scattered here and there across this hungry land, and around them the Wasichus had drawn a line* to keep them in. The nation’s hoop was broken, and there was no center any longer for the flowering tree. The people were in despair. They seemed heavy to me, heavy and dark; so heavy that it seemed they could not be lifted; so dark that they could not be made to see any more. Hunger was among us often now, for much of what the Great Father in Washington sent us must have been stolen by Wasichus who were crazy to get money. There were many lies, but we could not eat them. The forked tongue made promises.

I kept on curing the sick for three years more, and many came to me and were made over; but when I thought of my great vision, which was to save the nation’s hoop and make the holy tree to bloom in the center of it. I felt like crying, for the sacred hoop was broken and scattered.

*Black Elk is referring to the Indian reservation system. [Ed.]
wrote, “to have grown more rankly in those days.” If Wood’s des-
criptions were accurate, the strawberries too had been larger and more
abundant “before they were so cornered up by cultivation.” Some of
them had been as much as two inches around, and were so numerous
that one could gather half a bushel in a forenoon. Equally abundant
were gooseberries, raspberries, and especially currants, which, Tho-
reau mused, “so many old writers speak of, but so few moderns find
wild.”

New England forests had been much more extensive and their
trees larger in 1633. On the coast, where Indian settlement had been
largest, the woods had presented a more open and parklike appear-
ance to the first English settlers, without the underbrush and coppice
growth so common in nineteenth-century Concord. To see such a for-
test nowadays, Thoreau wrote, it was necessary to make an expedi-
tion to “the sample still left in Maine.” As nearly as he could tell, oaks,
firs, plums, and tulip trees were all less numerous than they had been
in Wood’s day.

But if the forest was much reduced from its former state, most of
its tree species nevertheless remained. This was more than could be
said for many of its animal inhabitants. Thoreau’s list of those that
were now absent was stark: “bear, moose, deer, porcupines, ‘the grim-
fac’d Ounce, and rav’nous howling Wolf,’ and beaver. Martens.” Not
only the mammals of the land were gone; the sea and air also seemed
more empty. Bass had once been caught two or three thousand at a
time. The progeny of the alewives had been “almost incredible.” Nei-
ther was now present in such abundance. Of the birds, Thoreau wrote:
“Eagles are probably less common; pigeons of course . . . heath cocks
all gone . . . and turkeys . . . Probably more owls then, and cormorants,
etc., sea-fowl generally . . . and swans.” To Wood’s statement that
one could purchase a fresh-killed swan for dinner at the price of six
shillings, Thoreau could only write in wonderment, “Think of that!”

There is a certain plaintiveness in this catalog of Thoreau’s, a
romantic’s lament for the pristine world of an earlier and now lost
time. The myth of a fallen humanity in a fallen world is never far
beneath the surface in Thoreau’s writing, and nowhere is this more
visible than in his descriptions of past landscapes. A year after his
encounter with William Wood’s New England of 1633, he returned to
its lessons in more explicitly moral language. “When I consider,” he
wrote, “that the nobler animals have been exterminated here,—the
cougar, panther, lynx, wolverene, wolf, bear, moose, deer, the beaver,
the turkey, etc., etc.—I cannot but feel as if I lived in a tamed, and,
as it were, emasculated country.” Seen in this way, a changed land-
scape meant a loss of wildness and virility that was ultimately spiritual
in its import, a sign of declension in both nature and humanity. “Is it
not,” Thoreau asked, “a maimed and imperfect nature that I am con-
versant with?”

It is important that we answer this question of Thoreau’s care-
fully: how did the “nature” of New England change with the coming
of the Europeans, and can we reasonably speak of its changes in terms
of maiming and imperfection? There is nothing new to the observation
that European settlement transformed the American landscape. Long
before Thoreau, naturalists and historians alike were commenting on
the process which was converting a “wilderness” into a land of Euro-
pean agricultural settlement. Whether they wrote of Indians, the fur
trade, the forest, or the farm, colonial authors were constantly aware
that fundamental alterations of the ecological fabric were taking place
around them.

For the most part, unlike Thoreau, they did so approvingly. As
early as 1653, the historian Edward Johnson could count it as one of
God’s providences that a “remote, rocky, barren, bushy, wildwoody
wilderness” had been transformed in a generation into “a second Eng-
land for fertility.” In this vision, the transformation of wilderness
betokened the planting of a garden, not the fall from one; any change
in the New England environment was divinely ordained and wholly
positive. By the end of the eighteenth century, the metaphors for
environmental change had become more humanistic than providential,
but were no less enthusiastic about the progress such change repre-
cented. In a passage partially anticipating Frederick Jackson Turner’s
frontier thesis, for instance, Benjamin Rush described a regular se-
quence for clearing the forest and civilizing the wilderness . . . The
shape of the landscape was a visible confirmation of the state of human
society. Both underwent an evolutionary development from savagery
to civilization.

Whether interpreted as declension or progress, the shift from
Thoreau’s forest of “nobler animals” to Rush’s fields and pastures of
prosperous farmers signaled a genuinely transformed countryside, one
whose changes were intimately bound to the human history which
had taken place in its midst. The replacement of Indians by predomi-
nantly European populations in New England was as much an ecologi-
cal as a cultural revolution, and the human side of that revolution
cannot be fully understood until it is embedded in the ecological one.
Doing so requires a history, not only of human actors, conflicts, and economies, but of ecosystems as well.

How might we construct such an ecological history? The types of evidence which can be used to evaluate ecological change before 1800 are not uniformly reliable, and some are of a sort not ordinarily used by historians. It is therefore important to reflect on how they should best be criticized and used. The descriptions of travelers and early naturalists, for instance, provide observations of what New England looked like in the early days of European settlement, and how it had changed by the end of the eighteenth century. As such, they provide the backbone of this study. But to use them properly requires that we evaluate each traveler's skills as a naturalist, something for which there is often only the evidence of his or her writings. Moreover, we can only guess at how ideological commitments such as Thoreau's or Rush's colored the ways they saw the landscape. How much did William Wood's evident wish to promote the Massachusetts Bay Colony lead him to idealize its environment? To what extent did the anonymous author of American Husbandry shape his critique of American agriculture to serve his purpose of preserving colonial attachments to Britain? Even if we can remove most of these ideological biases to discover what it was a traveler actually saw, we must still acknowledge that each traveler visited only a tiny fraction of the region. As Timothy Dwight once remarked, "Your travelers seize on a single person, or a solitary fact, and make them the representatives of a whole community and a general custom." We are always faced with the problem of generalizing from a local description to a regional landscape, but our understanding of modern ecosystems can be of great help in doing so.

A second fund of data resides in various colonial town, court, and legislative records, although here the evidence of ecological change can sometimes be tantalizingly elliptical. We cannot always know with certainty whether a governmental action anticipated or reacted to a change in the environment. When a law was passed protecting trees on a town commons, for example, did this mean that a timber shortage existed? Or was the town merely responding with prudent foresight to the experience of other localities? If a shortage existed, how severe was it? Was it limited only to certain species of trees? And so on. Only by looking at the overall pattern of legal activity can we render a reasonable judgment on such questions. These problems notwithstanding, town and colony records address almost the entire range of ecological changes in colonial New England: deforestation, the keeping of livestock, conflicts between Indians and colonists over property boundaries, the extermination of predators such as wolves, and similar matters. Deeds and surveyor records can be used statistically to estimate the composition of early forests, and are usually more accurate than travelers' accounts even though subject to sampling errors.

Then there are the less orthodox sorts of evidence which historians borrow from other disciplines and have less experience in criticizing. Relict stands of old-growth timber, such as the Cathedral Pines near Cornwall, Connecticut, can suggest what earlier forests may have looked like. The relict stands which exist today, however, are by no means identical to most of the forests which existed in colonial times, so that the record of earlier forests must be sought in less visible places. Ecologists have done very creative detective work in analyzing tree rings, charcoal deposits, rotting trunks, and overturned stumps to determine the history of several New England woodlands. The fossil pollen in pond and bog sediments is a reliable but fuzzy indicator of the changing species composition surrounding vegetation; despite problems in determining the absolute age of such pollen, it supplies some of the most reliable evidence for reconstructing past forests. In addition, a wide variety of archaeological evidence can be used to assess past environments, particularly the changing relations of human inhabitants to them.

Finally, there are those awkward situations in which an ecological change which undoubtedly must have been occurring in the colonial period has left little or no historical evidence at all. These include microscopic changes in soil fauna and flora, soil compaction, [and] changes in the transpiration rates of forests... Although caution is required in handling all these various forms of evidence (and nonevidence), together they provide a remarkably full portrait of ecological change in colonial New England. But they also raise intriguing questions, questions which are both empirical and theoretical... This brings us to the heart of the theoretical difficulties involved in doing ecological history. When one asks how much an ecosystem has been changed by human influence, the inevitable next question must be: "changed in relation to what?" There is no simple answer to this. Before we can analyze the ways people alter their environments, we must first consider how those environments change in the absence of human activity, and that in turn requires us to reflect on what we mean by an ecological "community." Ecology as a biological science has had to deal with this problem from its outset. The first generation of academic ecologists, led by Frederic Clements, defined the commu-
unities they studied literally as superorganisms which experienced birth, growth, maturity, and sometimes death much as individual plants and animals did. Under this model, the central dynamic of community change could be expressed in the concept of "succession." Depending on its region, a biotic community might begin as a pond, which was then gradually transformed by its own internal dynamics into a marsh, a meadow, a forest of pines, and finally to a forest of dominant trees. This last stage was assumed to be stable and was known as the "climax," a more or less permanent community which would reproduce itself indefinitely if left undisturbed. Its equilibrium state defined the mature forest "organism," so that all members of the community could be interpreted as functioning to maintain the stability of the whole. Here was an apparently objective point of reference: any actual community could be compared with the theoretical climax, and differences between them could then usually be attributed to "disturbance." Often the source of disturbance was human, implying that humanity was somehow outside of the ideal climax community.

This functionalist emphasis on equilibrium and climax had important consequences, for it tended to remove ecological communities from history. If all ecological change was either self-equilibrating (moving toward climax) or nonexistent (remaining in the static condition of climax), then history was more or less absent except in the very long time frame of climatic change or Darwinian evolution. The result was a paradox. Ecologists trying to define climax and succession for a region like New England were faced with an environment massively altered by human beings, yet their research program demanded that they determine what that environment would have been like without a human presence. By peeling away the corrupting influences of man and woman, they could discover the original ideal community of the climax. One detects here a certain resemblance to Thoreau's reading of William Wood: historical change was defined as an aberration rather than the norm.

... [In time] ecologists began to express a stronger interest in the effects of human beings on their environment. What investigators had earlier seen as an inconvenient block to the discovery of ideal climax communities could become an object of research in its own right. But accepting the effects of human beings was only part of this shift toward a more historical ecology. Just as ecosystems have been changed by the historical activities of human beings, so too have they had their own less-recorded history: forests have been transformed by disease, drought, and fire, species have become extinct, and landscapes have been drastically altered by climatic change without any human intervention at all. As we shall see, the period of human occupation in postglacial New England has seen environmental changes on an enormous scale, many of them wholly apart from human influence. There has been no timeless wilderness in a state of perfect changelessness, no climax forest in permanent stasis.

But admitting that ecosystems have histories of their own still leaves us with the problem of how to view the people who inhabit them. Are human beings inside or outside their systems? In trying to answer this question, appeal is too often made to the myth of a golden age, as Thoreau sometimes seemed inclined to do. If the nature of Concord in the 1850s—a nature which many Americans now romanticize as the idyllic world of Thoreau's own Walden—was as "maimed" and "imperfect" as he said, what are we to make of the wholeness and perfection which he thought preceded it? It is tempting to believe that when the Europeans arrived in the New World they confronted Virgin Land, the Forest Primeval, a wilderness which had existed for eons uninfluenced by human hands. Nothing could be further from the truth. In Francis Jennings's telling phrase, the land was less virgin than it was widowed. Indians had lived on the continent for thousands of years, and had to a significant extent modified its environment to their purposes. The destruction of Indian communities in fact brought some of the most important ecological changes which followed the Europeans' arrival in America. The choice is not between two landscapes, one with and one without a human influence; it is between two human ways of living, two ways of belonging to an ecosystem.

All human groups consciously change their environments to some extent—one might even argue that this, in combination with language, is the crucial trait distinguishing people from other animals—and the best measure of a culture's ecological stability may well be how successfully its environmental changes maintain its ability to reproduce itself. But if we avoid assumptions about environmental equilibrium, the instability of human relations with the environment can be used to explain both cultural and ecological transformations. An ecological history begins by assuming a dynamic and changing relationship between environment and culture, one as apt to produce contradictions as continuities. Moreover, it assumes that the interactions of the two are dialectical. Environment may initially shape the range of choices available to a people at a given moment, but then culture reshapes environment in responding to those choices. The reshaped environment presents a new set of possibilities for cultural reproduction, thus
setting up a new cycle of mutual determination. Changes in the way people create and re-create their livelihood must be analyzed in terms of changes not only in their social relations but in their ecological ones as well.

In colonial New England, two sets of human communities which were also two sets of ecological relationships confronted each other, one Indian and one European. They rapidly came to inhabit a single world, but in the process the landscape of New England was so transformed that the Indians' earlier way of interacting with their environment became impossible. The task before us is not only to describe the ecological changes that took place in New England but to determine what it was about Indians and colonists—in their relations both to nature and to each other—that brought those changes about. Only thus can we understand why the Indian landscape of precolonial times had become the much altered place Thoreau described in the nineteenth century.

The view from Walden in reality contained far more than Thoreau saw that January morning in 1855. . . . We may or may not finally agree with Thoreau in regretting the changes which European settlers wrought in the New World, but we can never share his certainty about the possibility of knowing an entire heaven and an entire earth. Human and natural worlds are too entangled for us, and our historical landscape does not allow us to guess what the "entire poem" of which he spoke might look like. To search for that poem would in fact be a mistake. Our project must be to locate a nature which is within rather than without history, for only by so doing can we find human communities which are inside rather than outside nature.

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Frontiersmen and the American Environment

Wilbur Jacobs (1978)

Extending the analysis of William Cronon (Selection 2) to the whole continent, Wilbur Jacobs, a distinguished western historian who has been president of the American Environmental History Association, writes a devastating critique of the pioneer treatment of North America. Jacobs understands that we are the heirs not only of an ecosystem shaped by frontiersmen but of their ideas as well. Environmental responsibility, he suggests, requires not only a knowledge of history but also the capacity to transcend many frontier assumptions. The statements of and about the first American conservationists, which follow this selection, document the beginnings of this process of questioning and reconstruction.

I believe environmental themes deserve more attention in American history than they have hitherto received. Environmental history can be a window to a clearer image of the past and can offer us unique perspectives on generally accepted historical concepts of unlimited growth, frontier expansionism, and the rapid use of nonrenewable natural resources. . . .

. . . Indians were . . . America's first ecologists. Through their burning practices, their patterns of subsistence (by growing, for instance, beans and corn together to preserve the richness of the soil), by creating various hunting preserves for beaver and other animals, and by developing special religious attitudes, Indians preserved a wilderness ecological balance wheel. Even the intensive farming of the

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