The Land Makes the Man: New Mexico's Influence on the Conservationist Aldo Leopold

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Nearly ninety years ago, the forest lands of the Southwest had a frontier flavor—cowboys and grizzlies, bucking broncos, and long expanses of roadless terrain. It was exactly what a young graduate of the Yale Forest School was seeking when he asked to be assigned to the U.S. Forest Service’s District 3 in the Arizona and New Mexico territories. That new forester, aflame with the “fervor of a sawdust evangelist,” was Aldo Leopold; a man destined to become one of America’s most significant conservationists, author of the country’s first game policy, initiator of the professional field of wildlife management, “father” of the national forest wilderness system, and one of the first restoration ecologists.

In the crucible of New Mexico’s cultures and arid landscapes, the gloss of Leopold’s eastern education burned away. He progressed from a man trained to protect and develop forest resources for “wise use” to one pondering whether the world was “made for man’s use, or [if] man merely [had] the privilege of temporarily possessing an earth made for other and inscrutable purposes?” Within Leopold, an inspired vision of science and ethics began to meld. By the time he left the Southwest in 1924, his passion was no longer fueled by timber harvests but by preserved wilderness and forest health. The fruits of these philosophical meanderings would eventually reach fruition in his ever-popular, often quoted book: *A Sand County Almanac*: “When we begin to see land as a community to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanized man. . . .”

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Leopold was born in the cradle of the nation’s heartland—the Mississippi River Valley—in Burlington, Iowa, in 1887. The lands he knew were blanketed by deciduous trees and prairie weaves, dotted with potholes and ponds, sewn together by rivers and creeks. Along these gushing streams, young Aldo trailed after songbirds and lay in wait for descending ducks.

Later, he traded midwestern woodlands for those of the East, studying the mechanics of mapping, lumbering, surveying, timber management, plant morphology, silviculture, and other scientific ways of evaluating and manipulating a stand of trees at Yale. These courses, bold and innovative for their time, had been imported from French and German models of utilitarian forestry by Gifford Pinchot, the first chief of the U.S. Forest Service. His goal was to grow trees like a crop to improve the productivity of the nation’s public forests in order to provide “the greatest good for the greatest number in the long run.”

The duties for which the young Leopold aspired were outlined in the National Forest Act of 1897 and in the foresters’ manual: “1. To improve and protect the forest. 2. To secure favorable conditions of water flows. 3. To furnish a continuous supply of timber.”

Pinchot’s science and Leopold’s fieldwork in the East were based on forests of northern climates where most of the woodlands had already cycled through clearcuttings and replantings, either natural or artificial, and retained some fertility. No large, wild, difficult-to-reach expanses remained. The lands were parceled out and speckled with small towns and occasional metropolitan centers. Wildlife populations had so dwindled that many people acknowledged that hunting limits were necessary to maintain remaining game populations. Some hunting controls had already been established, and some sporting groups, such as the Izaak Walton League and the Boone and Crockett Club, had taken on the responsibilities of conservation.

When in 1909 Leopold arrived by stagecoach to the Apache National Forest headquarters in Springerville, Arizona Territory, he entered the Southwest where the land seemed too vast, too rigid, too arid, and too mountainous for foot travel; the majority of roads too rough for wagons. Those travelers who wanted to “top out” in the mountains mounted their steeds, armored in ten-gallon hats, chaps, and boots, with six-shooters at their sides. Leopold was no exception.

Within days of his arrival, Forest Assistant Leopold selected his first mount, named Jiminy Hicks, to be followed by a succession of feisty, lean horses, including Pache, Bluedog, Red Buck, and Polly. Leopold longed for the life of a real vaquero, so he took roping lessons and swaggered around like the cowboys of the area’s big cattle companies. Leopold wrote, “I conceived a large enthusiasm for the free life of the cow country, and I admired the mounted cowmen, many of whom were my friends.”
As much as Leopold enjoyed the cowboy culture, it was the land that mesmerized him. He wrote in an early poem:

Have you topped the world at Salt House
with the mesas spread below you
A full hundred miles of daisies,
yellow islands in a sea;
Dark blue deeps of threading canyons,
dim blue reach of far-off valley?
Ho, the Salt House Trail in autumn,
it is calling yet to me.⁹

Within the diverse landscape of the White Mountains and Blue Range, trout streams ran clear and full, and an abundance of big game roamed. In a letter to his father, Leopold tried to entice him to visit: “This here Blue Range is full of bear, which come out of their holes and snoop about in Spring. And this here Black River is full of Trout—big ones—which smell good in a pan at the same season.”¹⁰ In less than a month after his arrival at the Apache National Forest, Leopold was looking for a way to establish a game refuge on the Blue River.

Up to this point, the U.S. Forest Service took a laissez-faire attitude toward the wildlife within its woodland sanctuaries (of course, some individuals within its ranks, such as Leopold, did not). The Service would assist state departments in enforcing their game laws, but only if an individual forester was so inclined. Leopold’s supervisor, John D. Guthrie, approved of his assistant’s innovative refuge project. Yet, since it was unprecedented and potentially controversial, timber sales, triangulation, grazing disputes, and sowing spruce seed took precedence.

Had Leopold been more astute in his surveying, his Blue Range refuge might have become a reality. Instead, he wasted many months assessing and correcting baseline calculations for a reconnaissance of the Blue Valley. Fighting forest fires and proving himself on another reconnaissance trip took up more time. He was then transferred before he could make his refuge a reality. But not before he committed another, more haunting, mistake.

At that time, the going philosophy among many people of the Southwest was “the only good predator was a dead one.”¹¹ Predators, such as grizzlies, cougars, and wolves were considered a menace to game and livestock. On that first, ill-fated reconnaissance trip, Leopold spotted a mother wolf with pups and sprayed them with buckshot, a mistake that haunted him, and which he described nearly forty years later in his _Almanac:_

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¹⁰ Leopold, _Almanac_ 3: 107, 1932.
¹¹ Leopold, _Almanac_ 3: 107, 1932.
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 a hunters’ paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

In 1909, however, Leopold “sensed only a vague uneasiness about the ethics of this action”—it did not dissuade him from further predator control. When writing his first foreword to the Almanac, he admitted he “helped to extirpate the grizzly from the Southwest, and thus played the role of accessory in an ecological murder,” and that he “was able to rationalize the extermination of the wolf by calling it deer management.”

When Leopold was transferred in 1911 to the Carson National Forest in northern New Mexico, he encountered a far tamer Southwest in terms of landscape yet a far more aggressive one in terms of people. Large cattle companies and sheeprers’ associations had overgrazed the Carson Range, and they were in active in the ongoing contention between each other and the Forest Service concerning grazing rights. As the new assistant and then supervisor of the Carson, Leopold felt his duties “entailed the inauguration of conservative grazing methods on a million acres of sheep range used by hundreds of not-very-peaceful Spanish-Americans and Indians.” Yet this did not deter Leopold from the enormity of his task. He stated boldly, “By God, the Individual Allotment and every other reform we have promised is going to stick—if it takes a six-shooter to do it.”

Unfortunately, the long-term, abusive grazing practices had already wreaked its damage. Enormous gullies scissored the landscape, and areas that once had been forest were transforming into desert. All this change had affected wildlife populations. “There is practically no game in this country,” he complained to his father. “Of course the sheep have run out the deer; there are few turkeys, and I saw one place with bear-sign. Two elk were seen here two years ago.” This environment, deprived of the game he dearly loved, emboldened Leopold to carry out his self-proclaimed mission—to apply the same scientific principles he used in forest management to the service of game protection.

While working with the Forest Service in New Mexico, Leopold fell in love with Maria Alvira Estela Bergere, known as Estella, one New Mexico’s most prominent daughters of the Luna/Otero sheeping empire. In many ways, Estella personified the Southwest he loved: a woman of beauty, color, graciousness, culture, music, and family history rooted in the land.
Aldo married Estella in 1912, and throughout the rest of his life she became due-North for him, the magnetic pole with which he guided the course of his energies. In one of his love letters to her later in life, he wrote, "Sometimes, Sweetheart, when I think of everything, I am just thankful, and when I have you in my arms again, I can’t think of anything else or more that the world could give me."\textsuperscript{18}

Aldo and Estella’s life together began smoothly, but before the end of the honeymoon year, Leopold suffered an attack of nephritis (resulting in a failure of his kidneys) that nearly killed him. Almost a year and half of rest was necessary for recovery. Leopold read, contemplated, and strategized. In the fall of 1914, he rejoined the Forest Service in the Office of Grazing. It was the antipathy of his desires. While Leopold wanted to decrease grazing to increase wildlife, the office supervisor was pushing for more revenue from grazing permits.

On 15 January 1915, Leopold took a stand for his ambitions in game management. He delivered a memo to District Supervisor Arthur Ringland on how to restore game to District 3, proposing that forest rangers should be paid for their time protecting and managing game animals within the national forests.\textsuperscript{19} Ringland heartily approved of the proposal, but Leon Kneipp, the representative from the Forest Service’s Washington, D.C. administration, did not. Kneipp felt that it expanded the definition of the forester too far.
Figure 2: Deputy Supervisor Leopold at Carson National Forest. Courtesy University of Wisconsin Archives, negative no. x25 1266.
Leopold did not give up, nor did Ringland. He transferred Leopold from the Office of Grazing to a newly created job in public relations. There Leopold could invest his energies in promoting a new forest "product"—recreation—and under these auspices concentrate on his fish and game protection efforts.

His first assignment was the Grand Canyon, which at the time was a national monument overseen by the Forest Service. At the time, the sight was dismaying to say the least. Set against the canyon’s majesty, tourist hawkers megaphoned their calls, lights on billboards speckled the dusk, untreated wastes and uncollected trash putrefied the winds; all were a lesson in what public appreciation can do to a scenic area without visionary planning. It was Leopold’s job, with Forest Supervisor Don P. Johnston, to create a recreational blueprint to preserve the park’s beauty while encouraging visitors to tour it. Over the next two years, Johnston and Leopold (with input from others) developed the first comprehensive management plan for one of the Southwest’s most famous treasures.

After this canyon tour of duty, Leopold returned to his original priority, game management. He developed the Forest Service’s first *Game and Fish Handbook*. Much more, though, was needed—most specifically, the political will to set up effective state systems for game laws and enforcement. Obviously, Leopold couldn’t tackle this alone. Ordinary citizens would have to get involved, and game protection was not easily promoted. Leopold had already noted in a ranger meeting at the Apache National Forest that “This is a new country and it takes time to get the people to see the benefit of game laws.”20 And these ordinary citizens were not “ordinary” according to any eastern or midwestern standards. They were as diverse as the southwestern landscape: ranchers, herders, businessmen, professionals, farmers, and laborers of all different ethnic backgrounds. Some of their families had lived in these lands for more than a century or two as Spanish colonists, or as Mexican citizens, or as free Apache or Navajo. Others were relative newcomers, immigrating to escape problems from the Civil War and its aftermath, or coming over from Texas and lands east of the Mississippi because they were simply looking for more room and freedom. All were resistant to any legal or governmental interference.

Though Leopold thrived in this diverse ethnic environment, he often took a “cowboy-like” stance toward the Native Americans he considered poachers because they still hunted for subsistence. After describing a typical chase to catch a “meat hunter,” (whom he held about on par with the market game hog), Leopold remarked, “Let he who thinks he is a pretty good hand in the woods try to catch an Indian.”21

Despite the difficulties and complexities of his audience, Leopold barnstormed throughout the Southwest in the latter half of 1915, with letters and speeches urging sportsmen to organize game-protection societies to maintain and enrich the Southwest's wildlife populations.
Through his charismatic presence and persuasion, he convinced these independent-minded men of the benefits to themselves in conservation. Leopold was elected secretary of the new Albuquerque Game Protective Association in October 1915, and, in a domino effect, Taos and Magdalena soon followed Albuquerque's lead.

In southern New Mexico, Miles W. Burford had plowed the field already. Burford had organized the hunters and fishers of Silver City into the Sportsmen's Association a year earlier. By combining their energies, Leopold and Burford spearheaded the creation of the New Mexico Game Protective Association (NMGPA) in March 1916, uniting the numerous societies that had sprung up across the state. Burford served as president and Leopold as secretary in charge of "educational and publicity work." Leopold wrote public relations and information pieces, and edited and wrote for The Pine Cone (not to be confused with The Carson Pine Cone, an earlier newsletter initiated by Leopold), a quarterly NMGPA bulletin that disseminated scientific news on game trends, articles on game law enforcement, proposals for game refuges, and opinion essays.

In 1917, the Permanent Wild Life Protection Fund awarded Leopold and the NMGPA a gold medal for their work to preserve wild species. This was indeed a notable award since it came from a highly visible preservationist society that did not believe in hunting. In his acceptance speech, Leopold described the mission to which he had hitched his star:

To restore to every citizen his inalienable right to know and love the wild things of his native land . . . to educate the moral nature of each and every one of New Mexico's half million citizens to look upon our beneficial birds and animals, not as so much gunfodder to satisfy his instinctive love of killing, but as irreplaceable works of art, done in life by the Great Artist.

Diversity, in both game and non-game species (including songbirds, but not predators) was a priority. To these ambitious ends, the NMGPA had put forth a three-pronged agenda: to establish and enforce hunting laws; to establish game refuges (on both the state and national levels); and to control predators. Leopold urged members to push policymakers and foresters beyond considering game preservation as a "cause" into that of a "science."

In an article titled "Forestry and Game Conservation," published in the Journal of Forestry in 1918, Leopold advised his colleagues that, "the American people have already answered, in a vigorous affirmative,
the question of whether our game shall be conserved . . . The time has come for science to take the floor, prepared to cope with the situation.28 He outlined his case in specific forestry terms, comparing stand estimates to game census, type maps to game distribution maps, annual cut to annual kill, and growing stock with breeding stock.29

Two years later, Leopold followed with an even more innovative, significant contribution to the discussion, and to the emerging scientific field of wildlife management. He proposed in the Journal of Forestry that the formula foresters used to estimate the productive capacity of grazing stock be applied to wildlife populations. Once an accurate census is made and the breeding capacity predicted, Leopold theorized, a sustainable percentage, or kill factor, could be deduced for the annual harvest. The kill factor would have “a different value for each species and each locality. It automatically takes into account all normal factors bearing on the productive capacity of the herd, such as secret, illegal killing, predatory animals, cripples, starvation, and disease.”30

Clearly, Leopold had learned some key lessons in game management from the land of the Southwest. Formulas derived on eastern woodlots or game populations could not be applied without exacting customization to the Southwest and each locality and species within it. And all formulas would have to somehow take into account the various sanctioned and unsanctioned interactions of other species, both human and non. To test his theory, Leopold required much more information. Thus began his in–depth scientific research into game–management principles. His first experimental “sample plot” for blacktail deer was set up in what is now known as the Cibola National Forest.31

With war in Europe, however, in 1918 the Forest Service had neither the manpower nor the political will to devote to game management. Leopold resigned from the Forest Service to serve as the secretary of Albuquerque’s newly organized Chamber of Commerce. He thought he would have more time for game management, but instead he had less. Enough momentum, though, had built up in the NMGPA that it no longer needed him operating the bellows daily, although he maintained active leadership.

The wildlife conservation legacy Leopold helped build in the state prospered and endured. Over the years, the NMGPA evolved into the New Mexico Wildlife Conservation Association and then into its present configuration, the New Mexico Wildlife Federation. The NMGPA and its descendants can boast that they helped create the state conservation department and pull it out of the political boxing ring, establish the state’s wildlife refuge system, preserve the state populations of antelope, deer, elk, trout, and turkey, among other species, and restore various types of degraded habitats. Probably one of the more telling recent achievements is that the organization has expanded from being composed solely of hunters and fishers to a group also attracting moderate environmen-
During Leopold's short stint in the Chamber of Commerce, he went through numerous projects of merit, some having a lasting effect on Albuquerque. As was his custom, he immediately began a public relations newsletter called *Forward Albuquerque*. Its masthead intoned: "A Chamber of Commerce is a Chamber of Citizenship. Its Primary Function is to MAKE THE PUBLIC THINK." With it, he promoted his pet projects, the most notable being the draining of the Rio Grande Valley for agriculture (which marks the first inkling of the Middle Rio Grande Conservancy [MRGC]), the hiring of a city planner to design the Civic Plaza around which all significant public buildings would be built in Spanish/Indian architecture, and a system of parks and playgrounds that would "be within walking distance of every home in town." Finally, he envisioned the creation of a crowning city park along the Rio Grande from Central Avenue south to the Barelas Bridge.

The valley was eventually drained (which, as a land management technique, Leopold later reconsidered), but a city planner was not hired until a decade later, delaying the construction of Civic Plaza and the system of neighborhood parks. At least thirteen tracts, totaling thirty-seven acres, were given over in response to Leopold's call for land donations for the main city park. Leopold solicited five more and planned the construction of a small lake "to complete the largest city playground between Denver and the coast."

Not all the lands were donated in the end, but the Rio Grande City Park did emerge, complete with lake, tennis courts, swimming pool, zoo, and the Barelas community center. The park now sits sandwiched between the Albuquerque Country Club to the north and the Barelas neighborhoods to the south. Ironically, many of the park's features that Leopold proposed are named after Clyde Tingley—a well-known contemporary who became mayor in the late 1920s, and then governor, and eventually a congressman. As Tingley gained political clout, he garnered the public approval necessary to complete some of the project's plans in the years after Leopold left the state.

The Rio Grande City Park may not be Leopold's only green bequeathal to the city. Much of the land that composes the Rio Grande Valley State Park, which lines the northern reaches of the city's stretch of the river, are actually owned by the city and the Middle Rio Grande Conservancy. The city and MRGC began buying up these riverside lands in the late 1920s. This park, too, may be part of the Leopold/Tingley legacy.

As considerable as Leopold's ambitions for the city of Albuquerque were, what is most interesting about them is how they display the full extent to which the lands and people of New Mexico had already settled into his psyche. He was striving to integrate what he saw as the best parts of the area's cultures (in terms of architecture and community life)
and landscapes into an ideal modern city, poised for the future: a city based on diversity and what he termed "public spirit," which he described in one sense as "intelligent unselfishness in action." 37

Leopold left the Chamber of Commerce in 1919 partly because of frustration over the lack of public spirit and the shortsightedness of a number of its members. He returned to the U.S. Forest Service, this time as the Chief of Operations, the second highest position in District 3. He was responsible for the inspection of everything from the fire stations to the outhouses.

On one of his first excursions, Leopold toured southwestern New Mexico's Datil Forest and encountered the untrammeled wilds embracing the Gila River—one of the last undeveloped places in the Southwest. Trout in the fresh flowing Gila lured him from his checkpoints. As he fished away one August Sunday, Leopold found himself wishing the Gila could be permanently preserved from further "improvements"—a wilderness plan in the making. 38 Primitive areas existed in the national forests, but they were not protected in any long-term way. Leopold's idea was radical and timely. Another forester, Arthur Carhart, was thinking in a similar way about preserving the area around Trappers Lake in the White River National Forest. Teaming their efforts, Leopold and Carhart formulated the rationale and policies necessary for success.

With the same enthusiastic tenacity he had applied to game management, Leopold tackled the "wilderness area idea." 39 He wrote article after article, speech after speech. He defined his concept of a wild area set-aside as "a continuous stretch of country preserved in its natural state, open to lawful hunting and fishing, big enough to absorb a two week's pack trip, and kept devoid of roads, artificial trails, cottages, or other works of man." 40 Initially, he justified wilderness areas as essential to serving the public's wide variety of recreational needs. As his idea matured, however, a convergence occurred between his wildlife management concepts and those of wilderness. Just as habitats had to be saved, so did samples of the land in their integrity. For as much as wildlife populations required study, so did the land itself.

The more Leopold inspected the forested lands of the Southwest, the deeper he came to know the nature and the state of peril they were in. The native grasses protecting the soil had been trodden, trampled, and chewed to the roots by grazing livestock. Clearcutting had stripped the woods bare. The soil had been scoured away by the wind or flushed out by rains. In the Apache National Forest, along his beloved Blue River, 90 percent of the topsoil had been washed off. Out of the thirty forests Leopold examined in his years as Chief of Operations, twenty-seven were severely damaged by erosion. Leopold wrote: "One day . . . we came home with cakes of mud a quarter of an inch thick surrounding our eyes—stuff that had blown into our eyes and was 'teared' out so you
had to pull off the lumps every few minutes."\(^4\)

Leopold’s reaction came swift and sure. He jumped head first into a study of soil loss and conservation, reading everything he could find, making extensive field notations (including fire scars on trees), and consulting experts. Leopold compiled a *Watershed Handbook* for the Forest Service that outlined signs of degradation and methods of prevention and physical remediation. He envisioned the manual as the first section of a new “Lands Handbook,” that would “extend and supersede the present ‘Uses Handbook.’”\(^4\)\(^2\) He noted how attention to watersheds was even more necessary in a land where water was scarce:

> Every acre of the National Forest in the Southwestern District drains into rivers important to irrigation or basins where underground waters are important. Conservation of watershed values thereof ranks with protection and timber products as one of the three primary functions of the Forest Service in this District.\(^4\)\(^3\)

Through his studies of soil loss, Leopold began to see the relationships between fire, grazing, vegetation, climate, and wildlife histories. “In short,” he wrote, “a century of fires without grazing did not spoil the Sapello [watershed in the Gila National Forest], but a decade of grazing without fires ruined it. . . .”\(^4\)\(^4\) It became painfully clear that the US Forest Service policies on grazing, logging, and fire prevention, created on European and eastern models, were inappropriate for the fragile, desert, and semi-desert conditions of the Southwest.\(^4\)\(^5\) The extremity of the climate and soils had stretched the policies to their point of self-destruction, laying bare the land’s workings. In an essay titled “Grass, Brush, Timber, Fire in Southern Arizona,” Leopold observed that as foresters they had always assumed that fires were worse than erosion from grazing. “In making this assumption,” he stated, “we have . . . rejected the plain story written on the face of Nature.”\(^4\)\(^6\)

Though he identified grazing as a major culprit (along with removing timber and brush) in the erosion equation, he was aware of how tied the Southwest’s economy was to cattle and sheep, and he sympathized with stock owners. He almost had to side with them since Estella’s uncle, Solomon Luna, was the head of a sheeppers kingdom, or as Leopold called him: “a kind of king to New Mexico.”\(^4\)\(^7\) And Leopold knew the power of ranchers. To improve or even maintain the conditions of the forest ranges, Leopold knew he would have to achieve the cooperation of stock owners and farmers, foresters and extension agents in the field, state and federal agencies, and local water municipalities. He consistently supported the Forest Service’s decision to allow grazing on most all ranges (except fragile canyons and those ranges severely overgrazed), but he stipulated that the carrier of each grazing permit meet the responsibili-
ties of caring for the range so the grazing did not "destroy greater value than it creates."\(^48\)

In weighing the competing values between public resource protection and individual use, Leopold began to theorize on the ethical implications. The loss of soil "is not an act of God; on the contrary," he stated, "it is the direct result of our own misuse of the country we are trying to improve."\(^49\) Perhaps had Leopold been a forester in the East or the North, where moisture and fertility could cover the interworkings of the land and its fragility, he may never have come to the conclusions he did. Indeed, it was the Southwest that called him. Leopold made the intellectual leap from seeing the land as a compilation of elements to an organism of many parts and interconnections. In his 1923 essay, "Some Fundamentals of Conservation in the Southwest," he wrote:

> Possibly, in our intuitive perceptions ... we realize the indivisibility of the earth ... and respect it collectively not only as a useful servant but as a living being, vastly less alive than ourselves in degree, but vastly greater than ourselves in time and space—a being that was old when the morning stars sang together, and, when the last of us has been gathered unto his fathers, will still be young.\(^50\)

Leopold then pondered whether the earth had been made specifically for human use or for some other unknowable purposes: "It just occurs to me ... that God started his show a good many million years before he had any men for [an] audience—a sad waste of both actors and music—and in answer to both, that it is just barely possible that God himself likes to hear birds sing and see flowers grow."\(^51\)

As Leopold's knowledge of the Southwest had matured, so had his respect for its native people. He wrote: "Five races—five cultures—have flourished here. We may truthfully say of our four predecessors that they left the earth alive, undamaged. Is it possibly a proper question for us to consider what the sixth shall say about us?"\(^52\)

Leopold addressed and was pursued by questions about land use and moral obligation the rest of his years. His prevailing philosophical quest was to understand how to live on the land without spoiling it.

In May 1924, Leopold left New Mexico for a new position with the United States Department of Agriculture (USDA) Forest Products Laboratory in Madison, Wisconsin. Five days after his departure, Leopold's proposal for a Gila Wilderness Area was approved—the first of its kind in the National Forest System. This was a momentous step for the Forest Service and for America. Forty years later, the event was expanded and made permanent in the National Wilderness Act of 1964. Today, nearly
seventy-five years later, more than 550 wilderness areas exist in forty-four states, encompassing over 95 million acres. The wilderness area idea has grown in popularity and use each year.  

Though Leopold had left New Mexico physically, he had not emotionally. He continued to work with some friends in the state on his scientific studies of the southwestern game fields. The updates Leopold received saddened him. His game management practices had been put into place in the Gila, including those of predator control. He described the results in his original foreword to *A Sand County Almanac*:

I had to learn the hard way that excessive multiplication is a far deadlier enemy to deer than any wolf. ... [T]he Gila deer herd, by then wolfless and all but lionless, soon multiplied beyond all reason, and by 1924 the deer had so eaten out the range that reduction of the herd was imperative. Here my sin against the wolves caught up with me. The Forest Service ... ordered the construction of a new road splitting my wilderness area in two, so that hunters might have access to the top-heavy deer herd. ... I was hoist of my own petard.  

The land, a strict but unbiased taskmaster, had forced Leopold to see that his youthful view of predator control was in direct opposition to his aims for wildlife management, wilderness preservation, and land health. And all were in direct confirmation of his thesis that the land is one. (Leopold would be happy to hear that the U.S. Fish and Wildlife Service recently reintroduced the Mexican wolf to his beloved Blue Range, which is in proximity to the Gila and Aldo Leopold National Wilderness Areas.)

Leopold's years in Wisconsin seasoned his understanding and articulation of this concept. In "The Round River," an essay from one of his Wisconsin hunting journals, he stated:

Harmony with the land is like harmony with a friend: you cannot cherish his right hand and chop off his left. That is to say, you can not love game and hate predators; you cannot conserve the waters and waste the ranges; you cannot build the forest and mine the farm. The land is one organism. ... If the land mechanism as a whole is good, then every part is good, whether we understand it or not.  

By land, Leopold meant "all things on, over, or in the earth." His
thinking culminated with a philosophy of respect for all members of the land community, and his Land Ethic: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

Leopold had come a long way since his first ride on Jiminy Hicks. Though these words were not written while he was in the Southwest, the groundwork for their insights had been laid there. The stark complexities of this arid land had etched lines across his psyche—lines so deep and interconnected that he would only come to understand them in the last years of his life while he was preparing the manuscript for *A Sand County Almanac*. In the *Almanac*, Leopold was able to sum up philosophical gleanings that had ripened to gold. In a rich blend of personal and natural history essays, he wrote about all he had learned of the land and people and their relation to each other.

Only a few days after hearing that his manuscript was accepted for publication, Leopold died. That was fifty years ago, 21 April 1948. It seems fitting then, in noting the anniversary of the passing of Aldo Leopold, that we ponder the lessons the land taught him, and perhaps consider for ourselves what the Land of Enchantment has to teach us.

**NOTES**

1. A. C. Ringland remembers Leopold as having the "fervor of a sawdust evangelist," quoted in Jim Voegeli, *Remembering Aldo Leopold*, radio documentary (WHA radio station, 1974), Oral History files, Des Moines County Historical Society. The collection of taped interviews from 1973–74 is stored in the State Historical Society of Wisconsin Archives, Madison. Much of the overall biographical material on Leopold used in this essay is taken from Curt Meine, *Aldo Leopold: His Life and Works* (Madison: The University of Wisconsin Press, 1988). Meine's manuscript is considered the definitive biography. For an argument about the first restoration ecologist see, *Ibid.*, 552, n. 3. n. 4. Donald Baldwin and others have argued that Arthur Carhart should be given the title since certain records suggest he submitted the first proposal to set aside federal forest land as wilderness (in the Superior National Forest in 1922). Elliot Barker stated that Leopold had been talking about the idea of wilderness preservation since 1913, and Fred Winn notes 1918 as the time of the first discussions of the specific Gila proposal—a year before Carhart made his first proposal. Leopold's proposal was unquestionably the first to succeed—and unquestionably the two men supported each other's proposals.


5. Aldo Leopold, “Watershed Handbook,” mimeographed pamphlet, United States Department of Agriculture, district 3, December 1923, 3, 103–05. In this source, Leopold references the duties from the Act of 1897 and the 1905 field manual of the USFS.


7. Leopold liked his horses and mentioned them often in his letters from this period. See tray 10, box 8, Aldo Leopold Papers, University of Wisconsin Madison Archives, (hereafter ALP).


10. Aldo Leopold to Carl Leopold, 25 November 1909, tray 10, box 8, ALP.


14. Ibid.

15. Aldo Leopold, unpublished biography, 30 April 1931, tray 10, box 6, ALP.


17. Ibid., 108.

18. Aldo Leopold to Estella Bergere Leopold, 11 February 1925, tray 10, box 8, ALP. (Aldo and Estella had five children: Starker, Luna, Nina, Carl, and Estella, all of whom have made major contributions to science.)


20. Ibid., 102.

21. Aldo Leopold, “A Turkey Hunt in the Datil National Forest,” in David E. Brown and Neil B. Carmony, eds., Aldo Leopold’s Wilderness (Harrisburg, Pennsylvania: Stackpole Books, 1990), 49. Leopold did not just scapegoat Indians for the lack of game, but added, “After all the Indian is no worse than the white man,” detailing the many other offenders: the tenderfoot hunter, the pseudo sportsman, the meat-hungry trapper or prospector, the light-fingered cowhand, and the sheeper who has been ordered to eat deer to save on mutton. Still, Leopold, like most of his contemporaries, held that all native lands and wildlife resources were now national resources, administered by the different agencies of the federal government. Leopold even proposed that a National Game Refuge be made on lands within the Jicarilla–Apache Indian Reservation, which he referred to as “Government Indian Lands.” See also, Leopold, “Make Stinking Lake a Game Refuge,” in Aldo Leopold Wilderness, 27.

22. For a more detailed history, see Meine, Aldo Leopold, 151–58.

23. Ibid., 153.

24. Ibid., 161.

25. Leopold, “Forestry and Game Conservation,” Aldo Leopold Wilderness, 83. Leopold had proven his dedication to variety and non-game species when he included information on how to encourage songbird populations in his Game and Fish Handbook. And in an article from this period, “Forestry and Game Conservation,” he stated that “Variety in game is quite as valuable as quantity. In the Southwest, for instance, we want not only to raise a maximum number of mule deer and turkey, but we must also at least perpetuate the Mexican Mountain–Sheep, bighorn, antelope, white–tailed deer, Sonora deer, elk, and javelina. . . . The perpetuation of interesting species is good business, and their extermination, in the mind of the conservationists, would be a sin against future generations.”


27. Leopold, “Forestry and Game Conservation,” in Aldo Leopold Wilderness, 78.
28. Ibid., 78–79.
29. Ibid., 79–84.
30. Leopold, "Determining the Kill Factor for Blacktail Deer in the Southwest," in Aldo Leopold Wilderness, 89.
31. Ibid., 90.
32. The New Mexico Wildlife Federation (NMWF) is now a satellite of the National Wildlife Federation (an outgrowth of the American Game Protective Association, of which Leopold was also secretary for a time). The Pine Cone became the Outdoor Reporter. Presently the Federation is very active in habitat restoration, with approximately nine projects a year.
33. Forward Albuquerque, tray 10, box 8, ALP. Leopold had personal reasons for wanting to improve Albuquerque. Throughout the years Leopold worked in the administrative offices of District 3 and for the Chamber of Commerce, he and his family lived in Albuquerque, first at 311 South 9th Street and later at 135 14th Street South. Both homes were conveniently close to the swampy flood plain of the Rio Grande, known for its mosquitoes, fishing, and "frog songs." The latter residence, in private ownership, is being considered by the city for listing on the National Register of Historic Places.
34. Ibid.
35. Ibid.
36. The Clyde Tingley/Aldo Leopold connection is one that deserves additional research.
37. Aldo Leopold, "The Civic Life of Albuquerque," address before Albuquerque's Woman's Club, 27 September 1918, tray 10, box 8, ALP.
40. Leopold, "The Wilderness and its Place in Forest Recreational Policy," in Ibid., 79. After Leopold moved to Wisconsin and was both using and supporting the protection of Minnesota's Boundary Waters Canoe Area, he expanded this to include canoe camping.
41. Meine, Aldo Leopold, 185.
42. Leopold, Watershed Handbook, 1.
43. Ibid., 3.
45. Leopold asked in his Watershed Handbook: "Why should settlement upset equilibrium on a wholesale scale in the Southwest, when in other regions it has not usually done so?" For an outline of the answer to his own question see, Leopold, "Pioneers and Gullies," in The River, 109–10. See also Leopold, Aldo Leopold Wilderness, 168–70.
46. Leopold, River, 118. Also Leopold, Aldo Leopold Wilderness, 185–86.
47. Meine, Aldo Leopold, 121.
48. Quoted in Leopold, Watershed Handbook, 12, 26. Leopold noted the groups requiring cooperation (26) and the responsibilities of the permittees (12).
51. Ibid., 96.
53. Most wilderness areas are seeing an ever increasing demand for visitor use. The controversies over whether or not public lands should be preserved from all uses that "leave a trace" is continuous. Protectorates of the Gila Wilderness Area have been in long-standing court feuds over whether or not the Diamond Bar Ranch is overgrazing on the Gila and to determine who really has the rights to that land. In Minnesota's Boundary Water Canoe Area, which Arthur Carhart first proposed and Leopold came to love, there are disputes about the suitability of snow-
mobile trails, motorized portages, and lakes with motor use. In other places, those benefiting from logging, mining, grazing, and tourist development are seeking to “unlock” these resources for “wise use.”

56. Ibid., 189.
57. It is highly likely that New Mexicans can also thank Aldo Leopold for the Bosque Del Apache National Wildlife Refuge. In 1934, Leopold was appointed by President Franklin D. Roosevelt to serve on the Committee on Wild Life Restoration with Thomas Beck and Jay “Ding” Darling. This “Duck Committee” added to the national system of wildlife refuges, selecting 12 million acres of marginal farmland across the U.S. for initial purchase, with plans for additional acres as funds and lands became available. It’s hardly surprising that within this blueprint Leopold would remember the state that had become his second home.