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The Great Schism in the Environmental Movement

Can modern greens loosen nature's grip on environmentalism?

By Keith Kloor | Posted Wednesday, Dec. 12, 2012, at 8:30 AM ET

Natural and Unnatural History: The Path Forward

Kevin M. Anderson
Austin Water Center for Environmental Research



Natural History

Understanding whole organisms in context

Scientific - Ecological understanding shaped by cultural contexts

Literary - Cultural understanding shaped by ecological contexts



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

Raymond Williams, "Ideas of Nature"

Natural History - Origins

Natural history is the study of plants and animals leaning more towards observational rather than experimental methods.

This definition satisfies depending on how much one likes to lean toward observation and if one is a scientist.

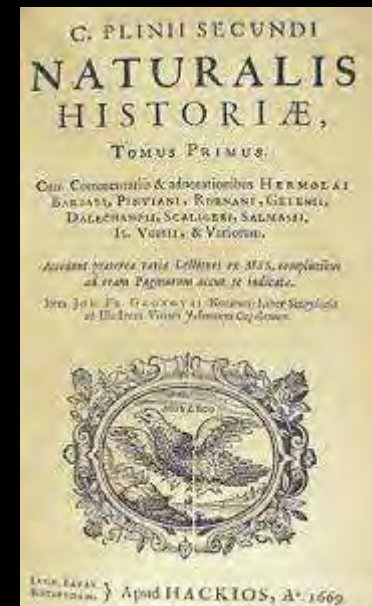
The originators of natural history were not scientists.

They were philosophers who studied nature and wrote *historia*

This Greek word is closer to investigation or research rather than our word “history”

But the books of their nature research were entitled “Natural History”

...and the rest, as they say, is history.



Themes

- Observation
- Description
- Classification
- Encyclopedias
- Biogeography
- Collecting
- Museums
- Evolution
- Amateurs to Professionals
- Naturalists to Biologists
- Artists as Naturalists
- Natural History as Literature





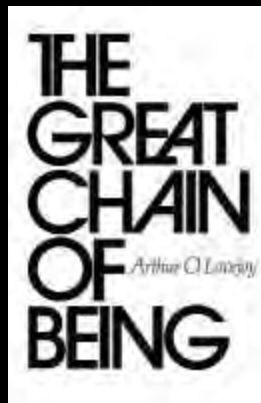
Classification of Living Things - Aristotle

Aristotle's classification of living things contains some elements which still existed in the 19th century. What the modern zoologist would call vertebrates and invertebrates, Aristotle called 'animals with blood' and 'animals without blood'.

Aristotle's *History of Animals* classified organisms in relation to a hierarchical "Ladder of Life" (*scala naturae*), placing them according to complexity of structure and function so that higher organisms showed greater vitality and ability to move.

Aristotle believed that creatures were arranged in a graded scale of perfection rising from plants on up to man, the *scala naturae* or Great Chain of Being.

His system had eleven grades, arranged according "to the degree to which they are infected with potentiality", expressed in their form at birth. The highest animals laid warm and wet creatures alive, the lowest bore theirs cold, dry, and in thick eggs.



Arthur O. Lovejoy (1964. First published 1936), *The Great Chain of Being: A Study of the History of an Idea*, Cambridge, Massachusetts: Harvard University Press

The Enlightenment 17th and 18th Centuries

Rise of Scientific Natural History

- Beginnings of Scientific Taxonomy
- New Worlds observed, described, collected, illustrated



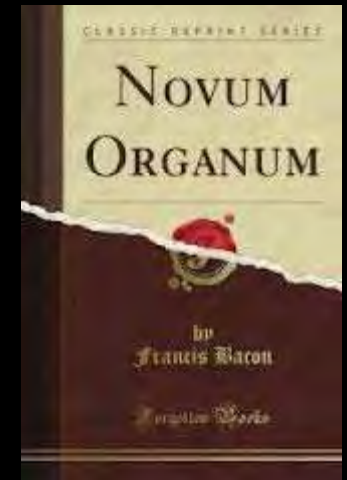
Francis Bacon 1561–1626

an English philosopher, statesman, lawyer, and pioneer of the scientific method

In his magnum opus, *Novum Organum*, or "new instrument", Bacon argued that although Scholastic philosophy at the time mainly used deductive syllogisms to interpret nature, mainly owing to Aristotle's logic.

The philosopher should proceed through inductive reasoning from fact to axiom to physical law.

"take the question to nature" and learn by observation and experiment



Classification and Identification

Carl Linnaeus 1707 – 1778

a Swedish botanist, physician, and zoologist, who laid the foundations for the modern scheme of binomial nomenclature.

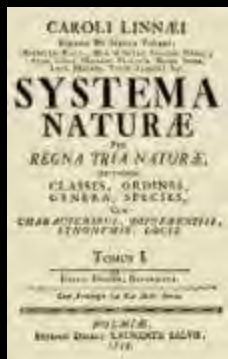
The first edition of *Systema Naturae* was printed in the Netherlands in 1735 He then returned to Sweden, where he became professor of botany at Uppsala.

In the 1740s, he was sent on several journeys through Sweden to find and classify plants and animals. In the 1750s and 60s, he continued to collect and classify animals, plants, and minerals, and published several volumes. At the time of his death, he was one of the most acclaimed scientists in Europe.

During Linnaeus' time as Professor and Rector of Uppsala University, he taught many devoted students, who made botanical expeditions to various places in the world, often with his help.

His “sexual system” of taxonomy used the flower and its reproductive parts to structure the taxonomy. It was remarkably useful for the practical purposes of identification but inconsistent for animal classification.

Focused on “essential” diagnostic characters, discontinuity in taxonomy



Classification and Natural Diversity Comte de Buffon 1707–1788

French naturalist, mathematician, cosmologist, and encyclopedic author.

Buffon published thirty-six quarto volumes of his *Histoire naturelle* during his lifetime; with additional volumes based on his notes and further research being published in the two decades following his death.

In the opening volumes of the *Histoire naturelle* Buffon questioned the usefulness of mathematics, criticized Carl Linnaeus's taxonomical approach to natural history.

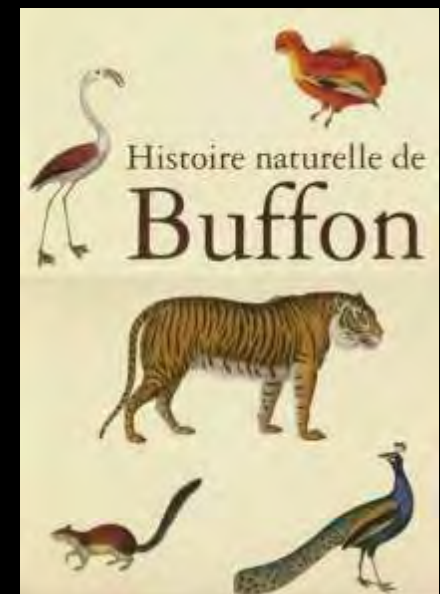
In the course of his examination of the animal world, Buffon noted that despite similar environments, different regions have distinct plants and animals, a concept later known as Buffon's Law.

This is considered to be the first principle of biogeography.

He was not an evolutionist, yet he was the father of evolutionism. He was the first person to discuss a large number of evolutionary problems.

In contrast to Linnaeus, Buffon was less concerned with identification and more interested in vividly illustrating plenitude, diversity, and continuity of animal species.

Buffon insisted we “must make use of all parts of the object” for classification, including internal anatomy, behavior, and distribution.



Voyages and Collections - Joseph Banks 1743-1820

Three voyages

- HMS Niger (1766-67) to Canada – Newfoundland and Labrador
- HMS Endeavour (1768-1771) with Captain James Cook to the Southern Pacific, New Zealand, and Australia collecting with Daniel Solander [student of Linnaeus]
- HMS Sir Lawrence (1772) Hebrides, Iceland, Orkney Islands

Founds the Royal Botanic Gardens at Kew

Leads the Royal Society – major patron of further collecting



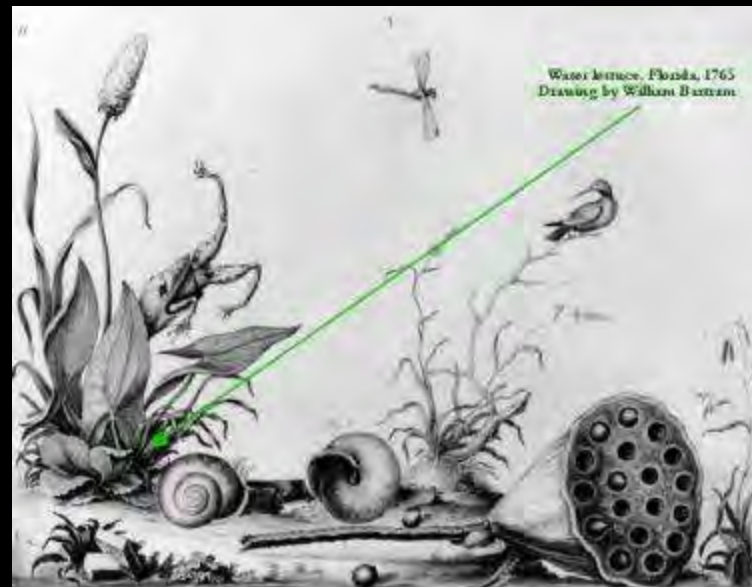
Illustration – The Artist Naturalist in North America

Mark Catesby 1683-1749

Natural History of Carolina, Florida, and the Bahama Islands
(Two volumes 1732-43)

William Bartram 1739-1823

Travels through North and South Carolina, Georgia, East and West Florida (1791)



19th Century Natural History - Amateurs to Professionals - Naturalists to Biologists

Artist Naturalist

John James Audubon



Biogeography

Alexander von Humboldt



Evolution

Charles Darwin



Alfred Russell Wallace



Museums

Louis Agassiz



Evolution, and Society

Herbert Spencer, G. Stanley Hall

The Beginning of American Nature Writing

Henry David Thoreau

Collecting and the Artist Naturalist in North America

John James Audubon 1785-1851

A French-American notable for his expansive studies to document all types of American birds and for his detailed illustrations that depicted the birds in their natural habitats. His major work, a color-plate book entitled *The Birds of North America* (1827–1839), is considered one of the finest ornithological works ever completed. Audubon identified 25 new species and a number of new sub-species.

Inspired by Buffon's *Histoire Naturelle* and the idea of showing the species in its habitat.



A vision of the unity of Nature

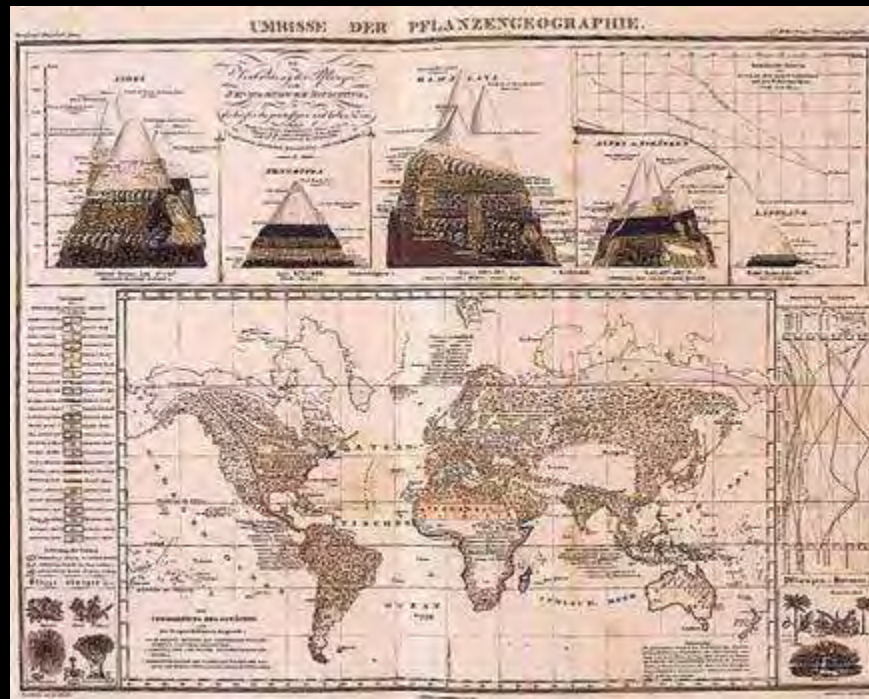
Alexander von Humboldt 1769 - 1859

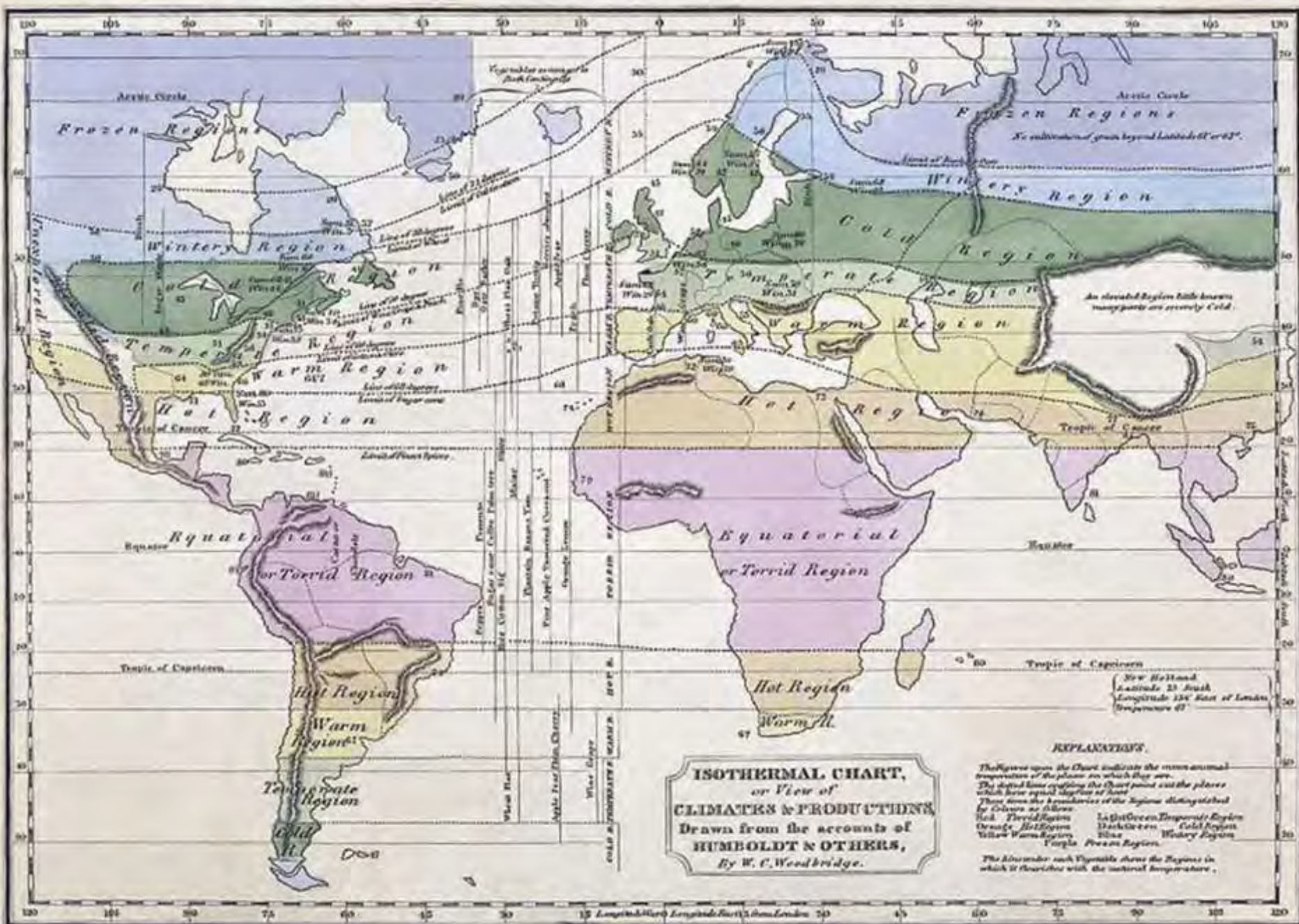
Unity in diversity, and of connection, resemblance, and order, among created things most dissimilar in their form, one fair harmonious whole...

Kosmos, 1845

Charles Darwin described him as "the greatest scientific traveler who ever lived." He is widely respected as one of the founders of modern geography and ecology. Alexander von Humboldt's travels, experiments, and knowledge transformed western science in the nineteenth century.

Between 1799 and 1804, Humboldt travelled extensively in Latin America, exploring and describing it. His description of the journey was written up and published in an enormous set of volumes over 21 years. Later, his five-volume work, *Kosmos* (1845), attempted to unify the various branches of scientific knowledge.





ISOTHERMAL CHART,
or View of
CLIMATES & PRODUCTIONS
 Drawn from the accounts of
HUMBOLDT & OTHERS,
By W. C. Woodbridge.

EXPLANATIONS.

The figures upon the Chart indicate the mean annual temperature of the places on which they are.
 The dotted line expresses the Tropic point and the places which have equal daylength of hours.
 Those from the boundaries of the Regions distinguished by Colours are Colours as follows:

Red	Torrid Region	Light Green	Temperate Region
Orange	Hot Region	Dark Green	Cold Region
Yellow	Warm Region	Blue	Wintery Region
Purple	Frozen Region		

The Isotherms each Expressive show the Regions in which it fluctuates with the natural temperature.

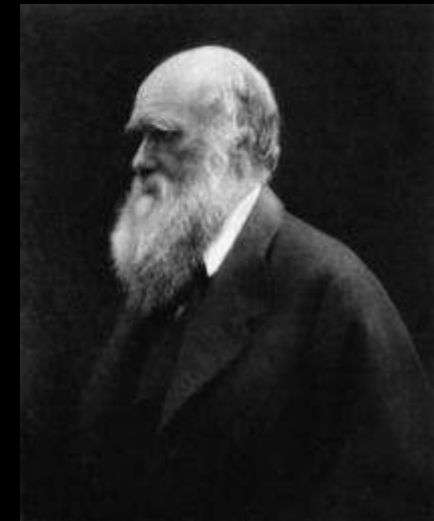
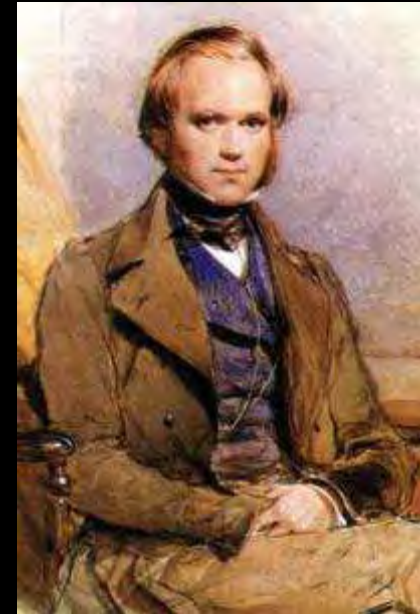
Drawn according to the observations of the 43rd day of January 1825, by William C. Woodbridge of the U.S. Government.

Natural History and Evolution

Charles Darwin 1809-1882

He established that all species of life have descended over time from common ancestry, and proposed the scientific theory that this branching pattern of evolution resulted from a process that he called natural selection in *On the Origin of the Species* (1859).

The Voyage of the Beagle 1831-36 – Galapagos ground finches



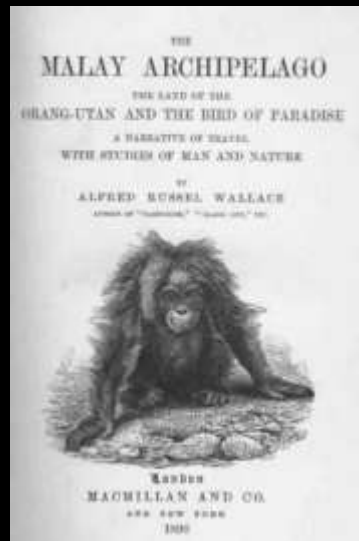
Natural History and Evolution

Alfred Russell Wallace 1823-1913

He is best known for independently proposing a theory of evolution due to natural selection that prompted Charles Darwin to publish his own theory.

Wallace did extensive fieldwork, first in the Amazon River basin and then in the Malay Archipelago, where he identified the Wallace Line that divides the Indonesian archipelago into two distinct parts, one in which animals closely related to those of Australia are common, and one in which the species are largely of Asian origin. He was considered the 19th century's leading expert on the geographical distribution of animal species and is sometimes called the "father of biogeography".

Travels in the Amazon and Malay Archipelago (1848-1862)



Natural History, Evolution, and Society

Social Darwinism

The strongest or fittest should survive and flourish in society, while the weak and unfit should be allowed to die. The theory was chiefly expounded by Herbert Spencer but fit Victorian Era beliefs.

Colonialism was seen as natural and inevitable, and given justification through Social Darwinian ethics - people saw natives as being weaker and more unfit to survive, and therefore felt justified in seizing land and resources.

In its most extreme forms, Social Darwinism has been used to justify eugenics programs aimed at weeding "undesirable" genes from the population; such programs were sometimes accompanied by sterilization laws directed against "unfit" individuals. The American eugenics movement was relatively popular between about 1910-1930, during which 24 states passed sterilization laws and Congress passed a law restricting immigration from certain areas deemed to be unfit. Social Darwinist ideas, though in different forms, were also applied by the Nazi party in Germany to justify their eugenics programs.

Genetic Psychology

G. Stanley Hall (1844-1924) "genetic psychology" children must recapitulate human development from primitive rural stages to complex urban life; denial of this process in cities bred social immaturity, crime, and chaos.

- The Nature Study Movement – Agassiz "Study Nature, not Books"



Twentieth Century Development of Ecology – Community Structure and Succession

Frederic Clements (1874-1945), *The Development and Structure of Vegetation* (1904), *Plant Succession* (1916)

- Vegetation is dynamic
- Succession and climax stage
- Monoclimax – any region of Earth can have only one mature stage (competition)
- Assumes a natural state with no human interference – natural equilibrium



Charles Elton (1900-1991), *Animal Ecology* (1927), *The Pattern of Animal Communities* (1966)

- Community Structure – an economy of nature
- Food chain, food web
- Plants = producers, Animals = consumers (reducers, decomposers)
- Niche – the status or occupation of an organism in a community
- One species to one niche (competition)



Development of Ecology – Community Structure and Succession

Ecology – systems and populations

Energy and Economic Model – Ecological Efficiency



Eugene Odum, *Fundamentals of Ecology* (1953)

- The law of organic nature is to bring order and harmony out of chaotic materials of existence
- Nature is a series of balanced ecosystems – the basic functional unit of ecology, and so a need for a unified theory of the ecosystem [a pond, a watershed, a meadow]
- A flow of energy leads to clearly defined trophic structure, biotic diversity, and material cycles within the system
- Rather than climax stage he used “mature ecosystem” – the ecosystem was often disturbed but fluctuated around a single homeostatic point – health = stability

Robert MacArthur and Edward O. Wilson, *The Theory of Island Biogeography* (1967)

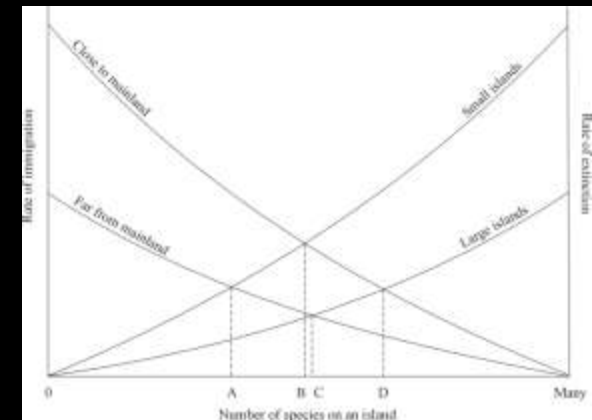
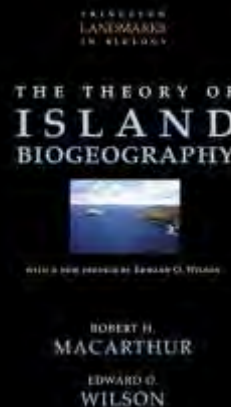
- An ecology that makes no testable predictions is not yet a science
- Mathematical modeling and islands
- The number of species represented on an island depends on size and location
- Number of species always reaches an equilibrium point – species diversity does not continue to develop indefinitely, new colonization must be matched by extinction – community structure focus rather than ecosystem



But is an ecosystem a reality or an abstraction?

Are ecosystems inherently stable?

How do the great disrupters Humans fit in?



The “new ecology” post-Odum

Anthropogenic climax communities

Robert May, *Stability and Complexity in Model Ecosystems* (1973)

- Mathematical models demonstrate that the more species there were, the more fragile was the system
- Chaos theory and complexity, “Confronted with disturbances beyond their normal experience” complex systems like rainforests tended to crumble.

Instability of biodiversity and invasion biology

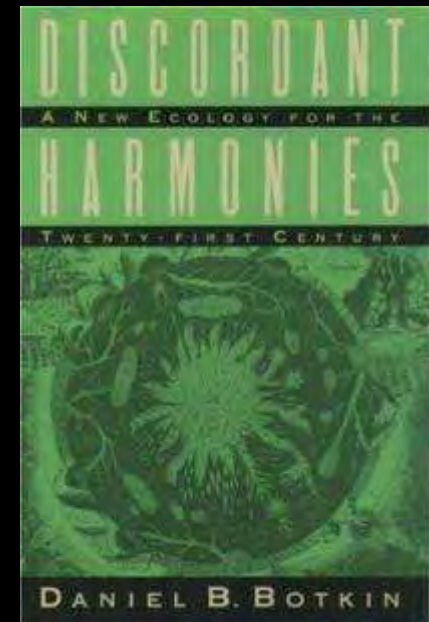
Daniel Botkin, *Discordant Harmonies: A New Ecology for the Twenty-first Century* (1990)

- “Nature in the 21st Century will be a nature that we make”

The new ecology emphasizes

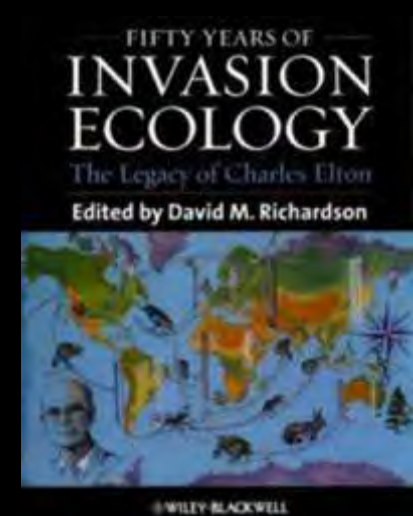
- Disequilibria
- Instability
- Chaotic fluctuations

in ecosystems both “natural” and human impacted



The Rise and Fall of Biotic Nativeness: a Historical Perspective Matthew K. Chew and Andrew L. Hamilton

In *Fifty Years of Invasion Ecology: The Legacy of Charles Elton* (2011)



The idea of a native species was first defined in 1847

Nativeness is an organizing principle of numerous scientific studies and findings, and the *sine qua non* invoked by many management policies, plans, and actions to justify intervening on prevailing ecosystem processes.

It is important to be clear about what these concepts mean.

Is nativeness conceptually defensible?

Does it accomplish any theoretical work?

In answering, we conclude that its categorical meaning and significance both dissolve under scrutiny.

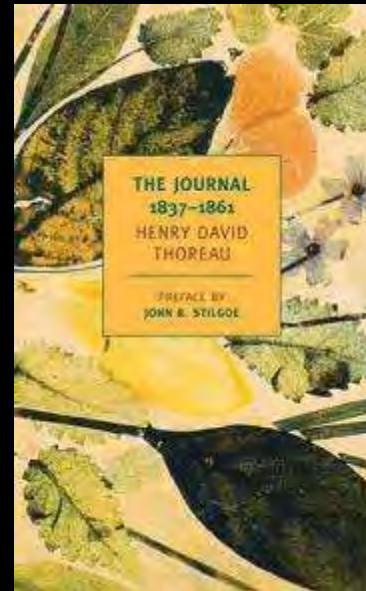
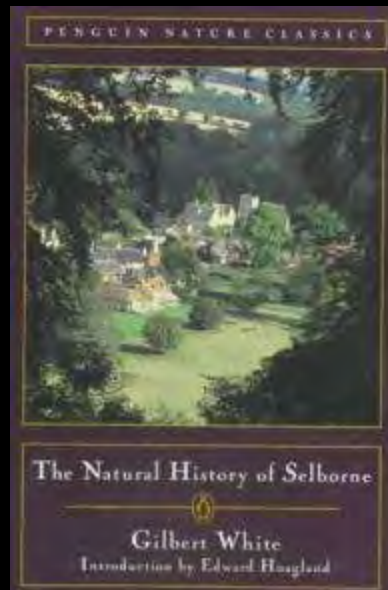
Biotic nativeness is theoretically weak and internally inconsistent, allowing familiar human desires and expectations to be misconstrued as essential belonging relationships between biota, places and eras.

We believe much well-intended effort is wasted on research contrasting 'native' and 'alien' taxa, and by conservation projects focused primarily on preserving or restoring natives.

Natural History and Literature

The Literary Naturalists

Gilbert White and Henry David Thoreau

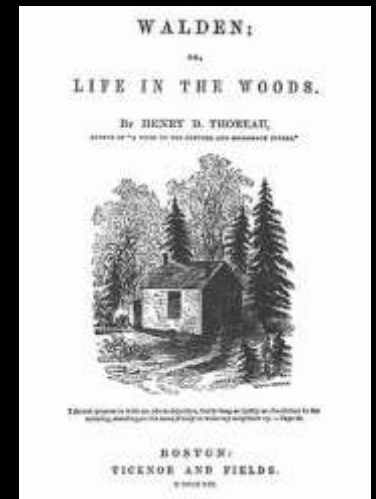
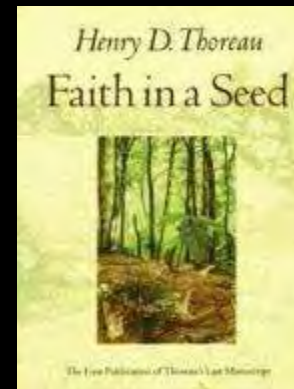
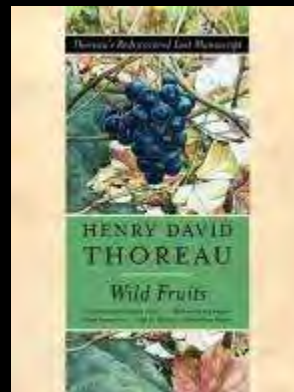
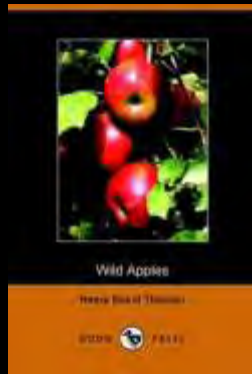


Documentation and Reflection - the Beginning of American Nature Writing

Henry David Thoreau 1817-1862

Until the 1970s, literary critics dismissed Thoreau's late pursuits as amateur science and philosophy. With the rise of environmental history and ecological literary criticism a new perception emerged, showing Thoreau to be both a philosopher and an analyst of ecological patterns in Concord's fields and woods – a naturalist.

The linkage to Gilbert White was clear, and contemporary American nature writing rediscovered its foundations in natural history.



Published 1854

Theory of Degeneracy

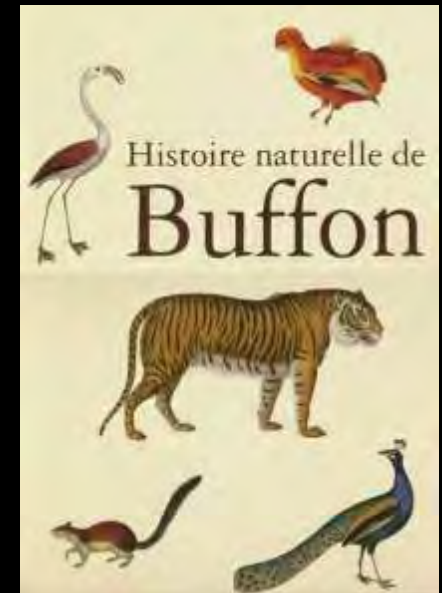
Comte de Buffon 1707–1788

“In his massive encyclopedia of natural history, Buffon laid out what came to be called the theory of degeneracy.

He argues that, as a result of living in a cold and wet climate, all species found in America were weak and feeble. What's more, any species imported into America for economic reasons would soon succumb to its new environment and produce lines of puny, feeble offspring.

America, Buffon told his readers, is a land of swamps, where life putrefies and rots.”

Mr Jefferson and the Giant Moose, Lee Alan Dugatkin, 2009



Jefferson's Moose

In his *Notes on the State of Virginia* (1785) Thomas Jefferson responded to Buffon's claims. His evidence included comparative tables of weights of animal species from America and Europe, lists of species endemic to each part of the world (the American list was four times as long) and even an explanation of why cattle were smaller in the New World than in the Old (farming practices, not climate conditions). He also included a passionate defense of Native Americans.

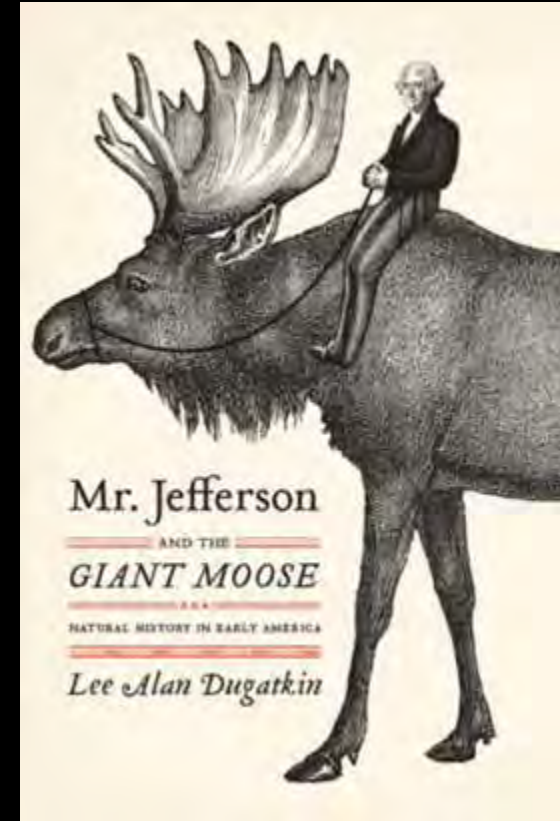
In addition, "Jefferson also wanted to present Buffon with tangible evidence...He tried with the skin of a panther, and then the bones of a hulking mastodon...but Buffon didn't budge.

Jefferson's most concerted effort in terms of hands-on evidence was to procure a very large, dead, stuffed American moose – antlers and all – to hand Buffon personally, in effect saying, "see."

This moose became a symbol for Jefferson – a symbol of the quashing of European arrogance in the form of degeneracy."

Dugatkin, 2009

If the theory of American degeneracy took hold in Europe the long-term consequences could impact trade with and immigration to the United States.



Cultural Impact of the Theory of Degeneracy on the Idea of American Nature

Thoreau and Wildness and Wilderness

“in Wildness is the preservation of the world”

Henry David Thoreau, “Walking” (1862)

“This statement will do at least to set against Buffon’s account of this part of the world and its productions.”

‘We go eastward to realize history, and study the works of art and literature, retracing the steps of the race, — we go westward as into the future, with a spirit of enterprise and adventure. The Atlantic is a Lethean stream, in our passage over which we have had an opportunity to forget the old world and its institutions.’

“For I believe that climate does thus react on man — as there is something in the mountain air that feeds the spirit and inspires. Will not man grow to greater perfection intellectually as well as physically under these influences?”



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 fibres 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.



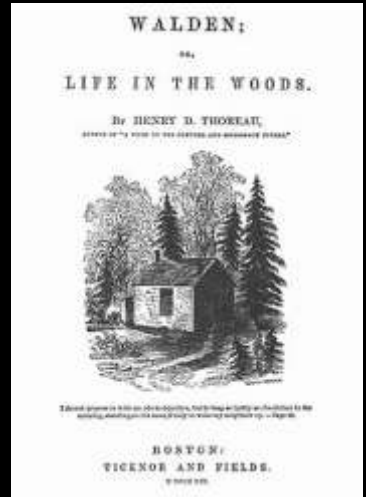
Life consists with Wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him. One who pressed forward incessantly and never rested from his labors, who grew fast and made infinite demands on life, would always find himself in a new country or wilderness, and surrounded 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.

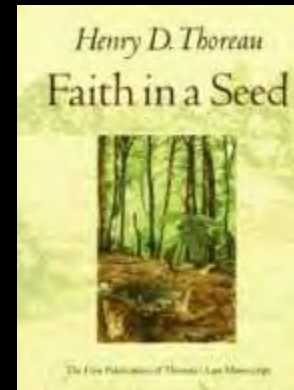
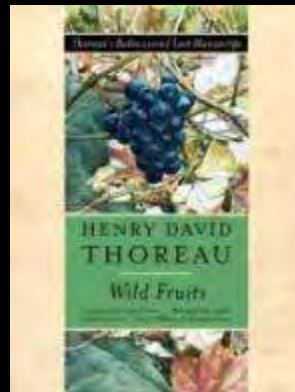
Yes; though you may think me perverse, if it were proposed to me to dwell in the neighborhood of the most beautiful garden that ever human art contrived, or else of a dismal swamp, I should certainly decide for the swamp.

When I would recreate myself, I seek the darkest wood, the thickest and most interminable, and, to the citizen, most dismal swamp.

I enter a swamp as a sacred place — a *sanctum sanctorum*. There is the strength — the marrow of Nature. The wild wood covers the virgin mould, — and the same soil is good for men and for trees.



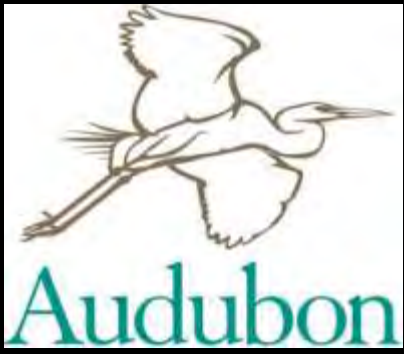
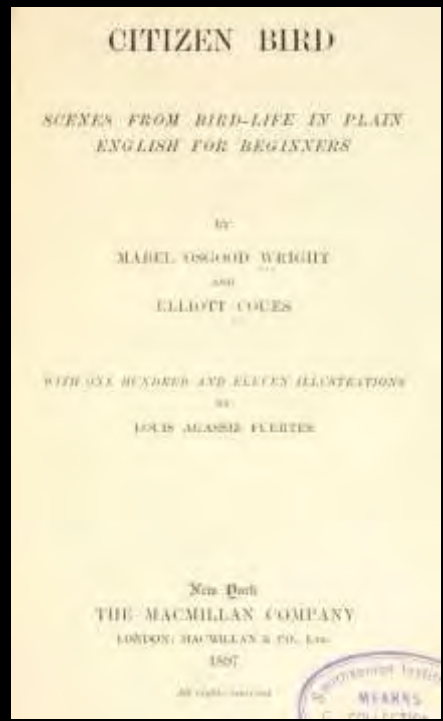
Published 1854



Popular American Natural History – late 19th and early 20th Century

Good Birds and Bad Birds

In 1889, the U.S. Bureau of Biological Survey devoted its first bulletin entirely to “The English Sparrow in North America” and compiler Walter Barrows concluded that these foreigners were “a curse of such virulence” that they should be systematically and completely destroyed. Furthermore, it should be a crime to kill the shrike, sparrow hawk, screech owls, bluejays, or grackles, since they eat English sparrows.



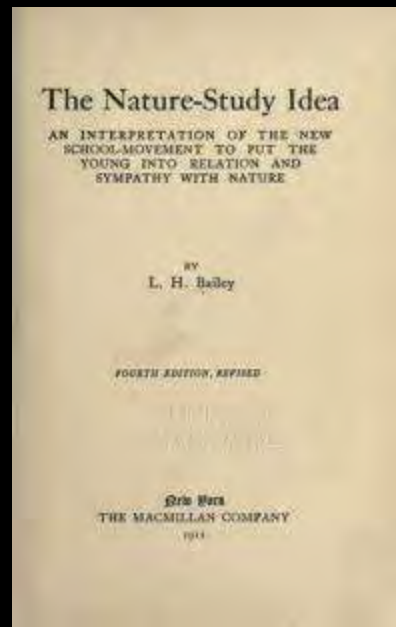
Citizen Bird (1897) About city children learning scientific terminology on an abandoned farm in New England

The Nature Study Movement – Agassiz “Study Nature, not Books”

Liberty Hyde Bailey (1858-1954) The Nature-Study Idea (1903) “we must live closer to nature and we must perforce begin with the child”

The movement popularized scientific study outside of the classroom as well, and has proven highly influential for figures involved in the modern environmental movement, such as Aldo Leopold and Rachel Carson.

Anna Comstock defined the idea extensively in her book, Handbook of Nature Study (1911) "Nature Study is for the comprehension of the Individual life of the bird, insect or plant that is nearest at hand."





The Nature Fakers Controversy and the Boy Scouts 1903-1907

Ernest Thompson Seton (1860 – 1946) Seton was an early pioneer of the modern school of animal fiction writing, his most popular work being *Wild Animals I Have Known* (1898)

“Redruff: The Story of the Don Valley Partridge” –

Down the wooded slope of Taylor's Hill the Mother Partridge led her brood; down toward the crystal brook that by some strange whim was called Mud Creek. Her little ones were one day old but already quick on foot, and she was taking them for the first time to drink...There were twelve of them, but Mother Grouse watched them all, and she watched every bush and tree and thicket, and the whole woods and the sky itself. Always for enemies she seemed seeking—friends were too scarce to be looked for—and an enemy she found. Away across the level beaver meadow was a great brute of a fox. He was coming their way, and in a few moments would surely wind them or strike their trail. There was no time to lose.



John Burroughs on Ernest Thompson Seton in "Real and Sham Natural History,"

[The] line between fact and fiction is repeatedly crossed and... a deliberate attempt is made to induce the reader to cross too... Mr. Thompson Seton says in capital letters that his stories are true and it is this emphatic assertion that makes the judicious grieve.

When President Theodore Roosevelt came to Burroughs' defense in his article "Nature Fakers," the debate subsided.

Seton met Scouting's founder, Lord Baden-Powell, in 1906. Baden-Powell had read Seton's book, *The Birch Bark Roll of the Woodcraft Indians*, and was greatly intrigued by it. The pair met and shared ideas. Baden-Powell went on to found the Scouting movement worldwide, and Seton became vital in the foundation of the Boy Scouts of America and was its first Chief Scout.



20th Century and Contemporary Natural History and Literature



Aldo Leopold

Wildlife Management

Sand County Almanac (1949)



Rachel Carson

Aquatic Biology and Oceanography

The Sea Around Us (1951)

The Edge of the Sea (1955)

Silent Spring (1962)

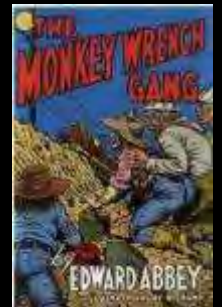
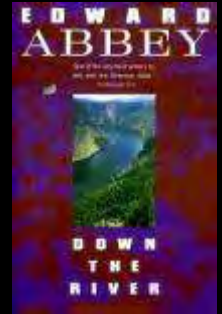
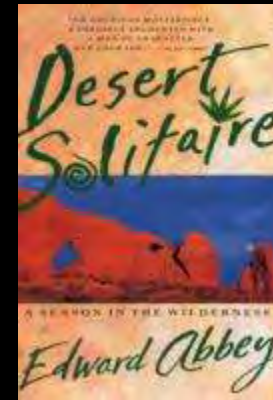
Edward Abbey (1928-1989)



Desert Solitaire: A Season in the Wilderness (1968)

The Monkey Wrench Gang (1975)

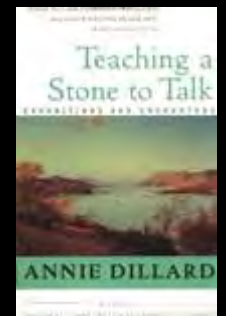
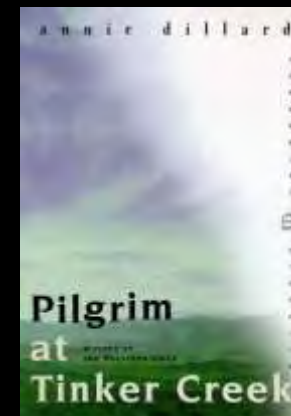
Down the River (1982)



Annie Dillard

Pilgrim at Tinker Creek (1974)

Teaching a Stone to Talk (1982)



Natural History and Literature – Biologist Writers



Robert Michael Pyle – Lepodopterist

- The Audubon Society Field Guide to North American Butterflies (1981)
- Wintergreen: Listening to the Land's Heart (1987)
- The Thunder Tree: Lessons from An Urban Wildland (1993)
- Chasing Monarchs: A Migration with the Butterflies of Passage (1999)
- Nabokov's Butterflies. Edited and annotated by Pyle and Brian Boyd (2000)
- Walking the High Ridge: Life As Field Trip (2000)
- Mariposa Road: The First Butterfly Big Year (2010)



Gary Paul Nabhan – Ethnobotanist

- The Desert Smells Like Rain (1982)
- Gathering the Desert (1985)
- The Forgotten Pollinators (1996)
- Cultures of Habitat (1997)
- Where Our Food Comes From – Retracing Nikolay Vavilov's Quest to End Famine (2008)

The Way Forward for Natural History:
Discovery and Transformation Of “Pristine Nature”



“The virgin forest was not encountered in the sixteenth and seventeenth centuries,
it was invented in the late eighteenth and early nineteenth centuries.”

Stephen Pyne *Fire in America* (1982)



Pre-Columbian Central America

- Home to over 19 million people
- Sedentary agricultural societies
- Major population crash after European conquest
- Landscape probably looked less like this →



And more like this. . .





Eskimos

UNINHABITED LANDS

Aleuts

Ingalika
Tanainas

Kutchins

Dogribs

Yellow
Knives

Eskimos

Hudson
Bay

Eskimos

Beothuks

Tlingits

Haidas

Kaskas

Slaves

Chippewyans

Beavers

Crees

Montagnais-
Naskapis

Midmace

Kwakiwts

Nootkas

Sahali

Chinooks

Yurokas

Pomoi

Chumash

Luisenias

Yokuts

Washos

Palutes

Wapais

Mohaves

Yumas

Papagos

Pimas

Hopis

Navahos

Zunis

Rio Grande

Pueblos

Apaches

Utahs

Shoshonas

Fiatheads

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Sarais

Blackfeet

Shuswaps

Thompsons

Sanpoits

Gros

Ventres

Assiniboins

Crows

Cheyennes

Gosiutes

Wapais

Mohaves

Yumas

Papagos

Pimas

Hopis

Navahos

Zunis

Rio Grande

Pueblos

Apaches

Utahs

Shoshonas

Fiatheads

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shoshonas

Shuswaps

Blackfeet

Thompsons

Sanpoits

Gros

Ventres

Assiniboins

Crows

Cheyennes

Gosiutes

Wapais

Mohaves

Yumas

Papagos

Pimas

Hopis

Navahos

Zunis

Rio Grande

Pueblos

Apaches

Utahs

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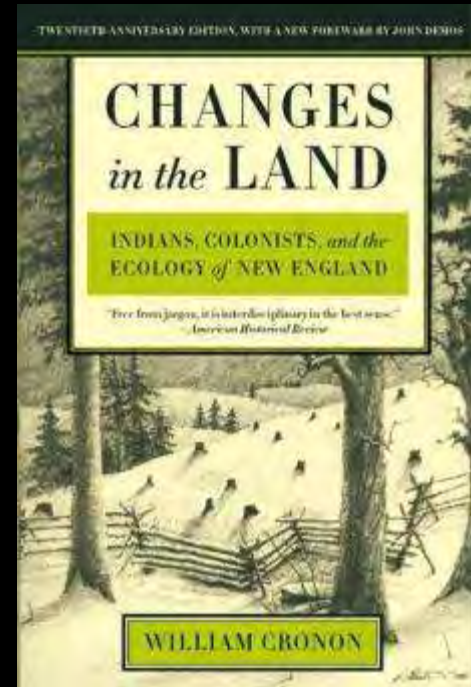
Crows

Cheyennes

In southern New England they would burn large areas of the surrounding forest once or twice a year, creating forests that Europeans saw as “open and parklike.”

The fires would consume all the undergrowth so that the result was “a forest of large, widely spaced trees, few shrubs, and much grass and herbage.”

” Wherever Native Americans in southern New England lived, the English traveler (1633) William Wood noted, “there is scarce a bush or bramble or any cumbersome underwood to be seen in the more champion ground.”



Cahokia

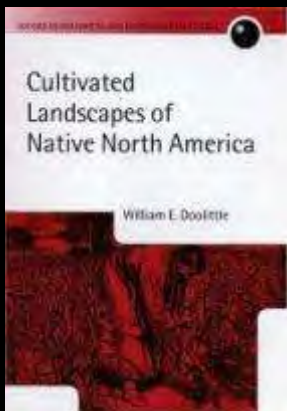
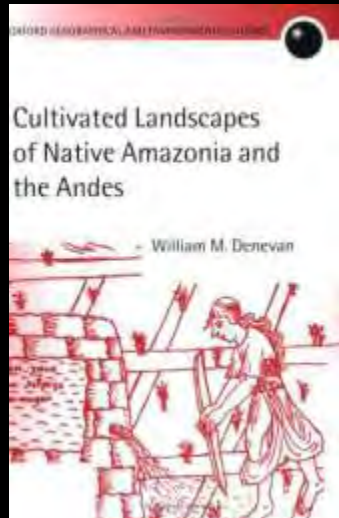
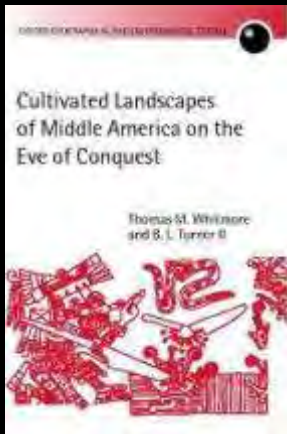


Cultivated Landscapes of the Americas

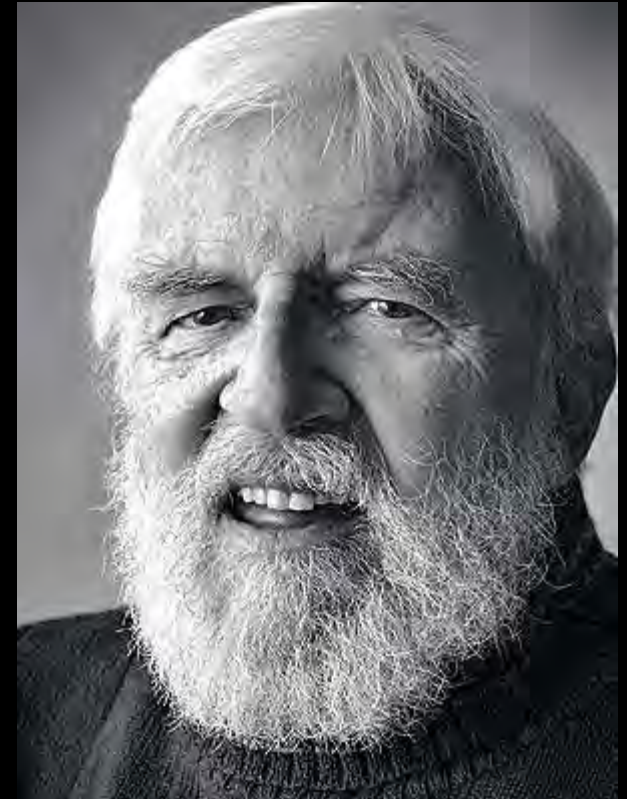
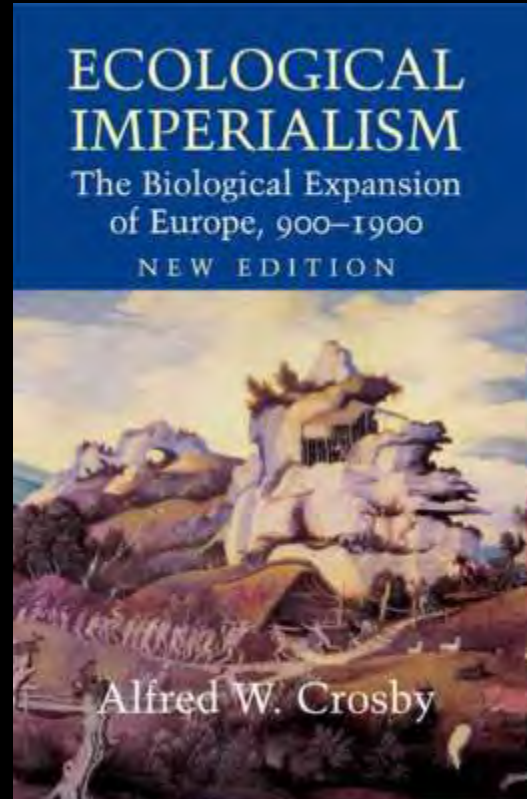
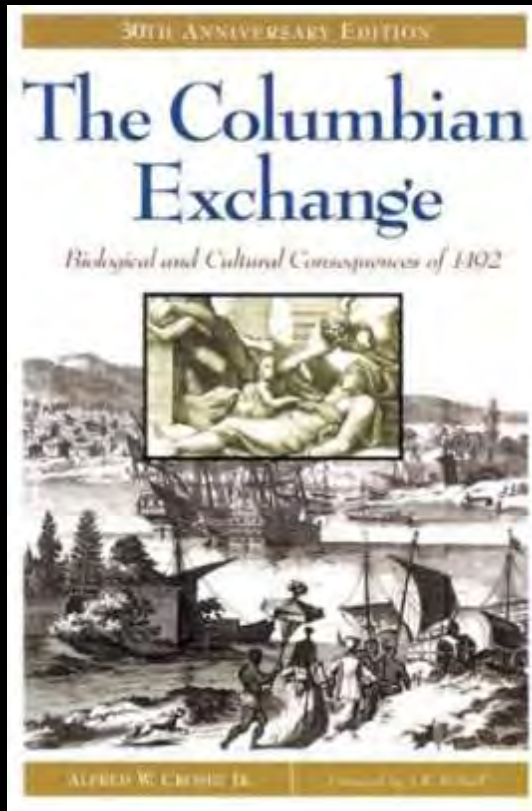
The Pristine Myth: The Landscape of the Americas in 1492

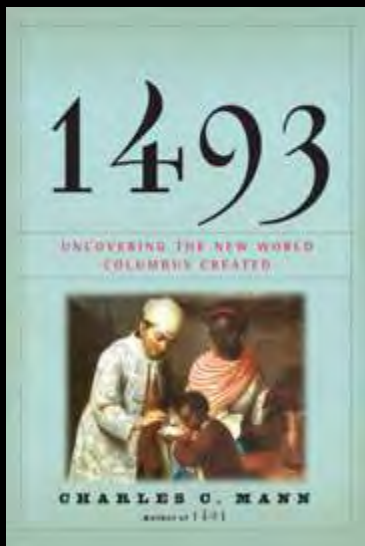
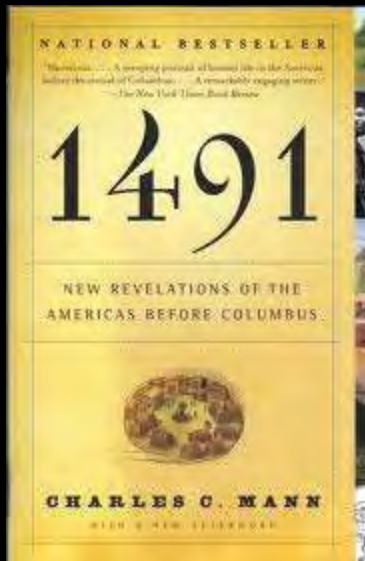
William M. Denevan

Department of Geography, University of Wisconsin



Alfred Crosby described the near extinction of some tribes and the dramatic depopulation of others in *The Columbian Exchange* (1972) and the biological expansion of Europe in *Ecological Imperialism* (1986).





The Great Nations of Europe – Randy Newman

The Great Nations of Europe had gathered on the shore
they'd conquered what was behind them and now they wanted more
so they looked to the mighty ocean and took to the western sea
The great nations of Europe in the 16th century

Hide your wives and daughters, hide the groceries too
The great nations of Europe coming through

The Grand Canary Islands first land to which they came
they slaughtered all the canaries there which gave the land its name
there were natives there called Guanches, Guanches by the score
bullet's, disease the Portuguese, they weren't there any more

now they're gone, they're gone, they're really gone
you never seen anyone so gone
there's pictures in a museum, some lines written in a book
but you won't find a live one, no matter where you look

Hide your wives and daughters, hide the groceries too
The great nations of Europe coming through

Columbus sailed for India found Salvador instead
he shook hands with some Indians and soon they all were dead
they got tb and typhoid and athletes foot, diphtheria and the flu
'scuse me great nations coming through

On *Bad Love* (1999) and *Songbook Vol. 1* (2003)



Urban Natural History

Understanding whole organisms in context

Scientific - Ecological understanding shaped by cultural contexts

Literary - Cultural understanding shaped by ecological contexts



Sanctioned and Unsanctioned Nature

In the United States, the foundational metaphors of Nature that we celebrate are wilderness and pastoral arcadia.

They are the basis 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.



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

These metaphors valorize urban nature that is either deliberately cultivated in parks and gardens or formally protected as remnants of native landscapes obliterated by the creation of the city in preserves, sanctuaries, and refuges.



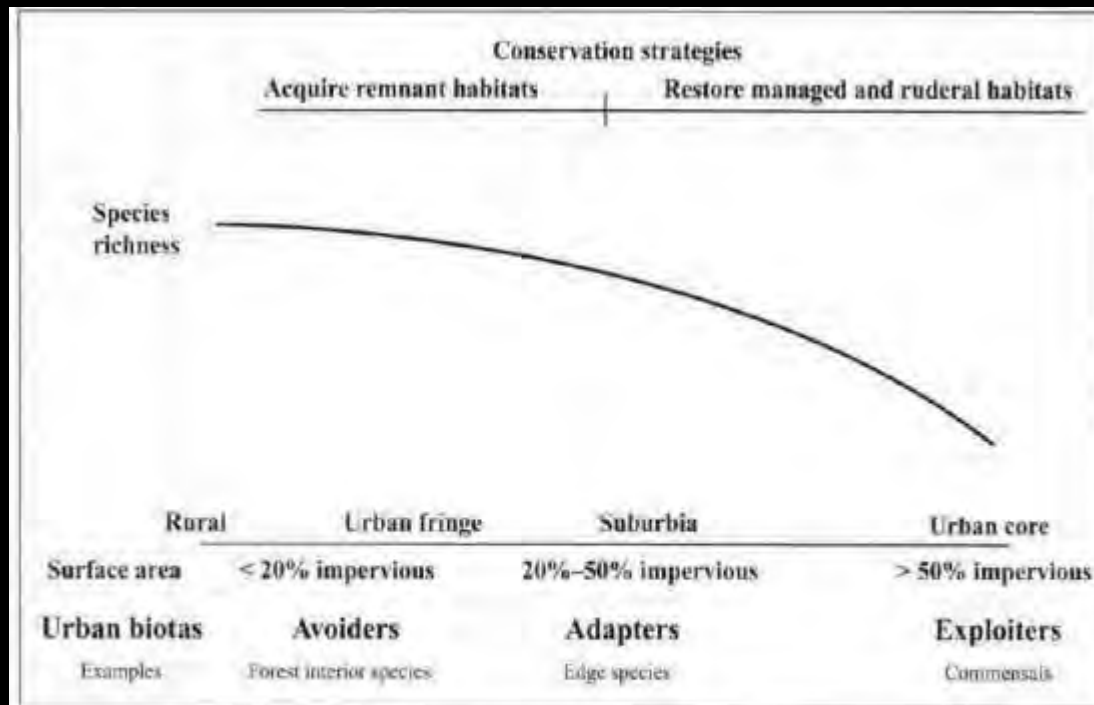


Figure 2. Urban-rural gradient. This is a very generalized and simplified depiction of changes in surface area, species richness, and composition, as compiled from a number of sources discussed in the text. Two basic conservation strategies with respect to urban sprawl are shown at the top.

Perceptions of American Biologists, Ecologists, and Environmentalists (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.

Urban Nature

Biological slumming

...the danger...is being tempted into some biological slumming. The habitats I've described in this book are in no way a substitute for the official countryside. Nor are they something to be cherished in their own right, necessarily.

Richard Mabey, *Unofficial Countryside* (1973)



American Urban Natural History - Urban Nature as Chaos

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)



New Urban Ecology – Prospective rather than Retrospective Ecology

... the reference point is not an original condition of a natural landscape, but rather a condition defined based on the current site potential and the greatest possible degree of self-regulation. From this perspective, therefore, the natural capacity for *process* is the central point, not a particular, retrospectively determined and often idealized, *picture* of nature.

-Ingo Kowarik *Wild Urban Woodlands* (2005)

Sudgelände Nature Park, Berlin



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. *Uncommon Ground: Rethinking the Human Place in Nature* [1995]



Natural What?

