



Prophet of Conservation



In 1864, George Perkins Marsh published the book that was to earn him the title of "Prophet of Conservation". In "*Man and Nature, or, Physical Geography as Modified by Human Action*" Marsh put forward the idea that human activity could, and did, significantly alter the appearance and productivity of the landscape, and even the climate of our planet.

Up to this time, no one had studied the earth as the home of humankind or described the interdependence of environmental and social relationships as Marsh did.

Vermont, lawyer, congressman, ambassador, linguist and sage, George Perkins Marsh was born in 1801 in a wooden farm house on the property that is now Marsh-Billings-Rockefeller National Historical Park. During Marsh's studies and extensive travels he realized the scope of human alteration of landscape in Europe, the Middle East, and at home in the United States.

Humans had to be stewards of nature, he wrote, and make choices that would benefit the health of the entire natural world.

"Steep hillsides and rocky ledges are well suited to the permanent growth of wood, but when in the rage for improvement they are improvidently stripped of this protection, the action of sun and wind and rain soon deprives them of their vegetable mould... They remain thereafter barren...producing neither grain nor grass." - George Perkins Marsh, 1847 speech to a local Vermont agricultural society

"I spent my early life almost literally in the woods; a large portion of the territory of Vermont was, within my recollection, covered with natural forests; and having been personally engaged to a considerable extent in clearing lands, and manufacturing, and dealing in lumber, I have had occasion both to observe and to feel the effects resulting from an injudicious system of managing woodlands and the products of the forest" – George Perkins Marsh, Letter to the botanist Asa Gray, 1849

"The clearing of the woods has been attended with the removal of many obstructions to the flow of water...The general character of our water courses has become in fact more torrential...In inundations, not only does the mechanical violence of the current destroy or sweep down fish and their eggs, and fill the water with mud and other impurities, but it continually changes the beds and banks of the streams, and thus renders it difficult and often impossible for the fish...to return to their breeding places to deposit their spawn."

As a young boy, George once described himself as "forest born: - the bubbling brook, the trees, the flowers, the wild animals were to me persons, not things."

"A great oak, he once said, had a better claim to respectability than many humans he knew." - Jane Curtis et al., *The World of George Perkins Marsh; America's First Environmentalist*, p.13

"I was four-and-a-half years old at the time and sat on a little stool between my father's knees in the two-wheeled chaise in which he always drove. That 'one-horse shay' must have been as strong as the old deacon's, for the roads in those days were shocking. But I little heeded that, for to my mind the whole earth lay spread out before me. My father pointed out the most striking trees as we passed them, and told me how to distinguish their varieties. I do not think I ever afterward failed to know one forest tree from another. He called my attention to the general configuration of the landscape, pointed out the direction of the different ranges of the hills, told me how the water gathered on them and ran down their sides, and where the mountain streams would likely be found. But what struck me, perhaps most of all, he stopped his horse on top of a steep hill, bade me notice how the water there flowed in different directions, and told me such a point was called a *watershed*. . . I never forgot that word, or any part of my father's talk that day."

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“Without citing further examples, which might be indefinitely multiplied, it is enough to say that human improvements have produced an almost total change in all the external conditions of piscatorial life... and we must of course expect that the number of our fish will be greatly affected by these revolutions.” George Perkins Marsh, speaking as Vermont’s Fish Commissioner

"We are never justified in assuming a force to be insignificant because its measure is unknown, or even because no physical effect can now be traced to it as its origin." *Man and Nature*, p. 465

“The earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence... would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the depravation, barbarism, and perhaps even extinction of the species.” *Man and Nature*, p. 43, written while in Pegli (Alpine Europe),

“In those yet virgin lands which the progress of modern discovery in both hemispheres has brought and is still bringing to the knowledge and control of civilized man, not much improvement of great physical conditions is to be looked for. The proportion of forest is indeed to be considerably reduced, superfluous waters to be drawn off, and routes of internal communication to be constructed; but the primitive geographical and climatic features of those countries ought, as far as possible, to be retained.” *Man and Nature*, p.29

“Purely untutored humanity, it is true, interferes comparatively little with the arrangements of nature, and the destructive agency of man becomes more and more energetic and unsparing as he advances in civilization.” *Man and Nature*, pp. 39-40

“...man... changed millions of square miles, in the fairest and most fertile regions of the Old World, into the barrenest deserts.” *Man and Nature*, p. 42

“But we are, even now, breaking up the floor and wainscoting and doors and window frames of our dwelling, for fuel to warm our bodies and seethe our pottage, and the world cannot afford to wait until the slow and sure progress of exact science has taught it a better economy.” *Man and Nature*, p. 52

“It is certain that Man has done much to mould the form of the Earth’s surface.” - *Man and Nature*, p. 18

“Man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords.” - *Man and Nature*, p. 102

“All nature is linked together by invisible bonds and every organic creature, however low, however feeble, however dependent, is necessary to the well-being of some other among the myriad forms of life with which the Creator has peopled the earth.” - *Man and Nature*, p.103

“The Equation of animal and vegetable life is too complicated a problem for human intelligence to solve and we can never know how wide a circle of disturbance we produce in the harmonies of nature when we throw the smallest pebble into the ocean of organic life.” *Man and Nature*

“As soon as multiplying man had filled the open grounds along the margin of the rivers, the lakes, and sea, and sufficiently peopled the natural meadows and savannas of the interior, where such existed, he could find room for expansion and further growth only by the removal of a portion of the forest that hemmed him in. The destruction of the woods then was man’s first conquest, his first violation of the harmonies of inanimate nature.” -*Man and Nature*, p.103

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“...in the vocabulary of nature, *little* and *great* are terms of comparison only; she knows no trifles, and her laws are as inflexible in dealing with an atom as with a continent or a planet.” *Man and Nature*, p.105

“With the disappearance of the forest, all is changed. At one season, the earth parts with its warmth by radiation to an open sky, receives at another an immoderate heat from the unobstructed rays of the sun. Hence the climate becomes excessive, and the soil is alternatively parched by the fervors of the summers and seared by the rigors of the winter. Bleak winds sweep unresisted over its surface, drift away the snow that sheltered it from frost and dry up its scanty moisture... the melting snows and vernal rains, no longer absorbed by a loose and bibulous vegetable mold, rush over the frozen surface and pour down the valley seaward instead of filling a retentive bed of absorbent earth, and storing up a supply of moisture to feed the perennial springs.. The face of the earth is no longer a sponge, but a dust heap... The earth, stripped of its vegetable globe, grows less and less protective... and consequently less able to shield itself from wind and sun and scouring rain... Gradually it becomes altogether barren and thus the earth is rendered no longer fit for the habitation of man.” *Man and Nature*, p.104

Erosion: “If the sheltering forest has been destroyed [the soil] is confined by few of the threads and ligaments by which nature has bound it together and attached it to the rocky groundwork”. –*Man and Nature*, p.48

“The weeds that grow among cereal grains, the plants of the kitchen garden, are the same in America as in Europe.” *Man and Nature*, p.61

“Every country has many plants not now, if ever, made use of by man, and therefore not designedly propagated by him, but which cluster about his dwelling and continue to grow luxuriantly on the ruins of his rural habitation when he has abandoned it. The site of a cottage, the very foundation stones of which have been carried off, may often be recognized years afterwards by the rank weeds that cover it, though no others of the same species are found for miles.” *Man and Nature*, footnote, p. 61

“The bird and beast of prey, whether on land or in water, hunt only as long as they feel the stimulus of hunger, their ravages are limited by the present demands of appetite, and they do not wastefully destroy what they cannot consume. Man, on the contrary takes millions of fish so that he may dine tomorrow.” *Man and Nature*

“We have now felled forest enough everywhere, in many districts far too much. Let us restore this one element of material life to its normal proportions, and devise means for maintaining the permanence of its relations to the fields, the meadows and the pastures, to the rain and the dews of heaven, to the springs and rivulets with which it waters down the earth.” *Man and Nature*, p. 328-9)