Aldo Leopold Listens to the Southwest

Dan Shilling

> *"He said, after speaking of the Indian's knowledge of nature, 'Nature is the gate to the Great Mystery.' The words are simple enough, but the meaning unfathomable."*
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> —Aldo Leopold, age 17, in a letter to his mother describing a Native American elder who spoke at his boarding school[1]

I

Serious people have struggled with the meaning of this "unfathomable" knowledge, from Socrates, Spinoza, and Lao Zi in generations past, to Annie Dillard and Edward O. Wilson today. What is the relationship between, and the meaning of, the human-nature dynamic? As the epigraph wonderfully foreshadows, few authors would wrestle more eloquently with that elusive meaning than Aldo Leopold. A key figure in environmental history and thought, Leopold came to Arizona in 1909, directly from college. To mark that centennial, this issue of *Journal of the Southwest* features three essays about the forester and writer who, in generations to come, will likely be considered alongside Muir and Thoreau. At the start it is worth remembering the environment Leopold stepped into in 1909. He left it with his certainties not a little disturbed.

An Iowan whose land-management career played out primarily in the Southwest and Midwest, Leopold is remembered as a founding member of the Wilderness Society; the originator of scientific game management; the architect of the nation's first wilderness area; a critic who questioned DDT nearly twenty years before Rachel Carson; the father of Starker and Luna Leopold, noteworthy ecologists in their own right; an advocate for responsible heritage tourism more than a

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half-century before the phrase existed; one of the earliest practitioners of community-based land cooperatives; and, well ahead of his time, an activist who suggested boycotting products made using child labor or in an environmentally negligent manner.

Moreover, similar to ethnobotanist Gary Paul Nabhan or biologist E. O. Wilson today, whose writings privilege humanistic concepts as much as nature's mechanisms, Leopold was a scientist who authored hundreds of technical articles, but he is generally regarded as the voice that launched the discipline of environmental ethics in the early 1970s, more than two decades after his untimely death in 1948. To be sure, Leopold was no trained philosopher: educated as a forester at Yale during the Progressive Era, when Gifford Pinchot's "wise-use" creed dominated wildlife policy and Theodore Roosevelt's administration, Leopold came to Arizona to begin his land-management career in the new Apache National Forest. That first year on the job he probably never passed up an opportunity to shoot a predator, especially the despised wolf, but after one such incident he sensed a disconnect between his formal classroom training and the hillside lesson, an event he would write about thirty-five years later:

> We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then and full of trigger-itch; 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.[2]

The mountain thinks, the wolf too—mutually—about their refuge. There is between them "something known." Where is *Homo sapiens* in this dialogue? asks Leopold in this landmark passage from a 1944 essay, "Thinking Like a Mountain," one of the more remarkable statements in environmental literature and a pivotal episode in *A Sand County Almanac*, a collection of Leopold's essays published posthumously in 1949. He had shot the mother wolf on a ridge in eastern Arizona, probably near Escudilla Mountain south of Springerville.[3] His was a routine act, since the Forest Service's eradication policy of the day held that fewer "varmints" benefited ranchers and left more game for hunters. But the "fierce green fire" ebbing in the wolf's eyes planted a thought the young greenhorn did not fully grasp, let alone express, for decades: that

a natural reciprocity already regulated the hillside absent his management theory.

In that 1909 Arizona mountain moment Leopold intuited at least some of this "hidden meaning" (his catchphrase for the "unfathomable"), and eventually became an eloquent voice for stewardship, speaking for all the "cogs and wheels" and advocating a communal, even reverential, approach to nature best expressed in "The Land Ethic," his book's capstone essay: "In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it."[4] This passage, the upshot of the author's own "moral evolution,"[5] certainly breaks with what Descartes, Bacon, and other earlier philosophers believed about the human-nature relationship, what Manifest Destiny sanctioned, what Pinchot's utilitarianism endorsed, or what many of Leopold's contemporaries felt the Book of Genesis decreed.[6] But the core of Leopold's land ethic was not new; he may have dressed it in twentieth-century ecological garb, and delightfully so, but the underlying moral obligation he revels in would have been familiar to earlier cultures of the Southwest.

Leopold's long transition from a youthful resource manager to an environmental sage in many ways parallels the nation's passage from unabashed resourcism to a more attuned brand of conservation, prompting historian Susan Flader to comment, "Leopold's intellectual development mirrors the history of ecological and evolutionary thought."[7] In that sense he serves as a touchstone to explore the intellectual and ethical development of attitudes toward nature in twentieth-century America. When we consider the instruments that nurtured Leopold's development, clearly his familiarity with the wildlife profession's research and his experiences on the land played a significant role. Equally important was his deep appreciation and masterful incorporation of historical frames, aesthetic theory, philosophical insight, and other humanistic leanings, which pepper his spare but brawny prose. Just as consequential, and perhaps too often overlooked, was the cultural heritage Leopold absorbed from Arizona, New Mexico, and northern Mexico.

II

Aldo Leopold may not have been born with the proverbial silver spoon in his mouth in 1887, but compared to many others at the end of the

nineteenth century, his childhood was extremely comfortable. His hometown of Burlington, Iowa, founded in 1833 on the west bank of the Mississippi River, grew into a transportation hub for barges and trains. With that great waterway and its surrounding hills, plains, and groves as backdrops, it is no surprise Aldo's early years were filled with fishing, hiking, hunting, birding, and boating—outdoor passions instilled in him by his father, Carl, an avid outdoorsman who passed a strong ethical code to his son. Culture and education were likewise valued in the Leopold home, attributes nurtured mostly by his mother, Clara; at seventeen Aldo was sent to an Ivy League preparatory academy in New Jersey, in order to expand his horizons and opportunities,. Leopold's parents then provided for his attendance at Yale, where he was an early graduate of the university's Pinchot-endowed forestry program. During semester breaks and holidays, he might escape with his family to one of the new national parks, and he frequently vacationed for most of the summer at Les Cheneaux Club, a private boating community on Lake Huron. His comfortable lifestyle was about to change, however.

Aldo Leopold would live through one of the most momentous periods in the history of land-management policymaking, and he lived and worked in places where those policies were both manifest and consequential—ecologically and socially. During his forty-year career he witnessed the creation of the National Park Service in 1916, along with the passage of other significant environmental legislation; the popularization and democratization of the outdoors by the Boy Scouts, Sierra Club, and Wilderness Society; an explosion of nature-based literature, from writers such as Willa Cather, Jack London, Hamlin Garland, and O. E. Rolvaag; and New Deal activities on the land—logging, road building, park construction, photography. Too, the first half of the twentieth century was framed by the conservation-preservation debate, manifest in the expressions of Gifford Pinchot and John Muir, respectively, and spotlighted in the battle to dam Yosemite's Hetch Hetchy Valley to supply water for San Francisco—the first national environmental debate. Muir lost that battle in 1913 and was dead within a year.

It is commonplace to say Leopold began as an early student of Pinchot's wise-use approach to land management and ended a disciple of Muir's preservationist philosophy. One difficulty with that statement is that it oversimplifies those two men's views about nature, given that Pinchot also held preservationist positions and Muir did not oppose all access or development.[8] But to measure Leopold, this is a fair starting

point. Certainly, Aldo begins in Pinchot's classroom, even writing confidently in an early 1918 essay, "Nature was actually improved upon by civilization."[9] And while he will eventually echo Muir's passion, Leopold's land ethic is more multifaceted. He correctly observes that not everyone can be "John of the Mountains," living alone in the Sierra Nevada, subsisting on bread and locusts. He celebrates a third way, today's "radical center," a position that makes room for working landscapes where use and preservation intersect: "a state of harmony between men and land."[10] He captured that idea in his familiar succinctness: "Bread and beauty grow best together."[11] At the University of Wisconsin, where he created one of the first land-management programs, Leopold encouraged students to appreciate "the beauty, as well as the utility, of the whole, and know the two cannot be separated."[12] In his 1933 study *Game Management*, which remained for decades *the* textbook for conservation courses, he was already contemplating an alternative: "There is a third 'minority,' [who] denies kitchens or factories need be ugly, or farms lifeless, in order to be efficient."[13] Especially toward the end of *Game Management*, where he introduces personal ethics into the "management" formula, Leopold begins to wander down the third path, a journey that will lead through Pinchot's forests, over Muir's mountains, to the "working" sand counties of central Wisconsin.

From where did this third way spring? Leopold drew from many sources, but to find one, look beyond the hundredth meridian to a fragile yet unforgiving landscape, and then look to the cultures that had sustained themselves, that more often than not knew a "state of harmony" in that place for thousands of years. Listen to the narratives of the Southwest's natural and cultural geography. Aldo Leopold listened.

III

On a summer's day in 1909, with a new master's degree from Yale in hand, the twenty-two-year-old Iowan of respectable German stock stepped from the train at Holbrook, Arizona, to begin his off-and-on-again career with the U.S. Forest Service. Photographs from the time show Leopold in an outfit that was probably his idea of how westerners dressed—sitting erect on his horse in chaps and vest, with a Tom Mix ten-gallon hat, and six-guns strapped to his hips. If his attire seemed amateurish, so too was Leopold's initial fieldwork in Apache National

Forest, whose original boundaries had been drawn just a year before he arrived. More than a few colleagues questioned the new man's leadership and surveying skills, especially after he botched his first major assignment. But within a year he had proven himself a competent, even exceptional, forester, only to be laid low in 1913 by a kidney ailment that nearly killed him—alone, on the mountain, a day's ride from home, an ordeal that would forever curb his activities in the field. Leopold's life, his field journal suggests, may have been saved by a Native American.[14]

When Leopold arrived in Holbrook, the mile-high town was a small trading outpost for the expanding Navajo reservation, as well as a gateway to Petrified Forest, a newly designated national monument owing to the 1906 Antiquities Act. Located on a rolling transitional sliver of Arizona's northeastern plateau, Holbrook was founded in 1881 when the Atlantic and Pacific Railroad, later renamed the Santa Fe, reached northern Arizona, giving rise to a string of towns whose economic health was tied to the rails—Winslow, Flagstaff, Williams, Kingman. Just sing the "Route 66" song. Named for the railroad's chief engineer, Holbrook was home to roughly six hundred people, most eking out a living in the ranching business, either raising cattle and sheep or working for the railroad, loading livestock for their final journey. Nearby Springerville, "a very pretty irrigated Valley"[15] where Leopold lived and worked for a short time, was an even smaller community of about three hundred, by and large Mormons, whose horticultural and ranching techniques, wrapped in a novel religion bent on blossoming the desert, introduced yet another land ethic to Arizona's rim country.

Still three years from its 1912 statehood, and two from the completion of Roosevelt Dam, which would spur growth in the Phoenix area, Arizona was home to about 200,000 people in 1909. Its territorial neighbor, New Mexico, where Leopold lived for most of his Southwest career, had a slightly larger population at 327,000. The population of Connecticut, where he had just attended Yale for four years, was more than a million; compared to Arizona, Connecticut held five times as many people on one-twentieth of the land. From Leopold's first base of operations near Springerville, the closest towns of any size were Albuquerque and Phoenix, both with populations of about eleven thousand, both more than two hundred miles away. His new world of the semiarid West, observes William Least Heat Moon, one of our land's most imaginative chroniclers, differed "from the East in one great, pervasive, influential, and awesome way: space."[16]

When the untried forester from Yale stepped into that immense space on July 16, 1909, he would not have seen a single automobile, paved road, or substantial building. He *would* have seen Native Americans at the train depot selling crafts. More than a few ranch-hand faces he looked into would have reflected their Mexican heritage. He might have noticed Chinese laborers who stayed behind after the railroad was built. Intermarriage was common, blurring ethnic boundaries, as Leopold himself would demonstrate. He was not in Burlington or New Haven anymore.

Working in Apache National Forest, which eventually covered more than two million square miles in eastern Arizona and western New Mexico, Forest Assistant Aldo Leopold, although too often office-bound for his liking, might spend days or weeks riding and camping across the region's majestic mesas, mountains, and deserts—usually as part of a Forest Service team he was supervising, occasionally solo. "I am lucky to be here in advance of the big works," he wrote his mother; "I wouldn't trade it for anything else under the sun."[17] The majesty of that place at that time extended beyond the natural landscapes to cultural vistas as well; and when Leopold arrived, the area's Indian nations, in particular, were undergoing tremendous change—social, cultural, political, and economic upheavals that would continue throughout his fifteen years in the Southwest. The resilience Indian people demonstrated in the face of these crises was grounded in a personal, not a financial, relationship to the land. That sense of love and admiration was not part of the Yale curriculum, but Leopold eventually learned it, felt it, and embraced it.

While skirmishes and raids continued, even into the 1930s, for the most part the Indian Wars had ended in 1886 with Geronimo's surrender and subsequent deportation to Florida. Forever regretting his compact with Crook, Geronimo died in Oklahoma in 1909, the year Leopold first set foot on the rugged mountains and plateaus of the Southwest that Apaches had wandered across since the 1400s. If there was any question as to who won the Indian Wars, the answer came at Wounded Knee in 1890—the date Frederick Jackson Turner later singled out, eloquently but mistakenly, as the year the frontier closed.[18] The young historian, only thirty-one, presented his influential thesis at the 1893 World's Columbian Exposition in Chicago, where each day hundreds of thousands of fairgoers marveled at the White City's electric lights, colossal exhibition halls, newfangled Ferris wheel, and Buffalo Bill's Wild West Show—the crowds cheering a substitute Sitting Bull and his warriors as

they reenacted Custer's Montana finale. The actual leader of the Lakota Sioux was not available. During his few months with Bill Cody's show in 1885, the aging Sitting Bull met queens and other dignitaries, filled arenas, signed autographs, and posed for photographs for a fee, such was his renown. Then he went home to South Dakota and was shot in the head by Indian agents in 1890, Turner's epoch-ending date.

Sitting Bull's death *was* emblematic, a closing, but not the one identified in the "frontier thesis," a scarcely disguised tribute to the triumphal march of civilization. Instead, his murder marked the passing of a way of life—not progress; few Native Americans would ever again experience the boundless West that Sitting Bull had known. By the time of his death, many Indians already led "a bad life and a hard one . . . close to the edge of real danger,"[19] observed novelist and historian Wallace Stegner who, like Leopold, was born in Iowa, then raised on the plains of Montana and Saskatchewan—in Indian country. Born in 1909, when Aldo arrived in the Southwest and Geronimo died far from his Arizona home, Stegner grew up among a wounded people and equally doomed lands—a tragedy that was, he comes to accept, partly of his own doing. Like others, he found purpose in *A Sand County Almanac*, especially Leopold's conviction that Americans must reevaluate their values, not only their techniques: "What he told us was that our minds have to change, that a revolution in our thinking must take place, that we must readjust our relations with the earth, if we expect the globe to survive us."[20] Following Leopold's lead, Stegner would find mentors close at hand: "we might well consider learning more [from the Indian] instead of trying to make a white man of him."[21]

When Leopold landed in Holbrook, many of the Southwest's reservations had been established, or at least their original boundaries set, including those for the Navajo, Hopi, Apache, Hualapai, Havasupai, and most Pueblo tribes in New Mexico. By 1924, when Leopold left the area, Arizona had added the huge Tohono O'odham reservation, among others, totaling nineteen distinct Indian nations covering nearly a quarter of the state's land. Next door, New Mexico contained more than twenty smaller reservations, most established in 1864. In Arizona and then in New Mexico, Aldo Leopold lived in the middle of Southwest Indian country, land of the Clovis culture. The iconic Taos Pueblo in northern New Mexico was thirty miles from the home he and Estella built in Tres Piedras; from the family's residences in Albuquerque and Santa Fe, the Laguna, Acoma, and other Pueblo communities were within a

day's ride; Apache reservations were not too distant; most public lands Leopold inspected adjoined tribal territory; and the largest and most populated reservation, the Navajo (Diné), occupied a large chunk of Arizona's northeast quadrant—land he came to know well.

The last half of the nineteenth century was devastating for American Indians. Michael Dorris would write in 1981 that "there has never been a greater misnomer than to call Indians the 'vanishing Americans,'"[22] but less than a century earlier, knowledgeable and sympathetic voices, Leopold's among them, wondered if indigenous cultures would survive, let alone prosper.[23] They had reason for their doubts. Depending on whose calculations one accepts, by 1900 between 65 and 99 percent of native people had been wiped out since contact—genocide no matter how the numbers are interpreted.[24] The loss of life from war and disease may have slowed as the twentieth century got underway, but other losses continued during Leopold's Southwest years. Considering that two-thirds of Indian land in 1887 was in the hands of non-natives by 1934, he obviously witnessed the unrelenting encroachment on and theft of Indian soil—a loss of family, not stolen property, a loss more spiritual than financial.

Still, while Leopold's early years in the Southwest represented the nadir for many tribes, the period also saw the dawn of re-ascendancy and self-determination. When he arrived, the late nineteenth-century routine of removal, long march, and relocation had almost ended, and by the time he departed in 1924, most of the region's tribal nations had settled on land they would never be forced to leave. During the early twentieth century Indians lobbied, although not always successfully, to protect their homelands from mining, lumbering, agricultural, and political interests—in some cases even expanding their land base. By the time Leopold left for Wisconsin, tribes were forming their own governments, agencies, and commissions, at least somewhat independent of the Bureau of Indian Affairs or other federal oversight. While Indian boarding schools operated into the 1980s, by 1924 some were being shuttered, phasing out an indoctrination system that shattered languages, traditions, and families. Tribal schools, medical centers, social agencies, and economic development programs began to take shape on Indian land during Leopold's years in the region.

These achievements do not mask the startling inequities in education, employment, health care, land management, and political standing that continued on the reservations, occasionally becoming even worse as

alternate assimilation and termination policies swung in and out of favor. To be clear, early twentieth-century Indian reservations were among the most desperate places in the country, fixed in neglect and voicelessness. Upon his arrival in 1909, Leopold would have learned that the first inhabitants of Arizona and New Mexico, resident before the lands *were* territories or states, were not citizens in the eyes of the federal government, a designation they would not receive until 1924, the year Leopold left the Southwest. The original Americans would not be granted the right to vote in either state until 1948, the year he died.

Given the political, economic, cultural, and environmental turmoil occurring on Indian land during Leopold's time in the Southwest, it is unlikely that someone of his curious nature, in his profession, would not have followed and even engaged the controversies, especially because most of the disputes, laws, treaties, dispossessions, and other actions concerned land, culture, and politics, three topics that consumed Aldo Leopold throughout his career. Granted, while his letters and journals describe many encounters with Mexicans and Indians, only infrequently does Leopold acknowledge any debt to earlier cultures of the Southwest. But then he is often lazy about citing sources and influences. Further, if his views about land underwent a transformation during a three-month research trip to Germany, as scholars tend to accept, then clearly it is worth conjecturing a similar Southwest influence. After all, by the time he departed for Wisconsin in 1924, where he lived until his death in 1948, Aldo Leopold had spent nearly fifteen years wandering through, studying, and writing about a natural and cultural environment that looked and acted very differently than his native Iowa—or any other region he had known. That sense of place, where indigenous and Hispanic traditions still influenced land-use policy, and society itself, would have a subtle but ultimately profound effect on Leopold's evolution as a conservationist. That influence is perceptible before he leaves the Southwest, and it would grow more pronounced throughout the tumultuous decades to come.

It is no exaggeration to suggest that the compelling culmination of Leopold's intellectual wanderings, the celebrated "Land Ethic," had its genesis in the Southwest. True, when he left New Mexico to become deputy director of the Forest Products Laboratory in Madison, Wisconsin, Leopold was not close to articulating his famous statement, but he had taken steps in that direction—starting to question, for example, Forest Service policies concerning fire, sustained yield, road building, predator control, and the value of wilderness. He had also begun to write and

speak publicly about environmental "health" in a language that stressed ecological ***and*** moral obligations between all members of the land community—soils, plants, animals, and humans. "The result," says Curt Meine about Leopold's closing years in the Southwest, "was a series of articles and speeches noteworthy for ecological insights decades ahead of their time."[25] These insights reflect, among other things, Leopold's growing appreciation of indigenous values: "Five races—five cultures—have flourished here. We may truthfully say of our four predecessors that they left the earth alive, undamaged," he observes in 1923.[26] Just as it did to painters, writers, and scientists who visited the region, the cultural heritage of the Southwest, not only readings in forestry journals, prodded Leopold down a path others had previously wandered.

IV

"Leopold's achievements," writes historian Roderick Nash, "rested on more than a century of theological, philosophical, and scientific thought."[27] Nash and others have documented many of the influences, including Leopold's incorporation of the scientific discoveries of Charles Darwin, Frederic Clements, and Charles Elton; his appropriation of the noumenon hypothesis advanced by Russian philosopher P. D. Ouspensky; his embrace of other nature writers, among them George Marsh, John Muir, Henry David Thoreau, and William Burroughs; and his adaptation of novelist Sinclair Lewis's critique of a shallow and politically dangerous rapaciousness, giving Leopold his pet adjective: "Babbittian." Recent studies such as *Aldo Leopold's Odyssey* by Julianne Lutz Newton, not to mention the pioneering work of Susan Flader, Curt Meine, and J. Baird Callicott, cover a great deal of this conceptual terrain. Less has been written, until recently, about the influences of Native or Mexican Americans on Leopold's intellectual growth, even though the cultural environment they contributed to surrounded him daily, in both his personal and professional roles. It is an area ripe for research, one I can only hint at here, but cultural influences nonetheless helped shape his thinking.[28]

In 1912, for instance, Leopold married into a prosperous Hispanic family. His new in-laws owned thousands of acres and managed one of the largest sheep ranches in the nation, a business his bride's family could trace to the early 1800s. "She must be extremely beautiful," Aldo

wrote his parents, "since I don't think she would be called especially pretty."[29] His marriage to the striking twenty-two-year-old Estella Bergere introduced Aldo not only to a new language, religion, and cuisine, but also to a different way of thinking about natural resources. On his father-in-law's property, everyday land-use topics such as water rights and grazing, among others, were not conceived as they had been in his New Haven classroom or at Forest Service headquarters.

Adding to the cultural stimuli, the young couple's time in the Southwest, where four of their five children were born, marked the glory days of the Taos artist colony—the era of paintings by Ernest Blumenschein, stories by Willa Cather and Mary Austin—products of the Southwest's natural and cultural zeitgeist, with a nudge from Tony and Mabel Dodge Luhan. A young Robert Oppenheimer spent summers in a nearby cabin and returned often, later to build a device. Aldo and Estella, herself a former high school teacher, were well suited to the bohemian setting. They loved opera and the theater, joined literary salons, and read voraciously, and not only wildlife journals, but local history, novels, and poetry—a passion at least one of Leopold's superiors found peculiar, if not downright inappropriate, for a forester.[30]

The early twentieth century also witnessed the rise of mass tourism to the region, with Fred Harvey, in particular, marketing magnificent landscapes and equally exotic cultures to East Coast elites—and the Santa Fe Railway happy to sponsor the travel. It was a development not lost on Leopold who, for a brief time in 1917–18, worked at the Albuquerque Chamber of Commerce, where he imagined hospitality programs designed around the region's distinctive architecture, landscapes, civilizations, and arts.[31] Contributing to that appeal, and building on the late nineteenth-century research of John Wesley Powell and Frank Hamilton Cushing, linguists, archaeologists, and other researchers "discovered" Indian cultures. Alongside photographers like Edward Curtis, they helped ignite an explosion of academic and, later, popular interest in native customs, languages, arts and crafts, foods, ceremonies, and traditions.[32]

Most importantly, the fights over southwestern land and water that Leopold witnessed often affected tribal territory, and the disputes were as much cultural as geographical. The controversies would have been familiar to many people in the Southwest since, by Leopold's time in the region, land *was* the economy. Certainly senior foresters and other professionals staffing federal, state, and local resource agencies would

have monitored developments on native property. Moreover, as head of public relations for the entire district, churning out newsletters about local land issues, with an increasing nod to cultural subtexts, Leopold operated at the center of political, environmental, and spiritual conflicts over land, even though he did not as yet appreciate his role: "It did not occur to us that we, too, were the captains of an invasion too sure of its own righteousness."[33] Although years from the "intellectual humility"[34] that the Southwest's cultural heritage would one day bequeath him, Leopold could not have failed to recognize the clash of values embedded in the developments on Indian land, among them:

- in 1910, the collapse of a controversial dam that flooded Laguna Pueblo. The reservation, west of Albuquerque, is near Carson National Forest, where Leopold served as deputy supervisor;
- the creation of Yavapai-Apache reservations in central Arizona between 1910 and 1916. The reservations abut Prescott National Forest, where he conducted research;
- the establishment of Grand Canyon National Park in 1919, requiring the relocation of Havasupai Indians. Leopold worked on the park's first master plan in 1916, and, as eventual supervisor of Forest Service District 1, Grand Canyon fell within his jurisdiction;
- Indian agent John Collier's attempts throughout the 1920s to improve conditions on the reservations— for example, working to defeat the Bursum Bill, a transparent attempt to steal Pueblo land;
- the Chiricahua Apaches' return to the Southwest in 1913, nearly twenty years after their 1894 removal to Oklahoma;
- in Santa Fe, the signing of the 1922 Colorado River Compact, a document not overly concerned with Indian water rights;
- logging operations that began in 1923 on the Mescalero Apache reservation, another Indian community bordering Forest Service land;
- Carlos Montezuma's activism on behalf of Arizona tribes—speaking, lobbying, even starting his own newspaper in 1916—which earned him a reputation as a troublemaker among authorities;
- amendments to the 1887 Dawes Act through 1910, and implementation of the 1902 Newlands Act, continuing through the 1920s. Dawes tried unsuccessfully to turn Native Americans into Jefferson's property-owning yeoman farmers, while Newlands created massive irrigation projects in Arizona, New Mexico, and a dozen other western states, sometimes affecting Indian land;

- the escalation of sheep farming on Navajo land in the 1920s, leading to the notorious stock removal of the 1930s. Next door on Arizona's Kaibab Plateau, Leopold worked to stem another case of overgrazing—deer irruptions that turned disastrous in the mid-1920s. The result of a predator eradication policy, the deer crisis contested his agency's belief that wilderness could be manipulated, even intelligently, without consequence.

At their core, many of the disputes were defined by a cultural collision over the meaning of land—over concepts such as ownership, highest use, and ecological health. Like other government land administrators, Aldo Leopold studied, worked, and lived in "the age of engineers," as he labels it[35]—a Cartesian world of print and grids, a linear universe answerable to cause and effect, a society managed by overconfident experts. Southwest indigenous worldviews, by contrast, were oral accounts, obscure to outsiders, gifted instead of learned, holistic rather than causal, humble in nature's shadow. Early on, not surprisingly, Leopold's comments tend to reflect standard agency practice, viewing Native Americans as pilferers or obstacles to well-ordered landscapes: "The only hunting I've done this month is for Indians," he complains in a 1909 letter, but "the s-of-b's got away from us," ignoring the fact that until recently his federal forest was their home.[36] While developing the plan for Grand Canyon, he wonders in a 1915 memo, "Quite a question about how to handle the Supai Indians"—again, dismissing the tribe's historical and spiritual bond to the deep gorge and its river. A 1919 article for *Wild Life* magazine likewise rebukes "poaching Indians" who are "hard to catch," while a 1920 essay about fire in the forest dismisses the Paiutes' ecological wisdom.[37] The young man is, to be blunt, smug for his years.

However, always responsive to cultural impulses—in this case his wife's Hispanic roots, his growing familiarity with the Southwest's heritage, and his artistic and literary excursions, references to which weave their way through his letters, journals, essays, and reports—Leopold begins to speak a new language, one more open and accepting. "Maybe I realize slowly," he acknowledged at the time, "but I do not forget."[38] It *has* taken a while, but he will not forget, even after he leaves New Mexico. As Julianne Lutz Newton observes about his final years in the Southwest, cultural expressions, *the* point of divergence in many land-use disputes, eventually elbow their way into Leopold's thinking, taking precedence: "Once again, the desired end would determine the

necessary prescription for land use. And, once again, determining and bringing about that end would involve cultural as well as ecological insights."[39]

In the end, the intellectual and ethical odyssey that Newton and others trace was, among other things, an amalgamation of Leopold's scientific training at Yale; on-the-ground research with Forest Service colleagues; and extensive reading in science, philosophy, history, and literature—all wrapped in a Southwest heritage that was expressed at least partially through an indigenous outlook unwritten at the time, but discernible through its integration of land and culture. "The great American Southwest," writes Ted Jojola, "is a testament to how sustained human collective interaction has molded a landscape that is the embodiment of both human intervention and the natural ecosystem."[40] Leopold's journey will near its end with his acceptance and celebration of this bond between culture and land: "Culture is a state of awareness of the land's collective functioning."[41] But earlier, even while in Arizona and New Mexico, he had already begun to invoke the moral imperative that characterizes indigenous views about nature. In "Some Fundamentals of Conservation in the Southwest" (1923), Leopold introduces Ouspensky's "soul, or consciousness" in a section titled "Conservation as a Moral Issue," noting, "Philosophy, then, suggests one reason why we cannot destroy the earth with moral impunity."[42] Later, in "The River of the Mother of God" (1924), an essay rejected for publication, he opines "we are crushing the last remnants of something that ought to be preserved for the spiritual and physical welfare of future Americans."[43] Leopold has approached the conversation between the mountain and wolf, and now he, Estella, and the children leave for a very different environment in 1924.

In Wisconsin, home of his hero John Muir, Leopold's Southwest education was contextualized and reinforced in other ways—the result of a frustrating job, economic worries, the nation's Depression, ecological failures, looming wars, and, closer to home, a denuded landscape absent the indigenous voices Leopold had begun to listen to in the Southwest. By 1848, when it became a state, Wisconsin had rid itself of many original Indian territories—and most native forests as well—a correlation that does not escape Leopold: "Most of the original inhabitants have been run out of Wisconsin. This applies not only to Indians, but also to grasses, flowers, shrubs, and, in part, to trees."[44] In his new surroundings, where he would spend the next twenty-four years as a forestry administrator,

private consultant, and university professor, Aldo Leopold began to grasp what had been lost, biologically and culturally.

Of no small consequence was the Great Depression, which prompted a moment of anxious national reflection that was also felt in the Leopold home in Madison, where economic and ecological uncertainties intertwined. Less than a year before the 1929 stock market crash, Deputy Director Leopold left the Forest Products Laboratory, frustrated in both his professional and personal capacities. For the next five years, until he secured a position at the University of Wisconsin, he hung out his "consulting forester" shingle—hoping to provide for, during the Depression's darkest years, a large family, a new house, and a farm north of town.

At the same time, citizens began to doubt the principles that Leopold had questioned since his Southwest years. America's confidence in the scientific, political, and social certitude that Roosevelt, Pinchot, and other Progressives championed was subdued by the economic and agricultural catastrophes of the 1930s. Aldo Leopold was educated and trained under the Progressive banner, and his former employer, the U.S. Forest Service, was a poster child for the view that social ills could be remedied by university-trained experts, a cause the young forester from Iowa once applauded: "it is *Service* and glorious Service too," he wrote in a 1911 letter.[45] Two decades later in Wisconsin, Leopold sensed otherwise. The Southwest had chipped away at his confidence and now, by way of his nationwide research in particular, he had firsthand knowledge of many ecological problems, often engineered by "the experts."

Adding to Escudilla Mountain's wolf, Kaibab Plateau's deer, and other mini-epiphanies that pressed Leopold to question Pinchot's instrumentalism, scholars point to other key encounters that occurred after he left New Mexico but should be considered in light of his Southwest experiences. The Dust Bowl of the mid-1930s, for instance, tested Leopold's faith in technologically determined "clean farming," absent a moral compass. The drought, erosion, and vanished topsoil that shocked the nation's heartland he chalked up to the "economically unstable" industrialization of agriculture, saying simply but solidly "our tools are better than we are."[46] The Hopi, Leopold knew, had grown corn on an arid rock mesa in Arizona for centuries, while "modern" farming techniques had turned healthy Kansas soil to sand in a few decades.

A three-month trip to Germany in 1935, where Leopold saw well-managed hillsides but ultimately an artificial landscape—what he called "cubist" forestry[47]—left him feeling that perhaps ecologists trained solely

in the science of trees and dirt did not fully appreciate "land health," which he characterized in terms of natural diversity, not manicured monocultures. On that research expedition with other leading foresters, he also began to appreciate the connection between environmental policy and the greater good, forestry and democracy, the land community and the human community. Sitting in a Berlin hotel room, no doubt with brown shirts outside his window and equally regimented forests and "rivers confined in their straight-jackets" in the distance,[48] Leopold jotted on a hotel napkin: "One of the anomalies of modern ecology is that it is the creation of two groups each of which seems barely aware of the existence of the other. The one studies the human community. . . . The other studies the plant and animal community. . . . The inevitable fusion of these two lines of thought will, perhaps, constitute the outstanding advance of the present century."[49] At war's end, with Germany's forests and Oppenheimer's bomb (built near the family's old homestead) coloring his thoughts, a troubled Leopold feels the "inevitable fusion" has not been realized: "Science, as now decanted for public consumption, is mainly a race for power. Science has no respect for the land as a community or organism, no concept of man as a fellow passenger in the odyssey of evolution."[50]

Equally significant were hunting trips to northern Mexico in the mid-1930s, to land that had escaped the slide rule, surveyor's chain, and "cold-potato mathematics,"[51] but which nonetheless appeared healthier than the territories he had administered north of the border, challenging the Forest Service's entire approach: "It was here that I first clearly realized that land is an organism and that all my life I had seen only sick land, whereas here was a biota still in perfect aboriginal health."[52] Back in the Southwest, sitting at the Gavilan's edge, "when the campfire is low and the Pleiades have climbed over rimrocks,"[53] Leopold weighed this "perfect" wilderness in Sonora against the exhausted lands once in his custody. His federal "management" agency, after all, was only four years old when he arrived in Arizona, and it did not seem to be working too well: "The effort to control the health of the land has not been very successful."[54] As Leopold reflects in "Song of the Gavilan," possibly someone else, someone earlier, had had a better idea: "There once were men capable of inhabiting a river without disrupting the harmony of its life."[55]

Perhaps the most significant episodes occurred on his own land. In 1935, Leopold bought eighty sickly acres about fifty miles north of

Madison, the site of his celebrated Shack, where he, Estella, five children, and a memorable bird dog experimented with "working landscapes" until Aldo died at only sixty-one. The family's regular weekend trips to the Shack brought him into contact with other ranchers and farmers, and cultivating a conservation ethic among them and the general public became a chief cause. In effect, Leopold became an activist. He organized and directed game and ranching cooperatives, contributed a regular column to Wisconsin's wildlife magazine, spoke at civic events and served on many commissions, broadcast a weekly radio program (a recording of his voice is the Holy Grail of Leopold research), and was deeply embedded in environmental politics at both legislative and grassroots levels. He rightly perceived that more land is held in private hands than by public agencies, so if states and municipalities were to restore land health, something other than university programs and government incentives was needed, something that appealed to and enlisted the public's heart, not only its coin: "There must be some force behind conservation—more universal than profit. . . . I can see only one such force: a respect for land as an organism; a voluntary decency in land-use exercised by every citizen and land-owner out of a sense of love and obligation."[56] Never a religious man in the traditional sense, Leopold edges toward pantheism with his commitment to unearthing and applying this "sense of love and obligation"—a view that goes beyond the techniques of Husbandry 101 to a place that honors the ecological *and* ethical reciprocity linking all citizens of the land community.

What drew Leopold to that place? Other families owned farms, friends and relatives accompanied Aldo to Mexico, a handful of foresters joined him on the Germany trip, and nearly everyone during the Great Depression experienced or at least knew of the Dust Bowl. But they did not write "The Conservation Ethic" in 1933 or "The Farmer as Conservationist" in 1939, two pivotal essays that, in retrospect, bookend an important phase of Leopold's development, a fertile period during which he puts misplaced values on trial. The 1933 paper, major parts of which rematerialize in *A Sand County Almanac*, introduces a new theme, calling for philosophers to extend moral considerations beyond the human orbit: "There is as yet," Leopold complains, "no ethic dealing with man's relationship to land and to non-human animals and plants which grow upon it."[57] The later essay, in the wake of a tempest of topsoil in Oklahoma, anemic forests in Germany, and hundreds of dead trees at the Shack, makes a clean break with Pinchot: "Sometimes I think that ideas,

like men, can become dictators. . . . I doubt there exists today a more complete regimentation of the human mind than that accomplished by our self-imposed doctrine of ruthless utilitarianism."[58]

From where does this burgeoning awareness spring? What spurs the creative turning point of the 1930s? Searching for answers to the human-land conundrum throughout his career, Leopold regularly channels his thoughts and experiences through the forestry profession's research, to which he contributed not a little. Increasingly, as well, he invokes humanistic lenses: Eastern literature, transcendentalism, Russian mysticism, Western history, European philosophy, the arts and poetry. He is as inclined to quote Shakespeare as Darwin. Ultimately, Leopold reaches back to the cultural expressions of another place, another time. Particularly as he worked on *Game Management* and traveled widely inspecting forests, he began to reflect on the cultural topography of his first assignment, leading to, among others, "Virgin Southwest" (1933) and "Conservationist in Mexico" (1937). Later, while designing university courses, he draws upon his Southwest experiences for class exercises, such as one titled "Optional Problem for Students: Game Damage to Indian Agriculture."[59] In sum, the taxing and tumultuous 1930s, when more than a few Progressive Era certainties toppled, provided an opening for indigenous values to resurface, shaping and reinforcing Leopold's lessons from Elton, Muir, or Ouspensky, not to mention the Shack and other land episodes.

A noticeable outcome is that Leopold's later comments about Native Americans honor their values, the uncertain but essential realm to which the mature Leopold at last commits himself. For example, a 1943 essay, "Wildlife in American Culture," begins by celebrating the Indian's reverence for the buffalo—sustainer of both life and spirit.[60] Elsewhere, his final words seem tinged with regret for previously shutting down, rather than listening to, an entire culture: "This same landscape was 'developed' once before, but with quite different results. The Pueblo Indians settled the Southwest in pre-Columbian times, but they happened *not* to be equipped with range livestock. Their civilization expired, but not because their land expired."[61] A humbled and more amenable Leopold, his confidence in land-use policy shattered more than once, warms to the "hidden meaning" of the Arizona and New Mexico years. He at last joins the conversation on the mountain and accepts its "unfathomable" meaning, increasingly aware that the hillside is ordered by "unknown controls" too complex to manage.[62] Rather

than attempt to fix an impenetrable and unpredictable nature, Leopold senses he can and should learn from it, echoing Black Elk: "The buffalo is wise in many things, and thus, we should learn from him and always be a relative with him."[63]

Over time, the slow fusion within Leopold spawns a land ethic that is, in part, a western interpretation of Indian ecology, made understandable and palatable to a dominant culture steeped in progress, boosterism, and scientific certainty. Given the political and social realities of his time and place, it is unlikely Leopold could stand before the Madison Chamber of Commerce, Wisconsin governor, or the scientists he regularly addressed and declare, "We came from the earth . . . our mother," as did the Nez Perce prophet Toohoolhoolzote,[64] let alone describe a conversation between a mountain and a dead wolf. But that is what his land ethic proposes—a "community" in the civilizing and mystical sense of the word, venerated by indigenous cultures and framed by a new ecological understanding: "The land ethic simply enlarges the boundaries of the *community* to include soils, waters, plants, and animals, or collectively: the land."[65]

Leopold sought an "ethic" that was noticeably absent from Sinclair Lewis's Main Street, but whose roots he could trace to earlier cultures. While some may find his most enduring statement muddled, or critics may point out that Leopold's science was sometimes wrong, those reproofs overlook the case advanced by philosopher J. Baird Callicott, which is that the defining feature of the land ethic—that our relationship to nature must be based on something other than use—is not only valid but essential, perhaps even more so today.[66] It is a quality that follows directly from Native American views, where land was seldom valued as a commodity to be surveyed, fenced, or purchased.

V

While it is impossible to identify *the* Native American philosophy or attitude toward nature that defined Leopold's Southwest experiences, just as there is no single Euro-American view, we can point to a few common threads that weave their way through the tapestry of many aboriginal beliefs about the natural world, among them:

- reciprocity and respect define the bond between all members of the land family;

- reverence toward nature plays a critical role in religious ceremonies, hunting rituals, arts and crafts, agricultural techniques, and other day-to-day activities;
- one's relationship to the land is shaped by something other than economic profit;
- to speak of an individual owning land is anathema, not unlike owning another person, akin to slavery;
- each generation has a responsibility to leave a healthy world to future generations.

These are not Romantic myths, New Age manifestos, or fables of a prehistoric Noble Savage, as detractors may claim; nor do they suggest an idyllic fairly tale where Indians and fellow creatures harmoniously cavorted in a pristine garden before the Fall. The millions of people in the Americas before European contact used natural resources, built large cities, diverted waterways, exploited and slaughtered animals, exterminated species, warred with one another, transformed ecosystems with fire, and sometimes harmed the earth. Complicating interpretation, the continent was home to dozens of sovereign nations, most with multiple clans and villages; so to say all Indian people in all places followed the same ecological blueprint is a nonstarter.

Having said that, more than ten thousand years of history testifies that the prevailing standards shaping most indigenous relationships to the natural world were *restraint* and *reverence*—restraint because, as people close to the land, they understood and embraced their dependence on Earth's resources; reverence because all was a gift from the Creator, whose reincarnated universe meant animals, trees, and rocks were another "people." The Walpi spoke of snake, lizard, and water people; Diné farmers called maize "corn people," singing to each plant as they might nurture a child; and Lakota hunters blessed and gave thanks to the "buffalo people," who fulfilled their role in the chain of life by offering food, clothing, tools, and ornaments.

Considering their hunting skills, especially after they acquired the horse and rifle, American Indians probably *could* have wiped out the buffalo, but they didn't, an act of ecological restraint and spiritual reverence. Had they practiced farming more intensively on the Southwest's fragile lands, they *could* have destroyed their world, but most didn't. Historian Donald Hughes observes, "Indian technology was certainly capable of doing more damage to the environment than was actually done."[67] It

wasn't so much the tools that were or were not available to native people that determined ecological health; it was, instead, the wisdom to know what to do with the tools, a theme Leopold would adopt: "We end, I think, at what might be called the standard paradox of the twentieth century: our tools are better than we are, and grow better faster than we do. They suffice to crack the atom, to command the tides. But they do not suffice for the oldest task in human history: to live on a piece of land without spoiling it."[68]

Among indigenous belief systems which reflect this conviction, the Iroquois Confederacy constitution, an oral account more than five hundred years old first recorded in the nineteenth century, decrees that human actions should account for families seven generations beyond: "The thickness of your skin shall be seven spans. . . . Look and listen for the welfare of the whole people and have always in view not only the present but also the coming generations."[69] In effect, the Iroquois outline a vision for a sustainable world, and while "sustainability" today has become a trendy and sometimes hollow buzzword, it became a genuine theme for Leopold. Although he never uses the word, except when discussing the Forest Service's "sustained yield" policy, many of his comments express sustainable ambitions: "the responsibility of passing [land] on . . . not only to immediate posterity, but to the Unknown Future"; or, "It thus becomes a matter of some importance . . . that our dominion, once gained, be self-perpetuating, rather than self-destructive."[70] Rather than *sustainability,* Leopold is apt to use *harmony, reciprocity,* or, importantly, *stability* to express permanence: "The true problem," he says, "is to achieve both utility and beauty, and thus permanence."[71] Pinchot's utility + Muir's beauty = sustainability. If anyone understood that formula, Leopold comes to appreciate, it was the cultures who had lived in, worked on, and learned from the "hair-trigger" ecology of the Southwest.[72]

What indigenous values, then, eventually show up in Leopold's land ethic? I'll end with a ten-point outline of his account of the human-nature accord, the culmination of his intellectual and personal journey. Certainly other items could be added, a few points overlap, readers familiar with *A Sand County Almanac* and other writings may quibble with the terms, and I confess to cherry-picking quotes. Still, pairing Leopold's words with those from Native Americans, both early and modern voices, may begin to open up a conversation about the ways his views reflect indigenous thought. While the tones and textures of the passages may differ, the meaning does not.

1. **Land**: When he refers to the "land," Leopold means all of its parts.

   Leopold: "The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land."

   Intiwa: "The whole universe is enhanced with the same breath, rocks, trees, grass, earth, all animals, all men."[73]

2. **Structure**: Leopold maintains that humans are simply part of the drama, not outside of it in a dualistic pattern and certainly not at the top of a hierarchical system.

   Leopold: "In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it."

   Black Elk: "With all beings and all things we shall be as relatives."[74]

3. **Design**: Leopold suggests the ecosystem is not an inert, predictable mechanism, the calculable instrument Bacon and Descartes imagined, but a holistic yet chaotic energy force too complex and paradoxical to comprehend—the mystical "flux of nature" rather than the traditional "balance of nature."

   Leopold: "The ordinary citizen today assumes that science knows what makes the community clock tick; the scientist is equally sure that he does not. He knows that the biotic mechanism is so complex that its workings may never be fully understood."

   Linda Hogan: "Each piece fits and each life has its place, we learned from Darwin. As our knowledge has increased, that fitting has grown infinitely more complex and intricate. There is an integrity, a terrestrial intelligence at work. It's an intelligence far-reaching and beyond our comprehension."[75]

4. **Preservation**: Because of the land's diversity and complexity, and the billions of years of evolutionary commotion it took to form the land community, Leopold believes all of its parts are valuable and worthy of protection.

   Leopold: "The last word in ignorance is the man who says of an animal or plant: 'What good is it?' . . . [W]ho but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering."

Chief Seattle: "Every part of this soil is sacred in the estimation of my people. Every hillside, every valley, every plain and grove, has been hallowed by some fond memory or some sad experience of my tribe."[76]

5. **Responsibility**: Leopold recognizes that humans can affect the organism more than any other species, and therefore they occupy a position of both privilege and accountability.

   Leopold: "When I submit these thoughts to a printing press, I am helping cut down the woods. When I pour cream in my coffee, I am helping to drain a marsh for cows to graze, or to exterminate the birds of Brazil."

   Simon Ortiz: "Essentially, it is how you fit / into that space which is yourself, / how well and appropriately."[77]

6. **Love**: Our pact with nature should not be governed by the tools that defined the apex of civilization since the seventeenth century, namely science and economics. Leopold believes their exalted standing is part of the problem, and that instead humankind's link to land must be grounded as well in ethics, aesthetics, and reverence—redefining utility.

   Leopold: "It is inconceivable to me that an ethical relationship 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."

   D'Arcy McNickel: "We want the river to be strong, we sing to it, feed it deer meat—tell it that we love it—old men and children."[78]

7. **Character**: Our relationship to nature reflects and molds the American character—our identity and democratic principles. Leopold wrote essays such as "Land Use and Democracy," while other articles discuss hunting and husbandry as vital to democracy—a thesis made popular by his neighbor, historian Frederick Jackson Turner (who returned to Madison the year Leopold arrived, 1924).

   Leopold: "Shall we now exterminate this thing that made us Americans? . . . [M]any of the attributes most distinctive of America and Americans are the impress of the wilderness and the life that accompanied it."

N. Scott Momaday: "To [the Indian] the sense of place is paramount. Only in reference to the earth can he persist in his true identity."[79]

8. **Diversity**: The organism's resilience is a function of biotic diversity. A monoculture undermines land health and threatens sustainability.

   Leopold: "What, in the evolutionary history of this flowering earth, is most closely associated with stability? The answer to my mind, is clear: diversity."

   Black Elk: "I was seeing in a sacred manner the shapes of all things in the spirit, and shapes of all shapes as they must lie together like one being. And I saw that the sacred hoop of my people was one of many hoops that made one circle."[80]

9. **Instruction**: The land ethic must be properly cultivated. In schools and communities it will be realized when citizens develop a personal, not only professional, commitment to the land. Since ecology embodies interrelationships, its practice must be taught as something other than a menu of separate scientific courses or programs that are isolated from the broader land narrative.

   Leopold: "Much education seems deliberately to avoid ecological concepts. An understanding of ecology does not necessarily originate in courses bearing ecological labels; it is quite as likely to be labeled geography, agronomy, history, or economics."

   Vine Deloria Jr.: "When a world view is broken into its component disciplines, these disciplines become things unto themselves and life turns into an unrelated group of categories each with its own morality and ethics."[81]

10. **Purpose**: The land ethic encompasses more than forests, rivers, and wildlife; it is more than a tool to preserve resources and critters. It is, instead, a means to a greater social good. As Leopold saw in Germany, the way we treat the land speaks volumes about the way we treat one another.

    Leopold: "To change ideas about what land is for is to change ideas about what anything is for."

    Leslie Marmon Silko: "The snow-covered mountain remained, without regard to titles or ownership or the white ranchers who thought they possessed it. They logged the trees, they killed the deer, bear, and

> mountain lions, they built their fences high; but the mountain was far greater than any or all of these things. The mountain outdistanced their destruction, just as love had outdistanced death. The mountain could not be lost to them, because it was in their bones."[82]

The mountain was in their bones—"thinking like a mountain," imagining unfathomable meanings. Admittedly, as the native voices reveal, there is little new in Leopold's important line of thought. Ralph Waldo Emerson found similar views in Eastern literature, and when Henry David Thoreau or Mary Austin celebrate "Indian wisdom," they pay tribute to the same idea—an interrelatedness with nature that obliges humans to leave a livable world for civilizations to come.[83] To that time-honored ethic, then, Leopold skillfully adds ecology, which he calls "the outstanding scientific discovery of the twentieth century"[84]—updating and reconfirming systematically what Muir, Thoreau, and Native Americans revered morally and spiritually.

Like Thoreau, who died relatively unknown beyond his small Concord community, Aldo Leopold was not well known outside forestry and wildlife circles upon his death in 1948, and *A Sand County Almanac* sold only modestly when released a year later, eventually going out of print. Both men stood outside their time. Thoreau wrote as the Industrial Revolution was about to anoint technology a god, muting the Romantic voice and forever altering the landscape. Leopold's final thoughts were stifled by a post-WWII science and engineering mania and New Ecology scholarship, which favored rationalism over his "love, respect, and admiration."

Nonetheless, just as Aldo Leopold took decades to decipher and reapply indigenous values, a new generation, weary of economic and political convention, eventually grasped the largely unplumbed implications of his poetry, and ultimately, like Thoreau's *Walden*, Leopold's *A Sand County Almanac* emerged as one of the bibles of environmentalism, even though critics still complained that the author's ideas were naïve or his words were slippery and eluded direct application—charges leveled at Indian land ethics as well. But the criticisms miss the point: Leopold's book is a challenging inquiry, not a how-to manual; it is meant to question values, not prescribe rules. Wallace Stegner said it is "not a fact but a task," and Leopold himself writes that "nothing so important as an ethic is ever 'written.'"[85] His essays "adjust men and machines to the land," as he characterizes the essential challenge, where "adjustment" means a revolution of values, an insurgency led by love, care, commitment, and other actors who rarely appear in scientific literature: "No important change in

ethics," he writes, "was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions."[86]

For Aldo Leopold, "loyalties, affections, and convictions" stem from one's understanding and appreciation of the land's grand narrative in all its variants, an ethical development he considers integral to the human evolutionary process: "an affair of the mind as well as the heart."[87] The opening section of "The Land Ethic," whose account of Odysseus's slave girls illustrates how natural rights among humans have expanded, argues for a wider circle—a "sacred hoop" Paula Gunn Allen calls it, one that enfolds all citizens of the land community.[88] Other cultures, Leopold knew, lived within this hoop for millennia. To achieve that level of sympathy with the natural world, he suggests, requires moral and historical reflection: "We can be ethical only in relation to something we can see, feel, understand."[89] His convictions explain why "The Professor," as students affectionately dubbed Leopold, taught ecology as story: "I am trying to teach you," he told his classes, "that this alphabet of 'natural objects' (soils and rivers, birds and beasts) which he who runs may read—if he knows how."[90]

Native Americans held similar views, seeing the world, says Luther Standing Bear, "as a library and its books were the stones, leaves, grass, brooks."[91] Leopold often uses the same metaphor: "Thus, he who owns a veteran burr oak owns more than a tree. He owns a historical library, and a reserved seat in the theater of evolution"; or, "Any prairie farm can have a library of prairie plants."[92] The land narrative likewise encompasses and integrates the human chapter: "The woodlot is, in fact, a historical document which faithfully records your personal philosophy"; and, "The landscape of any farm is the owner's portrait of himself."[93] To appreciate that connection between nature and culture, land literacy, like reading the printed page, should be taught and instilled in all citizens:

> The ability to perceive these deeper meanings, and to appraise them critically, is the woodcraft of the future.
>
> To sum up, wildlife once fed us and shaped our culture. It still yields us pleasure for leisure hours, but we try to reap that pleasure by modern machinery and thus destroy part of its value. Reaping it by modern mentality would yield not only pleasure, but wisdom as well.[94]

Leopold sought that wisdom his whole life, in university classrooms, mountains and rivers, literature of all genres, a strong home life (Estella

was his preferred editor), civic engagement, and a place's culture. "But what of cultural values?" is a recurrent theme.[95] That Leopold increasingly privileged that question suggests he had embarked on the journey mapped by Paula Gunn Allen: "Western cultures lean more and more heavily on technological and scientific methods of maintenance, while traditional cultures such as those of American Indian tribes tend more toward mystical and philosophical methods."[96] It is a journey Leopold would describe but not live to read, as he suffered a fatal heart attack while fighting a grass fire near the Shack in 1948, just one week after learning his collection of essays had been accepted for publication. Aldo Leopold never saw his final words in print, nor did he have any idea how *A Sand County Almanac* would at last be regarded, selling millions of copies in a dozen languages, launching new university programs and conservation organizations, and encouraging countless admirers to pursue a career in land management.

One reason the book has endured is precisely *because* of the humanistic tendencies that publishers who expected a forester's "nature book" questioned: "We like less the subjective parts—that is, the philosophical parts which are less fresh," said Knopf's rejection letter.[97] In what turns out to be the book's most indispensable passages, the words editors doubted, Leopold admonishes our hubris and suggests that the achievements we take such pride in, specifically technological and economic advances, are fine things, but they are only tools that produce more tools: "We are remodeling Alhambra with a steam-shovel, and we are proud of our yardage."[98] Lamentably, says Leopold, steam shovels are simply a means to an end; they don't provide the insight that tells society *what* a desirable end *is*. The depressing result is a landscape shaped by means not ends, by tools not wisdom: "A stump was our symbol of progress."[99] To prevent that, Aldo Leopold counsels, we should listen to the mountain, to the wolf, to their partners in the soil. We have mentors long here. If we learn from them as well, and train our ecological ear just right, the land community may whisper, and we may hear, the "unfathomable" meaning:

> Then you may hear it—a vast pulsing harmony—its score inscribed on a thousand hills, its notes the lives and deaths of plants and animals, its rhythms spanning the seconds and the centuries.[100] ✣

Notes

1. Aldo Leopold to his mother, February 10, 1904, quoted in Curt Meine, *Aldo Leopold: His Life and Work* (Madison: University of Wisconsin Press, 1988), 35. Many of the biographical and historical details in this essays rely on Meine's account. Other biographical information derives from Susan L. Flader, *Thinking Like a Mountain: Aldo Leopold and the Evolution of an Ecological Attitude toward Deer, Wolves, and Forests* (Columbia: University of Missouri Press, 1974); Julianne Lutz Newton, *Aldo Leopold's Odyssey: Rediscovering the Author of* A Sand County Almanac (Washington, D.C.: Island Press, 2006); Marybeth Lorbiecki, *Aldo Leopold: A Fierce Green Fire* (Helena, Mont.: Falcon, 2005). Leopold's correspondence, Forest Service journals, personal notebooks, articles, and other reports and documents are housed at the University of Wisconsin, Aldo Leopold Archives. Most material is available online at <http://digicoll.library.wisc.edu/AldoLeopold>.

2. Aldo Leopold, *A Sand County Almanac and Sketches Here and There* (New York: Oxford University Press, 1949), 130.

3. Scholars have long discussed whether Leopold's wolf epiphany was based on an actual event or is an allegory he invented. A recently discovered letter at least places Leopold near the mountain in question, at the appropriate time, shooting a wolf. The letter to his parents is dated September 22, 1909, in which Leopold writes, "Wheatley [a fellow forest ranger] and I have killed 2 Timber Wolves and 2 Turkey." Curt Meine, Leopold's biographer, suggests the shooting took place on Sunday, September 19, as that was a day of rest for Forest Service rangers and the day they usually hunted (personal e-mail, July 17, 2009).

4. Leopold, *Sand County Almanac,* 204.

5. Leopold, *Game Management* (New York: Charles Scribner's Sons, 1933), 19.

6. Whether the Book of Genesis and Christianity in general sanction humankind's dominion over the land and its creatures is, of course, disputed, and Leopold himself argued that Christians should adopt the stewardship interpretation in Genesis. Regardless, many Americans of Leopold's time subscribed to the dominionist views criticized in Lynn White Jr.'s classic essay, "The Historical Roots of Our Ecological Crisis," *Science* (10 March 1967) 1203–7.

7. Susan L. Flader, *Thinking Like a Mountain: Aldo Leopold and the Evolution of an Ecological Attitude Toward Deer, Wolves, and Forests* (Columbia: University of Missouri Press, 1974), 5.

8. Two recent biographies of Pinchot and Muir question the standard conservation-preservation dichotomy. See Char Miller, *Gifford Pinchot and the Making of Modern Environmentalism* (Washington, D.C.: Island Press, 2001); and Donald Worster, *A Passion for Nature: The Life of John Muir* (New York: Oxford University Press, 2008).

9. Leopold, "The Popular Wilderness Fallacy: An Idea That Is Fast Exploding" (1918), in Susan L. Flader and J. Baird Callicott, eds., *The River of the Mother of God and Other Essays by Aldo Leopold* (Madison: University of Wisconsin Press, 1991), 50.

10. Leopold, *Sand County Almanac,* 207.

11. Leopold, "The Conservation Ethic" (1933), in Flader and Callicott, *River of the Mother of God,* 191.

12. Leopold, "Wherefore Wildlife Ecology?" (1947), in ibid., 337.

13. Leopold, *Game Management,* 422.

14. Leopold, Forest Service diary, April 20, 1913: ". . . dark—could not find agency—stayed with an Indian."

15. Leopold, letter, Nov. 30, 1909.

16. William Least Heat Moon, *Blue Highways: A Journey into America* (New York: Ballantine Books, 1982), 136.

17. Leopold to his mother, Oct. 4 and Oct. 7, 1909.

18. Among deconstructions of Turner's thesis, see Patricia N. Limerick, "The Adventures of the Frontier in the Twentieth Century," in *Something in the Soil: Legacies and Reckonings in the New West* (New York: W. W. Norton, 2002), 74–92.

19. Wallace Stegner, *The Sound of Mountain Water* (Lincoln: University of Nebraska Press, 1985), 101.

20. Stegner to Bernard Johnston, Oct. 27, 1992.

21. Stegner, *One Nation* (Boston: Houghton Mifflin, 1945), 5.

22. Michael Dorris, *Daedalus,* quoted in Stephen Trimble, *The People: Indians of the American Southwest* (Santa Fe: School of American Research Press, 1993), 433.

23. Leopold, "Origins and Ideals of Wilderness Areas" (1940), in Curt Meine and Richard L. Knight, *The Essential Aldo Leopold* (Madison: University of Wisconsin, 1999), 111. Leopold writes, "in the Mexican mountains the whole biota is intact with the single exception of the Apache Indian, who is, I fear, extinct."

24. Ted Steinberg, *Down to Earth: Nature's Role in American History* (New York: Oxford University Press, 2002), 27: "Even assuming that a million people inhabited the continent—an implausibly low number—some two-thirds of them were gone after four centuries of European contact. The higher initial population figures, which seem more likely, yield a rate of attrition between 95 and 99 percent, one of the most dramatic population reductions in the history of the world." The pre-contact population debate is recently outlined in Charles C. Mann, *1491: New Revelations of the Americas before Columbus* (New York: Vintage Books, 2005), see especially pp. 102–6.

25. Curt Meine, "Aldo Leopold's Early Years," in J. Baird Callicott, ed. *Companion to* A Sand County Almanac (Madison: University of Wisconsin Press, 1987), 31.

26. Leopold, "Conservation in the Southwest" (1923), in Flader and Callicott, *River of the Mother of God,* 96.

27. Roderick Nash, "Aldo Leopold's Intellectual Heritage," in Callicott, *Companion,* 64.

28. A pioneering conference held in Albuquerque, New Mexico, Feb. 13–14, 2009, encouraged researchers to bring more cultural perspectives to bear on Leopold's life and work. For archival information about "A Cultural Conversa-

tion: Aldo Leopold, the Southwest, and the Evolution of a Land Ethic for the Future," see <https://www.aldoleopold.org/southwest>.

29. Leopold to his mother, quoted in Meine, *Aldo Leopold: His Life and Work,* 106.

30. In one evaluation report, Evan Kelley makes fun of Leopold's wide reading habits: "if a ranger reads a thesis on mythology (?) he would develop imagination to assist him in his daily work." Quoted in Meine, *Aldo Leopold: His Life and Work,* 191.

31. Leopold, "A Criticism of Booster Spirit" (1923), in Flader and Callicott, *River of the Mother of God,* 98–105. Throughout his career, Leopold's essays are replete with references to tourism; he clearly was attuned to the selling of native lands and cultures.

32. For more about the ways tourism and culture coalesced in the early twentieth-century Southwest, see Hal Rothman, ed., *The Culture of Tourism, the Tourism of Culture: Selling the Past to the Present in the American Southwest* (Albuquerque: University of New Mexico Press, 2003).

33. Leopold, *Sand County Almanac,* 137.

34. Ibid., 200.

35. Leopold, "The Farmer as Conservationist" (1939), in J. Baird Callicott and Eric T. Freyfogle, eds., *For the Health of the Land* (Washington, D.C.: Island Press, 1999), 164.

36. Leopold letter, Nov. 11, 1909.

37. Leopold diary, 1914–15; Leopold, "A Turkey Hunt in the Datil National Forests," in David E. Brown and Neil B. Carmony, eds., *Aldo Leopold's Southwest* (Albuquerque: University of New Mexico Press, 1995), 49; Leopold, "Piute Forestry vs. Forest Fire Prevention" (1920), in Flader and Callicott, *River of the Mother of God,* 68–70.

38. Leopold letter, Jan. 13, 1909.

39. Newton, *Aldo Leopold's Odyssey,* 75.

40. Ted Jojola, "Notes on Identity, Time, Place and Space," in Anne Waters, ed., *American Indian Thought* (Hoboken, N.J.: Wiley-Blackwell, 2004), 89.

41. Leopold, "Land Use and Democracy" (1942), in Flader and Callicott, *River of the Mother of God,* 300.

42. Leopold, "Some Fundamentals of Conservation in the Southwest" (1923), in Flader and Callicott, *River of the Mother of God,* 94–95.

43. Leopold, "The River of the Mother of God" (1924), in Flader and Callicott, *River of the Mother of God,* 127.

44. Leopold, "The Farm Arboretum" (1940), in Callicott and Freyfogle, *For the Health of the Land,* 124.

45. Leopold, letter, Jan. 13, 1911.

46. Leopold, "The Outlook for Farm Wildlife" (1945), in Flader and Callicott, *River of the Mother of God,* 326; Leopold, "Engineering and Conservation" (1938), in Ibid., 254.

47. Leopold, "Wilderness" (1935), in ibid., 227.

48. Leopold, "Naturschutz in Germany" (1936), quoted in Meine, *Aldo Leopold: His Life and Work,* 358.

49. Leopold, "Wilderness" (undated and unpublished), quoted in ibid., 360.

50. Leopold, "On a Monument to the Pigeon" (1946), quoted in ibid., 483. This version is somewhat different than what appears in the essay "On a Monument to the Passenger Pigeon" that later appears in *A Sand County Almanac.*

51. Leopold, *Sand County Almanac,* 22.

52. Leopold, "Original Foreword to *A Sand County Almanac*," in Callicott, *Companion,* 285-86.

53. Leopold, *Sand County Almanac,* 149.

54. Ibid., 194.

55. Ibid., 150.

56. Leopold, "The Meaning of Conservation," in Meine and Knight, *Essential Aldo Leopold,* 309. In his essay "The Farmer as Conservationist" (1939), Leopold comments on the need for something other than government or university programs: "Subsidies and propaganda may evoke the farmer's acquiescence, but only enthusiasm and affection will evoke his skill." In Callicott and Freyfogle, *For the Health of the Land,* 165.

57. Leopold, "The Conservation Ethic" (1933), in Flader and Callicott, *River of the Mother of God,* 182.

58. Leopold, "The Farmer as Conservationist" (1939), in ibid., 259.

59. A letter Leopold sent to Professor Bryon Cummings at the University Arizona, dated September 28, 1936, requesting information about a class exercise clearly suggests he had studied ancient agricultural practices: "Before issuing this sheet to my students, I would appreciate your verification of the list of crop plants which these Indians probably had. I would especially like your opinion as to whether they had potatoes. It is hard for me to see how any of the other crop plants could have escaped the depredations of game. Possibly the problem which I propound on this sheet has already been worked out by an archaeologist. I do not see, however, how any valid solution could be worked out without an extensive knowledge of the food habits of the game species present."

60. Leopold, "Wildlife in American Culture," reprinted in *Sand County Almanac,* 177.

61. Leopold, *Sand County Almanac,* 206–7.

62. Leopold, "The Outlook for Farm Wildlife" (1945), in Flader and Callicott, *River of the Mother of God,* 326.

63. Black Elk, *The Sacred Pipe: Black Elk's Account of the Seven Rites of the Oglala Sioux,* ed. Joseph Epes Brown (New York: Ballantine Books, 1971), 72.

64. Dee Brown, *Bury My Heart at Wounded Knee: An Indian History of the American West* (New York: Henry Holt, 1970), 320–21.

65. Leopold, *Sand County Almanac,* 204 (emphasis added).

66. J. Baird Callicott, "Elements of an Environmental Ethic," in *In Defense of the Land Ethic* (Albany: State University of New York Press, 1989), 64. For more on Leopold's critics and Callicott's reply, see J. Baird Callicott, "The Conceptual Foundations of the Land Ethic," in Callicott, *Companion,* 286–317.

67. Donald J. Hughes, *North American Indian Ecology*, 2nd ed. (El Paso: Texas Western Press, 1983), 98.

68. Leopold, "Engineering and Conservation" (1938), in Flader and Callicott, *River of the Mother of God,* 254.

69. Felix Cohen, David E. Wilkins, and Lindsay G. Robertson, *On the Drafting of Tribal Constitutions* (Norman: University of Oklahoma Press, 2007), 96–97.

70. Leopold, "The Conservation Ethic" (1933), in Flader and Callicott, *River of the Mother of God,* 183.

71. Leopold, "The Land-Health Concept and Conservation" (1946), in Callicott and Freyfogle, *For the Health of the Land,* 225.

72. Leopold, "The Conservation Ethic" (1933), in Flader and Callicott, *River of the Mother of God,* 184.

73. Leopold, *Sand County Almanac,* 204; Elsie Clews Parsons, *Pueblo Indian Religion* (Chicago: University of Chicago Press, 1939), 198.

74. Leopold, *Sand County Almanac* 204; Black Elk, *Sacred Pipe,* 105.

75. Leopold, *Sand County Almanac,* 205; Linda Hogan, *Dwellings: A Spiritual History of the Living World* (New York: Touchstone, 1995), 95.

76. Leopold, "Round River," in *A Sand County Almanac with Essays on Conservation from Round River* (New York: Ballantine Books, 1966), 190; Chief Seattle, quoted in Hughes, *North American Indian Ecology,* 11.

77. Leopold. "Game and Wild Life Conservation" (1932), in Flader and Callicott, *River of the Mother of God,* 165; Simon Ortiz, *Woven Stone* (Tucson: University of Arizona Press, 1992), 129.

78. Leopold, *Sand County Almanac,* 223; D'Arcy McNickel, quoted in Roger Dunsmore, *Earth's Mind* (Albuquerque: University of New Mexico Press, 1997), 58.

79. Leopold, "Wilderness as a Form of Land Use" (1925), in Flader and Callicott, *River of the Mother of God,* 137–38; N. Scott Momaday, "I Am Alive," in *The World of the American Indian* (Washington, D.C.: National Geographic Society, 1974), 14.

80. Leopold, "Biotic Land-Use" (1942), in Callicott and Freyfogle, *For the Health of the Land,* 203; Black Elk, quoted in Hughes, *North American Indian Ecology,* 84–85

81. Leopold, *Sand County Almanac,* 224; Vine Deloria Jr., *Custer Died for Your Sins: An Indian Manifesto* (New York: Avon Books, 1960), 108.

82. Leopold, "The State of the Profession" (1940), in Flader and Callicott, *River of the Mother of God,* 280; Leslie Silko, *Ceremony* (New York: Penguin Books, 1977), 229–30.

83. Henry David Thoreau, "Natural History," quoted in Max Oelschlaeger, *The Idea of Wilderness* (New Haven: Yale University Press, 1991), 139; Mary Austin, *The Land of Little Rain* (New York: Modern Library, 2003), 70. Upon meeting a Paiute basket maker, Austin describes her wisdom as "things to be learned in life not set down in any books."

84. Leopold, "Round River," in *A Sand County Almanac with Essays on Conservation,* 190.

85. Wallace Stegner, "The Legacy of Aldo Leopold," in Callicott, *Companion,* 245; Leopold, *Sand County Almanac,* 225.

86. Leopold, "The Conservation Ethic" (1933), in Flader and Callicott, *River of the Mother of God,* 188; Leopold, *Sand County Almanac,* 209–10.

87. Leopold, "The Ecological Conscience" (1947), in Flader and Callicott, *River of the Mother of God,* 343.

88. Paula Gunn Allen, "The Sacred Hoop: A Contemporary Perspective," in Cheryll Glotfelty and Harold Fromm, eds., *The Ecocriticism Reader: Landmarks in Literary Ecology* (Athens: University of Georgia Press, 1996), 241–63.

89. Leopold, *Sand County Almanac,* 214.

90. Leopold, "Wherefore Wildlife Ecology?" (1947), in Flader and Callicott, *River of the Mother of God,* 337.

91. Luther Standing Bear, *Land of the Spotted Eagle* (Lincoln: University of Nebraska Press, 1978), 194.

92. Leopold, "Burr Oak: Badge of Wisconsin" (1941), in Callicott and Freyfogle, *For the Health of the Land,* 112; Leopold, "Roadside Prairies" (1941), in ibid., 138.

93. Lorbiecki, *Aldo Leopold: A Fierce Green Fire,* 124; Leopold, "The Farmer as Conservationist" (1939), in Callicott and Freyfogle, *For the Health of the Land,* 172.

94. Leopold, *Sand County Almanac,* 187.

95. Ibid., 180.

96. Allen, "Sacred Hoop," 258.

97. Dennis Ribbens, "The Making of *A Sand County Almanac,*" in Callicott, *Companion,* 102.

98. Leopold, *Sand County Almanac,* 226.

99. Leopold, "The Popular Wilderness Fallacy: The Idea That Is Fast Exploding" (1918), in Flader and Callicott, *River of the Mother of God,* 49.

100. Leopold, *Sand County Almanac,* 149.