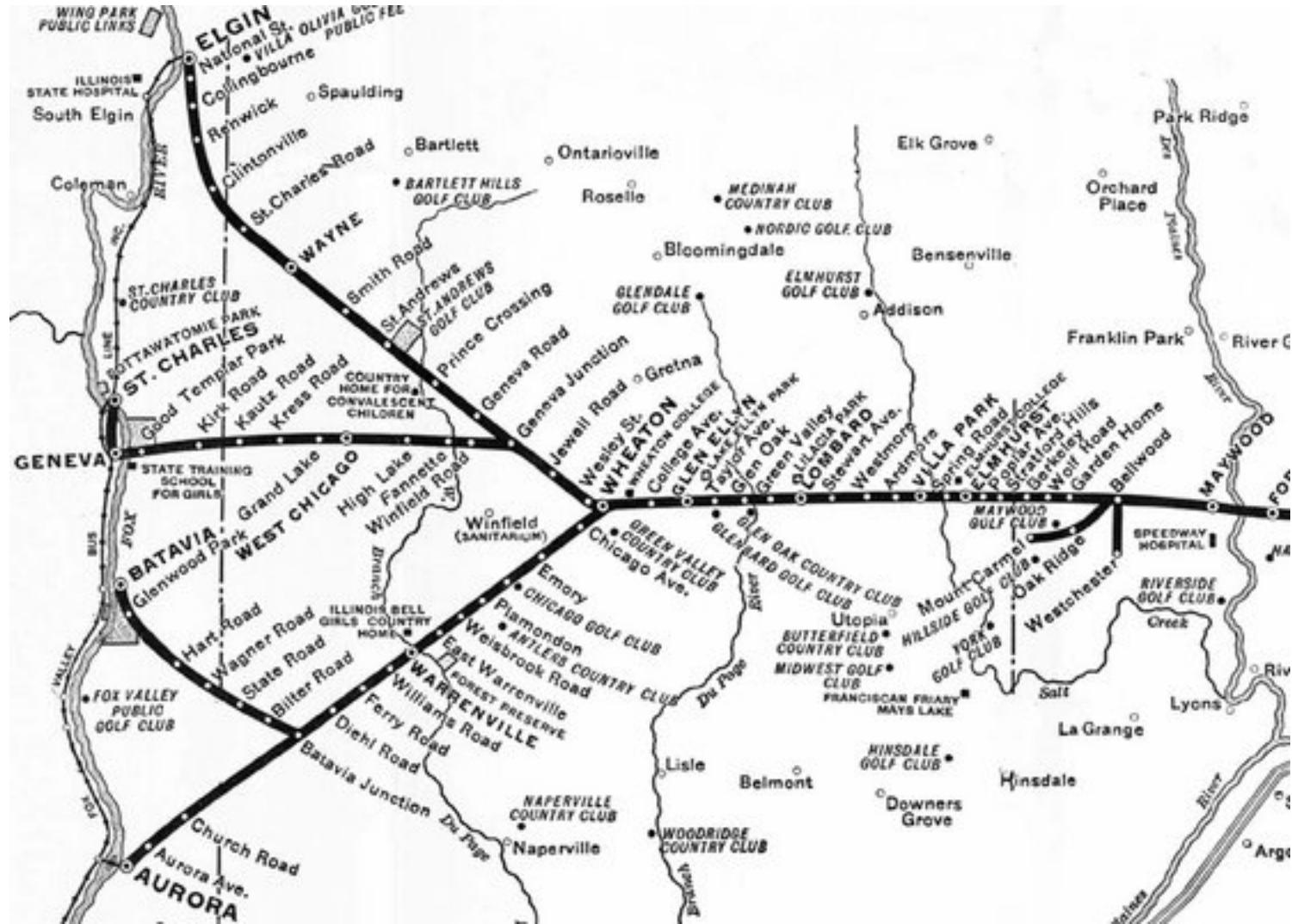


Illustration from ch. 11 of *Reading the Landscape of America* (1975), p.199

# A Bold Notion



1936 Chicago, Aurora, & Elgin RR Map

# Future Footpath?

Naperville, Sept. 25 – We are human beings. We are able to walk upright on two feet. We need a footpath. Right now there is a chance for Chicago and its suburbs to have a footpath, a long one.

The right of way of the Aurora electric road lies waiting. If we have courage and foresight, such as made possible the Long trail in Vermont, and the Appalachian trail from Maine to Georgia, and the network of public footpaths in Britain, then we can create from this strip a proud resource.

Look ahead some years in the future. Imagine yourself going for a walk on an autumn day. Choose some part of the famed Illinois footpath. . . . The path lies ahead, curving around a hawthorn tree, then proceeding under the shade of a forest of sugar maple trees, dipping into a hollow with ferns, then skirting a thicket of wild plum, to straighten out for a long stretch of prairie, tall grass prairie, with big blue stem and blazing star and silphium and goldenrod. . . .

That is all in the future now, the possible future. Right now the right of way lies waiting, and many hands are itching for it. Many bulldozers are drooling.

Letter to *Chicago Tribune*, 25 Sept 1963

# The Illinois Prairie Path's Founders



In just 2.6 years  
these 14 founders  
turned Mrs. Watts'  
letter to the editor  
proposing a public  
path into a 12-year  
lease to develop 27  
miles of trails that  
became the  
Mainstem of the  
Illinois Prairie Path.



May Theilgaard Watts



Elizabeth Holmes  
Samuel Holmes



Lillian Lasch



George Ryerson  
Phoebe Ryerson



Helen Turner



Jane Sintd  
August Sintd



John Heddens



Betty Nemic  
William Nemic

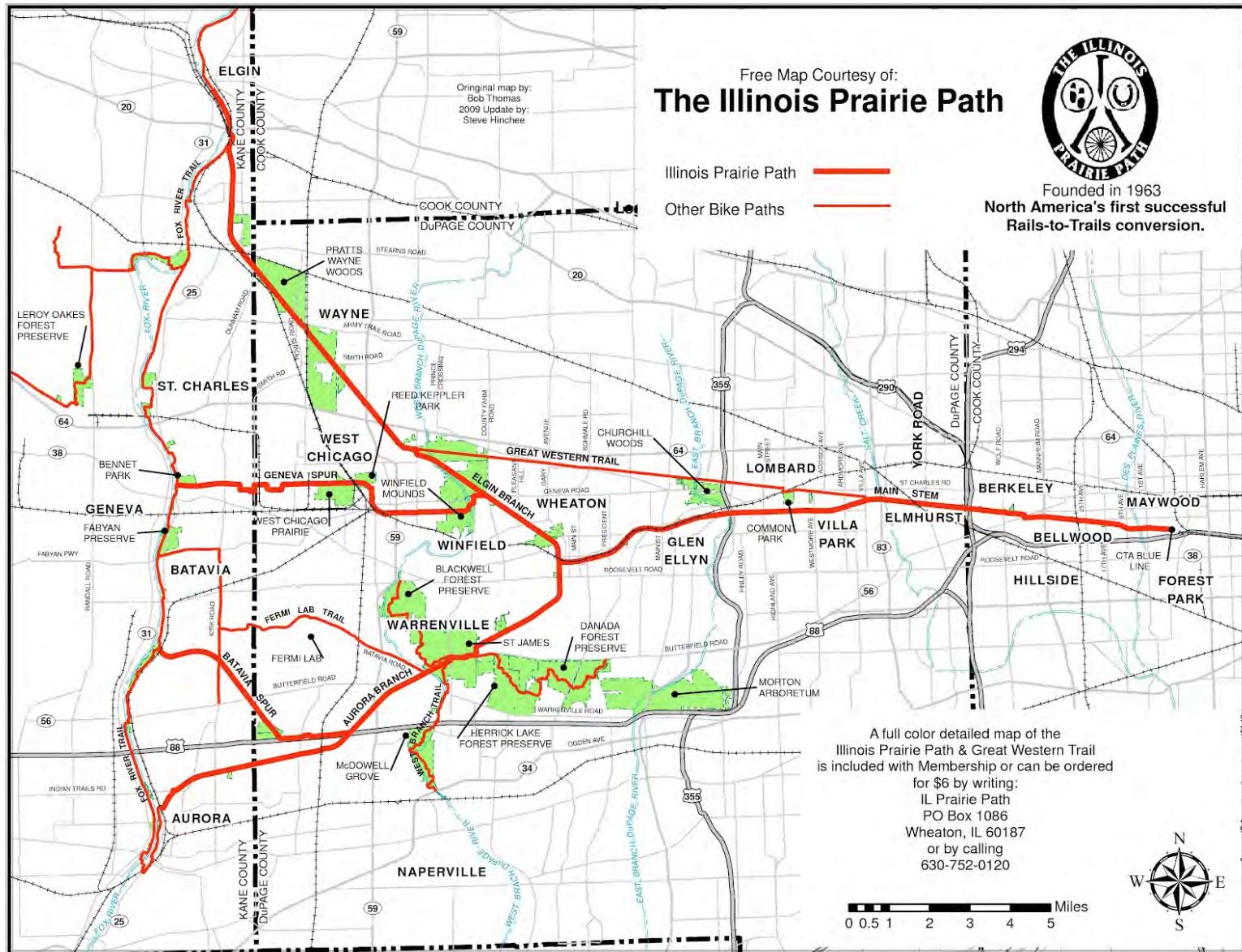


Dr. Warren Keck



Gunnar Peterson

# Urban Conservation: Rails to Trails



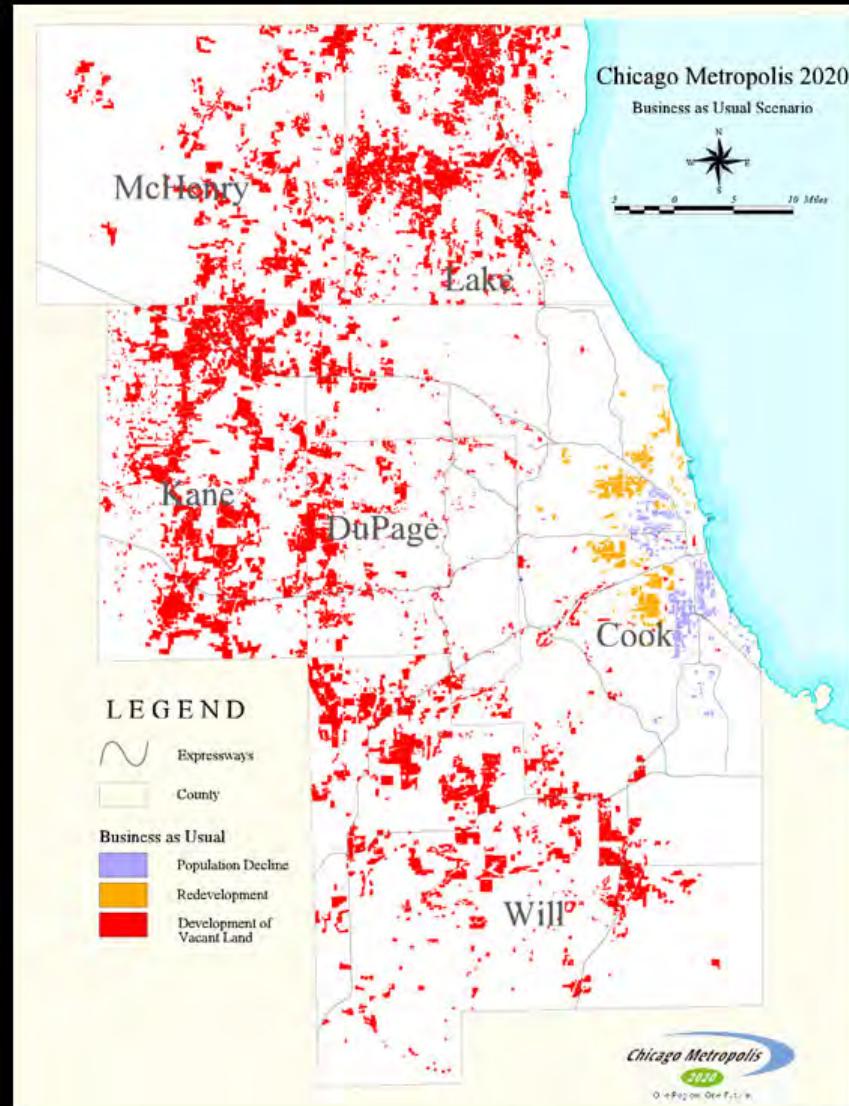
Source: [Illinois Prairie Path](#) (est. 1963)

# Active Transportation in Small Cities



Bike to Metra (commuter train) Map – Joliet, IL (2010)

# Land Use, Planning, Open Space Conservation



Chicago area business as usual growth trend vs. Metropolis Plan concept.  
Image credit: Chicago Metropolis 2020

# Watts' Environmental Ethic

Congruence with Contemporary Sustainability

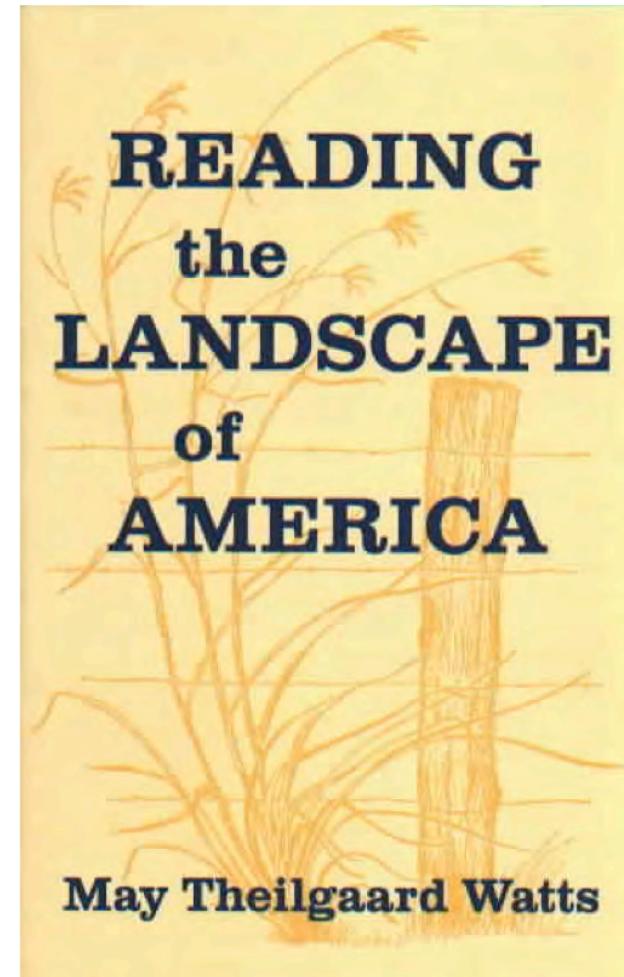
**Interdisciplinary methods:** literature, science, art, education

**Ecology & (good old fashioned) natural history:** value of direct experience, holistic knowledge of nature

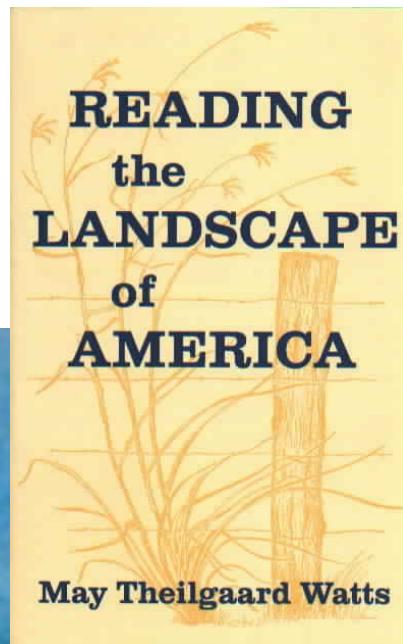
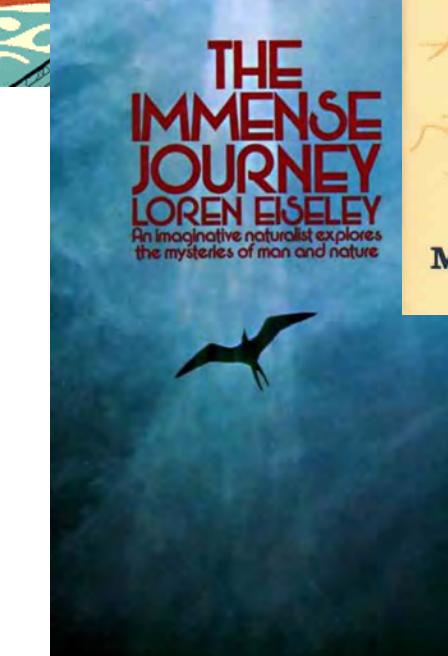
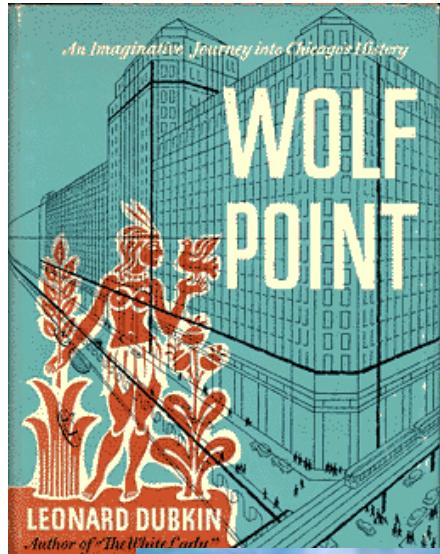
**Urban / suburban / rural / wild landscapes:** connections, not divisions

**People & nature:** human impacts & transformations are part of the story to be read

**Conservation:** value of biodiversity, native species, ecosystem integrity, open space, cultural traditions



# Urban Nature Writing and the Future of Cities



**Contributes to the environmental history** of our cities and suburbs

**Challenges our assumptions** about the urbanized landscape, the character of wilderness

**Connects us to nature** close at hand, underfoot

**Exemplifies the engagement** of the arts and humanities with ecological problems and environmental issues

**Helps us envision** what a sustainable city or suburb should be like