

# Foreword

---

Since the last edition of *The Environmental Debate* was published in 2017, controversy over environmental issues has only intensified. Air and water pollution, waste disposal, and alternative energy sources continue to be debated with urgency, and while climate change becomes an undeniable climate crisis, there are still those who vehemently deny it. This new edition brings current a wide range of environmental issues, from the worthiness of reviving coal production to political grappling over environmental regulations, and even the notion of “de-extinction”—reviving species that were previously declared extinct. Most importantly, it addresses the topic causing the most controversy—the growing climate crisis that is wreaking havoc on weather patterns, causing devastating storms and wildfires, and its connection to worldwide diseases such as COVID-19, and species loss.

## Primary Documents

This work contains 207 primary documents arranged chronologically from Biblical times to the present, including 31 new documents, many reprinted in their entirety. All documents include an informative introduction that includes biographical information about the document’s author, the evolution of thinking regarding the specific environmental issue being discussed, and relevant historical context crucial to the understanding of the specific environmental challenges the document focuses on. The text is extensively cross-referenced to help compare and contrast opinions and goals from one time to another. Each document includes complete citations, making additional research easy and quick.

Documents include diaries of explorers, letters from politicians, relevant fictional excerpts, speeches of scientists, environmentalists and politicians, news articles, court cases, and laws passed, and are arranged in the following nine parts, each with a lengthy introduction that includes the historical context crucial for understanding the specific environmental challenges of the time:

1. Foundations of American Environmental Thought and Action
2. Politicians, Naturalists, and Artists in the New Nations, 1776–1839
3. The Origins of Environmental Activism, 1840–1889

## Part I

---

# Foundations of American Environmental Thought and Action

About twelve to fourteen thousand years ago, when the sea level was substantially lower than it is today and Asia and North America were still connected by a land bridge in the area of the Bering Strait, a few Asian hunters and gatherers crossed this narrow stretch of land between what are now Russia and Alaska and became the first humans to set foot in the Western Hemisphere.<sup>1</sup> Like other people who migrated to the Americas during the ensuing millennia, these prehistoric men and women probably came in pursuit of food or more hospitable surroundings. Possibly, when they ventured into this vast unpeopled land, they were tracking game animals. As word of good hunting in the newly discovered region filtered back into Asia, additional groups of migrants made their way to the Western Hemisphere. Some of these people drifted south along the western coast of the great land mass, and within about a thousand years, a few bands had roamed as far as South America.

By the time Columbus arrived in the “New World” in 1492, the indigenous population had

grown to an estimated seven million people, living throughout North and South America and the Caribbean. The approximately one million inhabitants of North America occupied every part of the continent, from the ice-bound north to the dry southwest and the luxuriant lands of the Gulf Coast, from the forests of the northwest to those of the northeast, and from the grassy central plains down to the rich, watery lands of the southeast. In the Great Plains region, it is estimated, there were about 225,000 people, and west of the Rocky Mountains perhaps 350,000 people.<sup>2</sup> Most tribes throughout the continent practiced some form of farming and relied on hunting, fishing, and foraging to satisfy their material and dietary needs. Among the crops they cultivated was maize, which had been developed (beginning about nine thousand years ago in southern Mexico) from wild teosinte.<sup>3</sup> They had no iron for tools, no horses or wheels for transportation, and in the northern regions (in what would become the United States and Canada), no written language or knowledge of higher mathematics.

### Contact Between Europe & America

Across the Atlantic Ocean, in Europe, a great renaissance had begun in the fourteenth century. A surge of economic growth and an intellectual blossoming during this period resulted in advances in science and mapmaking. The increased intellectual openness, as well as the spread of knowledge that followed the invention of printing with movable type in about 1450, made possible the technological advances, including key advances in maritime technology, which in turn led to an expansion of maritime trade and the great voyages of discovery of the late fifteenth and sixteenth centuries.

Spanish explorers established bases in the Caribbean region early in the sixteenth century. By the middle of the century, they had sailed up and down the Atlantic and parts of the Pacific coasts of North America, had made forays into much of the territory that eventually became the southern part of the United States, and had set up a permanent colony at St. Augustine, Florida. They had also tried, unsuccessfully, to establish permanent settlements along the Atlantic coast as far north as what is now South Carolina. Other explorers, sailing under the flags of various European states, including England and France, had also explored the Atlantic seaboard. Both the French and the English had attempted to establish colonies along the Atlantic shore during the sixteenth century, but resistance from the native inhabitants, disease, and lack of food proved to be insurmountable obstacles to the survival of these colonies. It was not until 1609 that the English gained a permanent foothold on the western shores of the Atlantic with the establishment of a settlement at Jamestown, Virginia.

During the century that followed the successful colonization of Jamestown, the landscape of North America was transformed by an influx of permanent settlers from western Europe. Colonies were established all along the Atlantic seaboard, and traders, trappers, and missionaries traveled deep into the interior of the continent. By 1700, the territory that would eventually form the thirteen rebellious British colonies had a population approaching 300,000.

### The Clash of Cultures

The vast majority of the fifteenth- to eighteenth-century explorers and colonists of North America—whether they came from Spain, England, France, the

Netherlands, or elsewhere in Europe—brought with them very similar attitudes about the relationship between humans and the natural world. Predominant among these was a belief that humanity is at the center of creation, that people have a right to use the resources of the land for human benefit, and that it was their divine duty to subdue the land they had discovered and the non-Christians who occupied it. For the most part, the natural world was seen as either a beneficent garden with riches created fundamentally for the use of humans or as a savage, evil wilderness to be conquered and tamed. Those parts of the world that had been occupied and cultivated were viewed as potential gardens, while the uninhabited wilderness was looked on with fear and mistrust.

The European explorers' and colonists' worldview was shaped by the Bible and the classics as well as by their own local customs and traditions. The Bible, a work familiar to all of the early explorers and fundamental to the education of the colonists, was a primary sourcebook [see Document 1]. A wide range of other writings had also influenced the mind-set of the Europeans, including classics such as the *Eclogues* of Virgil [see Document 2] and scientific and philosophical writings such as the works of Francis Bacon [see Document 8] and Isaac Newton. It is doubtful that many of the colonists would have been familiar with the writings of St. Francis of Assisi,<sup>4</sup> whose vision of a bond between all creation closely paralleled the views of some North American Indians but was an anomaly in European thought until recently.

The Europeans considered the Native Americans as either merely another resource created for the use of civilized humans (Europeans) or as savage, uncivilized creatures to be Christianized. However, despite the European interlopers' condescending attitude toward the Indians, the explorers and colonists were clearly dependent on the natives for knowledge about the weather, plants, and animals in the New World [see Document 7].

The newcomers were intent on claiming for themselves—both as representatives of their sovereigns and as individuals—as much of the land and its wealth as they could lay their hands on [see Documents 3-5]. However, the Native Americans were steadfast in their desire to continue to farm, hunt, and fish on the lands and in the rivers where they had done so traditionally. As the growing white population appropriated more and more of America's land and

The greatest delight which the fields and woods minister is the suggestion of an occult relation between man and the vegetable. I am not alone and unacknowledged. They nod to me, and I to them. The waving of the boughs in the storm is new to me and old. It takes me by surprise, and yet is not unknown. Its effect is like that of a higher thought or a better emotion coming over me, when I deemed I was thinking justly or doing right.

Yet it is certain that the power to produce this delight does not reside in nature, but in man, or in a harmony of both.

#### **B. From *The American Scholar*, 1884**

The first in time and the first in importance of the influences upon the mind is that of nature. Every day, the sun; and, after sunset, Night and her

stars. Ever the winds blow; ever the grass grows. Every day, men and women, conversing, beholding and beholden. The scholar is he of all men whom this spectacle most engages. He must settle its value in his mind. What is nature to him? There is never a beginning, there is never an end, to the inexplicable continuity of this web of God, but always circular power returning into itself. Therein it resembles his own spirit, whose beginning, whose ending, he never can find,—so entire, so boundless. Far too as her splendors whine, system on system shooting like rays, upward, downward, without centre, without circumference,—in the mass and in particle, Nature hastens to render account of herself to the mind.

*Source:* Ralph Waldo Emerson, *Nature: Addresses and Lectures* (Boston: Houghton Mifflin, 1884), pp. 86-87, 14-17.

### **DOCUMENT 37: William Cullen Bryant's Proposal for a Great Municipal Park (1844)**

*For nearly three-quarters of a century, beginning in 1811 with his poem "Thanatopsis," William Cullen Bryant inspired American nature lovers, artists, and writers by conveying a sense of the wonder and divinity of nature. In 1844, motivated by his knowledge of the great parks of Europe, including Regents Park in London, the noted poet and editor of the influential New York Evening Post proposed setting aside a very large tract of land for a municipal park. Previously, half a dozen or so acres had been set aside for local parks, such as Madison Square in New York City, but no municipal public park on the scale proposed existed anywhere in the world, for the great European parks were actually private lands that had been opened to the public. Although the site he suggested was not the one finally selected for New York's Central Park, he set in motion a movement to create a rural park in the city that inspired similar movements in cities around the country.*

If the public authorities, who expend so much of our money in laying out the city, would do what is in their power, they might give our vast population an extensive pleasure ground for shade and recreation in these sultry afternoons, which we might reach without going out of town.

\* \* \*

On the road to Harlem, between Sixty-eighth Street on the south, and Seventy-seventh on the

north, and extending from Third Avenue to the East River, is a tract of beautiful woodland, comprising sixty or seventy acres, thickly covered with old trees, intermingled with a variety of shrubs. The surface is varied in a very striking and picturesque manner, with craggy eminences, and hollows, and a little stream runs through the midst. The swift tides of the East River sweep its rocky shores, and the fresh breeze of the bay comes in, on every warm summer afternoon, over the restless waters. The trees are of almost

## DOCUMENT 138: Dixy Lee Ray Asks, “Who Speaks for SCIENCE?” (1990)

*Dixy Lee Ray, the idiosyncratic former governor of Washington and one-time chairman of the Atomic Energy Commission who had a Ph.D. in biology, was an avid supporter of nuclear energy. Although recognizing a need to curtail the rapid depletion of natural resources and prevent pollution, she questioned the primacy of human activity as the cause of global warming and objected to the placing of stringent environmental limitations on industrial development. Like Bernard Cohen [see Document 131], Ray was concerned about how the environmental riskiness of various activities, including industrial activities, is determined and how the perception of risk affects U.S. industrial policy.*

It is now widely accepted by the press and consequently by much of the general public that man’s industrial activities are “fouling our nest” and pose a threat to the life of planet Earth, a threat that grows more ominous year by year. Is this conventional wisdom correct?

The risk one runs in challenging so widely held a belief is the risk of being judged an apologist for industry, or worse, to be accused of favoring pollution. Now my disclaimer: I am not in the pay of nor am I employed by any industry and I am as much opposed to pollution as anyone. But I do part company with alarmists who misuse science to foment fear and who clamor with increasing stridency that industrial progress must stop or be redirected into uneconomic alternatives because the world is going to pot. Is it?

\* \* \*

What are our real environmental concerns? Cancer-causing chemicals? Radiation, including radon? Carbon dioxide, ozone, the “greenhouse effect”? . . .

First, the cancer-causing chemicals. With the exception of childhood leukemia—always tragic, but relatively rare—cancer is a malady that afflicts predominantly older adults and the aged. For most cancers, and there are many different kinds, the causes are complex, interactive, and often include genetic factors. If we look at the fatality records, the facts show that the total of carcinogenic substances targeted by the EPA—including chemicals in the work place,

environment, food additives, and industrial products—cause *fewer than eight percent of all cancer deaths in America.*

The best scientific evidence points to genetics, viruses, sexual practices, diet, alcohol, and more than anything else, tobacco, as accounting for nearly all of the remaining 92 percent. Yet, the public, through constantly reported innuendo against industrial chemicals and radiation, is encouraged to believe otherwise. Moreover, a proper look at cancer statistics shows that, aside from a sharp increase in lung cancer caused by cigarette smoking, there have been no significant increases in the rate at which people die from any of the common forms of cancer over the last 50 years. In fact, there have been significant decreases in some types of cancer—for example, stomach cancer—during these decades of rapid industrialization and the introduction of many new man-made chemicals.

But most people believe cancer is caused by toxic substances created by industry. Why? Because they listen to the wrong spokesmen, and that is all they hear. National television has elevated sob-sister journalism to a new dramatic high, with emotional, heart-rending stories about cases of childhood leukemia and other individual or family tragedies as if they were epidemic. These stories capture public attention and play on natural sympathy, and these reactions, in turn, affect the decisions and budgets of governmental scientific agencies. In an internal memo, the Environmental Protection Agency

## Document 201: Kevin Trenberth on the Connection Between Climate Change and Wildfires (2020)

*In the summer of 2020, wildfire season hit California and a number of other southern states again, reviving the debate over the connection between wildfires and climate change. In this article from The Conversation in 2020, atmospheric scientist Kevin Trenberth explained how climate change and global warming are connected to the annual fire seasons experienced in some parts of the world.*

Once again, the summer and fall of 2020 in the Northern Hemisphere has brought us an epidemic of major wildfires.

These burn forests, houses and other structures, displace thousands of people and animals, and cause major disruptions in people's lives. The huge burden of simply firefighting has become a year-round task costing billions of dollars, let alone the cost of the destruction. The smoke veil can extend hundreds or even thousands of miles, affecting air quality and visibility. To many people, it has become very clear that human-induced climate change plays a major role by greatly increasing the risk of wildfire.

Yet it seems the role of climate change is seldom mentioned in many or even most news stories about the multitude of fires and heat waves. In part this is because the issue of attribution is not usually clear. The argument is that there have always been wildfires, and how can we attribute any particular wildfire to climate change?

As a climate scientist, I can say this is the wrong framing of the problem. Global warming does not cause wildfires. The proximate cause is often human carelessness (cigarette butts, camp fires not extinguished properly, etc.), or natural, from "dry lightning" whereby a thunderstorm produces lightning but little rain. Rather, global warming exacerbates the conditions and raises the risk of wildfire.

Even so, there is huge complexity and variability from one fire to the next, and hence the attribution can become complex. Instead, the way to think about this is from the standpoint of basic science – in this case, physics.

### Global warming is happening

To understand the interplay between global warming and wildfires, consider what's happening to our planet.

The composition of the atmosphere is changing from human activities: There has been over a 40 percent increase in carbon dioxide, mainly from fossil fuel burning since the 1800s, and over half of the increase is since 1985. Other heat-trapping gases (methane, nitrous oxide, etc.) are also increasing in concentration in the atmosphere from human activities. The rates are accelerating, not declining (as hoped for with the Paris Agreement).

This leads to an energy imbalance for the planet.

The flows of energy through the climate system are schematically illustrated with numbers on the top-of-atmosphere values and net energy imbalance at the surface. Trenberth et al 2009

Heat-trapping gases in the atmosphere act as a blanket and inhibit the infrared radiation – that is, heat from the Earth – from escaping back into space to offset the continual radiation coming from the sun. As these gases build up, more of this energy, mostly in the form of heat, remains in our atmosphere. The energy raises the temperature of the land, oceans and atmosphere, melts ice, thaws permafrost and fuels the water cycle through evaporation.

Moreover, we can estimate Earth's energy imbalance quite well: It amounts to about 1 watt per square meter, or about 500 terawatts globally.

While this factor is small compared with the natural flow of energy through the system,