

Land Conservation in a Changing World

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CHAPTER 3

Revolution, Romanticism, Railways, Nature: The Nineteenth Century Crucible of Conservation

Land conservation in our modern sense of the term emerged in the nineteenth century. Here we discuss British and American origins of land conservation. There were other European origins, especially in Germany, but the British and American conservation traditions share deep cultural and historical roots that, despite the bitter War of Independence, remained tightly wound in the 19th and 20th centuries. Later chapters will discuss international conservation, but I'll leave European conservation beyond the U.K. mostly to other authors. In Appendix 3-A following this chapter, see the "Chronology: The Long Nineteenth Century" which tracks the broader historic context for this period.

Conservation in Britain and the U.S. emerged from a churning caldron of several elements in a late 18th and 19th century world that, like the locomotive in *Rain, Steam, and Speed – The Great Western Railway*, the 1844 J.M. W. Turner painting, seemed to be hurtling



Rain, Steam, and Speed – The Great Western Railway, 1844. J.M.W. Turner

beyond control. The 19th century arrived on the heels of the American War of Independence (1775-1783), and the French Revolution (1789-1799), then plunged into the Napoleonic Wars (1792-1815) and the collision of European empires in Africa, Asia and South America. Fueled by agricultural and technological advances, world population increased dramatically, especially in cities where the industrial revolution created a new working class and a rising middle class.

European and American cities offered their migrants the promise of greater mobility and better education, if not always greater health and security. The powerful intellectual, aesthetic, and cultural movement known as Romanticism equally deplored and celebrated the rapid and

profound changes unleashed by this age of revolutions. Philosophy, literature, science, and social science advanced rapidly, challenging ancient verities and building the foundation for the largely unimagined advances and horrors of the twentieth century. The development of experimental science and field-based natural history – geology, botany, and zoology – led to the intellectual revolution of Darwinism and the new science of ecology.

When British general Lord Cornwallis surrendered to George Washington and the French General Rochambeau at Yorktown in 1781, ending the American War of Independence, legend has it that the defeated British troops played a popular air of the English Civil War, “The World Turned Upside Down.” The first verse:

Listen to me and you shall hear, news hath not been this thousand year:
 Since Herod, Caesar, and many more, you never heard the like before.
 Holy-dayes are despis'd, new fashions are devis'd.
 Old Christmas is kicked out of Town
 Yet let's be content, and the times lament,
 You see the world turn'd upside down.

The legend may be sheer fancy or ex-post-facto American propaganda. More likely the British soldiers were playing the well-known air “When the King enjoys his own again,”¹ but with its pro-monarchy lyrics. But the phrase “the world turned upside down” is apt for the period beginning in England in the mid-to- late 1700’s with major advances in spinning, weaving, agriculture, and steam energy. Although the term “industrial revolution” did not enter the language until much later, writers like William Blake, William Wordsworth, Samuel Coleridge, and industrialists like reformer Robert Owen, a utopian socialist, saw themselves as living in a whirlwind of change and disruption.

Almost a generation earlier than the Industrial Revolution, the English Agricultural Revolution spurred unprecedented population growth from the late 18th century throughout the 19th century. That revolution was based on acceptance by English farmers of earlier introductions of turnips for fodder and nitrogen-fixing clover for fertility in place of the medieval fallow system of crop rotation. Without the need to keep fields fallow every three years, farm productivity greatly increased while maintaining and even improving soil fertility. Improved plows from the Dutch, the availability of shiploads of guano from South America with

their nitrogen and phosphates, and the enclosure of common fields and so-called “wastes” to create larger, more efficient fields for wheat and other grains resulted in greater yields needed to support a rapidly growing population.

In the United Kingdom (England, Wales, Scotland, and Ireland) the population grew from 8.6 million in 1700 to 41.6 million in 1901, an extraordinary increase of 384% in 200 years. From 1700 to 1750, the growth was 12.1%; after 1750 it accelerated quickly and remained high until 1900.

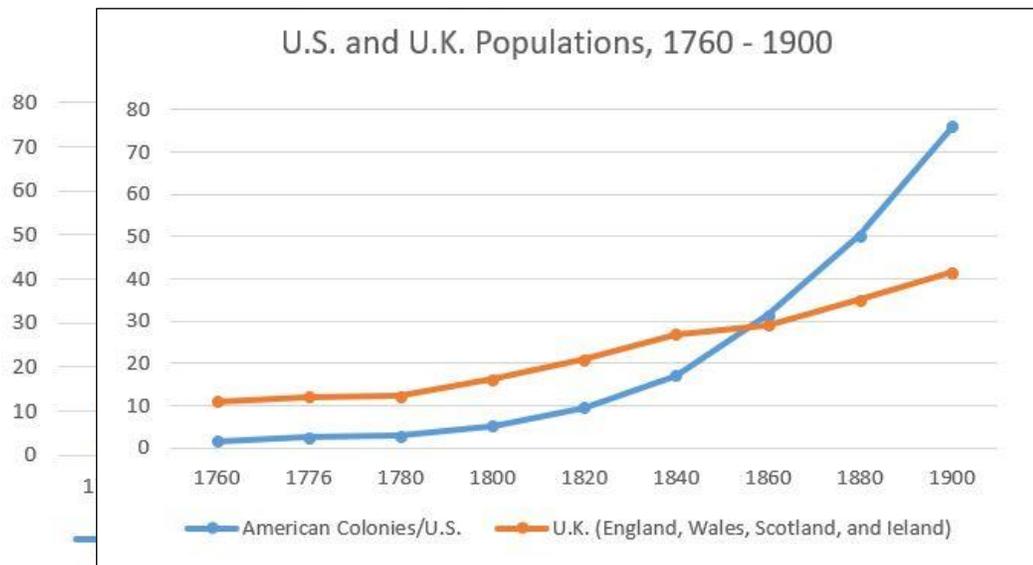


Figure 3-1. For data, notes, and sources, see Appendix 3-B.

The American Colonies and then the early United States grew even more rapidly, at an incredible rate, through the eighteenth and nineteenth centuries. From 1700 to 1800, population in the area under Colonial and then U.S. control grew by 2,012%; from 1800 to 1900, it grew by 1,336%.² From 1750 – 1800, the colonial population grew by the relatively slow pace of 112%, perhaps held back by British colonial policy and the social and economic strains of the French and Indian War and the War of Independence. The colonial economy grew along with the population, more rapidly than the mercantile-minded British could manage, especially after American Independence proved to be lasting. Soon after the Peace of Paris ended the War of American Independence in 1783, America’s Industrial Revolution harnessed water power with thousands of small dams, followed by steam power, fueled by wood at first and then by coal. Appreciation of the country’s natural beauty and wealth of natural resources increased

with exploration and travel, especially following President Thomas Jefferson's astounding purchase of the 828,000 square mile Louisiana territory from financially-overextended France in 1803. By 1870 the U.S. population of 38.6 million had surpassed the 31.4 million population of the United Kingdom (England, Wales, Scotland, and Ireland).

After the Mexican War (1846-48), the US became a transcontinental nation; during and after the Civil War (1860-1864) it became a world-class industrial power; after the Spanish War in 1898, it became a rising and self-righteous imperial power seeking a "Manifest Destiny" unlimited by continental borders.

As settlement in the late 18th and early 19th century pushed further north along the river valleys in New England, north and west in Pennsylvania and New York, and generally west across the Appalachians, settlers cleared forests at a great rate, often leading to erosion of thin upland soils on steep sites that were poorly suited for cultivation. Mill dams interrupted fish passage, game became locally scarce as relentless forest clearing advanced. Canals connected remote farmers markets in growing cities but favored the farmers in the river valleys over those in the uplands. The resulting frontier landscape was raw, stumpy, rough-and-tumble at the ragged edge of civilization. Always the West beckoned, a safety valve for a multi-ethnic population, but much less egalitarian than the Declaration of Independence suggested and less agrarian than Thomas Jefferson preferred.

The California Gold Rush began in 1849. Railroad construction had begun in the 1820's and continued through the Civil War. It employed thousands of Irish and Chinese laborers, thanks to whom the symbolic Golden Spike connected the Central Pacific and Union Pacific tracks at Utah's Promontory Point in 1869. Out-of-work Chinese would be shipped back to China, though many found work digging the wine cellars of northern California, and others tried their luck as laundry-men, cooks, and market-gardeners scatter throughout the rarely welcoming West. The Civil War devastated the South and greatly increased the industrial base of the North. The Union Cavalry found a new mission fighting the Indian Wars, which dragged on into the twentieth century, in many cases becoming campaigns of conscious ethnic cleansing as the American bison was all but nearly exterminated and the remaining "savages" were confined to virtually uninhabitable reservations. Throughout the nineteenth century, migrants from Great Britain and Europe flowed into the ports and tenements of eastern cities and

pushed west. In the gold fields of California and, later, the Black Hills of South Dakota, fortunes were made and lost overnight.

All this churning upward and outward, rising and falling, winning and losing, construction and destruction, and transformation of the landscape could not have taken place without stirring strong intellectual, artistic, religious, and political cross-currents of anxiety, discontent, and pride. The English historian, Robert Tombs (b. 1949), having reviewed Britain's seventeen years of war with France and final defeat of Napoleon in 1815, observes, "Britain had emerged as the world's richest and most powerful state But pride did not make it a happy or stable place . . ." Tombs quotes an English Whig (liberal)³ paper of the day: "What is it, after all, the people get? / Why! Widows, Taxes, Wooden Legs, and Debt!"⁴ Even after losing its American Colonies, what Britain also gets is its claim to be "the workshop of the world;"⁵ as well as the literary lions Blake, Wordsworth, the English novelists, the Darwinian revolution; the Irish famine; the enervating reign of Queen Victoria; the challenges of anarchism and socialism, and a worldwide empire on which the "sun never set" – until it did, with Indian independence in 1947.

Following the English "graveyard poets," Thomas Gray and others, the Welsh and Scottish poets, and the sentimental and Gothic novelists, English literature found new energy and spirit in the early 19th-century, beginning with William Blake (1757-1827), William Wordsworth (1770-1850, Samuel Taylor Coleridge (1772 - 1834) and other "Lake Poets," followed by the second generation of Romantic poets, principally Lord Byron (1788-1824) and Percy Bysshe Shelly (1799-1822).

English fiction in the Romantic and Victorian eras became a reflection of, and commentary upon, the changing society, its historical roots and development, its inequality, its cruelty among people and to animals, its resistance to reform, and its alternating fascination with, and dread of, science. Major English novelists of the 19th century who responded to the changing landscape and society with extraordinary depth of engagement and vision included:

- Walter Scott (1771-1832), *Waverly* (1814) and many novels of Scottish history and romance (1814-1825)
- Mary Shelley (1797-1851), *Frankenstein, The Modern Prometheus* (1818); *The Last Man* (1826)
- Elizabeth Gaskell (1810-1865), *North and South* (1855)
- Charles Dickens (1812-1870), *Oliver Twist* (1839); *Bleak House* (1852)

- Anthony Trollope (1815-1882), *Chronicles of Barsetshire* (1855-1867)
- George Eliot (1819-1880), *Middlemarch: A Study of Provincial Life* (1871-72)
- Charlotte Brontë (1816-1855), *Jane Eyre* (1847)
- Emily Brontë (1818-1848), *Wuthering Heights* (1847)
- Thomas Hardy (1840-1928), *Tess of the D'Urbervilles: A Pure Woman* (1891)
- Kenneth Grahame (1859-1932), *Wind in the Willows* (1908)
- Beatrix Potter (1866-1943), *Peter Rabbit* (1902) and 19 other tales from 1902-1917.
- H.G. Wells (1866-1946), *The Time Machine* (1895); *The Island of Dr. Moreau* (1896)
- D.H. Lawrence (1885-1932), *Sons and Lovers* (1913)

The purpose of this list is not to provide a syllabus for a course in 19th century British environmental fiction, but to suggest the wealth and breadth of the 19th century novelistic attention to landscape and environment. Except for Hardy, Grahame, Potter, Wells and (arguably) Shelley, the environment is not one of their authors' principal themes. Especially trenchant in their critical perspective on their landscapes as alienating and opposed to their characters are Thomas Hardy and D.H. Lawrence. About Thomas Hardy, the contemporary English novelist Margaret Drabble (b. 1939) writes, "Thomas Hardy is perhaps the greatest writer of rural life and landscape in the language Each novel has its own atmosphere, its own world of landscape, even though most are set within a fairly narrow compass."⁶

In turn, American literature blossomed soon after Scott and Shelley with the Sleepy Hollow tales of Washington Irving (1783-1859), whose "Rip Van Winkle" (1819) was a cautionary vision of the speed and relentless disruption of change. The novels of James Fennimore Cooper (1789-1851) portrayed a lost world of courage, honor, nobility, and tragedy in the wilderness. The essay "Nature" (1836) by Ralph Waldo Emerson (1803-1882), celebrated nature as the aesthetic and moral birthright of Americans. Irving, Cooper, and Emerson set the stage for the disquieting tales of Nathaniel Hawthorne (1804-1864); the cultural critique, political dissent, and clear botanical observations of Henry David Thoreau (1817-1862); the epic travelogues and metaphorical tales of Herman Melville (1819-1891); and the convention-smashing poetry of Walt Whitman (1819-1892). *Leaves of Grass*, Whitman's free-verse bombshell, appeared in a series of revisions and additions over forty years beginning in 1855. This stirring of thought and literature, much of it responding to the power and beauty of the natural landscape that Americans were just beginning to know, has been called the "American Renaissance."⁷

The emergence of empirical natural and physical science, including astronomy, anticipated and helped inspire this exuberant flowering of literature. In *Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science* (2009), English biographer Richard Holmes (b. 1945) begins his linked tales of mid-18th and early-19th-century exploration, botany, astronomy, and invention with Captain James Cook's voyage of the *Endeavour* to Brazil, Tahiti, New Zealand, and Australia from 1768-1771. As a young and wealthy graduate of Oxford, Joseph Banks bought his own passage on the *Endeavour* as expedition botanist, thus launching a remarkable career as adventuresome naturalist, plant collector, and patron of English science. Holmes continues with the astronomical innovations and cosmic explorations of William Herschel (1738-1822) and his sister Caroline Herschel (1750-1848). Together, they greatly advanced the study of the cosmos. In 1781, William astonished the world with his discovery of Uranus, the first new planet discovered since Classical times. He built the largest and clearest reflector telescopes in the world. Able to see more detail of the heavens than anyone else, William explored the moon and Mars with his ever-larger telescopes and his prodigious gifts of imaginative speculation. His confident reports of possible inhabitants on the moon and perhaps other planets excited poets and scientists alike. Together, Caroline (the first British woman to be paid a salary in an official governmental position, and the first woman astronomer) and William discovered and catalogued thousands of nebulae and star clusters, and many new comets. Herschel's cosmology pushed the limits of space nearly to infinity, challenging Biblical teachings with a new perspective on the place of the earth and its solar system in a universe of nearly incomprehensible scale.

In addition to the work of these outsized figures, we could add a long line of naturalists, explorers, geographers, life scientists and physical scientists, artists, philosophers, social advocates and reformers from whose work a new "environmental imagination" emerged.⁸ But this literary, artistic, and scientific movement was not spontaneously generated from British and American soil. Instead we should view English and American Romanticism as direct descendants of the Romantic Revolution in the western world, the legacy of which continues today as an expansive mode of thinking about, and responding to, the place of humankind in nature.

Romanticism

Isaiah Berlin (1909-1997), the 20th century Russian-British literary critic and philosopher, describes Romanticism as “the largest recent movement to transform the lives and the thought of the Western world . . . the greatest single shift in the consciousness of the West that has occurred, and all the other shifts which have occurred in the course of the nineteenth and twentieth centuries appear to me in comparison less important, and at any rate deeply influenced by it.”⁹

What, then, were the chief elements of Romanticism that prepared the seedbed of conservation in the U.S. and Britain? In addition to those named above, the most relevant to our subject were Rousseau’s (1712 – 1778) elevation of nature above civilization as an educational model; nature writing by William Bartram (1739-1823), a friend of Jefferson; the reports from the Lewis and Clark expedition (1804-1806) following the Louisiana purchase; Alexander von Humboldt’s (1769-1859) experiential, field-based geography and natural science; Audubon’s exquisite paintings of American birds (1827-1858); George Catlin’s spare and evocative paintings of Native Americans (1830-1838); the popular naturalism of John Burroughs (1837-1921); and Charles Darwin’s *Origin of the Species* (1859).

Taken together, these and related authors spurred popular interest in geography, natural history, the beginnings of anthropology, and human evolution. Equally eye-opening were the large-format books of picturesque landscape etchings, lithographs, and scenic panoramas and photographs, especially those by the Hudson River Valley school and of the American West. Later in the century, better roads and the burgeoning popularity of travel, newly opened canals and, soon after, the railroads brought Americans by the thousands to view these picturesque landscapes in person. Discoveries of Pleistocene fossils within the U.S. proved that extinctions of large mammals had occurred on American soil. The near-extirpation of the American bison by 1893 and the shocking demise of the sky-darkening flocks of passenger pigeons, culminating in 1914 with the death of the last passenger pigeon in a zoo, brought home to many the no-longer arguable conclusion that extinctions of God’s creatures could occur in the modern world.

The philosophical roots of Romanticism began with Jean Jacques Rousseau’s celebration of nature and his rebellion against established religion and social convention; Immanuel Kant’s (1724-1804) philosophy of individual consciousness; and George William Friedrich Hegel’s

(1770-1851) philosophy of historical dynamism (1807-1820). In addition to providing a rhetorical basis for American Independence and French Revolution, Romanticism transformed art, music, literature, philosophy, and politics and accompanied or spawned dissent and social reform movements throughout Europe and North America. The new nation of successful rebels and regime-changers that became the United States was bent on establishing its own social, cultural, and economic framework, filling up and pushing out to its self-proclaimed natural boundaries and beyond.

Romanticism and Ecology

I want to be clear. I've known enough ecologists not to suggest that the science and practice to which they've dedicated their minds, hands, and careers were largely the product of romantic yearnings for transcendental unity of men, women, and nature. Ecology began and developed as an empirical science, as Donald Worster in *Nature's Economy: A History of Ecological Ideas* ably traces from the 18th century naturalist Gilbert White and the botanist Carl Linnaeus to the "Age of Ecology" widely proclaimed in the 1970s. Still a relatively young discipline, ecology today incorporates many influences from, and intricate links with, physics, mathematics including advanced statistics, chemistry, geography, cartography, and economics, anthropology and paleontology, as well as botany, zoology, and genetics. Nevertheless, as Worster points out, ecological science shares basic principles with the Romantic philosophy of Johan Wolfgang von Goethe (1749 -1832) whose work inspired Wordsworth, and who in turn strongly influenced Emerson, Thoreau, and Muir.

Johann Wolfgang von Goethe (1749-1832) was a German playwright, novelist, poet, and



Wolfgang von Goethe, in an unaccustomed moment of leisure

biologist. His widely-known 1808 play, *Faust*, was based on the 16th century legend of a scholar who bargains his soul with the devil, Mephistopheles, in exchange for possessing all knowledge and human experience.

Goethe's inveterate interest, serious study, and deep participation in literature, science, and public affairs makes one wonder if his character, Doctor Faustus, was a stand-in for his own determination to know and experience virtually everything. In fact, the model for

Faust may have been Goethe's college friend, Alexander von Humboldt, to whom we'll return

soon. As a naturalist, Goethe saw nature, including humankind, as an intertwined, mutually beneficial network, a community. This became a fundamental tenet of Romanticism, of science in the Romantic tradition, and of ecology itself. In science this human-nature holism was a reaction to the mechanistic view of nature, often termed “Cartesian,” developed by Francis Bacon (1561-1626), René Descartes (1596-1650), and Isaac Newton (1642-1727). In literature and philosophy, the holistic view of nature and humankind as interconnected and interdependent was in part a reaction to the strong sense of alienation experienced by many in the face of industrialization, and urbanization.

Inspired by Goethe, for a time his classmate in Germany, von Humboldt, influenced the serious amateur naturalist, Thomas Jefferson (1743-1823), the pioneering historical geologist Charles Lyell (1797-1875), the Swiss-American geologist and biologist Louis Agassiz (1807-1873), and Coleridge, Emerson, Thoreau, Darwin, and many others.¹⁰ Worster sees von Humboldt as “a pioneer in ecological biology,” a full generation before Haeckel coined the name for the developing science of ecology.¹¹

In 1753, the Swedish field botanist, Carolus Linnaeus (1707-1778) developed his classification system for plants, published in 1753 as *Species Plantarum*, which became the foundation for modern botany. In 1749, he wrote, *The Oeconomie of Nature*, translated into English in 1759. Darwin read *Oeconomy* and borrowed the concept in his *Origin of the Species*.¹² Linnaeus’ science was Cartesian rather than holistic in the Romantic sense. Linnaeus saw humankind as set firmly above and separate from nature; but he meant his system to encompass the entire world of plants and animals, each with its specific, God-ordained reason for being. Unfortunately, Linnaeus based his taxonomy on erroneous assumptions about structural similarities and differences that soon led to misclassifications. Linnaeus’ system was criticized by Goethe and others for ignoring relationships among plants in their natural setting. Weaknesses and criticisms aside, Linnaeus provided a relatively simple and straightforward system of Latin classification that enabled naturalists to communicate world-wide while avoiding mass confusion among the growing community of international plant collectors and taxonomists.

Donald Worster observes, “The Romantic approach to nature was fundamentally ecological; that is, it was concerned with relation, interdependence, and holism.” Applying the current practice of literary ecocriticism, James C. McKusack, makes the case that

“. . . the English Romantics were the first full-fledged ecological writers in the Western literary tradition. [They] formulated an innovative and in many respects original way of understanding the world. Such an understanding may authentically be termed "ecological," since for the first time in the Western intellectual tradition it evinces the essential elements of a modern ecological worldview.¹³

McKusack notes further that “. . . Wordsworth and Coleridge shared a common perception of the natural world as a dynamic ecosystem and a passionate commitment to the preservation of wild creatures and scenic areas.”¹⁴



William Wordsworth, left, at middle age; and Samuel Taylor Coleridge as a young man.

Wordsworth and Coleridge, whose poetry launched English literary Romanticism, became enormously popular in Britain and, following U.S. Independence, in the U.S. But did this “proto-ecology” (or “ecologism”¹⁵) of Wordsworth, Coleridge, and Romantic writers simply reflect the deep, highly aesthetic appreciation of nature felt

and exhibited by Romantic artists and writers; or did Romantic poetry and literature to an important extent reflect the rapidly developing empirical disciplines of geography, geology, and biology, from which ecology would emerge?

It appears that two main sources and directions of influence were at work. A major strain of early Romanticism was a nostalgic, imaginative return to the ancient, pastoral landscape of the region of Arcas in ancient Greece. Pastor Gilbert White’s *Natural History and Antiquities of Selborne* (1789), a twenty-year natural history and cultural portrait of one of his traditional rural parishes, brought that Arcadian spirit into an 18th- century English setting. Fifty miles southeast of the chaos of London, the



John Clare

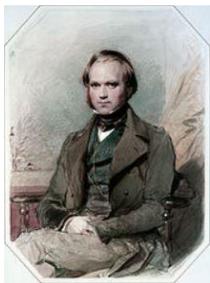
small parish of Selborne seemed remarkable to White in its harmonious, quietly beautiful, largely self-sufficient character. White’s *Natural History* quickly became a classic, inspiring greater interest in local natural and cultural history. The poetry of John Clare (1793-1864), known as the “Northamptonshire Peasant Poet,” harkened

back to the same Arcadian spirit of rural England, but with a fraught and poignant undertone of portent and loss.¹⁶ Clare's poem, "The Lament of Swordy Well," denounces the actual conversion of a local wetland to a sand and gravel quarry. In this poem, Clare gives the wetland with its creatures a collective voice claiming their right to seek redress, analogous to the civil rights underlying English law. According to McKusack, "Clare is certainly among the first to suggest that the Earth itself should have the legal right to redress of environmental grievances."¹⁷

In addition, the increasing dynamism and theoretical sophistication of science in the Romantic era, less constrained by religious fetters, especially geography, geology, and the life sciences, often inspired Romantic writers and artists. Charles Lyell's *Principles of Geology* shattered long-held assumptions about the age and stability of the earth's structure and about the changing distribution of the earth's plants and animals through geologic time. Lyell also pointed out the extent of mankind's disturbance of the earth's natural balance through the extirpation of species including, in Britain, "the bustard, wild horse, boar, beaver, wolf, and bear" and the decimation of many others.¹⁸

These and other pioneering scientists of the 19th century introduced themes of dynamic change and violence to geology and the life sciences that, together with Darwin's theory of natural selection, amounted to a new world view, a new consciousness, from which the science of ecology would emerge. After a long delay, in 1859, Darwin finally presented to the scientific world and the general reading public, his theory of natural selection through life and death struggle of organisms at the species level in his *Origin of the Species*, one of the truly foundational works of modern science.

The *Origin of the Species* had been a quietly ticking time-bomb for nearly a generation of self-censorship by the author, concerned about the roar of disapproval that would certainly greet the theory of human evolution. When Darwin's intellectual bombshell finally reached the public in 1859, it cleared a much broader conceptual space within which ecology, as well as biology, could develop. Such issues as extinction, the dispersal of species, and the diversity of species now had a theoretical frame of reference for the work of geographers, geologists, biologists, and naturalists. Quick grasps of Darwinism seemed highly compatible with the grim economics of Thomas Malthus, appearing to make sense of, and therefore to justify, the undeniable inequity in human society. In the willful corruption of Darwin's theory that became known as Social Darwinism, human society became a matter of "survival of the fittest," conveniently justifying the existing class structure, racial discrimination, imperialism, and genocide.¹⁹



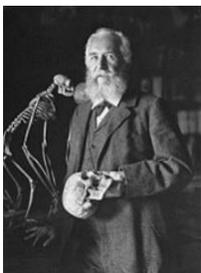
Charles Darwin

Following close upon Darwin, the German zoologist, Ernst Haeckel published his *Generelle Morphologie der Organismen* (1866), in which he named the new science of “*Oekologie*.” Haeckel had lost his childhood religion on the cusp of adulthood and proclaimed himself an atheist.

Philosophically, he was a Monist, meaning that “*the real world, the object of science, can only be known by experience and pure reason.... It was reason that led to an appreciation of the beautiful, the true and the good.*”²⁰ Monism held that mind and matter were one. Reason and emotion were one. There is no after-life and no soul. Animals are potentially equal with mankind, at least the higher animals with “primitive” man.²¹ The environmental historian Anna Bramwell summarizes Haeckel’s legacy as follows:

Haeckel’s most important legacy was his worship of Nature, the belief that man and nature were one, and that to damage one was to damage the other. He offered scientific ‘proof’ that harmony and benevolence were intrinsic to the world, and that man must fit into its framework, while cherishing and caring for nature’s wonders.²²

Despite his serious interest in Buddhism, Haeckel was a combative personality, rising to the challenge presented by his many critics, and providing many contradictions and



Ernst Haeckel

unsupported speculations for critics to attack. Unlike the usually dispassionate posture of scientists, Haeckel was driven to public advocacy of his positions as they related to such matters as politics and warfare. In ironic contrast to his professed belief in cool and analytical reason, Haeckel was passionate in his “emotional nature-worship.”²³ Unfortunately for his reputation as a scientist

or a moral force, he had a metaphysical streak that tended to subsume his science in passionate subjectivity. This led him to state distasteful ideological and pseudo-scientific views on the natural superiority of the white race that were later attractive to Nazi ideologues and were used to justify the Nazi genocide.

It would be difficult to overstate Alexander von Humboldt's impact on 19th century culture, politics, literature, and science. Returning to Spain in 1804 after five years of travel and scientific exploration, risking his life on several occasions, von Humboldt stopped briefly in the U.S. Capitol and was promptly invited to visit President Thomas Jefferson, and Jefferson's ally and fellow Virginian, Secretary of State James Madison. Although von Humboldt deplored slavery and understood that Jefferson and Madison (as George Washington had been) were slaveholders, he admired Jefferson as the author of the Declaration of Independence, a man of the Enlightenment and of science, a practicing naturalist, and an agriculturalist. They met several times over the next few days in early June, interrupted by a whirlwind of visits, dinners, and a party hosted by Madison. Their interest in Humboldt had a focus: they wanted to hear all that the geographer could tell them about South America and, especially, Mexico, where the border was in dispute. Humboldt freely shared his notes and meticulously corrected maps. He left with Jefferson's praise as "the most scientific man of his age."²⁴



Alexander von
Humboldt

Upon returning to Europe, Humboldt was feted as an international hero, a reputation he would enhance many times with his grandly illustrated books, culminating with *Views of Nature: or Contemplation of the Sublime Phenomena of Creation* (1850, 1884). Andrea Wulf, his recent biographer, documents how his reputation and influence grew almost without bounds throughout his long life, and beyond. His example of intellectual brilliance, physical resilience, and liberal views of humankind and society directly inspired Jefferson, Simón Bolívar, Darwin, Thoreau, Marsh, Haeckel, and Muir. Although Humboldt's direct influence waned quickly in the 20th century,²⁵ in the English-speaking world, it continues to be felt in the development of ecology and human ecology. In conservation today, we see Humboldt's continuing influence in the focus on biodiversity and in the growth of the international conservation movement.

New England Transcendentalists



Ralph Waldo
Emerson

Despite the spirit of independence and frontier exuberance following the American Revolution, it was the Romanticism of English writers, principally Wordsworth, Coleridge, Byron, and Shelley, that penetrated and enlivened the New England Transcendentalists in the second generation following American Independence. The Transcendentalists were a small circle of writers, thinkers, and social experimenters centered on the essayist Ralph Waldo Emerson. In addition to European Romanticism, the influences on Transcendentalism included the theology of Swedenborg, Hinduism, and Universalism as taught at Harvard's Divinity School. Transcendentalists held that the divine (Emerson's "Over-soul") pervades all of nature and humanity; and that both are inherently good. Transcendentalists held advanced views of the role of women, although Margaret Fuller's feminism and Whitman's overt sensuality ripped asunder polite boundaries in rarified society. Transcendentalists favored communal living, at least in theory, although their few actual experiments in communalism soon became unstable and ended much more quickly than those of the Shakers. Leading members of the "Transcendental Club" included Emerson, Thoreau, Bronson Alcott (father of Louisa May Alcott), and Margaret Fuller. Whitman, a New Yorker, lived too far from Concord to be a member of the club, but took Emerson's individualism to extreme limits.

Transcendentalists lived with their inherent philosophical and cultural contradictions: they were philosophical idealists, not materialists, but they embraced science; they believed in the individual, but they wanted communal living to work. Their scientific work brought the observation of nature to a new level of care and detail, in the Enlightenment tradition, and they strived, without notable success, to fit their observations into the overall theoretical unity that Christianity had provided.

Within the Transcendental circle, Henry David Thoreau most fully embraced nature and in later years became a serious naturalist, with a scientist's concentration on small details and their inter-relationships. His attention to local landscape history gave him a strong grasp of humankind's impact on, and fundamental dependence upon, nature. In *The Environmental* intellectual and moral center of American environmental writing. One might say that Thoreau was and is the main trunk of the environmental tree, and his successors, George Perkins Marsh, John



Henry David
Thoreau

Muir, Aldo Leopold, Rachel Carson, Edward Abbey, and others are the well-secured main limbs while the continuing scholarly and literary interest in Thoreau continues to advance the growing point of environmental thought.

Thoreau did not feel a need to own land; an, in any event, his preference for unsteady employment would likely have disqualified him from obtaining a mortgage. He was comfortable borrowing the land of others for his Walden cabin and his interminable walks. Throughout his all-too-short life, he was supported by his mother and sister and a small circle of bemused, if sometimes irritated, friends – the literary muses, if far from the economic elite of young America. During his walks and his work as a surveyor, he identified broad areas in Concord that should be preserved; and, in his 1815 *Journal*, called for every town to preserve a sizeable woodland, not for timber or fuel wood, but as a common for restoration of the spirit. He also urged property owners to consider giving their land to their towns for public benefit as collectors of art give their collections to museums.²⁶ In this, he was translating the English tradition of the Commons for the America of aggressive privatism.

The Town of Concord and its Land Conservation Trust have followed his advice, though many in town felt that the ambitions of the Walden Woods conservation campaign of the 1990s, funded generously by famed Eagles musician Don Henley, were unrealistic, unnecessary, and generally over the top.²⁷ What the Walden Woods campaign brought to the scene, in addition to the generosity of Henley's support and the public attention it generated, was its fundamental insight that, while Walden Pond was the symbolic center of Thoreau's importance, the broader Walden Woods extending for miles surrounding the Pond itself was the locus worth preserving and restoring, even at this late hour of the twentieth century. That broader radius included Concord's "sanitary" landfill, the unsightly trailer park between the landfill and Walden Pond, and White Pond to the south of Walden in the Town of Sudbury – all these sites being within a web of established suburban development.

Thoreau made these specific conservation suggestions in his Journals, which were not published as a whole until 1906. In *The Maine Woods*, based on his journal like most of his works, but published in 1866, he called for national ownership of Mt. Katahdin and the surrounding wilderness to protect it from the rapine of forests he saw in southern New England. In "Chesuncook," the second chapter of *The Maine Woods*, Thoreau reflects on the extensive, "nearly unbroken" pine forests of what we now call the Northern Woods of northern

New England, New Brunswick, adjacent Quebec, and New York's Adirondacks. Recalling the English Royal Forests, Thoreau writes:

Why should not we, who have renounced the king's authority, have our national preserves, where no villages need be destroyed, in which the bear and panther, and some even of the hunter race [meaning Native Americans] may still exist, and not be "civilized off the face of this earth," Not for idle sport or food, but for inspiration and our own true re-creation? Or shall we, like villains, grub them all up, poaching on our own natural domains.²⁸

George Perkins Marsh (1801-1882)

Man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned toward to discord.

George Perkins Marsh, *Man and Nature*

Man and Nature (1864) and its retitled second and third editions, *The Earth as Modified by Human Action* (1874 and 1884), were the work of a polymath Vermonter, George Perkins



George Perkins Marsh

Marsh, a relatively wealthy, though serially unsuccessful farmer and entrepreneur, diligent Congressman, devoted scholar, and gifted linguist. He read twenty languages, most of them self-taught. As a diplomat appointed by Abraham Lincoln, Marsh travelled widely throughout Europe. Although he was one of the foremost intellectuals of his time, Marsh never entirely scrubbed the Vermont soil from his hands or its spirit of independence and self-reliance from his heart. In the monumental *Man and Nature*, a project to which he returned again and again following his

retirement from diplomatic service, Marsh warned that heedless cutting of forests in the U.S. was repeating the errors that had destroyed ancient civilizations, and were already damaging his home region, New England. He had great faith in technology and rational thinking and recommended sensible measures to reduce the impact of timbering and agriculture. He expressed deep skepticism of legislation as a remedy for the excessive and destructive clearing of forests. Instead, he wrote, "Americans must look to diffusion of general intelligence on this

subject, and the enlightened self-interest, for which they are remarkable . . .” He regretted the amount of forest land that most states had turned over to private individuals and noted the opportunity New York State still had to protect the huge and largely intact forests of the Adirondacks.

Marsh was a well-modulated advocate in his book and his occasional speeches to small societies in Vermont.²⁹ While his great book reached academics, professionals, and the highly educated much more than it reached the farmers and loggers whose practices on the ground most needed changing, he was held in high esteem and the influence of *Man and Nature* was substantial and long-lasting. Although Marsh made no pretense of writing as a scientist, his scholarly standards were high. *Man and Nature* was the first “popular” work to advance the basis for the barely emerging science of ecology. It also provided the justification for the eventually successful campaigns in the 1870’s and 1880’s to conserve the Adirondacks in New York State and for the creation of forest reserves in 1891, soon to become the United States Forest Service under Gifford Pinchot and President Theodore Roosevelt. Pinchot, Roosevelt’s conservation advisor and “father of the U.S. Forest Service” considered *Man and Nature* to have been “epoch-making.”³⁰

Marsh was 16 years older than Thoreau and 37 years older than John Muir. The lifetimes of Marsh and Muir, with Thoreau’s relatively short life in the middle, spanned 113 years, from 1801 to 1914. For the emerging forestry profession in the U.S., and especially in Europe, Marsh’s work persuasively summarized the consequences of human neglect and abuse of forests. It had a major influence on botanist Charles Sprague Sargent (1841-1927), appointed director of the Harvard Arboretum in 1872, and on social critic and Harvard art historian Charles Eliot Norton (1827-1908), one of Frederic Law Olmsted’s mentors and supporter. In 1905, Joseph Battell, a horse-breeder, former Vermont legislator and philanthropist, donated a 1,200-acre tract of virgin forest and alpine habitat surrounding Camel’s Hump in the northern Green Mountains, (at 4,082 feet, the state’s third highest mountain), to the State of Vermont. The gift provided that the property be kept in its “primitive state,” and the State accepted that provision and has honored it since, eventually designating a 20,000-acre forest reserve including the Battell gift.³¹ It is likely that Battell was strongly influenced by Marsh.

John Muir (1838-1914)

John Muir was born on April 21, 1838, to Ann Gilrye Muir and Daniel Muir, in Dunbar, Scotland, a bustling seaport and fishing town. The third of seven children, and the eldest of three boys, John took a long time to find his way in the world and his purpose in life. Despite a hardscrabble childhood constrained by his father's strict Calvinism and little formal schooling beyond the age of 11, Encouraged by his mother and sister to read widely, Muir's mother and sister encouraged him to read widely, through which he developed a voracious appetite for knowledge. In 1849, they emigrated to the U.S. as thousands of Americans and new migrants were heading west in the California Gold Rush. The Muir family found their way to Milwaukee in the rapidly growing state of Wisconsin. They soon purchased a 160-acre quarter section of mostly wooded land north of Madison, for \$1.25 an acre, and added a second quarter section a year later. That part of south-central Wisconsin, near Portage, was gradually filling up with settlers who cleared the forest to establish small homesteads. John spent most days doing a man's work on their subsistence farm and in the woods.

John's father was a devout member of the breakaway Disciples of Christ, which had separated from the Campbellite Brethren. The Campbellites had themselves separated from an evangelical branch of the Scottish Presbyterians. In Wisconsin, faced with the hardships of wresting a living from the glacial soils and the forest, Daniel Muir found himself called to the ministry. The theology was a moderate Calvinism; people were not pre-destined to evil and damnation; but discipline, faith, and strictly good behavior were required to avoid falling out of grace. Daniel saw it as his duty to apply the sect's discipline on John's backside with an ever-handy switch. Such frequent discipline may have toughened the boy's will and his tolerance of pain but was only partially effective in obtaining obedience and adherence to Biblical doctrine. Not surprisingly, Daniel's rigorous discipline and John's independent nature were not a match made in heaven. Instead, a serious rift developed between father and son, as John drifted further and further away from his father's strictures and the family homestead.³²

Despite John's skimpy education and near-poverty during much of his youth, he became one of the most influential and effective conservation advocates in U.S. history. Strongly influenced by the English Romantics as well as by Emerson, Thoreau, the nature writer John Burroughs, and especially the geographer Alexander von Humboldt, John gradually replaced his

father's Calvinism with a radical theology that equated Nature with God and recognized plants and animals in a position of moral equality with mankind.

Although Daniel disapproved, John took up a late-night hobby of devising and crafting a wide array of ingenious devices, including (in his words) “. . . water wheels, curious door locks and latches, thermometer, hygrometers, pyrometers, clocks, a barometer, an automatic contrivance for feeding the horses at any required hour, and an early-or-late rising machine.”³³ The latter was a contrivance that woke the sleeper by literally tilting him out of bed onto his feet or onto his side, depending on his sleeping position. A later “improvement” added a basin of water to ensure that the sleeper would wake quickly and reliably. He made and sold several.

At twenty-two, considerably older than the usual freshman of his time, John talked his way into the University of Wisconsin, partly on the strength of a collection of his intricate mechanical inventions which he had brought to the state fair in Wisconsin's capital city, Madison. Fortunately, the University ran a preparatory program for ill-prepared candidates. Following the fair, John was admitted. Quickly demonstrating his natural ability and intelligence, he gained admission to the regular program in his second quarter. His chemistry and natural science professor was an accessible and unconventional educator with a liberal outlook, who hailed from New York State and Vermont and was strongly influenced by Emerson's philosophy. Jeanne Carr, the professor's wife, an amateur botanist and a writer, quickly recognized the spark of intelligence and personality in John. She just happened to be uncommonly perceptive, insightful, and intellectually available. In many ways, all completely platonic, Jeanne became John's mentor and muse over many years. As a final bit of good luck, a classmate studying botany suggested that John might like the hobby of collecting plants.

John's studies at the University over a four-year period, without completing a degree, were followed by three years of mostly solitary botanizing in Ontario and the Midwest. He worked at a sauntering pace, interrupted as necessary by stints as a farm hand, handyman, and machinist to allay hunger, sleep under a roof, and earn cash for the next stage of his wanderings. Today, the events of John's young life seem as improbable as that of young Shakespeare or a character in a Dickens novel.

His wandering had four main phases. The first, from March 1864 to 1867 followed his departure from the University and a strained visit home. Threatened by the Civil War draft, John crossed the Canadian border for the duration of the War and explored the northern

shores of Lake Huron in Canada and Lake Erie. The second phase began in September 1867 by train from Indianapolis, Indiana, to Louisville, Kentucky, followed by his 1,000-mile walk from Louisville through the southern Appalachians and Georgia to Florida and the Gulf Coast, ending in Cedar Keys, Florida late in the year. The third, beginning in January 1868, took him by freight schooner from Florida to Cuba; then, in February, to New York City and to Panama in March, then across the Isthmus by rail, and by steamer to San Francisco, arriving on March 29. In his fourth, John was joined by Chilwell, a cockney shipmate intent on immigrating. From their ship, guided by general directions from a workman, the pair set off on foot from San Francisco, over the Coastal Range and across the Central Valley into the Sierra Nevada Mountains and the Yosemite Valley – which became John’s “Promised Land.” In the spring of 1869, having taken a job as sheepherder, he returned to the Sierras and Yosemite, the protection of which would become his life’s work and his legacy to the conservation movement.



John Muir

During these journeys in in his twenties, with his blazing blue eyes, slight but tall frame, and his curly, untrimmed moustache and dark beard reaching the nape of his neck, John was an odd and intriguing sight in a flat-brimmed hat, dark, rumpled gray trousers, high-collared shirt, and dark jacket. According to his biographer, the environmental historian Donald Worster,

Over his shoulder he carried a black rubbery bag filled with a single change of underwear [apparently his only change of clothes] a bar of soap, a towel, comb, and brush ... There were also three small books . . . Robert Burns’ poems, John Milton’s Paradise Lost and the New Testament – and a fat, heavy one, weighing in at some five pounds, Alphonso Wood’s A Class Book of Botany . . . probably the 1862 edition he had acquired as a student ... On his back he strapped a homemade plant press for drying specimens . . .³⁴

Wood’s *Botany* had provided instructions for the plant press. It held about 96 sheets of blotting paper, wrapped in wire mesh held together with leather straps and metal buckles – a considerable appurtenance to carry. It’s not clear how Muir kept the contraption and its specimens from getting wet. Perhaps he wrapped it in oil cloth. One imagines Muir as a latter-day Johnny Appleseed, with plant press in place of Johnny’s familiar sack of apple seedlings. Worster’s description continues: “The traveling satchel included, as a final significant item, a

blank notebook bound in dark covers, with some two hundred ruled pages 's inches by six inches in size. Its owner inscribed on the inside cover: 'John Muir, Earth-planet, Universe.'"³⁵

Despite his odd appearance, John was not shy about asking farmers and others along his route for bread and a bed. When the latter was unavailable, he made his bed, usually in the woods along the trail as best he could with neither blanket nor complaint. Despite these conditions, he was meticulous about personal cleanliness, if not about his dress – he had adopted some of his parents' strict lessons well. His soft-spoken, intelligence, likeable personality, good spirits and easy banter, ability to work long hours without complaint, and unusual facility with machines attracted friends and opportunities when he needed them most.

During these treks, he kept in sporadic touch with his family and his University friends from time to time by mail, primarily sent to Jeanne Carr. Except for his first two years in Canada, he kept copious notes in his journals, about his botanizing, the landscapes he traversed, people he encountered, and places where he stayed. John's trend of good luck generally continued; in these lonely and arduous quests over a period of five years, he fell upon serious misfortune only three times. The first occurred in March 1866 at a woodworking mill in Trout Hollow, near Meaford, Ontario, where a conflagration consumed his entire production of thousands of broom and rake handles and the entire Trout and Jay wood mill, leaving John Muir unpaid by hundreds of dollars, which were eventually paid to him by the honest millowner.

John moved on quickly and, no longer threatened by the draft, he crossed back to the U.S. in late 1867 with Indianapolis as his next destination. The War had ended two years earlier. Indianapolis was a rail center that would allow him to embark on a long-planned expedition to the Gulf States and then South America and the Amazon, directly inspired by Von Humboldt's explorations. He soon found work in a carriage material factory at \$10 per week, raised to \$22 for his second week, after a quick promotion.³⁶ He was feeling fortunate and relatively solvent, though he itched to resume his travels and his botanizing.

The second misfortune occurred at night in March 1867, in that Indianapolis factory. While Muir was using the point of a steel file to remove lacing from a leather machinery belt that needed repair, the tool slipped from his grasp and stabbed into his right cornea, piercing it deeply enough to allow aqueous fluid to escape. By the time he reached his boarding house, he had lost sight in both eyes, the left eye in sympathy with the wound to his right. Imagine his distress and alarm; to be blind in the mid-nineteenth century was to be virtually helpless,

reduced to penury and possibly committed to an alms house. Fortunately, Jeanne Carr had written to friends in Meaford inquiring of John's whereabouts. Learning about his accident, she asked her friends to engage a doctor, who visited John with the good news that his sight would return in a matter of weeks with little permanent damage. Aided by his youth and rugged constitution, as well as devoted nursing by the wife of the boarding house owner, John recovered, fully determined to begin his long-planned trek through the southern states as quickly as he could get his affairs in order.

This close call brought him to a decision; he would not accept the security of a factory job, however interesting and financially rewarding it might be. Instead, he would dedicate himself to exploring and botanizing the landscape of America. His destination would be the Gulf of Mexico and, finally, the Amazon of Alexander von Humboldt.

John's third misfortune nearly ended his life. In Cedar Key, Florida in late October 1867, while awaiting passage to South America on a lumber vessel, John was stricken by a debilitating fever, probably malaria. He had been hired temporarily by a mill owner, R.W. Hodgson, to repair machinery. He and his wife, Sarah, took John into their house, where they nursed him for about three months. In those days, quinine and calomel (mercury chloride) were the usual treatments. Sarah shared Muir's love of plants and may have supplemented his treatment with herbal remedies.³⁷ Muir wrote that the malaria brought on typhoid fever. Whatever the combination of diseases and remedies may have been, he came very close to death.

In several weeks, with his fever partially abated, he resumed his journey. He caught a freight schooner to Havana, Cuba, where he spent about a month botanizing along the north shore of the island and enjoying the languorous city. Although determined to make his way to Orinoco, he finally realized that continuing in his feverish condition would be foolhardy. In a Havana garden while reading a New York newspaper, he glimpsed an advertisement for cheap fares to California. The captain of the Florida - Cuba schooner recommended a "*trim little schooner loaded for oranges for New York,*" and noted that "*these little fruiters are fast sailers.*"³⁸ The fare was \$25 of John's remaining \$100. In twelve days, the schooner approached New York Harbor. It was February; and Muir delighted in the bare, snow-covered landscape, a relief after the tropical heat and his fevers. Muir stayed aboard and near the wharfs while the schooner's cargo of oranges was unloaded. Fearing that he would get lost and miss the next departure to California, he did not take a streetcar uptown to Central Park. He thereby missed a

possible chance to encounter Frederick Law Olmsted, who had returned to New York and his Park a year earlier, after resigning as manager of the failed Mariposa gold-mining operation in California.

After a month-long journey, by ship to Panama, by locomotive across the Isthmus, and then by the steamship *Nebraska* north to San Francisco, John passed through the Golden Gate on March 29, 1868. He was thirty years old, middle-aged for his time, without money or established career, but with journals full of notes. When he and Chilwell crossed the Coastal Range and met the Merced River, which drains the Sierra Range, the view across the Central Valley toward the Sierras was, in John's words, "a scene of peerless grandeur."³⁹ For another month, John and Chilwell trekked north along the Merced River, reaching the Yosemite Valley in early May. Donald Worster, describes California's deeply personal appeal to Muir as follows:

"In California he discovered a place that laid such a hold on his affections that he could never leave. It became his true and only home, however much he would travel during the rest of his life. Yosemite Valley was the spiritual center of that home, a place he would love even before he left Indiana, for its unique qualities of shelter, light, and soaring grandeur of rock. But the whole state held out an irresistible appeal, and for more than aesthetic reasons. Here was a place he had found all on his own, with no connection to his family or his past life, where he could start anew. He had been looking for a somewhere to put down roots, but they had to be his own roots and nobody else's."⁴⁰

Worster compares Muir's emotional response to California with Milton's encounter with *Paradise Lost*:

The blind poet . . . never imagined such a place actually surviving on earth . . . For Muir, California immediately seemed like the real thing – a this-worldly paradise that could be breathed, measured, and slept on, as he did on the valley floor.⁴¹

I'll leave it to the next chapter to continue Muir's epic adoption of Yosemite in the context of the emerging battle for Yosemite's protection. Before doing that, however, I want to express some closing thoughts about this intrepid traveler. Although Muir learned much about the natural history of his route, his botanical observations during this youthful phase seem thin

and his collecting unsystematic. The posthumous 1916 book, *A Thousand-Mile Journey to the Gulf*, compiled and heavily edited from Muir's journal by his early biographer William Frederic Badè, is a disappointment as the log of a discerning and sensitive traveler undergoing a spiritual evolution. Although Muir stayed with several southern hosts, the book reports mostly brief, courteous, and not very revealing conversations. Except for a few vague references to the still-visible effects of the Civil War, one gets little sense of the tensions that must have been roiling under the surfaces of his unfailingly courteous hosts, both white plantation owners and former slaves.

As edited by Badè, Muir's notes use the term "prejudiced" only once, in Muir's characterization of a courteous and friendly plantation owner's attitude to the North. Granted, frank conversations about the recent War, its causes, conduct, and consequences for the South's families and its communities, both black and white, would have been difficult for southerners and a relatively "liberal" northerner under any circumstances. On these visits, Muir wanted bed and board, preferably without cost, not verbal jousts over politics.

For lack of space here, I have placed in this chapter's Appendix most of Muir's comments on "negroes" in *A Thousand-Mile Walk*, as compiled by Badè. I have omitted several repetitious entries that do not change the pattern. Considered as a whole, Muir's comments are neither incisive nor empathic. The three examples below give the flavor.

September 25. [Along the Chattahoochee River] The negroes are easy-going and merry, making a great deal of noise and doing little work. One energetic white man, working with a will, would easily pick as much cotton as half a dozen Sambos and Sallies.

October 19 Slept in the barrens at the side of a log. Suffered from cold and was drenched with dew. What a comfort a companion would be in the dark loneliness of such a night. Did not dare to make a fire for fear of discovery by robber negroes who, I was warned, would kill a man for a dollar or two.

January 16. In Havana I saw the strongest and the ugliest negroes that I have met in my whole walk. The stevedores of the Havana wharf are muscled in true giant style, enabling them to tumble and toss ponderous casks and boxes of sugar weighing hundreds of pounds as if they were empty. I heard our own

brawny sailors . . . express unbounded admiration of their strength and wished that their hard outbulging muscles were for sale. The countenances of some of the negro orange-selling dames express a devout good-natured ugliness that I never could have conceived any arrangement of flesh and blood to be capable of. Besides oranges they sold pineapples, bananas, and lottery tickets.

Although it is not clear to what extent these off-hand comments reflect Muir's deep-seated views of newly-emancipated former slaves, now fellow citizens, they are disquieting. The fear and aesthetic aversion underlying them is palpable, as is an apparent lack of empathy for people who had been deprived of freedom and education, threatened, beaten, hunted down by dogs, raped, tortured and maimed. But Muir has never been accused of excessive empathy for his fellow humans, of whatever origin they may be, other than his favored Scots. Of course, the off-hand racial attitudes revealed in these comments were consistent with those held by many white Americans in both South and North, including many who favored abolition of slavery and who served in the War. His attitudes to Native Americans, like those of most Americans of the period, were also problematic. As a boy in Wisconsin, he occasionally encountered poor Native Americans, reduced to poverty and hunger, and seen as beggars and thieves of pigs and horses. Later in the Sierras, he viewed Native Americans as dirty – Muir was fastidious about cleanliness – and unworthy of the pure Yosemite wilderness. He disliked and disapproved of their use of fire in the Park. Like Frederic Law Olmsted and others he entirely missed the fact that Native-American's use of fire was an effective management tool for the meadow-like Valley that Muir prized. Neither Olmsted nor Muir objected to the removal of Native Americans from Yosemite National Park. Nevertheless, on several occasions, he voiced admiration for their spiritual relation to nature and their pantheism.⁴²

To conclude this section, I'll offer a few closing remarks on the importance of Muir's three-year personal and botanic quest (from the time he left home for Canada in on March 1, 1865 to this arrival in San Francisco on March 29, 1868) and on the extraordinary evolution of Muir's beliefs about humankind's place in nature.

First, on Muir's 1,000-mile walk to the Gulf. Although the walk was physically arduous and personally revelatory, his pace was too quick to allow more than a superficial transect, whether botanic or geographic. He chose a more-or-less direct route and spent little time in

towns or cities. After all, the Gulf was the intermediate destination. His sights were fixed on South America and, even after arriving in California, he remained determined to undertake his Amazon journey when he recovered fully.

When Muir saw in the Yosemite Valley in 1868, it had been under California's weak management for four years following Abraham Lincoln's signed legislation on June 30, 1864 granting Yosemite to California as a state park to be protected for all to enjoy. As Muir would see for himself soon enough, cutting of virgin sequoias was continuing with little restraint, hotels and other buildings were disfiguring the Valley, roads into the "park" were being built without a plan, and squatters were staking private claims. Despite what he saw, Muir himself would not come into his own as defender of, and advocate for, Yosemite until 1876.



Calypso bulbosa,
Muir's "flower
person"

For Muir, the importance of his three-year quest for the Promised Land was the time and context it provided for working out his spiritual relationship to nature. Leaving home for Canada, he had not rebelled against his father's Calvinism; instead he had gradually replaced it with an equally strong faith in Nature as the true manifestation of God. In July 1864, early in his botanizing along the Holland River north of Toronto, John experienced an epiphany. Lonely at day's end, tired, and on the edge of hunger, he was wandering in the seemingly endless dark forests and swamps along the Holland River, with little of interest to collect. Suddenly, in a sunlit opening, he came across a radiant, wild orchid, *Calypso borealis* (now known as *Calypso bulbosa*). As Muir described the experience:

But when the sun was getting low and everything seemed most bewildering and discouraging, I found beautiful Calypso on the mossy bank of a stream, growing not on the ground but on a bed of yellow mosses in which its small white bulb had found a soft nest and from which its one leaf and one flower sprung. The flower was white and made the impression of the utmost simple purity like a snowflower . . . It seemed the most spiritual of all the flower people I had ever met. I sat down beside it and fairly cried for joy How long I sat beside Calypso I don't know. Hunger and weariness vanished, and only after the sun was low in the west I plashed on through the swamp, strong and exhilarated as if never more to feel any mortal care.⁴³

Note that John has personified Calypso as a “flower-person.” This kind of personification was common in 19th century nature writing;⁴⁴ but, in the context of John’s evolving view of nature and humankind, it retains a special quality of spiritual engagement. In another letter of the Canadian journey, John enlarged upon Calypso’s meaning. The “flower-person” was not valuable simply because of her beauty. Thorns and thistles that had annoyed him frequently in the Canadian wilds were no less valuable.

I cannot understand the nature of the curse, “Thorns and thistles shall it bring forth to thee.” Is our world indeed the worse from this thistly curse? Are not all plants beautiful, or some ways useful? Would not the world suffer by the banishment of a single weed? The curse must be within ourselves.”⁴⁵

Now that’s a surprising statement from anyone who has clawed through thorns and thistles impeding a trail.

Muir’s accident in Indianapolis and his near fatal illness in Florida seem to have crystallized ⁴⁶ his changing religious and spiritual ideas. Worster summarizes these shifts from an uncomfortable and unsteady adherence to Christian belief to a kind of nature worship, noting that, in Muir’s journal, “. . . his sharpest and most fulsome invective was directed not at “people,” . . . but at those who saw themselves as “Lord Man,” placed by God above all others and treating the earth as their footstool.”⁴⁷

At this stage of his spiritual evolution, Muir’s views of humankind, human society, and nature became increasingly radical. To summarize:

- Through ignorance, mean-spiritedness, hubris, and greed humankind was ruining nature in many ways, especially in the unfettered destruction of forests;
- Despite its vaunted claim to be “Lord Man,” humankind was not placed on earth to dominate nature; and was failing in its moral obligation to provide responsible stewardship of nature;
- All living things (and perhaps rocks and minerals as well), were essential components of the earth’s natural environment; all had value and rights equal to those of humankind.

- Without completely professing atheism, Muir was moving beyond the Transcendentalism of Emerson and Thoreau toward an incomplete and sometimes self-contradictory form of pantheism.

Soon, in the Sierras, Muir would take the next step intellectually toward what would become one of the central insights of ecological science and of ecological consciousness. Muir wrote, “When we try to pick out anything by itself we find that it is bound fast by a thousand invisible cords that cannot be broken, to everything in the universe.”⁴⁸

As Muir’s life illustrates, here and there throughout the 19th century, people in Britain and the U.S. were beginning to sense that unfettered, God-given mastery of humankind over nature could not be what God intended. Out of the 19th century crucible of forces, tensions, ideas, and soul-searching, a tentative notion of conservation emerged. It was expressed first in the revived genre of nature writing, then in the movement for sanitation and park-making by Frederic Law Olmsted and others, and in the preservation of historic sites and landmarks. With Muir in the U.S. and his counterparts in England, we see the beginnings of organized conservation as a broad social movement.

The idea of landscape

One of the most important 18th and 19th-century contributions to the land conservation movement was the developing concept of landscape. The word landscape began as a Dutch word, *landschap*, from *land* and *schap*, which meant a region or territory. *Schap* became the word ending *-ship* which originally meant a “shelf” or “mooring” and came to mean “belonging” as in “membership” or “ownership.” Conjoined, according to Yi-Fu Tuan, the two syllables meant “a collection of farms or fenced fields, sometimes a small domain or administrative unit.” In 1600 the Dutch term became, literally, a term of art, meaning a painting of scenery, often as seen from a higher viewpoint or “prospect.”⁴⁹ In English, “landscape” took on the following meanings:

1. A picture representing a view of natural inland scenery; the art of depicting such scenery
2. The landforms of a region in the aggregate; a portion of territory that can be viewed at one time from one place
3. An area of activity; a scene (as in political landscape)⁵⁰

As a verb, “landscape” means to alter or modify a landscape by changing the vegetation or landform.

In *Countryside Conservation*, Bryn Green gives two definitions for “landscape”: “the visual impression of a tract of country, a unit of scenery”; and “the patterns and processes characterizing a specifically circumscribed tract of country.”⁵¹ Landscape architect and scholar, Anne Whiston Spirn, in *The Language of Landscape* (1998), writes, “Landscape associates people and place Landscape connotes a sense of the purposefully shaped, the sensual and aesthetic, the embeddedness in culture. The language of landscape recovers the dynamic connection between place and those who dwell there.”⁵² Spirn’s definition enlarges Green’s by emphasizing that the countryside and “scenery” almost always include roads, buildings, and portions of the landscape that have been strongly influenced, altered, or created by human activity; and that serious discussions of landscape include flora and fauna, landforms, and human influence and settlement.

It appears to be a frequent practice of landscape authors to do whatever they can to avoid defining this basic term. Simon Schama’s (b. 1945) resonant collection of landscape reveries, *Landscape and Memory* (1995), is one of many examples. Schama briefly gives the Dutch etymology, but not a modern definition. One of our most thoughtful landscape writers, Barry Lopez (b. 1945), as editor of the monumental glossary of landscape terms, *Home Ground: Language for an American Landscape* (2006),⁵³ omits any definition of landscape between “a’a” and “zigzag rocks” suggesting that the hundreds of terms defined and explained and, many of them, nicely illustrated in *Home Ground* together stand for our natural landscape.

An important contribution of Romanticism was the broadening concept of “scenery” and “scenic views.” The striving of landscape artists to portray the “picturesque” as a framed representation of a landscape that evoked a place, mood, or historical time evolved in to something more expressionistic and nearly abstract. An example is M.W Turner’s oil painting, *Rain, Steam, and Speed – The Great Western Railway, 1844* on the first page of this chapter. Edward Burke’s *A Philosophical Enquiry into the Sublime and the Beautiful* (1756)⁵⁴ had introduced the elements of danger, terror, and obscurity into scenic beauty. Landscape artists and later photographers of the 19th century responded to burgeoning interest in the landscapes of countryside and the wilderness with new visions. Painters of the Hudson River School began in New York and New England and soon took their palettes and easels west and

to South America. Their visions of pastoral landscapes and sublime wilderness, originally painted in oil or water color and then published as etchings, sometimes hand-tinted, in large format magazines and books in turn served as invitations to travelers and to those who were not up to the hardship or expense of long-distance travels to the sites portrayed. As cameras and photographic reproduction improved from mid-century on, striking, three-dimensional panoramas became available to anyone who could afford the inexpensive and widely distributed stereo cards and simple hand-held stereoscopes for viewing stereo pairs. The U.S. National Parks became frequent subjects. These popular images in effect set public standards for what sites were worthy of protection.

Richard T.T. Forman's (b. 1935) *Land Mosaics: The Ecology of Landscapes and Regions* (1995), an extraordinary survey of the developing discipline of applied landscape ecology, gives a helpful, succinct, and dispassionate definition. For many year, Forman was the Professor of Landscape Ecology at the Graduate School of Design, Harvard University, leading many bright and creative graduate students in landscape architecture to a deep appreciation of ecology as fundamental to their profession. He defines landscape as

. . . a kilometers-wide mosaic over which local ecosystems recur. The spatial elements within landscapes [include] local ecosystems, ecotopes, biotopes, biogeocoenoses, geocomplexes, sites and more . . . The spatial elements within regions are landscapes. This land mosaic or 'ecomosaic' paradigm has not only attracted scientists . . . but also galvanized linkages among disciplines directly solving land use issues.⁵⁵

I did not censor the jargon above, wanting to retain the self-fascination of a new sub-discipline in the ecstasy of defining itself as its own major branch of science or technology and distinguishing itself as a new paradigm of thought and practice. For definitions, see below.* *

Unfortunately, an intentional or unintentional consequence is the separation of high-wire technocrats from the rest of us pedestrian mortals, the kind of separation described by the

* "Ecosystem" is a biological community of interacting organisms and their physical environment. "Ecotope", refers to the smallest distinct landscape features defined by a mapping and classification system.

"Biogeocoenoses" are the interacting organisms within a habitat. "Geocomplex" is a more scientific-sounding term for "landscape." "Eco- [ecological]mosaic" is, a pattern of interspersed ecosystems (or a pattern of habitat patches). A pattern can be classified and described systematically without resorting to the subjectivity common to descriptions of visual landscapes.

English scientist, civil servant, and novelist C.P. Snow (1905- 1980) in *The Two Cultures and the Scientific Revolution* (1959).

A renowned British writer and landscape architect, Nan Fairbrother (1913-1971) anticipated Forman's approach to landscape in her 1970 book, *New Lives, New Landscapes: Planning for the 21st Century*. She gives landscape a broad, functional definition beyond the confines of a dictionary.

Landscape = habitat+ man . . . the natural environment changed by a creature who is himself constantly changing. It is thus the result of an equation which can never be stable, and if it has seemed so in the past it is because the pace of landscape change has been slow compared with our brief human generations.⁵⁶

As she concludes her visionary, evocative work with "A Four-Point Plan for a New Landscape Framework," she restates the equation:

. . . landscape is the most comprehensive expression we have of the total environment Nor is the landscape only the direct physical expression of land-use, it is also the actual battleground where land-use works out its own solution (or else comes to grief in derelict areas).⁵⁷

Thus, an on-face neutral Dutch term became a near synonym for "scenery" itself (as in the set or background for a play) or a painting or drawing of a scenic landscape. Then it became the name for a natural assemblage of scenic elements. Barry Lopez calls that an "accordant landscape: containing two or more matching or congruent topographical features."⁵⁸ That contrasts with a "discordant landscape" which displays "topographical unconformity and [eschews] parallelism in its rivers, hills, and mountains In a discordant landscape . . . one element boldly goes against the grain, as do such unconventional individuals as artists, environmentalists, and other visionaries."⁵⁹



A discordant landscape, typical of uncoordinated urban development. Intersection of McGloughlin Blvd. and Holgate Ave. in the Southeast Portland, OR neighborhood of Brooklyn. The traffic light assemblage, expanse of pavement, and power pole and lines clutter and partially obscure the hazy but powerful distant view of Mt. Hood to the east, elevation 11,250 feet. The signs and garish restaurant distract from what would otherwise be a striking view of this distinguishing regional landmark.

One supposes that a “discordant” landscape, even though it may be jarring to the senses, could still be aesthetically positive in the sense of picturesque; or it could be dramatically ugly and repellent, such as a scene of farm fields with a sanitary landfill or a concrete prison behind a sparkling stream. Similarly, an accordant landscape is likely to be pleasant in the parallelism of its features, or it could be tiresomely repetitive, like an endless flat field of grain extending without relief to the horizon.

The remaining point form me to make about landscape’s elusive definition is that even the original *landschap* was crafted by the people who laid out the pattern of field and fences and who maintained that pattern year in and year out. In other words, from its origin, landscape has included a man-made or cultural component. Even though landscape ecologists may apply formal scientific terms to the elements of a landscape, the cultural component remains. The term cultural landscape is often used (though Lopez found no room for the term in *Home Ground*) “for a geographic area, including both cultural and natural resources and their wildlife and domestic animals, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values.”⁶⁰ That poses a problem for the science of landscape ecology. Almost any landscape today, however urban or wild, could qualify under that very broad definition; hence the need to develop a new language for a new way of thinking and classification.⁶¹ As the environmental historian William Cronon famously emphasized, there are few if any landscapes in the U.S. or even elsewhere that remain truly a “wilderness”, without human impact.⁶²

The new discipline of landscape ecology claims the natural, cultural, and ecological landscape as its field of study and brings to bear a new set of tools and methods for analysis, classification, and planning. It is a field of study enabled by more precise aerial photography, including the use of infrared images for analysis of vegetation and land forms aided by today's geographic information systems (GIS). The intricately flexible GIS computer software has been made widely available in several different formats and levels of complexity by its chief developer, Earth Sciences Research Institute (ESRI), which has made every laptop capable of displaying a McHargian⁶³ set of overlays for analysis and planning at virtually any scale. Ian L. McHarg (1920-2001) founded the Department of Landscape Architecture at the University of Pennsylvania, where Forman earned his doctorate. His *Design with Nature* (1969) displayed the technique of using transparent overlay maps in layers to facilitate analysis and planning. GIS software has made that technique applicable to many purposes, from police work and disaster response to regional landscape planning.

Richard T. T. Forman describes landscape ecology as blending into regional ecology. As a landscape contains two or more ecosystems, a region involves "a broad geographic area, a common macroclimate, and a common sphere of human activity and interest."⁶⁴ Under his concluding section in *Land Mosaics*, Forman sets forth the following principles of landscape ecology that fit the regional scale and, when applied, contribute to the sustainability of landscapes and larger regions.

Landscapes and region

1. Landscape and region. A mix of local ecosystems or land use types is repeated over the land, forming a landscape. A landscape is the basic element in a region composed of the next broader scale composed of non-repetitive, high contrast, coarse-grained pattern of landscapes.
2. Patch-corridor-matrix. The arrangement . . . of patches, corridors, and a matrix that constitute a landscape "is a major determinant of functional flows and movements through the landscape and of changes in its pattern and process over time.

Patches and corridors

3. Large natural-vegetation patches . . . protect aquifers and interconnected stream networks, sustain viable populations of most interior species, provide core habitat and escape cover for most large home-range vertebrates . . . and permit ecosystems to respond naturally to major disturbances].
4. Patch shape. An "ecologically optimum" patch shape allows the ecosystem to accomplish its key functions.
5. Interactions among ecosystems. All ecosystems in a landscape are interrelated, with movement or flow rate of objects dropping sharply with distance . . .

6. Metapopulation dynamics. For subpopulations on separate patches the local extinction rate decreases with greater habitat quality or patch size; and recolonization [after disturbance] increases with corridors, stepping stones, a suitable matrix habitat, or short inter-patch distance.

Mosaics

7. Landscape resistance. The arrangement of spatial elements . . . determines the flow or movement of species, energy, material, and disturbance over a landscape.
8. Grain size. A coarse-grained landscape containing fine-grained components is ecologically optimum, to provide for large-patch benefits, multi-habitat species including humans, and a breadth of environmental resources and conditions.
9. Landscape change. Land is transformed by several spatial processes overlapping in order including perforation, fragmentation, and attrition which increase habitat loss and isolation but otherwise cause very different effects on spatial pattern and ecological process.
10. Mosaic sequence. Land is transformed from more- to less-suitable habitat in a small number of basic mosaic sequences, the best ecologically being in progressive parallel strips from an edge . . .

Applications

11. Aggregate with outliers. Human landscapes are best arranged ecologically by combining land uses, while maintaining small patches and corridors of nature throughout developed areas, as well as outliers of human activity arranged along major boundaries of the landscapes.
12. Indispensable patterns. Land containing humans is best arranged ecologically by aggregating land uses, yet maintaining small patches and corridors of nature throughout developed areas, as well as outliers of human activity arranged along major boundaries.
13. Top-priority patterns for protection, with no known substitute for their ecological benefits, are a few large natural vegetation patches, wide vegetated corridors along water courses, connectivity for key species to move among large patches, and small patches and corridors providing heterogeneous bits of nature throughout developed areas.⁶⁵

In thirteen cogent, tightly packed statements, Forman manages to summarize 513 pages, nearly his entire textbook. Forman states that, by applying these principles to actual landscapes, if our fellow humans did what we directed and behaved themselves thereafter, we and our fellow living things would enjoy mutual sustainability.

In a little more than 400 years, the idea of landscape has changed from a collection of land parcels, to an artist's rendition of a scene, to a pleasing arrangement of natural and cultural elements, to the subject of detailed analysis and problem solving by natural scientists and geographers, and other social scientists, and landscape architects. At the same time, unfortunately the term "landscape" has tended to become drained of meaning through overuse, with everyone's backyard crafted and maintained by a "landscaper." Landscape architects and ecologists, like Forman, have done their best to

re-invigorate the word with purpose and commitment to a sustainable human presence on the planet. Forman's conclusion is worth considering.

We the people can tend our garden, maintain our yard, and farm our field. We can plan for tomorrow, for the upcoming season, and for the next year. But as individuals and humanity we rarely can plan over human generations. [The discipline of landscape ecology] is the key to escaping from this straightjacket. Landscapes and regions, i.e., large spatial areas, are a surrogate for long term. When we plan, when we conserve, when we design, especially for regions, we manifest sustainable thinking and act for human generations.⁶⁶

Summary

In this chapter, we have explored the 19th- century context of conservation in the U.K. and U.S. the Agricultural and Industrial Revolutions and the rise of capitalism were the fundamental agents of the long century's unprecedented changes, and the reactions to these changes, including the growth of a literate and economically and politically powerful middle-class, set the stage for a new environmental consciousness and the conservation movement. The Romantic movement, which began in late 18th century Europe, represented a new openness and expressiveness in art, architecture, and literature and a much greater appreciation of nature and the natural and cultural landscape. The response of Romanticism to the many nineteenth-century advances in technology and science was often contradictory. On the one hand, people feared the consequence of shifting understandings of the origins of the earth, humankind, and the universe, and of the reality of God. On the other hand, people viewed the apparent benefits of new and improved technology with a sense of exhilaration sparked by the extraordinary, perhaps limitless, new possibilities at hand for humanity.,

American Independence; continuing waves of immigration; and the relentless march of settlement further and further West marginalized, harried, sickened, displaced, and slaughtered thousands of remaining Native Americans, even as many of the great forests of North America were being transformed into masts, ship-timbers, lumber, fuelwood, and sawdust.

Strongly influenced by German Idealism and by Wordsworth, Coleridge, and the English Romantic poets, the New England Transcendentalists represented a set of sometimes contradictory reactions to these cultural and environmental changes. Emerson and especially

Thoreau expressed a new, deeper consciousness of nature. Influenced by von Humboldt and Eastern mysticism, Thoreau deepened that consciousness and grasped the unity of nature and humankind and the willful propensity of humankind to manhandle nature in damaging ways. For Thoreau, nature's wildness was spiritually uplifting and liberating; but he found remote wilderness unsettling. In his *Journals*, Thoreau was one of the first Americans to call for protection by town government of a portion of each town's remaining forestland, not as a common resource to be exploited for lumber and fuel, but as remnant natural habitat protected from exploitation, and as a wild reserve for the enjoyment of residents. But these references were buried in his voluminous journals until they were published in 1906, long after his death. In *The Maine Woods* (1864) he also called for national ownership of the "virgin forests of the New World" as were still remnant in northern Maine.

Shared and reinforced by Jefferson, Thoreau, Marsh, Darwin, and Haeckel (for better or worse in Haeckel's problematic case), was the indomitable spirit of Alexander Von Humboldt, whose physical, intellectual, and aesthetic explorations echo in the science underlying today's environmental consciousness and its expression in conservation achievements as well as in art and literature.

The next three chapters will provide 19th-century sequential examples of historic preservation and conservation in the U.S. and U.K, and the founding stories of The Trustees of Public Reservations in Massachusetts and The National Trust in England, Wales, and Ireland.

Endnotes

¹ Robert Tombs (2014), *The English and Their History* (New York: Vintage), 162, repeats the legend without attribution. As is so often the case, Wikipedia gives a persuasive account, with documentation; see

https://en.m.wikipedia.org/wiki/The_World_Turned_Upside_Down

and https://en.m.wikipedia.org/wiki/When_the_king_enjoys_his_own_again . Both retrieved, 6-30-2018.

Apparently the first lyrics were an anti-Parliament song, protesting restrictions of Christmas celebration. The “Digger” version is of 20th-century vintage.

² The early figures exclude Native Americans, who were not counted until the 1890 census. If one million is taken as a conservative number of Native Americans in 1607, it took until about 1750 for the combined white and black population to equal that number. In effect, the “growth” of population in the Colonies from 1620-1750 was in part a replacement of the pre-settlement Native American population. By 1800, Native Americans had declined to 600,000 and by 1890, had been more or less systematically reduced to 250,000, a remarkable and sickening story of ethnic cleansing.

³ Whigs were an 18th-19th century political faction or party that favored a constitutional monarchy and opposed an absolute monarchy. The Whigs tended to represent the growing business and middle class as opposed to the aristocratic Tories.

⁴ Robert Tombs (2014), 416-417.

⁵ *Ibid.*, 422, quoting Prime Minister Benjamin Disraeli.

⁶ Margaret Drabble (1970), *A Writer’s Britain: Landscape in Literature* (London: Thames & Hudson), 91. Illustrated brilliantly by Jorge Lewinski, Drabble’s engaging work situates British writers in their landscapes, from the early Christian Fathers and the Celtic bards to the 20th-century poets Ted Hughes, Sylvia Plath, and Dylan Thomas. On the theme of environmental/ecological fiction, see Jim Dwyer (2010), *Where the Wild Books Are: A Field Guide to Ecofiction* (Reno, Nevada: University of Nevada Press). See also Ann Haley MacKenzie (2008), “An Analysis of Environmental Issues in 19th Century England Using the Writings of Charles Dickens,” *The American Biology Teacher*, Vol. 70, No. 4, April 2008; Rebecca Jayne Hildebrand (2018), “Ambient Worlds: Description and Concept of Environment in Nineteenth-Century British Fiction,” PhD Thesis, Columbia University Dept. of English and Comparative Literature. Available for downloading starting April 17, 2020; Philip Steer (2017), “Reading classic novels in an era of climate change,” *The Conversation*, May 20, 2017. <https://theconversation.com/reading-classic-novels-in-an-era-of-climate-change-75843>

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⁷ F.O. Matthiessen (1941), *American Renaissance: Art and Expression in the Age of Emerson and Whitman* (London: Oxford University Press).

⁸ Lawrence Buell (1995) coined the phrase in his seminal study, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge: Harvard University Press).

⁹ Isaiah Berlin (1999), *The Roots of Romanticism* (Princeton: Princeton University Press) p. 146

¹⁰ Donald Worster, 136.

¹¹ *Ibid.*, 135.

¹² Donald Worster, 156.

¹³ *Ibid.*, James C. McCusack (2000), *Green Writing: Romanticism and Ecology* (New York: St. Martin’s Press), 19.

¹⁴ *Ibid.*, 50.

¹⁵ Anna Bramwell uses “ecologism” to refer to the broad project of ecology as a set of ethical and moral standards and a social movement, as distinguished from the science of ecology. Anna Bramwell (1989), *Ecology in the 20th Century: A History* (New Haven: Yale University Press). “Proto-ecologist” has been used by several scholars to characterize ecological thinking prior to the organization of ecology as a distinct discipline (beginning with Haeckel). See Jonathan Bate quoted in Peter Coates, *Nature*, 134, referring to Wordsworth: “Bate politicizes and historicizes Wordsworth by locating him within the British green tradition, a process which upgrades him from nature-poet to proto-ecologist.”

¹⁶ James C. McCusack, 75

¹⁷ James C. McCusack, 77, 85.

¹⁸ *Ibid.*, 141.

¹⁹ Ernst Haeckel, never a strict Darwinist (he opposed the theory of natural selection and placed his bets on the Lamarckian theory of inheritance of acquired traits) became a fervent Social Darwinist, whose promulgation of scientific racism was borrowed by Nazi ideologists. Humboldt's biographer, Andrea Wulf (see below), absolves Haeckel of responsibility for the Nazi appropriation of his racist interpretations of early paleontology. Similarly, Anna Bramwell (1989), 48-51, defends Haeckel against the association of his philosophical views with Nazism, pointing out that Haeckel saw nature as the realm of freedom infused with love. However, racist science does not have to be associated with Nazism to be judged fairly as reprehensible, even if based on supposedly empirical studies of human remains.

²⁰ Anna Bramwell, 43.

²¹ *Ibid.*, 44.

²² *Ibid.*, 53.

²³ *Ibid.*, 45.

²⁴ Andrea Wulf (2015), *The Invention of Nature: Alexander Humboldt's New World*, Kindle edition (New York: Alfred A. Knopf), 102.

²⁵ *Ibid.*, 335.

²⁶ In 1890, Charles Eliot, the Boston landscape architect and protege of Frederic Law Olmsted, made a similar suggestion to owners of fine properties, and a year later founded an organization, The Trustees of Public Reservations, to that same premise. Under a slightly less misleading name (avoiding the suggest that its privately-funded operations were somehow under state sponsorship or control). The Trustees of Reservations continues as one of the largest state-wide land conservation organizations in the U.S. Much to its consternation, people outside New England often assume that the name suggests overseeing *Indian* reservations.

²⁷ This characterization of Concord's response to the attentions of a famous rock music star is based on conversations with conservationists in Concord over the years as a member of the staff of The Trustees of Reservations. One of my sources was Valerie Talmage, former director of the Massachusetts Historical Commission, who was tangentially drawn into the Walden Woods campaign before joining my staff. The preservation of several period warders' dwellings facing the forbidding east wall of the Concord Prison were discussed as a way of compensating for the prospective loss of affordable housing when land slated for several units of affordable housing within a larger condominium project southwest of Walden Pond was purchased by the Walden Woods group. Under continuing pressure from the Commonwealth of Massachusetts, Concord had approved the somewhat remote multi-family development as a way of producing some publicly-assisted affordable housing. Sites within or close to the village itself had been vigorously and successfully opposed for years on the usual NIMBY grounds. Henley had promised to contribute to the renovation of the warders' dwellings; but the Department of Correction had little interest; the deal collapsed, and the dwellings were removed by the Department. The land owned by Philip DeNormandie, a Boston developer and commercial real estate operator, was sold to Walden Woods at a price considerably increased by the permits already granted by the Town of Concord.

²⁸ Henry David Thoreau (1985; 1864), *The Maine Woods* in Robert F. Sayre, ed., *Henry David Thoreau* (New York: The Library of America), 712.

²⁹ Marsh spent little effort on advancing constituent-related legislation, but a great deal of time and effort on committee work, including the founding of the Smithsonian Institution.

³⁰ Gifford Pinchot quoted in David Lowenthal (2000), *George Perkins Marsh: Prophet of Conservation* (Seattle: University of Washington Press), 304. See also pages 302-305 for *Man and Nature's* influence. Lowenthal ranks the book along with *Origin of the Species* as the nineteenth century's two seminal texts on the inter-relationship of humankind and nature.

³¹ In 1969, the State of Vermont designated a large area Camel's Hump as a state forest reserve. The small acreage of alpine habitat around the peak has been the site of research on the effects of acid rain emanating from the Midwest.

³² The abusive conditions of John's childhood were mitigated to some extent by his mother's softer, more artistic, nurturing and encouraging nature and by his sisters who did not betray John's accumulation of nighttime reading that would not have passed his father's test of Christian fidelity. Donald Worster, 53-54.

³³ Donald Worster, 63.

³⁴ Donald Worster, 120-121.

³⁵ *Ibid.*, 122.

- ³⁶ Donald Worster, 102-103.
- ³⁷ *Ibid.*, 140.
- ³⁸ Quoted in *Ibid.*, 85
- ³⁹ John Muir quoted in *Ibid.*, 150.
- ⁴⁰ *Ibid.*, 149.
- ⁴¹ *Ibid.*, 152.
- ⁴² Dorceta E. Taylor, 359-362.
- ⁴³ John Muir as quoted by William Frederic Badè (1924), *The Life and Letters of John Muir*; in Terry Gifford, editor (1996), *John Muir: His Life and Letters and Other Writings* (Seattle: The Mountaineers), 70-71. Badè notes that this passage was in a “fragmentary autobiographical sketch.” Muir was not keeping a journal during his Canadian sojourn. The Calypso episode appeared in a letter Muir wrote to Professor J. D. Butler at the University of Wisconsin. Without Muir’s permission, Butler in turn sent it to *The Boston Recorder*. According to Muir, that article was the first of his writings to appear in print.
- ⁴⁴ Lawrence Buell (1995), *The Environmental Imagination* (Cambridge: Harvard University Press), Chapter 6, “Nation’s Personhood.” See especially, 193-196.
- ⁴⁵ John Muir quoted in William Frederic Badè, 83.
- ⁴⁶ Stephen Fox’s term, quite apt, given Muir’s interest in geology. See Stephen Fox (1981), *The American Conservation Movement: John Muir and His Legacy*, 43.
- ⁴⁷ Donald Worster, 144, referring to Muir’s letter to Catherine Merrill, July 1 1868.
- ⁴⁸ Stephen Fox, 291, quoting Muir’s journal, July 27, 1869. Fox establishes that this was the original version that Muir would restate in several ways in various writings; and which many others would misquote.
- ⁴⁹ Adapted from *Online Etymology Dictionary*; also see Yi-Fu Tuan (1974), *Topophilia* (New York: Columbia University Press), 133.
- ⁵⁰ Adapted from the Merriam-Webster *On-Line Dictionary*.
- ⁵¹ Bryn Green, *op. cit.*, 12.
- ⁵² Ann Whiston Spirn (1988), *The Language of Landscape* (New Haven: Yale University Press),
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- ⁵⁴ Edmund Burke (2014, 1776), *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and the Beautiful*. Cambridge: Cambridge University Press.
- ⁵⁵ Richard T. T. Forman (1995), *Land Mosaics: The ecology of landscapes and regions* (Cambridge, England: Cambridge University Press), 19-20.
- ⁵⁶ Nan Fairbrother (1970), *New Lives, New Landscapes: Planning for the 21st Century* (New York: Alfred A. Knopf),
- ⁵⁷ Nan Fairbrother, *Ibid.*, 301 -302.
- ⁵⁸ Barry Lopez and Debra Gwartney, 3.
- ⁵⁹ *Ibid.*, 107. The definitions for “accordant” and discordant were written by Donna Seaman, an associate editor at *Booklist*, editor of the anthology *In Our Nature: Stories of Wildness* and host of the Chicago radio program, *Open Book*.
- ⁶⁰ Birnbaum, Charles A. (1994), “Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes.” Preservation Brief 36. National Park Service, Technical Preservation Services. <https://www.nps.gov/tps/how-to-preserve/briefs/36-cultural-landscapes.htm> Retrieved, 7-3-2018.
- ⁶¹ National Park Service, Preservation Brief 36. <https://www.nps.gov/tps/how-to-preserve/briefs/36-cultural-landscapes.htm>. Retrieved, 1-13-2017.
- ⁶² William Cronon (1996), “The Trouble with Wilderness; or, Getting Back to the Wrong Nature” in William Cronon (1996), editor, *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W. W. Norton), 69-90.
- ⁶³ Ian L. McHarg (1969), *Design with Nature* (New York: Natural History Press, American Museum of Natural History). This work displayed the “integrative” practice of overlay mapping to reveal landscape patterns (and areas of limitation/favorability of various types of land uses. McHarg’s classes at the University of Pennsylvania and his landscape architecture firm, McHarg, Roberts, and Todd, employed this breakthrough method .
- ⁶⁴ Richard T.T. Forman, 512

⁶⁵ Richard T.T. Forman, 514-16. I have edited these descriptions slightly, but without altering their flavor. Some may find it sourly technocratic. I sense a dose of the salt and pepper associated with the creation of a new discipline with its own special terminology.

⁶⁶ Richard T.T. Forman, *Ibid*, 524.

Image Sources

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- Page 24 *Calypso bulbosa*, a.k.a. *Calypso borealis*. Sally Zimmerman; Wikipedia Commons'
- Page 28 Serengetti Plains, an accordant landscape. September 11, 2005.
Photography by gary.fotu.
<https://www.flickr.com/photos/78328628@N00/44030204>.
- Page 29 A discordant landscape. Intersection of McGloughlin Boulevard and Holgate Avenue, Southeast Portland, Oregon. Photo by Wesley Ward, June 11, 2018. Taking that photo from an 18"-wide median strip separating eight lanes of traffic was hair-raising as it must be for the homeless who stand in that spot day after day appealing for donations.