OUTDOOR RECREATION

ENRICHMENT FOR A LIFETIME

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Chapter 3

Visionaries and Pioneers

The early Americans, including the Puritans and pioneers, ordinarily had an antagonistic attitude toward nature and wilderness, believing that it was to be tamed and conquered. The major value of the forest was to cut it down to provide wood for homes and shelters. These early attitudes began to change through the efforts of a few leaders who recognized nature's mystery and spiritual potential. In Chapter 2, we noted that the Romantics moved toward greater harmony with nature. Also, life in the mid-19th century became more comfortable and nature less intimidating. Romanticism paved the way for transcendentalism, a philosophy in which nature is viewed as the vehicle to inspire intuitive thought that lifts the consciousness to greater spiritual wisdom. This mode of thought influenced future naturalists toward preserving the American wilderness.

THE TRANSCENDENTALISTS

As a mode of perception, transcendentalism became an indefinable movement of abstract American intellectual thought. It intrigued New Englanders during the mid-19th century, some of whom were turning to an inner world and exploring oneness with the universe. To them, natural objects commandeered significance, and if used properly, they reflected universal spiritual truths. Two of the leading transcendentalists, Emerson and Thoreau, will be presented here. Both believed that human beings have the potential to transcend materialism. Emerson defined transcendentalism simply as "belief in the Higher Law of God" (Wolf, 1974, p. 125). Henry David Thoreau expounded on Emerson's idea that when a person is close to nature something happens to his or her perceptions. Inspired by Emerson, Thoreau lived close to nature to experience and express his own heightened senses. He focused on nature in his writings, describing what he beheld and then generalized about overlying implications. Emerson, on the other hand, focused his perceptions on the human being using deductive logic and philosophical abstractions (Ronald, 1987). Many characteristics of Emerson's and Thoreau's transcendentalism, such as the trust in organic form, the correspondences between elements of the natural world, the concern with people's relationship to the environment, and the institution of being solitary, are echoed by naturalists today and continue to exert great influence on today's naturalism and wilderness preservation.

Ralph Waldo Emerson (1803–1882)

Born in Boston, Ralph Waldo Emerson became one of the most famous, original 19th century thinkers and one of the most quoted American writers. He endured the loss of his father and sister at an early age, which undoubtedly affected his writing. Drawn to nature, Emerson began to feel a profound affection for it and for the solitude it could provide him, which sustained him for the rest of his life. He proclaimed, "Nature is loved by what is best in us" (Atkinson, 1950, p. 411). At the age of 14, he received a grant from his father's church and entered Harvard College. Appointed "President's freshman," he was provided free board. Here he began writing his journals, which became his constant companion for some 50 years. These gave rise to literary material in lectures, essays, and books. Upon graduation, Emerson joined his brother William in teaching and operating a finishing school in his mother's home. It was an unhappy time for him; he filled his journals with discouragement and self-doubt. He wrote to a friend who was also teaching: "How my heart bleeds for you! Better tug at the oar, dig the mine, or saw wood; better sow hemp, or hang with it, than sow the seeds of instruction" (Gilbert, 1914, p. 124).

Descended from eight generations of ministers, Emerson enrolled in the Divinity School at Harvard, and once licensed, he stopped teaching. He married Ellen Tucker, whose health was delicate, and who died of tuberculosis after only 17 months of marriage. Afterward, Emerson resolved that he was not in sympathy with some of the doctrines of his church, and as a result, he resigned his post and sailed for Europe. The trip revived him, and upon his return, he met and married his second wife, Lydia. He soon suffered the death of two of his beloved brothers. Later, Emerson and his wife lost the eldest of their four children to scarlet fever.

After his return from Europe, Emerson spent an allotted portion of each day walking in the woods and along the rivers with his eyes open to the natural surroundings. He occasionally preached and lectured enthusiastic audiences on the moral and psychological interaction between nature and the human spirit. In Concord, he became involved in local affairs and was a respected and valued member of the community. His presence made Concord a significant intellectual and cultural center.

Emerson helped to organize a discussion group whose members called themselves "transcendentalists." Serving as their first literary proponent, Emerson envisioned a unity of nature, humans, and God; he believed that through the use of intuition, a heightened awareness could be reached that would transcend one's thoughts to a grander level of ultimate (transcendental) understanding. Through natural phenomena he believed one could intuitively understand human relationships to the universe, its components, and to God (Ronald, 1987). Transcendentalist notions were expressed by others, but Emerson's literary style set him apart. In his first book, *Nature* (1836), he enumerated the values of nature:

> If a man would be alone, let him look at the stars. The rays that come from those heavenly worlds will separate between him and what he touches. One might think the atmosphere was made transparent with this design, to give man, in the heavenly bodies, the perpetual presence of the sublime. Seen in the streets of cities, how great they are! If the stars should appear one night in a thousand years, how would men believe and adore; and preserve for many generations the remembrance of the City of God which had been shown! But every night come out these envoys of beauty, and light the universe with their admonishing smile. (Atkinson, 1950, p. 5)

In 1840, he helped to found and later edited a magazine called *The Dial*. Surviving only until 1844, it proved to be an excellent way for younger members of the transcendentalist school, including Henry David Tho-

productive period, Emerson's *Essays,* derived from his lecture series, was published in two volumes (1841, 1844), and his reputation grew. During the American Renaissance in literature (1835–1865), when Emerson was in his prime, he was recognized as a leading lecturer and author. His other publications included *Poems* (1846), *Representative Men* (1849), *The Conduct of Life* (1860), and *May Day* (1867).

In "Nature" in *Essays: Second Series* (Atkinson, 1950), Emerson wrote,

> It seems as if the day was not wholly profane in which we have given heed to some natural object. The fall of snowflakes in a still air, preserving to each crystal its perfect form; the blowing of sleet over a wide sheet of water, and over plains; the waving rye-field; the mimic waving of acres of houstonia, whose innumerable florets whiten and ripple before the eye; the reflections of trees and flowers in glassy lakes; the musical, steaming, odorous south wind, which converts all trees to windharps; the crackling and spurting of hemlock in the flames, or of pine logs, which yield glory to the walls and faces in the sitting-room—these are the music and pictures of the most ancient religion. (p. 408)

Inspiration and many ideas for his writings came to him on his long afternoon walks in the Concord hills. An observer of nature, he was not generally an active participant. On some occasions he hunted, but his friends implied that he never shot a living thing. Emerson enjoyed his excursions to the mountains with members of the Adirondack Club, and later in life he took a trip to California where he met John Muir (described later in this chapter). The two men drew close, but Muir believed that Emerson was by 1871 only a ghost of what he had once been (M.V.D., 1931).

Henry David Thoreau (1817–1862)

Henry David Thoreau, who was introduced to the transcendentalists by his longtime friend Ralph Waldo Emerson, is regarded a classic writer and cultural hero. He established the tradition of nature writing that was later developed by naturalists John Burroughs and John Muir. His pioneer studies of the human uses of nature deeply affected conservationists including Benton MacKaye, founder of the Appalachian Trail. In searching for a spiritual dimension in a commercially expanding society, Thoreau demonstrated "the value of leisure, contemplation, and a harmonious appreciation of and coexistence with nature" ("Henry David Thoreau," 1998). Although he oscillated between a transcendental and scientific examination of nature, it was this alliance between contemplative thoughtfulness and close observation and speculation that became the pattern for his prose and essays. Neither style was as notably sentimental or romantic as Audubon's or Muir's writings (to be discussed later in his chapter).

The third of four children, Thoreau was born and raised in a beautiful setting in Concord, Massachusetts. During his early years, he shared his mother's love of the out-of-doors and developed an affinity for hunting, fishing, and solitude in nature. He especially admired the pond called Walden. His family contributed to his education at Harvard, where he also received aid from a beneficiary fund for needy students. While in college, he was granted a leave to teach and to assist his father, a pencil manufacturer. Originally christened David Henry, he reversed his names at age 20, demonstrating an early act of independence. After graduation, he was unsure of his goals, and teaching appeared to be a means to support himself. He soon resigned after he was coerced into flogging students who lacked discipline. Thoreau returned to the family business of pencil making, which gave him leisure for his reading, studying, and walking. In 1837, after reading Emerson's *Nature,* he began to write about

nature in his journal, which he kept throughout his life (Benet, 1966). Living simply, he found wealth in enjoyment rather than in possession. In later, more successful years, he wrote in his journal,

> Ah, how I have thriven on solitude and poverty! I cannot overstate this advantage. I do not see how I could have enjoyed it, if the public had been expecting as much of me as there is danger now that they will. If I go abroad lecturing, how shall I ever recover the lost Winter? (E. Teale, 1962, p. 73)

Thoreau opened a school with his brother John, and they introduced field trips for nature study, an innovation in American education, discussed in Chapter 14. In 1839, the two brothers took a 13-day vacation voyage on the Concord and Merrimack Rivers, a journey Thoreau later immortalized in his writings. By 1841, the school closed due to his brother's ill health. He met Emerson at one of his lectures, and Emerson invited him to his home and introduced Thoreau to other transcendentalists. They appreciated Thoreau's freedom of thought. An acquaintance, Nathaniel Hawthorne, believed that Thoreau retained a wild and original nature and observed that he led a life similar to the American Indians (Harding, 1954). Thoreau did study the wisdom of Indians and later described in *The Maine Woods* a camping trip with an Indian friend and what he had learned from him.

As Thoreau read widely—from the explorations of Audubon to Hindu philosophy—his appreciation of solitude, meditation, and contemplation deepened. In solitude, he acquired an observant intimacy with nature, but he was not a lone woodsman. For Thoreau, nature also provided a lavish setting for wilderness excursions, where relationships with others were developed (Schildgen, 2001). He enjoyed the company of others, and his contemporaries attested that he was gregarious. The bachelor, Thoreau, had proposed marriage in 1840, but [illegible] of his fiancée's parents. For a time, he lived with the Emersons, working as a handyman. Upon the death of his brother, he shared his loss with Emerson, who had just lost his son, and in their sorrow, the friendship grew. Emerson and others encouraged Thoreau to lecture and write, and in 1845, Emerson gave him land on the northwest shore of Walden Pond. After building a cabin, Thoreau entertained many guests and welcomed children. He often took short walks into Concord for a meal with his family. Thoreau also practiced meditation and spent long hours observing, recording, and writing about nature. When strangers insisted on joining him on his nature walks, he complained, "They do not consider that the wood-path and the boat are my studio, where I maintain a sacred solitude and cannot admit promiscuous company" (Strong, 1988, p. 11).

During Thoreau's 2-year stay at Walden, he, the abolitionist who helped send enslaved Americans north on the Underground Railroad, was arrested for his past refusal to pay a poll tax in protest against slavery. After only one night in jail, a disgusted Thoreau was released after someone, probably his aunt, paid the tax. He argued that people should follow their own conscience, not the dictates of an immoral government. He retold the story in his essay "Resistance to Civil Government" (later called "Civil Disobedience" and "On the Duty of Civil Disobedience"), which appeared a few years later in an obscure magazine. Leaving Walden forever, he spent the summer of 1847 at Emerson's home while Emerson was away in Europe. Thoreau then returned to his father's home and the family atmosphere with the first complete draft of his book *A Week on the Concord and Merrimack Rivers*. This book about his trip into the wilderness with his now-deceased brother was released in 1849 at his own risk in an edition of 1,000 copies. When it sold poorly, he remarked, "I have now a library of nearly nine hundred volumes, over seven hundred of which I wrote myself" (Strong, 1988, p. 14). An unfavorable review, probably due to his unorthodoxy in religion, criticized Thoreau's

In his book *Walden,* published in 1854, Thoreau strove to describe nature and demonstrate that civilized people could escape the evils of competition. *Walden* sold slowly but steadily and became a classic in later years. Four books published after his death and derived in part from journeys taken during the 5 years following his *Walden* experience were *Excursions* (1863), *The Maine Woods* (1864), *Cape Cod* (1865), and *A Yankee in Canada* (1866). Drawing on these same experiences, he wrote "Ktaadn" [*sic*] and the "Maine Woods," "Excursion to Canada," and "Cape Cod," which appeared in *The Union Magazine* (1848), *Putnam's Monthly* (1853), and *Putnam Monthly* (1855), respectively.

Adopting a more conventional life after *Walden,* Thoreau made a living as a self-taught surveyor and worked in the family business. He continued to enjoy his walks and lectured occasionally. In later years, Thoreau became more of a scientific observer of animal behavior, the life cycle of plants, and features of the changing seasons. His most important scientific observation and contribution was presented in a lecture and article entitled "The Succession of Forest Trees." Some speculated that his resolve to count tree rings one bitterly cold winter day may have precipitated his early death at age 44 (Strong, 1988), apparently from tuberculosis. His final words, "moose" and "Indian," indicate his final thoughts were about his beloved wilderness experiences (R.W.A. & H.S.C., 1936). Emerson delivered a long eulogy and described Thoreau as someone who was a pleasure to walk with; was physically fit; was a good swimmer, runner, skater, and boatman; and knew the country like a fox. According to Emerson, Thoreau's study of nature inspired his friends, who appreciated hearing of his adventures and seeing the world through his eyes. Reading, writing, and the study of wildlife were the only occupations that really suited him. Thoreau's statement, "In wildness is the preservation of the world," that first appeared in "Walking" (republished in *Excursions* in 1862) became the motto of the wilderness society years later (E. Teale, 1962, p. 59).

Thoreau spiritualized his experiences with wilderness and nature, and through his writings, he influenced future naturalists and the destiny of North America. Living at a time when trees were appraised in terms of board feet, and not as shelters for birds or animals, he feared that human naturalness and oneness with the ecosystems would vanish. Thoreau was a visionary in concluding that there was a need to preserve parcels of wilderness for the people, and he helped to lead the intellectual revolution that found nature and wilderness attractive as opposed to threatening and disagreeable (Bolton, 1954; Vickery, 1989). To many, Thoreau is considered the father of the environmental movement. The following selection is taken from *The Maine Woods* (Thoreau, 1965):

> It is difficult to conceive of a region uninhabited by man. We habitually presume his presence and influence everywhere. And yet we have not seen pure Nature, unless we have seen her thus vast and drear and inhuman, though in the midst of cities. Nature was here something savage and awful, though beautiful. I looked with awe at the ground I trod on, to see what the Powers had made there, the form and fashion and material of their work. This was the Earth of which we have heard, made out of Chaos and Old Night. Here was no man's garden, but the unhandselled globe. It was not lawn, nor pasture, nor mead, nor woodland, nor lea, nor arable, nor wasteland. It was fresh and natural surface of the planet Earth, as it was made forever and ever. . . (pp. 87–88)

In the same book, in his essay "The Moose Hunt," he described his feelings after observing a moose hunt:

> Strange that so few ever came to the woods to see how the pine lives and grows and spires, lifting its evergreen arms to the light—to see

> its perfect success; but most are content to behold it in the shape of many broad boards brought to market, and deem that its true success! But the pine is no more lumber than man is, and to be made into boards and houses is no more its true and highest use than the truest use of a man is to be cut down and made into manure. There is a higher law affecting our relation to pines as well as to men. . . . I saw the tops of the pines waving and reflecting the light at a distance high over all the rest of the forest, I realized that the former were not the highest uses of the pine.

THE NATURALISTS

Although naturalism began with the French philosopher Jean-Jacques Rousseau, on this continent, two great men led the natural movement. One of them was John Audubon, the other John Muir. Rachel Carson, a great woman, distinguished scientist, and accomplished writer of the 20th century, was the first to alert the nation to the damage suffered by the environment as a result of chemical technology of the 1900s. Their devotion to understanding, depicting, preserving, and writing about nature led to a more intimate understanding of nature and the outdoors.

John James Audubon (1785–1851)

Early conservationist, artist, ornithologist, and perhaps the most popular naturalist of North America, John James Audubon explored the Ohio and Mississippi Rivers, the wilderness of Kentucky, the dunes and lagoons of the Texas coast, the palmetto groves of Florida, and the wild coast of Labrador. Writing in his journals, he personalized and revolutionized the study, illustration, and description of birds and mammals.

Born the illegitimate son of a French naval officer, merchant, and slave trader, the 4-year-old, originally named Jean Rabine, ter were taken to France and adopted by Captain Audubon and his legal wife in 1794. Audubon's real mother, Jeanne Rabine, a Creole girl who had worked on his father's sugar plantation in Santa Domingo (Haiti), died shortly after his birth there. In France, his stepmother encouraged his early attraction to nature. He also learned to fence and dance and to play the violin and flute. Later in life, with his flute Audubon was capable of imitating the songs of birds he observed, and he began to sketch them. Not showing much interest in scholarly work, he was sent to Paris to study drawing. Although the ability to draw eluded him at the time, he developed a desire to illustrate birds as they appeared in the forest, not in profile as they generally appeared in books (Audubon, 1960; Elman, 1977). His attempts to do so always reminded him of his father's admonition that "all things possessing life and animation were difficult to imitate" (C. Fisher, 1949, p. 15).

Believing that Audubon could learn English and enter a profitable trade in the United States, his father suggested that Audubon tend their farm in the United States near Philadelphia. The move was also strategic to keep the young Audubon out of a bloody conflict during the French Revolution. He considered himself the master of the farm at age 18, despite his father's hired agent, and continued to develop his fascination with nature and birds. It was at this time that the son changed his baptized name Jean-Jacques Fougere to the anglicized John James.

Using a vivid personal narrative rather than dry impersonal experimental reports, Audubon explained his methods of observing wildlife in their natural surroundings. He began to conduct scientific investigations with the birds he sketched and skillfully mastered how to closely examine birds and mammals without alarming them. He handled nestlings without causing the adult birds to abandon them, developing a method used by 20th century field biologists. In one of his experiments, he tied threads as leg bands to phoebes for identification. In this manner, he discovered that many of them returned in the spring to their fledgling region after

100 years later, a Bird Banding Society would be formed to repeat his test to gather exact data on migratory species in every part of the American continent (Elman, 1977). Later, in his *Ornithological Biography,* he described one of his experiences observing nature:

> . . . rambling along the rocky banks . . . observing the watchful King fisher perched on some projecting stone over the clear water of the stream. Nay, now and then, the Fish Hawk itself, followed by a White-headed Eagle, would make his appearance, and by his graceful aerial motion, raise my thought far above them into the heavens. . . There it was that I studied the habits of the Pewee; and there I was taught most forcibly, that to destroy the nest of a bird or to deprive it of its eggs or young, is an act of great cruelty. (Elman, 1977, pp. 85–86)

After a quarrel with his father's hired agent, Audubon borrowed money from his fiancée's uncle and in 1805 set sail for France, where he remained for a year visiting family, hunting, and drawing his first known bird sketches. He may have served in the French navy before returning to Pennsylvania with Ferdinand Rozier, who agreed to work as a partner on his family's Mill Grove estate. They invested in a lead mine, which proved to be a bust. Audubon spent time studying birds and taught himself to wire dead birds into lifelike positions for his sketches. In New York as an apprentice in business, he met Samuel L. Mitchell, future founder of the Lyceum of Natural History, now the New York Academy of Sciences. Together, they went on excursions to prepare bird and mammal specimens.

Disenchanted with life at Mill Grove, Audubon and Rozier opened a retail store in Louisville and eventually in Henderson, Kentucky. Audubon made a brief return to Pennsylvania to marry Lucy Bakewell and soon struck up a friendship with Daniel Boone. He later met ornithologist Alexander birds. Samuel Mitchell believed that Audubon's art was superior to Wilson's and urged him to consider his own professional potential, but Audubon continued to try his luck in business. After failed attempts, he traveled to Missouri still in the pursuit of business success. En route, the weather proved to be bitterly cold, with ice forming on the Mississippi River. On the trip, Audubon taught his dispirited partner how to winter camp and expressed his exhilaration in observing the great snow-white birds lying on the ice. This proved to be a turning point in his career. Audubon sold out to his partner and journeyed back to Kentucky on foot, writing of his adventures, which were published later in his *Ornithological Biography.* In his journal he wrote,

> Winter was just bursting into spring when I left the land of lead mines. Nature leaped with joy, as it were, at her own new-born marvels, the prairies began to be dotted with beauteous flowers, abounded with deer, and my own heart was filled with happiness at the sights before me. (Audubon, 1960, pp. 23–31)

In Kentucky, Audubon attempted several enterprises, his last being a steam grist and lumber mill with his wife's brother that proved too elaborate for Henderson. Jailed for debt, he was released on the plea of bankruptcy, but grew increasingly despondent after the death of his infant daughter Rose, poignantly felt after their first daughter Lucy's death only a few years earlier. To support his wife and two sons, Audubon created charcoal portraits on commission until he found work as a taxidermist in Cincinnati in the new Western Museum. His wife persuaded him to devote himself to his artistic talents, and thereafter, his life course took aim. In 1820, Audubon explored the lands along the Ohio and Mississippi Rivers for birds with a student, Joseph Mason. Settling in New Orleans, he supported the undertaking and raised money to send for his family by painting portraits and teaching archery, dance,

own sons, he traveled the swamps and forests to Natchez, where he drew full time. Enhancing watercolor application by using various media to express textures, Audubon developed his signature style, and Mason drew many backgrounds.

Determined to have his work published, Audubon went to Philadelphia with a large portfolio of work. Finding the cost of publication prohibitive, he made plans to travel to Europe, where engraving cost far less. Before departing, he visited Mitchell, president of the Lyceum of Natural History, who introduced Audubon to this society. Audubon's drawings were highly praised, and he was elected to the Lyceum membership. His credibility grew after his reading of two papers to this prestigious society. Later, his fellow Americans nominated him a fellow of the American Academy of Arts and Sciences.

During Audubon's 1826 voyage to Europe, the ship's crew would sometimes lower him onto the water in a small boat so he could collect specimens. Once in Liverpool, Audubon was favorably received, and he acquired the initial subscriptions for his four-volume book *Birds in America*. These and later subscriptions made possible the long-delayed publication of his 435 prints. After an exhibition of his drawings at the Royal Institution of Liverpool, Audubon was declared an American genius. In Edinburgh, he received a regal reception and was elected to its Royal Society. Many other honors came to him during his stay in England, including his election to the Fellowship in the Linnean Society. Having garnered enough subscriptions, he began to publish *Birds of America* (1827–1838). The monumental achievement, done in double elephant folio—27 by 40 inches—would result in the largest set of books ever published. All of the engravings were life-size, were set in copper, and were in color. Set in their natural environment, more than a thousand birds were depicted, as well as thousands of American flowers, trees, shrubs, insects, and animals from Labrador to Florida and from Louisiana and Maine to the Great Plains.

After spending 3 years in England, Audubon was reunited with his family and continued to search for new species to augment his growing project. During a visit to Washington, DC, in 1830, President Andrew Jackson received him, and the House of Representatives became an early subscriber. Other original subscribers included Daniel Webster, Henry Clay, the kings of France and England, as well as many important libraries of the Western world. During this successful decade, Audubon teamed with Scottish naturalist William MacGillivray to write the five-volume text for *Birds of America*, called *Ornithological Biography* (1831–1839), and *A Synopsis of Birds of North America* (1839). In the content of the first, which included a description of the habits of the birds he drew, he gave an interspersed account about life in America during this turbulent period. Today, Audubon's writings are recognized as a literary treasure (National Audubon Society, 2001). With his reputation now established internationally as a naturalist and artist and the foremost naturalist in the United States, the Audubon family chose to settle in New York (Elman, 1977; C. Fisher, 1949).

Still not content, Audubon entered into two new projects. These included his seven-volume Octavo or miniature edition of *Birds of America* (1840–1844) and a new three-volume work, *Viviparous Quadruped of North America* (1845–1848), with an accompanying three-volume text (1846–1853). The critically and commercially successful "miniature," produced under the guidance of Audubon and his son John, was entrusted to J. Bowen, a Philadelphia lithographer. The later companion book on mammals was done in collaboration with scholar and friend John Bachman with the aid of his sons, whose first wives were Bachman's daughters. Audubon's son John did the artistic work for over half of the 155 plates, and his other son Victor contributed by managing the sales and designing many of the backgrounds (National Audubon Society, 2001). *Viviparous Quadruped of North America* was the first book of its kind in America and without rival in Europe. Naturalists immediately accepted it as a standard and authoritative work (C. Fisher, 1949).

Throughout 1843, Audubon traveled

During an 8-month expedition to the upper Missouri River and the Yellowstone country, he chased the great buffalo herds, but never realized his dream of reaching the west coast. At a later date, his comprehensive notes from this trip were published by his granddaughter in *Audubon and His Journals*. At the age of 60, Audubon's eyesight began to fail and an eventual stroke disabled him further. By the time of his death at his estate Minnie's Land in Upper Manhattan, his family fortunes were diminishing.

Thirty-five years later, the National Audubon Society was formed in 1886 in Audubon's honor by George Bird Grinnell, editor of *Forest and Stream*. The society attracted the distinguished support of John Greenleaf Whittier, Oliver Wendell Holmes, and others, and some 50,000 members joined within 2 years (Fox, 1981). Audubon's enjoyment of the physical process of exploring the wilderness, tracking down each new species of bird, and observing, recording, and cataloging it marks him as one of the finest artist-naturalists of the Romantic era in America, earning him his nickname, "The American Woodsman." Renowned ornithologist Elliott Coues said, "Audubon and his work are one; he lived in his work, and his work will live forever" (C. Fisher, 1949, p. 76).

John Muir (1838–1914)

John Muir was born in Dunbar, Scotland, and immigrated with his father, brother, and sister to Wisconsin at the age of 11. The rest of his family followed later. His mother, kindly and compassionate, and his father, an unbending religious zealot, brought the family to the United States to seek a less discordant religious environment. The eldest of three sons and the third in a succession of eight siblings, Muir was expected to do heavy farm labor from dawn to nightfall. In his book *The Story of My Boyhood and Youth*, Muir (1913/1975) recounted his harsh experience while digging a 90-foot-deep well. After he struck sandstone at 10 feet, his father was advised to blast the rock. Lacking the skills or the money to do it, he decided to send his son down in a bucket equipped lessly chipping from morning to night, day after day for months, in a space about 3 feet in diameter, Muir finally struck water at 80 feet. In the process, carbonic acid gas that had settled at the bottom nearly killed him.

Experiencing the awe of the neighboring wilderness provided young Muir with some retreat from the harsh living conditions; however, he acknowledged in later years that it was on the farm site at Fountain Lake that he first conceived the idea of wildlands to be set aside by governments for their scenic and educational value (Downing, 1992). Although Muir rejected the religious fanaticism of his father, his spiritual roots profoundly influenced his thinking and writing in later years. Taking issue with the Christian concept of dominion over natural resources, Muir saw the spirit in everything natural and became a pioneer of the idea that wilderness should exist for the value of its existence alone (Leshuk, 1988). Finding beauty intrinsic to his natural surroundings, he described the Wisconsin groves of oak as a summer paradise for songbirds, saying, "Nature's fine love touches, every note going straight home into one's heart" (Muir, 1913/1975, pp. 137–138).

Inventive and hungry for knowledge, Muir made an arrangement with his father that he could read early in the morning before it was time for his chores. He rose at 1 o'clock, and the 0-degree weather made a fire necessary. Fearing that his father might object to the cost of firewood, which took valuable work time to chop, he invented a self-setting sawmill. Neighbors encouraged him to take some of his inventions to the state fair in Madison. Muir had a successful showing that resulted in some local fame, a position in a machine shop, and the favorable notice of university authorities. As a student at the University of Wisconsin, he selected a practical course of studies and disregarded the regimen required for a degree. Between work and study, he had only 4 hours to sleep each night, so he invented a bed that set him on his feet every morning at the hour desired. At his desk, he arranged his books in order so they would automatically

according to schedule. After closing, each book would reposition itself in the appropriate slot as the next would appear.

The day after commencement Muir and two of his college mates headed out on a long botanical and geological excursion down the Wisconsin River Valley through Minnesota and Iowa. These travels pulled at his heart as he waited for a response to his letter of application from the University of Michigan, where he hoped to continue his studies. Muir, a pacifist by nature, had also registered for the Civil War draft. His number was passed in the early drawings, and he decided that if his number was not drawn that fall while he worked for his brother-in-law that he would head to Canada for the "University of the Wilderness" (Wilkins,1945, p. 39). In Canada, Muir "entered at once into harmonious relations with Nature" (Wolfe, 1945, p. 91). Returning after 2 years in Canada, he took on odd jobs in factories, which led to quick promotions due to his ability and his inventions of labor-saving equipment. He became foreman-engineer at an Indianapolis carriage factory until an industrial injury nearly blinded him. Convalescing for weeks in a dark hospital room, he finally recovered his sight. This convinced Muir that he should be true to himself, and he decided to follow nature and the inventions of God (Muir, 1975).

On September 2, 1867, Muir began a thousand-mile walk to the Gulf of Mexico. He recorded his observations about the forests, flora, and geography in his journal. He also wrote of his experiences with the inhabitants and of his personal reflections on human responsiveness toward nature. Edited and published posthumously, these observations appear under the title *A Thousand-Mile Walk to the Gulf* (1916). Once he reached the Gulf, he sailed to Cuba and then to Panama, where he crossed the Isthmus and sailed up the west coast, landing in San Francisco in March 1868. Immediately, Muir sought directions into the wilderness of the Yosemite Valley, where he worked on a ranch and continued his explorations while studying botany and the geology of the [illegible]

four decades later in perhaps his best-loved book *My First Summer in the Sierra* (1911). In an earlier publication, *The Mountains of California*, Muir (1894/1977) shared his enthusiasm of the unknown, portraying his climb on Mount Ritter located in the middle portion of the High Sierra:

> Its height above sea level is about 13,300 feet, and it is fenced round by steeply inclined glaciers, and canyons of tremendous depth and ruggedness, which render it almost inaccessible. But difficulties of this kind only exhilarate the mountaineer. . . . In so wild and so beautiful a region was spent my first day, every sight and sound inspiring, leading one far out of himself, yet feeding and building up his individuality. Now came the solemn, silent evening. Long blue, spiky shadows crept out across the snow-fields, while a rosy glow, at first scarce discernible, gradually deepened and suffused every mountain-top, flushing the glaciers and the harsh crags above them. This was the alpenglow, to me one of the most impressive of all the terrestrial manifestations of God. At the touch of this divine light, the mountains seemed to kindle to a rapt, religious consciousness, and stood hushed and waiting like devout worshipers. Just before the alpenglow began to fade, two crimson clouds came streaming across the summit like wings of flame, rendering the sublime scene yet more impressive; then came darkness and the stars.

During this period, Muir, who had learned of Emerson and Thoreau at the University of Wisconsin, acted as interpreter of natural history when Emerson visited Yosemite in 1871. Muir would later name a mountain in the Yosemite region in Emerson's honor (F. Teale, 1954). By this time, he had already discov-

that Yosemite Valley was produced by glaciation rather than by a devastating earthquake. As Muir became known throughout the country for his scientific writing, other famous men made their way to his pine cabin. He became publicly known for his writings in 1874 when a series of magazine articles entitled *Studies in the Sierra* was launched. His enchantment with nature did not end in the Sierra, however. In 1879, Muir took his first of seven journeys to Alaska, where he became one of the first white men to discover the area now known as Glacier Bay. In Alaska, his adventures included discoveries and observations of plants, fish, animals, birds, rivers, mountains, and glaciers.

A new turn in his life occurred in 1880 when Muir married Louie (short for Louisiana) Wanda Strentzel and leased, and later bought, a part of the Strentzel fruit ranch. After 10 years of prudent farming in Martinez, California, he saved $100,000. With enough to support his wife and two daughters, he could devote himself to his true ambitions, his hikes and observations. Supportive of his fight for conservation and travel, his wife encouraged him to go to the mountains for his health. Muir had no feeling for haste and could sit for hours studying the flowers. He was known to have taken 10 hours to walk 10 miles because he stopped so frequently to study or ponder (W.F.B., 1934).

Returning to his work as an advocate for wilderness and forest preservation, Muir wrote many articles about the need to transfer Yosemite back to the federal government and rename it a national park. He also introduced bills to save the majestic sequoia trees. By 1890, Yosemite, Sequoia, and General Grant (now King's Canyon) were all national parks. The next year his book *Our National Parks* was released. In 1903, Muir, who had helped persuade President Benjamin Harrison to set aside 13 million acres of forest and President Grover Cleveland to set aside another 21 million acres, camped with President Theodore Roosevelt during his tour of the American West. Together, they laid the foundation of Roosevelt's innovative and notable conservation programs (Downing, [illegible] Presidents Roosevelt Wilson and Taft, Muir's influence could be gauged by the designation of over 50 national parks, 200 national monuments, and 140 million acres of national forest (White, 1996). Muir credited Robert Underwood Johnson, an editor of *The Century Magazine*, as the "originator of Yosemite," but Muir himself is credited with saving the Grand Canyon and the Petrified Forest and with assisting in establishing Sequoia, Yosemite, Mount Rainier, Crater Lake, Glacier, and Mesa Verde National Parks as well as 12 national monuments (Ford, 1989). Two of these, the Grand Canyon and Olympic Peninsula, later became national parks. Deservedly, Muir is often called the father of the national park system because his work toward preservation later became the mission of the National Park Service.

To protect the newly created Yosemite National Park, Johnson and others suggested to Muir that an association be formed. On May 22, 1892, Muir helped to found the Sierra Club in San Francisco and served as the club's first and singular president for 22 years. In his invitational letter, he expressed his hope that this club would be able to "do something for wilderness, and make the mountains glad" (Downing, 1992). Although the club gained national recognition for its efforts to reserve and preserve scenic and forest areas first in California and then across the nation, Muir lost his last major battle when Congress in 1913 authorized the Hetch Hetchy reservoir in the valley adjacent to Yosemite Valley. Both were part of the Yosemite National Park (see Chapter 7). To Muir, who felt that a journey into the Yosemite Valley itself was an inherently spiritual experience, the loss of this beautiful land was most certainly a heartbreak. Yet the resilient man pulled his attention to a long-deferred book on Alaska. Optimistically, Muir wrote to Johnson, the long-drawn-out battle-work for nature's gardens has not been thrown away. The conscience of the whole country has been aroused from sleep, and from outrageous evil compensating good in some form must surely come (Wilkins, 1995).

The public conscience was so thoroughly aroused that wilderness preservation grew in popularity, and Muir was "enshrined at its

heart" (Wilkins, 1995, p. 243). His great contribution to wilderness preservation lay in his ability to promote successfully the revolutionary idea that wilderness had spiritual as well as economic value (Ryan, 1990). His own deepest insight was perhaps in finding the inner oneness in all of nature, pointing out that no particle of nature is ever wasted. In the wilderness, Muir believed, one could appreciate fellow creatures, realizing one's part in a harmonious whole. He said, "In God's wildness lies the hope of the world, the great fresh, unblighted, unredeemed wilderness" (Wolfe, 1979, p. 317). Other books written by John Muir were *Stickeen* (1909) and *The Yosemite* (1912). Published posthumously were *Travels in Alaska* (1915), *The Cruise of the Corwin* (1917), and *Steep Trails* (1918).

Rachel Carson (1907–1964)

Scientist and ecologist Rachel Carson was employed by the U.S. Fish and Wildlife Service from 1936 to 1952. As a talented writer, she was capable of transforming government research into poetic prose. Together, her books *Under the Sea-Wind* (1941), *The Sea Around Us* (1951), and *Edge of the Sea* (1955) constituted a biography of the ocean that made her famous as a naturalist and science writer. Her best seller, *The Silent Spring* (1962), touched off an international controversy over the long-range effects of pesticides. By shocking the world with her presentation of disasters brewing, she magnified environmental awareness and "changed the course of history" (Gore, 2006).

The youngest of three children, Rachel Louise Carson was born in industrial Springdale, Pennsylvania, where she came to love the natural environment on her family's farm. In large measure, she owed her love of nature to her mother, a graduate of Washington Female Seminary, who "taught her as a tiny child joy in the out-of-doors and the lore of birds, insects, and residents of the streams and ponds" (Rothe, 1952, p. 101). In later years, the study of birds became a hobby. She became an associate member of the American Ornithologist's Union and a director of the Audubon Society of the District of

Carson's writing career began at an early age with her contributions to *St. Nicholas* magazine beginning in 1918. Her last article for the magazine, published in 1922, was her first publication about nature. "My Favorite Recreation—Going Bird's-Nesting" displays an impressive knowledge, adult style, and intuitive sense of expression (Holmes, 2004). Intent on becoming a writer, she entered the Pennsylvania College for Women (now Chatham College) in Pittsburgh with a scholarship after graduating first in her high school class. She participated in a wide range of activities, including field hockey and basketball, but her interest in writing was redirected to science. "Biology," she told a friend, "has given me something to write about" (Strong, 1988, p. 180).

Her first publication about the sea appeared in the college magazine. Graduating magna cum laude in 1929 with a degree in zoology, Carson connected with the sea in August at the Marine Biological Laboratory at Woods Hole on Cape Cod. Enamored with the mysteries of the sea, she returned here at least four other summers. That fall she became one of 13 women to enter Johns Hopkins University for postgraduate study in the combined department of zoology, botany, and plant physiology, receiving her MA degree in 1932. During her early career, she taught at the University of Maryland, but she never fulfilled her plans to obtain a doctorate due to family responsibilities (Matthiessen, 1999). With the death of her ailing father in 1935 and her sister the following year, Carson's family responsibilities grew when she resolved to raise her two orphaned nieces. She elected not to marry and continued her devotion to her family throughout her life. In later years, she cared for her elderly mother and adopted her 5-year-old great nephew after the death of a beloved niece.

To make ends meet, "Ray" Carson, as she was known to some of her friends, began writing articles on scientific and ecological topics for the *Baltimore Sunday Sun* and other newspapers. She also wrote science radio scripts for the U.S. Bureau of Fisheries (later the Fish and Wildlife Service) in Washington,

appointment as junior aquatic biologist in 1936. Remaining in the employment of the U.S. government for 16 years, she was promoted to assistant aquatic biologist in 1942, associate in 1943, and aquatic biologist before the war ended.

Rather than doing laboratory research, she wrote bulletins, leaflets, and other informative literature. One submission seemed so outstanding that her editor encouraged her to submit it to the *Atlantic Monthly*. "Undersea" appeared in 1937 and captured the attention of an editor from Simon and Schuster, who asked her to write a full-length book concerning the sea. This article, along with one of her *Sun* features, served as a starting point for her first and favorite book, *Under the Sea-Wind*. The 1941 book, subtitled "a naturalist's picture of ocean life," was critically and scientifically praised, but only 1,400 copies were sold in its first year (De Bruhl,1981). Debuting 1 month before Pearl Harbor was attacked, the book about the shore, open sea, and deep abyss, written from the perspective of a shore bird and other nonhumans, had to wait for its audience. Upon republication by Oxford University Press in 1952, 40,000 copies were bought in advance with a portion of it appearing in *Life* magazine (Holmes, 2004).

After the department's reorganization as seen in Chapter 7, Carson rose within the ranks of the newly created U.S. Fish and Wildlife Service to biologist, information specialist, and editor-in-chief in 1949 while continuing her freelance work. Her most substantial writing for the government included a series of booklets about national wildlife refuges published in the early postwar years. To carry out the research, writing, and editing of the series, she traveled to refuges in Oregon, Utah, Montana, North Carolina, Massachusetts, and Virginia, which comprised the more than 300 sites already in existence in the late 1940s (Holmes, 2004). Today, the Rachel Carson National Wildlife Refuge along the southern Maine coast near the beach resort of Wells is named in her honor.

In 1949, she was given a Eugene F. Saxton Memorial Fellowship and in 1950 the George Westinghouse Foundation award for of science. She hired a literary agent for her second book that was serialized as "A Profile of the Sea" in *The New Yorker* before it was released in 1951. Entitled *The Sea Around Us*, the blockbuster went into a ninth printing, was placed on nonfiction best-seller lists throughout the country, was translated into more than 30 languages, and won the National Book Award. Drexel, Oberlin, Smith, and the Pennsylvania College for Women awarded her with honorary doctoral degrees. Taking the reader through successive periods of geological times in the book, she warns of the dangers of polluting the oceans with atomic wastes. In her chapter "The Long Snowfall," Carson (1951) shared her scientific insight and emotional sensitivity:

> Every part of earth or air or sea has an atmosphere peculiarly its own, a quality or characteristic that sets it apart from all others. When I think of the floor of the deep sea, the single, overwhelming fact that possesses my imagination is the accumulation of sediments. I see always the steady, unremitting, downward drift of materials from above, flake upon flake, layer upon layer—a drift that has continued for hundreds of millions of years, that will go on as long as there are seas and continents. For the sediments are the materials of the most stupendous "snowfall" the earth has ever seen. . . (p. 74)

Research for the book entailed learning deep-sea diving at shallow depths and included a 10-day voyage on a research ship. With little time to do her own creative work, her book progressed slowly, taking 3 years. Everything changed after its success. A Guggenheim Fellowship awarded in June allowed her the opportunity for a year's sabbatical to begin work on a third book. Royalties from both books gave her the economic independence to resign her position at the Fish and Wildlife Service the next year. Following her dream, she continued to write and bought property on Southport Island in

environment that she relished and wrote about.

Preparation for *The Edge of the Sea,* which explored the border zone where sea meets land, included wading in icy tidal pools for so long that she sometimes became numb with cold and had to be carried out. By studying minute sea creatures under her binocular microscope, she felt a spiritual closeness to the individual creatures about whom she wrote. She covered rocky shores, sandy beaches, and coastal reefs of the Atlantic coast in her third book of the sea trilogy, which also became a best seller, with *The New Yorker* printing a condensation of part of the book before the 1955 publication.

It was her fourth book, the landmark *Silent Spring,* that ushered in environmentalism, one of the great movements of the century (De Bruhl, 1981). Carson's grim warning was instrumental in bringing about awareness of the dangers of some pesticides and herbicides that could kill everyone and everything if humanity failed to check its use. Her text ended on the following note:

> The "control of nature" is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man. The concepts and practices of applied entomology for the most part date from that Stone Age of science. It is our alarming misfortune that so primitive a science has armed itself with the most modern and terrible weapons, and that in turning them against the insects it has also turned them against the earth. (Carson, 1962)

Before the book's release, *Silent Spring* was serialized in *The New Yorker,* which brought public attention to the book. By the time it reached the bookstores in 1962, it became an instantaneous best seller likened in historical significance to Charles Darwin's *The Origin of the Species* and Harriet Beecher Stowe's *Uncle Tom's Cabin* (Holmes, 2004). Opponents thought Carson an alarmist. Monsanto Chemical Company responded with a report to advise the public of the horrors of a pesticide-free world (De Bruhl, 1981). Like brochures, disseminated to the press, gave credence to her warning about the danger of a growing liaison between science and industry. Speaking to the Women's Press, she stressed the need to recognize who was supporting the research, thereby indicating that unfavorable facts may not always be revealed (Holmes, 2004). Realizing the controversial nature of her topic, she was confident about her facts and knew that she could count on the support of leading scientists and conservation organizations (Matthiessen, 1999). "Who are we," Carson questioned, "to say that those who come after us may never see some of today's rare and endangered species?" (Carson, 1963, p. 262).

About the same time, newspapers reported the death of 5 million fish on the lower Mississippi River, the worst of a series of incidents (Strong, 1988). Public outcry could not be ignored. President John F. Kennedy read the best seller with its call to prove "our mastery, not of nature, but of ourselves" (Steinbauer, 1990, p. 18). This encounter eventually led to the setting up of the Environmental Protection Agency (EPA). In the meantime, he appointed a presidential advisory committee to study the issue. The committee called for more research into the potential health hazard of pesticides and warned against indiscriminate use. Despite failing health, Carson made specific recommendations at congressional hearings in 1963. Many pesticides, including DDT, were eventually banned, and others were brought under stricter controls. With the ban on DDT enacted in 1972, the recovery of several endangered species has been taking place, including the nesting population of the bald eagle and peregrine falcon, which had been reduced by 90% in the contiguous United States at that time ("DDT ban accelerated," 1997). "We spray our elms," she explained, "and the following springs are silent of robin song..." (Elliott, 2007, para. 3).

Even after Carson's death by cancer, her

doubt, Carson would have preferred to be remembered for her books about the sea, where the grandeur of her style is visible (Graham, 1970). Her joy came from sharing the wonder and beauty of the living world with others. In her 1955 article "Help Your Child to Wonder," she even challenged her readers to do the same by encouraging children to keep alive their instinctive interests in what is "beautiful and awe-inspiring" (Strong, 1988, p. 184). In her posthumously published book, she laid down her philosophy, "The lasting pleasures of contact with the natural world are not reserved for scientists but are available to anyone who will place himself under the influence of earth, sea and sky and their amazing life" (Carson, 1965, p. 33).

Reluctantly, her focus changed, when her reverence for life called her to bring the message of modern crisis to public attention in *Silent Spring*. As she explained it, "What I discovered was that everything which meant most to me as a naturalist was being threatened, and that nothing I could do would be more important" (Brooks, 1972, p. 233). Embedded in all of Carson's writings was her belief that humans constituted only a portion of nature, and what differentiated them from the rest of nature was their ability to destroy it, in some cases irreversibly (Lear, 2000).

The various aspects of her life—zoologist, writer, policymaker, conservationist, birder, and government employee—were represented at her funeral at the National Cathedral in Washington, DC, by the pallbearers who carried her casket: Robert Cushman Murphy, internationally reknown ornithologist; Edwin Way Teale, nature writer; U.S. Senator Abraham Ribicoff; Stewart Udall, secretary of the interior; Charles Callison of the National Audubon Society; and Bob Hines, wildlife illustrator and colleague at the U.S. Fish and Wildlife Service (Holmes, 2004). Her numerous awards included her election to the American Academy of Arts and Science, and her unusual blend of science and art was acknowledged through the Burroughs Medal, an honor that associated her with immortals in nature such as Henry David Thoreau (Gartner, 1983). In 1973, she was elected of the 20th century, she was listed by *Time* magazine as one of the 100 most important Americans of the century.

THE PRACTITIONER PIONEERS

The mere description of nature and the advocacy to preserve it would not have saved natural areas if it were not for the efforts of the practitioners, those who worked in the parks and wilderness areas and struggled to conserve and preserve their qualities and make areas available to others and future generations. Standouts among these leaders are Frederick Law Olmsted, Gifford Pinchot, Stephen Mather, and Aldo Leopold.

Frederick Law Olmsted (1822–1903)

In the early years of the 19th century, New York City had a number of pleasure gardens that gradually gave way to buildings. By 1855, there were no gardens left, and city residents began visiting cemeteries for their foliage, lawns, and park-like amenities (Olmsted & Kimball, 1970). Although other cities of America at that time may have had open space and/or small parks, it was the establishment of New York's Central Park under the watchful eye of its architect, Frederick Law Olmsted, that signaled the birth of city parks in the United States.

As complaints about insufficient open space in New York continued, the common council of the city acquired an 840-acre parcel of rocky swampland just north of the city's boundaries. In 1857, a nonpartisan board was appointed to develop the park. A design competition was conducted in which Olmsted and British-born architect Calvert Vaux participated. Their design, nicknamed "Greensward," was awarded top prize over more than 30 competitors in April 1858, a year after Olmsted was appointed superintendent of the yet-undesigned Central Park (Doell & Twardzik, 1979).

Born in Hartford, Connecticut, Frederick Law Olmsted was placed in the care of a congregational minister after his mother's

a succession of schools was interspersed with long vacations that were taken in New York, New England, and Canada with his father, a wealthy merchant. After nearly being blinded by sumac poisoning at age 15, he abandoned his plans for college. A favorite activity during his convalescence was drawing plans for hypothetical cities and towns. It may have been his upbringing and tendency to ramble in the New England countryside that contributed to his interest in extending the natural environment into urban lifestyle (Havard, 1989). Nevertheless, before embarking on a career as a landscape architect, the profession that he created, he shipped out for China as an apprentice seaman in 1843 and also tried his hand at farming, writing, and other occupations.

Settling on a farm financed by Olmsted's father in Staten Island in 1848, Olmsted practiced landscape gardening and improved the grounds to such an extent that his neighbors often sought his advice. He chose to interrupt rural life in 1850 to take an extensive trip to Europe, where the English landscape and city parks in Liverpool and London made a lasting impression on him. When he returned, he wrote *Walks and Talks of an American Farmer in England,* and he was soon embarking on a career as a writer. Almost immediately, Olmsted gained literary success (Strong, 1988). Among the most influential books that he produced were *Journey in the Backcountry* (1860) and *The Cotton Kingdom* (1861), both published by Mason brothers of New York. His writing was based on his dispatches as a *New York Times* correspondent in the pre–Civil War South. He also helped launch *The Nation,* the respected liberal journal still in circulation today. In 1855, he became partner in a New York publishing firm and for a time edited *Putnam's Monthly Magazine.* When his firm went bankrupt 2 years later, he needed capital, but in his absence the condition of the farm had become run down.

Olmsted's second career as environmental planner and designer began with his appointment in 1857, at the age of 35, as the superintendent of Central Park. He had to be politically astute to get such an appointment many political battles over the potential park development. The state legislature passed an act for "the Regulation and Governance of Central Park in the City of New York." The act was a reaction to the lack of progress in developing the park coupled with the corruption and inefficiency of the politicians in charge (Jubenville, 1976). The idea for the park dated back to at least 1844 when poet William Cullen Bryant made the proposal.

Central Park, Olmsted's first and most famous work, is so natural today that it is hard to believe that it emerged as a direct result of two men's ingenuity. Their design suggested that the development of the park revolve around a number of concepts that are still used in the planning of outdoor recreational areas. The two planners felt that a park is a single, coordinated work of art that should be framed upon a single, noble motive. The park should allow for some relief from the confinement of urban life. Yet uses of the park are not necessarily compatible, and accordingly, different areas of the park should be spatially separated to reduce conflict and confusion. Moreover, the primary purpose of the park is to provide the best practicable means of healthful recreation for inhabitants of all classes. Olmsted wanted to provide the lower classes with "a specimen of God's handiwork that shall be to them, inexpensively, what a month or two in the White Mountains, or the Adirondacks is. . . to those in easier circumstances" (Olmsted & Kimball, 1970, p. 46).

When the Civil War broke out in 1861, the U.S. Sanitary Commission, which became the American Red Cross, asked Olmsted to serve as its general secretary. In that capacity he was charged with providing troops with medical and sanitary supplies. Two years later, he was offered the position of general manager of the Mariposa Company, a gold mining company near the Yosemite in California. The more lucrative position helped him pay his debt and support his wife and her three children; he had married his brother's widow. A year later Olmsted became commissioner of Yosemite and Mariposa Big Tree Grove. In a report, he set forth his justification

parks—the first statement of its kind in the United States—and recommended that they be treated as museums of natural history. Although he listed reasons to establish Yosemite as a park, his report went unnoticed and even disappeared, perhaps because there was such competition for state funds (Strong, 1988). Nonetheless, his justification that government could justify the protection of a land as a means to protect the public's inalienable right to the pursuit of happiness would in time become a sacred text (Duncan & Burns, 2009). During his stay, he was asked to provide a plan for the campus of the new University of California at Berkeley and Golden Gate Park in San Francisco.

Olmsted returned to the East Coast in 1865, where he completed Central Park and undertook a number of landscaping projects, among which were Prospect Park in Brooklyn, Fairmont in Philadelphia, and Lincoln Park in Chicago. One of Olmsted's innovative concepts was the idea of a string of green spaces around a city to bring recreational areas close to every citizen. In 1888, Olmsted and Charles Eliot introduced this concept in Boston. The park was named the "Emerald Necklace." The idea was adopted by many cities.

The success of Central Park set off a mania for park building, and Olmsted's trademark sprouted up in the Midwest as well, in Belle Isle Park in Detroit, Cherokee Park in Louisville, and Lake Park in Milwaukee (Haward, 1989). His idea of a commuter village, a suburb of an urban center such as Riverside is to Chicago, is still regarded as a model for suburban design.

Among many of Olmsted's contributions aimed at underscoring the natural environment in the lives of those who live surrounded by buildings were landscape plans for numerous campuses and private estates. The Amherst, Trinity, West Point, George Washington, and Stanford campuses have his stamp. Biltmore, the estate of George Vanderbilt in Asheville, North Carolina, was designed by Olmsted and later proclaimed by the nation's first chief of the Forest Service, Gifford Pinchot, as the "nest egg for practical 1977, p. 404). He helped plan Boston's Arnold Arboretum, which served as a forest laboratory. In 1874, Olmsted improved the grounds of the Capitol in Washington, DC. He played a major role in petitioning the U.S. and Canadian governments to protect Niagara Falls from waterpower development and helped to establish the Adirondacks as a state forest preserve.

As an advocate of comprehensive city planning, Olmsted urged that a city plan "make provisions for physical and mental health, safety and transportation needs in commercial and residential districts, proper housing and recreation" (I. Fisher, 1986, p. 2). Although Olmsted recognized the importance of outdoor recreation and sightseeing for health, vigor, and social transformation, he had no patience with requests for organized recreation. "He saw his parks as places for walking, riding and relaxing in a naturalistic retreat from the harshness of the city" (Knudson, 1984, p. 164). This attitude may have caused the friction that led to the rise of the playground and recreation movement of Joseph Lee, Jane Addams, and Luther Gulick, which will be discussed later. Today, the park and recreation movements have come together to form a union, where the legacy of the nation's foremost park maker endures.

Following Olmsted's retirement in 1895, his son Frederick Law Olmsted Jr. led his father's firm along with his stepbrother John Charles. The Olmsted Brothers' firm continued to carry on the work of Frederick Law Olmsted, employing nearly 60 staff at its peak in the early 1930s. Olmsted Jr., who founded the first formal training program in landscape architecture at Harvard University in 1900, maintained a lifelong commitment to conservation, contributing the guiding language in legislation establishing the National Park Service in 1916. John Charles became the first president of the American Society of Landscape Architects in 1899 and led the office in comprehensive planning for metropolitan open spaces and park systems (National Park Service, 1998). From this office, the first full-scale professional office for the practice of landscape design, Olmsted and

and private landscapes that forever changed the face of the nation. Today, the spirit of his work lives on at the same location at the Frederick Law Olmsted National Historic Site in Brookline, Massachusetts, now used as a center for the study and preservation of American landscapes.

Gifford Pinchot (1865–1946)

America's first professionally trained forester, Gifford Pinchot, could have lived a life of luxury and ease. Instead, he chose to travel wilderness trails and camp the wooded country, rising to national prominence as a conservationist and politician who fought for wiser use of natural resources. Pinchot, born to wealth and social prominence at his family's summer home in Simsbury, Connecticut, was raised in New York City and at his family's wooded estate in Pennsylvania. Aware of his father's concern for the dwindling state of the nation's forests, he was quick to notice the more impressive European management of forests when he vacationed abroad with his family. Because no American university offered a course of instruction in forestry, he arranged his course of study at Yale. After graduation, he studied European forests while doing postgraduate work at the French National Forestry School at Nancy.

Upon his return to the United States, he began to explore the nation, observing the relationship of people and forests. He noted that forests were facing a desperate and losing struggle to loggers. Trees were vanishing along the eastern seaboard; also the hardwood forests of the South and the pine forests of the Midwest had been decimated. Recognizing that it was only a matter of time before timberlands in the West would disappear, Pinchot advocated regulating the commercial use of public and private forests. This included selective cutting, planning for future growth, and establishing fire prevention measures. If properly managed, he was convinced that sustained yield was possible if it could be shown to be both practical and profitable. Pinchot expressed his sentiments at a later date:

> When I came home [from France] not a single acre of Government, State, or private timberland was under systematic forest management anywhere on the most richly timbered of all continents. . . . When the Gay Nineties began, the common word for forests was "inexhaustible." To waste timber was a virtue and not a crime. There would always be plenty of timber. . . . The lumbermen... regarded forest devastation as normal and second growth as a delusion of fools. . . . And as for sustained yield, no such idea had ever entered their heads. The few friends of the forest were spoken of, when they were spoken of at all, as impractical theorists, fanatics, or "denudatics," more or less touched in the head. What talk there was about forest protection was no more to the average American than the buzzing of a mosquito, and just about as irritating. (Williams, 2000, pp. 14–15)

Pinchot applied principles of scientific forestry in the private North Carolina forest of George W. Vanderbilt. Here Pinchot initiated the principle of selective logging, where young trees are given the opportunity to mature, and some mature trees are protected so that they may seed. After achieving a reasonable amount of success, Pinchot prepared an exhibit for the Chicago World's Fair in 1893 with an accompanying pamphlet, *Biltmore Forest,* the first of his many publications. Shortly thereafter, he became a consultant forester in New York City, made surveys of the forestlands of New Jersey, and drew plans for two private tracts in the Adirondacks. Greatly impacting Pinchot's career was the congressional passage in 1891 of a bill providing that forest reserves could be set aside as government land through a presidential proclamation. Many of these reserved lands would eventually come under his supervision.

In 1896, Pinchot was appointed to the National Forest Commission of the National

Academy of Science, whose chairman supported U.S. Army protection to defend the reserves from poachers. Pinchot, the commission's secretary, voiced his objectives, which favored regulated use through a forest service whose members had received scientific training. Since he was the first American to make forestry a profession, Pinchot presumably saw himself in a leading position (Fox, 1981). In the end, the National Forest Commission's study helped bring about authorization for commercial use of these reserves through passage of the Forest Management Act of 1897 (see Chapter 7).

After serving as "special forest agent" for the secretary of the interior, Pinchot was named chief of the small Federal Division of Forestry with the Agriculture Department in 1898, a departmental shift that Pinchot had supported since the later department employed professional foresters. Establishing a decentralized organization with built-in flexibility, he immediately began to establish his concepts of scientific forestry. His loyal, dedicated, and competent employees offered advice to some of the nation's largest lumber companies. Gradually, they took on more responsibilities toward managing the forest reserves, which remained with the Interior Department in the General Land Office. By 1901, his division had become the Bureau of Forestry. With the firm support and backing of President Theodore Roosevelt, Pinchot campaigned for Congress to transfer the forest reserves to the Department of Agriculture. The transfer bill was backed by stockmen, lumbermen, and others who preferred the advantages of Pinchot's promise of long-term protection through controlled use to the potential prohibition of commercial use that might result from the formation of parks and game reserves with the Department of the Interior (Strong, 1988).

In 1905, passage of the Transfer Act gave the Bureau, which was renamed the Forest Service, control of the national forest reserves. During Pinchot's administration, the national forests increased from 60 "forest reserves" covering 56 million acres in 1905 to 150 "national forests" covering 172 million their use, instituted a system of permits and fees, and regulated their harvest—it was not until after World War II that large-scale logging and other controversial procedures, such as clear-cutting took place (Strong, 1988). Pinchot also arranged for the creation of an official badge for the forest rangers, encouraged uniform standards, and encouraged a high level of competency. He composed the principles upon which the Forest Service was to administer its new responsibilities:

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All the resources of the forest reserves are for use, and this use must be brought about in a thoroughly prompt and business-like manner, under such restrictions only as will insure the permanence of these resources. (Cameron, 1928, p. 239)

Pinchot believed in the public control of natural resources to ensure the rational, scientific use of the land to maximize its benefits for the greatest number of people. Opponents of the Pinchot-Roosevelt conservation program did not believe in the expansion of government control. Still, others wished to exploit the nation's resources. With President Theodore Roosevelt's help, Pinchot organized a White House Conference on the Conservation of Natural Resources to which all the nation's governors and other leading figures were invited. Additionally, the National Conservation Commission, chaired by Pinchot, was organized to make an inventory of the country's resources and their date of probable exhaustion. Once Roosevelt left office, however, the conservation movement declined. Pinchot's conservation policies went under the direct attack of the new secretary of the interior, Richard A. Ballinger. Ballinger's appointment, by President

tal cooperative agreements that had taken place between the Forest Service and Interior when James R. Garfield (son of former President Garfield) served as secretary of the interior in the Roosevelt administration. The eventual struggle between Ballinger and Pinchot led to a split in the Taft administration. In 1910, Taft felt forced to dismiss Pinchot from government service after his public criticism of the President's decision to support Ballinger.

Application of Pinchot's *conservation* policy—using the land and its resources "for the benefit of many, and not merely for the profit of a few"—caused the loss of the support of the preservationist wing of the conservationists. With his policy in mind, Pinchot consistently chose the wise use of resources over proposals to use the land for parks (Strong, 1988). In the Hetch Hetchy debate, for example (see Chapter 7), John Muir and the preservationists supported protection of the Hetch Hetchy Valley in Yosemite National Park for its beauty, whereas Pinchot supported San Francisco's request to acquire the area as a reservoir. Pinchot's view was brought before congressional hearings in 1913. When asked if he knew of John Muir and his criticism of the bill, he replied,

> Yes, sir; I know him very well. He is an old and a very good friend of mine.... When I became Forester and denied the right to exclude sheep and cows from the Sierras, Mr. Muir thought I had made a great mistake, because I allowed the use by an acquired right of a large number of people to interfere with what would have been the utmost beauty of the forest. In this case, I think he has unduly given away to beauty as against use. (Nash, 1970, p. 88)

Still interested in national politics, Pinchot made his first of several unsuccessful attempts for the Senate in 1914, running as a Progressive. That same year he married Cornelia Bryce at age 49. They had a son, Gifford Bryce Pinchot. She used her boundless energy to help with the [illegible] dressed housewives demanding the vote, and eventually sought election herself. In 1920, Pinchot was appointed commissioner of forestry by the governor of Pennsylvania, and in 1922, he was elected governor. Barred from succeeding himself, he tried again for the Senate as a Republican candidate before being elected to a second term as governor in 1930. During his last year in office, he gave one last try for the U.S. Senate, but failed to gain the assistance of Republicans due to his support of Democrat Franklin D. Roosevelt's economic recovery programs. At age 72, he made a bid for nomination for governor once again, but the Republican votes overwhelmingly defeated him. Pinchot suffered a major heart attack in 1939, but he filled his remaining years by writing a book about his life as a forester, giving advice to the president, and devising a fishing kit that was used in lifeboats during World War II (Pennsylvania Historical and Museum Commission, 2001). Pinchot died of leukemia at age 81.

Throughout his years, Pinchot was a leader in matters involving conservation. In 1909, he founded the National Conservation Association and directed it from 1910 until it dissolved in 1923. He was involved in the passage of the Weeks Act in 1911, which provided for the expansion of forest reserves by purchase. A founder of the Society of American Foresters, he served as its president from 1900–1908 and 1910–1911. He continued his interest in forestry by serving as a nonresident lecturer and professor at the Yale School of Forestry, established through a lectureship grant awarded by his father. He wrote *The Fight for Conservation* in 1910, and his autobiography, *Breaking New Ground,* was published posthumously in 1947 (Penick, 1974).

Gifford Pinchot, the utilitarian champion, viewed conservation as a demand for the welfare of the present generation first and future generations later. Eventually, this view gave way. Men of the Forest Service, such as Aldo Leopold, shifted from a dominance of nature, in the Pinchot tradition, to a more cooperative harmony with nature. As such, the foundation was laid for stronger recreational and wilderness values. Pinchot's legacy re-

culture and values of conservation leadership, public service, responsiveness, integrity, a strong land ethic, and professionalism characterized by people who know their jobs and do them well. These values are the bedrock on which the Forest Service stands (see the Chapter 7 on federal resources).

Stephen Mather (1867–1930)

Stephen Mather was a staunch conservationist, and he was among the first to urge the U.S. Congress to set aside areas that are of scenic, historical, and scientific significance. Born in San Francisco, California, he developed at an early age a great affection for the natural beauty of the great Sierras. In 1887, Mather graduated from the University of California, Berkeley, and moved to the East Coast to work as a reporter for the *New York Sun* for 5 years. After he married Jane Floy he decided to pursue a career as his father had in the borax mining business, where he became an executive with a passion for advertising. In this capacity he helped to create the celebrated trade slogan "20 Mule Team Borax." A lucrative partnership developed with a friend followed in 1903. The 11-year association at the Thorkildsen-Mather Borax Company not only made Mather a millionaire, but also provided the committed conservationist with time to do volunteer work and enjoy hiking and mountaineering.

As a member of the Sierra Club, Mather took trips to the Sierra Nevada, where he met John Muir, who urged him to take a stand to protect the region against destructive activities such as logging and mining. While visiting the Yosemite and Sequoia National Parks, Mather became aware of private landholdings in scenic areas, cattle grazing in the national parks, and poor roads and trails (Strong, 1988). Concerned about the deteriorating condition of the national parks, Mather wrote to this effect to his acquaintance Frank Lane, the secretary of the interior. Lane simply invited him "to come to Washington and do something about it." Enticed out of retirement, Mather showed up in 1915 ready to go to work. Mather was made assistant to the secretary. Until his appointon the direction of the 13 national parks and 18 national monuments. In fact, their management, which came under the auspices of the Department of the Interior at the time of his arrival, was accomplished by a loose organizational coalition of the Departments of Interior, War, and Agriculture (Simpson, 1989). Moreover, the pool from which park superintendents were selected was political rather than professional in nature. Mather realized that the system needed a vast overhaul, which he set forth to accomplish. The plan was to tackle the problem on five fronts (Shankland, 1970):

1. Get Congress interested enough in the national parks (a) to make vast increases in their appropriations and (b) to authorize a bureau of national parks.
2. Authorize a bureau and start it functioning.
3. Get the public excited about the national parks.
4. Make park travel easier by promoting wholesale improvements in hotels, camps, and other concessions and in roads and transportation facilities both inside the national parks and outside.
5. Sell national park integrity to the point where Congress would
   (a) add to the system all appropriate sites possible,
   (b) keep out inappropriate sites,
   (c) keep the established sites safe from invasion, and
   (d) purge the established sites of private holdings.

The first task was not easy, as previous attempts to get the U.S. Congress to establish a federal bureau had failed, beginning with a bill drafted by J. Horace McFarland and Frederick Law Olmsted Jr. in 1910. Seeing the difficult road ahead, Lane helped by appointing a young lawyer from California, Horace Albright, to assist him. Mather contributed to the cause by reaching into his own pockets to create the position of pub-

ling Yard, a friend from the *New York Sun*. Yard served in this position, and then chief, from 1915 to 1919. During his first year, Yard prepared *The National Parks Portfolio* for distribution to 270,000 opinion makers throughout the country, helped to generate numerous articles about the national parks, and personally wrote pamphlets and articles designed to capture the attention of the public (Albright, 1990). To convince Congress to support a bureau of national parks, Mather invited influential persons, including newspaper publishers and editors, railroad executives, and influential Congressmen to tour Sequoia National Park at his expense. As could be expected, primary opposition came from the Forest Service. With many of the parks next to national forests, Forest Service administrators hoped that the national parks would be transferred to the Department of Agriculture. On the other hand, the 1913 loss of Hetch Hetchy caused many conservationists to support the development of a bureau that could provide protection for the parks.

Mather's public relations campaign was a success. Congress appropriated the majority of the money needed to purchase Giant Forest within Sequoia National Park and the National Geographic Society donated the remainder needed. Public awareness increased as articles in prestigious magazines such as *National Geographic* and *Saturday Evening Post* as well as in prominent newspapers exulted America's natural beauty and supported the need for its preservation. In the meantime, Mather, too, visited most of the parks, gathering information about basic visitor needs.

In August 1916, President Woodrow Wilson signed the bill to establish the National Park Service that became Public Law 64-235. For 15 years, Mather ran the National Park Service as its first director, and Albright, who succeeded him as director in 1929, became his assistant. Major achievements soon followed. In 1916, Lassen Volcanic National Park (in California) and Hawaii National Park (now called Haleakala) were added to the system. Mount McKinley (now Denali) National Park was added in 1917. Attendance at all of the mand for material about the parks. Nonetheless, Mather was always under constant pressure from critics. He suffered a breakdown. During an 18-month rest, Albright took over. Returning with new zeal, Mather worked to open the parks to recreational activities, joined Albright in his fight to ward off commercial pressures, and opposed proposals for waterpower development in Yellowstone National Park (Strong, 1988). In his director's report, Mather made the following plea:

> Is there not some place in this great nation of ours where lakes can be preserved in their natural state; where we and all generations to follow us can enjoy the beauty and charm of mountain waters in the midst of primeval forests? The country is large enough to spare a few such lakes and beauty spots. The nation has wisely set apart a few national parks where a state of nature is to be preserved. If the lakes and forest of these parks cannot be spared from the hand of commercialization, what hope can we entertain for the preservation of any scenic features of the mountains in the interest of posterity? (*Report of the Director of the National Park Service*, 1919, p. 963)

Once the National Park Service was on solid ground, Mather took a few months off after a friend died and to recuperate from his latest round of battles. His next goal was to increase the service's holdings to include "scenery of supreme and distinctive quality or some natural features so extraordinary or unique as to be of national interest and importance" (*Report of the Secretary of Interior*, 1918, pp. 112–113). After the number of national parks and monuments nearly doubled, Mather decided to concentrate on extending some of their boundaries. Since extensions often involved expanding into the national forests, the rivalry between the two agencies openly grew. Although the Forest Service responded by preserving some of their prized

the National Park Service. Mather also set up a commission to study potential parks in the east, supported the Save-the-Redwoods League to save the coastal redwoods of California, and championed the development of state parks throughout the nation by organizing a convention on state parks at Des Moines, Iowa, in 1921 (Strong, 1988).

In an effort to make all of the national parks and monuments accessible to the majority of Americans, Mather continued to invite congressional representatives and their families to visit these outstanding lands. While there, they were also driven on the poor roads. When appropriations for roads more than doubled, Mather stressed the importance of building roads through a portion of the most representative sections of the parks, but maintained that the remainder of the parks should remain as natural as possible. To arrange for visitor needs, Mather recommended that one qualified operator hold a license for the concessions to eliminate potential for commercialization and waste. This would also enable the government to approve rates and standards of service (Strong, 1988). Although there were those who opposed this system of regulated monopoly, others protested any form of improvements in the parks. Mather's greatest clash, however, was with corrupt politicians who pushed for franchises for friends. Mather fought back and won.

Stephen Mather, who accepted the invitation to come to Washington, did do something about the conditions of the nation's fledgling national parks and monuments. During his administration, he publicized the value of preserving the nation's heritage, designed policies that guide the public's use of scenic and historical resources, cultivated an exceptional personnel organization, launched campfire programs with park rangers, promoted museums and other means of interpretation, improved public access and use, blocked private enterprise from actions that would destroy a park's scenic beauty, arranged for large donations, and won the cooperation of Congress and big business. The national park system thus became a model

stay in his position longer, Mather left the service after he suffered a massive stroke. His life is summarized on bronze markers through many parks, which read,

> He laid the foundation of the National Park Service, defining and establishing the policies under which its areas shall be developed and conserved, unimpaired for future generations. There will never come an end to the good he has done. . .

Aldo Leopold (1887–1948)

Prominent wildlife ecologist, uncommon conservationist, and environmental philosopher Aldo Leopold was born the eldest of four children in Burlington, Iowa. This Mississippi River community afforded him the opportunity to become acquainted with wildlife at a young age. He recognized the steady decline of the wood duck population and the forestlands. His father, Carl Leopold, who owned a thriving desk factory, enjoyed the outdoors and nature. Setting an example of sportsmanship for the younger Leopold, he refused to hunt waterfowl during the nesting season long before such practices were enacted by federal law. While in high school, Leopold kept a journal of his observations of nature, the beginnings of his prolific writings. Expected to take over the family business, he instead entered Yale University's Sheffield's Scientific School, where he received his BS in 1908. The following year he entered the Yale School of Forestry, founded by a grant from James Pinchot, and received his master of forestry degree. After graduation he was employed as a forest assistant on the Apache National Forest in Arizona in the Arizona Territory, just 4 years after the Forest Service was established. By 1911, Leopold was promoted to deputy forest supervisor and a year later to supervisor of the Carson National Forest in the New Mexico Territory, where he became aware that the country was losing its wilderness (Strong,1988, p. 137). He married Estella Bergere from Santa Fe, with whom he had five children. Starker, Luna, Nina, Carl, and Estella all built their own careers as conserva-

Leopold's career was placed on hold for almost 17 months when he suffered from a near-fatal attack of acute nephritis, probably as a result of overexposure while camping during an assignment. During his convalescence he read widely including, most likely, the writings of Thoreau (Rogers & Ford, 1989). Returning to the service in 1914, he was assigned to the Office of Grazing at district headquarters in Albuquerque, where he became interested in the new science of ecology and began his life's work on wildlife management issues, including game refuges, law enforcement, and predator control (Williams, 2000). While working on recreation, fish, and game, Leopold recommended that game refuges be established within the district, and he prepared the Forest Service's first game and fish handbook. He founded a number of big-game protective associations in New Mexico and Arizona, edited a quarterly newspaper of the New Mexico Game Protective Association called *The Pine Cone*, and received the W. T. Hornaday's Permanent Wildlife Protection Fund's Gold Medal for his work in the field. Although Leopold was once an advocate of eliminating predators, including wolves and mountain lions, to preserve game species such as deer, he changed his opinion, advocating ecological balance. Years later in his essay "Thinking Like a Mountain," he shared a story about his earlier encounter with a dying old wolf, explaining, "I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view" (Gibbons, 1981, p. 690).

In 1918, Leopold took a leave of absence from the Forest Service to become secretary of the Albuquerque Chamber of Commerce. Leopold was supportive of congressional action, which allowed national forestlands to be used for recreational as well as commercial purposes. With the United States' entry into World War I, the Forest Service was obligated to shift priorities from recreational development to a more utilitarian management of forest resources. Upon his return the next year as assistant district forester for operations in the southwestern region, he became concerned about the rapid pace of road expansion after the war and began to call for the protection of wilderness lands within the national forests as places of preservation and human activity. In 1921, he wrote his most significant article, "The Wilderness and its Place in Forest Recreational Policy," which was published in the *Journal of Forestry*. Through his efforts, the 500,000-acre Gila Wilderness Area in New Mexico became the first administrative wilderness designated for recreation in 1924. Camping and backpacking were permissible activities in the wilderness area, but tourist campgrounds were not to be provided. This novel plan was articulated 40 years later at the national level in the Wilderness Act, thereby making Leopold a "Pioneer of Wilderness" (Rogers & Ford, 1989, pp. 187–188). Leopold believed that wilderness preservation symbolized self-restraint in the developing society, served as a reminder of the pioneer legacy, and provided an undisturbed ecosystem for environmental study (Nash, 1974).

In 1924, Leopold moved to Madison, Wisconsin, to become the assistant, then associate director of the Forest Products Laboratory of the Forest Service. Continuing his efforts toward wilderness preservation, he wrote a 1925 article entitled "Wilderness as a Form of Land Use," in which he developed the notion that Americans no longer needed to conquer the wilderness, but that they needed to set aside large portions of it for posterity. As a speaker at the second National Conference on Outdoor Recreation in 1926, he called wilderness a fundamental recreational resource and urged the development of national wilderness preservation policy. William B. Greeley, U.S. Forest Service chief, endorsed his idea, and an inventory of roadless land areas in the United States was conducted and reported at the Third National Conference on Outdoor Recreation in 1928. By 1929, the pathfinding L-20 Regulations directed the Forest Service districts to preserve undeveloped land; thus began

the movement to establish "primitive areas" within national forests (Rogers & Ford, 1989, pp. 188–189).

Leopold resigned from the Forest Service in 1928 to design a new profession in game management, which he modeled on the profession of forestry. His game survey of nine Midwestern states was funded by the Sporting Arms and Ammunition Manufacturers' Institute. These surveys were summarized in his 1931 *Report on a Game Survey of the North Central States*, one of the first intensive studies of game population ever undertaken in the United States. He also helped develop the country's first game management policy for the American Game Protective Association and was appointed to President Franklin D. Roosevelt's Committee on Wildlife Restoration. As one of the country's finest authorities on native game, Leopold became known as the "Father of Game Management" and more recently the "Father of Wildlife Ecology." In his landmark book, *Game Management* (1933), he clarified the fundamental skills and techniques for managing and restoring wildlife populations. By weaving forestry, agriculture, biology, zoology, ecology, education, and communication, he had created a new science and defined the new profession (Aldo Leopold Nature Center, 2001). Soon after publication, Leopold accepted an appointment to a new chair in the Department of Agricultural Economics at the University of Wisconsin. When the university created the Department of Wildlife Management in 1939, Leopold became the first person in the nation to chair the new science, holding this position until his death. Although Leopold spent the next several decades with wildlife management issues, his interests expanded to the field of ecology, where he is most revered today (Williams, 2000).

Leopold's concepts, based on the emerging science of systems ecology, synthesized the most progressive knowledge of population dynamics, food chains, and habitat protection (Nash, 1974). He noted that "we stand guard over works of art, but species representing the work of aeons are stolen from [illegible]" (Gilbert, 1991, pp. 690–691). Basic to his beliefs was the idea that the environment is not a commodity for humans to control but a community to which they belong. This innovative idea stimulated the development of Leopold's most important concept, "the land ethic," which he wrote of in his most widely read book, *A Sand County Almanac:*

> A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity. . . . It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense. Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our educational and economic system is headed away from, rather than toward, an intense consciousness of land. . . . In short, land is something he has "outgrown." (Leopold, 1966, p. 236)

Although he had no religious affiliation of his own, many consider Leopold's "land ethic" a spiritual act of consequence to the future of life on earth (Nash, 1974). He rationalized that people develop a revolutionary appreciation for land by entering it, for land brings the human race to it as a responsible member of that land community, not as its conqueror. Although published after his death, *A Sand County Almanac* (1949) contains ecological essays that Leopold began before World War II. It shares a lifetime of his observations of nature and the development of his ideas. His work, which has been compared to that of Henry David Thoreau and John Muir, is regarded as a classic in environmental literature and a bible for

the environmental movement. Many of his observations and essays were written at his vacation home, fondly known as "The Shack." When the Leopold family purchased a worn-out farm on the Wisconsin River in an area known as the sand counties near Baraboo in 1935, they rebuilt the only standing structure on the property, an old chicken coop, turning it into a cabin. Today, it is still called The Shack, and he would be proud to see the forest and prairie that surround it. True to his creed, Leopold and his family participated in the land's restoration by planting prairie and thousands of trees on the property. They also revitalized a low area into a wetland that attracts waterfowl. According to Leopold, "We abuse land when we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect" (Hirsh, 1971, p. 150).

During Leopold's last vacation at The Shack, smoke was spotted across the swamp on a neighbor's farm. Gathering his family, he handed out buckets and brooms, and went with them to put out the fire, but in the process he died of a heart attack at age 61. Before his death, Leopold had been active in a number of conservation endeavors, which included member of the council of the Society of American Foresters (1927–1931); elected fellow 1946; director of the National Audubon Society; vice president of the American Forestry Association; founder of the Wilderness Society in 1935 with Robert Marshall, Benton MacKaye (also mentioned in the section on Thoreau), Harvey Broome, Barnard Frank, Harold Anderson, Ernest Oberholtzer, and Sterling Yard; president of the Wilderness Society in 1939; president of the Ecological Society of America (1947); and member of the Wisconsin Conservation Commission from 1943 until his death (Nash, 1974). Additionally, Leopold traveled to Germany to study forestry and wildlife management in the fall of 1935 when he received the Carl Schurz fellowship, and he took the first of two pack trips along the Rio Gavilan in Chihuahua, Mexico, in 1936. *Round River: From the Journal of Aldo Leopold* (1953), like *A Sand County Almanac*, was edited by his daughter Luna B. Leopold and published posthumously. Today, the Aldo Leopold Foundation holds the rights to all of his unpublished material and those works published by nonextant publications at the University of Wisconsin Archives.

SUMMARY

This chapter dealt with visionaries and practitioner pioneers who foresaw the need for preserving areas, establishing programs, and developing concepts that enhance the pursuit of leisure in natural resources. Transcendentalists Ralph Waldo Emerson and Henry David Thoreau venerated nature and called on citizens of this country and the world to respect and preserve it. The depth of their commitment is only overshadowed by the depth of the meaning behind their words. Both men were among the literary giants of the 19th century.

Scientist-naturalists John Audubon, John Muir, and Rachel Carson observed nature and recorded their observations, which were eventually shared with millions of people. Wilderness to them was a place of awe and worship. Their life work spearheaded a preservation movement that gained momentum in the mid-1900s and is in the mainstream of society's activity today.

Pioneer practitioners Frederick Law Olmsted, Gifford Pinchot, Stephen Mather, and Aldo Leopold put into practice the concepts gained from the transcendentalists and scientist-naturalists. They laid the foundations for the nation's fledgling institutions that manage the recreational resources, and they helped to shape the roles of the park rangers and foresters who manage the natural resources for multiple use, limited use, and the betterment of the ecosystem. Frederick Law Olmsted is called the father of the American park, Gifford Pinchot was the pioneer of American forests, Stephen Mather was the first director of the National Park Service, and Aldo Leopold was a promoter of wilderness areas and a founder of the Wilderness Society.