



37. Aldo Leopold

Writings on the Rio Grande Valley

Description: Students learn about Aldo Leopold, an early environmentalist who lived in and wrote about New Mexico. Students read an essay by Leopold and other overview essays and respond to the ideas in the essays.

Objective: Through an analysis of Leopold's writing, students will gain historical perspective on the Rio Grande Valley and the impacts humans and the river have had on each other.

Materials: "The Virgin Southwest," by Aldo Leopold
 "Aldo Leopold and New Mexico" by Sterling Grogan
 "Leopold's Land Ethic" by Cary Weiner

Procedure: Students read the Aldo Leopold essay and the background essays and answer the reading comprehension and/or discussion/essay questions below. For younger students, break the text down into "chunks" and have a student or group of students responsible for reading and summarizing for the class each "chunk."

Assessment: Discussion Questions—Teacher Key

"The Virgin Southwest" article

1. What time periods are covered in his essay?
1824–1933.

37. Aldo Leopold



Grades: 9–12

Time: Two 50-minute class periods; one for reading and one for responding

Subjects: science, social studies, language arts

Terms: "The Virgin Southwest": *arid, seepage, silt, erosion, gradient, cobble bars, equilibrium, overgrazing, range management, leach, deltas, reclamation*; "Aldo Leopold and New Mexico": *levees, drains, watershed, succession*; "Leopold's Land Ethic": *integrity, biotic community*



2. According to Leopold, what is the major cause of erosion in the Rio Grande Valley? Use evidence from the essay to support your answer.
Overgrazing.
3. Who was James Ohio Pattie? How does Leopold use Pattie's account to support his main idea?
A trapper who kept a journal. Leopold compares the 1824 journal descriptions to the 1933/modern condition.
4. How was the Rio Grande valley different when Pattie wrote his account from when Leopold wrote his essay?
There was heavy grass along the river and on the mesas. The main valley was used for grazing with agriculture in the side streams, such as the Rio Puerco. There is more silt in the valley today. Today's valley has "scant grass, much erosion and a river choked with silt."
5. What does Leopold state is the public's responsibility in this changed Southwest?
The public needs to understand that there has been a change in the environment. There has been great erosion caused by human actions. People must learn from science about land use and develop a respect for "mother earth."

"Aldo Leopold and New Mexico" article

1. Who was Aldo Leopold?
Forester, ecologist, hunter, pioneer, writer and conservationist.
2. What is the Middle Rio Grande Conservancy District?
An agency designated in 1925 to prevent flooding, drain water-logged fields and improve irrigation in the Middle Rio Grande Valley.
3. What is environmental management?
Management with all parts of the environment considered—including animals, trees, grass, soil, geology and humans.
4. What did Leopold study in college? What was his first job in New Mexico?
Forestry. He worked for the U.S. Forest Service on the Carson National Forest as deputy supervisor.
5. What was the first wilderness area in the United States? How was Leopold involved in the designation of this wilderness area?
The Gila Wilderness. He used his experience in the Gila as a forester and his interest in managing the land for wildlife to push the idea that blocs of unspoiled area should be set aside as "wild and scenic." Earlier views held that the forest was solely to use for human "progress" and did not consider that the loss of wildlife habitat widely affected organisms in the forest.



6. According to Leopold, how are human beings connected to nature?

Nature is a prerequisite of human well-being; without the natural world humans are somehow diminished, poorer and perhaps less human. Humans are a part of the interdependent community of nature that together make an organism.

7. What is *The Sand County Almanac*?

A collection of Aldo Leopold's essays about land conservation; sometimes called the "bible" of modern environmentalism.

"Leopold's Land Ethic" article

1. What does it mean to be a "plain member and citizen" of the land?

That humans were not superior to other life, that all plants and animals play a role in nature, including humans. The land should be managed for the ecosystem in which people belong, not managed solely for people.

2. In Leopold's anecdote, what did the "fierce green fire" represent?

The wildness of a predator in her own element; that the wilderness had a way of working that was not under human control and should not be.

3. Do you think that people are "ill-equipped" to understand nature? Why or why not?

Answers could include: we cannot know things from another species' perspective, we can use the best scientific methods to try to understand nature, but it is always from our perspective and there are many, many aspects of nature yet to be understood.

4. How do you think Leopold was perceived during his time?

He was ahead of his time in many ideas, so many people did not agree with him, but he used sound scientific evidence and persuasive writing to bring others to his view.

5. Write your own environmental ethic.

Answers will vary.

Possible Discussion/Essay Questions (answers will vary)

1. Do you think that Leopold was a visionary—ahead of his time? Why or why not?
2. What would Leopold think about the Rio Grande today?
3. Imagine you were Leopold in 1918, and you were lobbying the New Mexico Legislature to pass a law to protect the Rio Grande Valley. Write a law and give supporting evidence why this law should be passed.



4. Leopold made a persuasive case for “the importance of nature as a prerequisite of human well-being.” What do you think that means? Use evidence from Leopold and also from your own thinking to support your ideas.
5. Write a paragraph or several paragraphs about Aldo Leopold. Use at least 10 of the following terms and concepts: *conservation, preservation, bosque, aquatic, adaptation, aquifer, ecosystem, endangered, erosion, ground water, habitat, irrigation, depletion, dams, reservoirs, riparian, runoff, watershed.*

Extensions: Stage a mock debate between Leopold and farmers/ranchers about the erosion problem.

Use a New Mexico map to locate all the places mentioned in these articles.

Have students draw the Rio Grande Valley that Leopold describes.

An additional activity about writers and the Rio Grande can be found in: *The Watercourse*. 2001. *Discover a Watershed: The Rio Grande/Rio Bravo*. Bozeman, Montana: The Watercourse. “One River, Many Voices,” p. 266.

Resources/

References:

“The Virgin Southwest,” by Aldo Leopold. 1933. From: Flader, Susan L. and J. Baird Callicott, eds. © 1991. *The River of the Mother of God and Other Essays by Aldo Leopold*. Reprinted by permission of the University of Wisconsin Press, Madison, WI.

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The Virgin Southwest

By Aldo Leopold, 1933

The major premise of civilization is that the attainments of one generation shall be available to the next. . . .

It is only recently that the biological sciences have had new occasion to challenge [this premise], in their discovery of an abnormal erosion-rate in some of our best soils. The rate is rapid elsewhere, but in the Southwest and the adjoining semi-arid regions it is nothing short of alarming. At the mouth of one Utah canyon, for example, erosive deposits display seasonal color-layers, from which a chronology similar to that of tree-rings has been built. It shows more movement of soil since the introduction of livestock to the watershed fifty years ago than had previously occurred since the recession of the glacial epoch.

“Discovery” is a slow process. It is almost a generation since certain ecologists, range-managers, foresters, and engineers saw and described the present southwestern situation, but it is only a year or two since the social consequences of its continuance were given credence by the lay public. Even statesmen now show signs of being aware that the best soils are slipping, sliding, toward the sea, and that the basic cause of this abnormal movement is the devegetation of the range through overgrazing by domestic livestock.

I think, though, that the thoughtful citizen still entertains a mental reservation—he regards this thing as important, *if true*. This is only natural, since he is unable to weigh personally the technical evidence; he must take the ecologist’s word for it. The fact of abnormal erosion, however, can be established on historical as well as ecological evidence. This paper aims to present such evidence as gathered from a single document: the journal of [James] Ohio Pattie, who trapped beaver in this region almost a generation before the Santa Fe Trail opened it to wholesale economic exploitation. Certain other material of miscellaneous origin, and certain personal observations, are interjected to give relief to the Pattie narrative.

Pattie was a young Missourian of the Boone and Kenton tradition, with an eye for game, grass, and timber. He traveled down the Rio Grande and the Gila, trapping beavers, in 1824. . . .

On the journey from Santa Fe to San Felipe, Pattie speaks of a “handsome plain, covered with herds of domestic animals.”

Continuing down the Upper Rio Grande Valley to Socorro, he “traversed the same beautiful plain country,” on which grazed “the same multitude of domestic animals.” There must have been heavy grass, not only along the river but *on the mesas* adjoining the valley floor. There is little grass on these adjoining mesas today; many of them have become sand dunes.

Pattie remarks that the valley floor was not cultivated except at San Felipe and above Socorro. At these points the valley is narrow and the river has a steep gradient. They would be the easiest places to divert the irrigation water from an



unsilted river channel, because the flatter the gradient of a stream, the more work is required to build intake ditches up its banks.

While the main valley was used for grazing, the farming, according to Pattie, was mostly conducted in side streams like the Puerco. Today the reverse is true. The main valley is all farmed, except where seepage (due to silting) makes it too wet, while the side streams are fit only for grazing, because erosion has gutted all the irrigable land.

Couzens says that in 1859 (?) the channel of the Puerco was only 12 to 15 feet deep where it crosses the road from Isleta to Acoma and Zuni. Abert says that in 1846 it was only 10 or 12 feet deep at a point a few miles higher up. Today, at these same spots, the channel of the Puerco is a miniature Grand Canyon carved in clay. I recollect it as over a hundred yards wide and thirty feet deep.

Pattie remarks that at Socorro the valley was thinly timbered, but covered with willow and cottonwood brush in which “great numbers of bear, deer, and turkey” found refuge. One infers there was little large timber anywhere along the upper river. Today the ancient cottonwoods that line its irrigation ditches are its principal ornament. Most of these cottonwoods *are rooted in the ridges of silt* that have resulted from the annual cleaning of the ditch channels; in fact the older ditches *have raised themselves from five to ten feet above the valley floor* by gradual siltage.

What do these seemingly disjointed facts tell us about the virgin Southwest?

They tell us that in Pattie’s day the Rio Grande drained a stable watershed, devoid of abnormal erosion. Even the sand dunes adjoining the river carried a heavy growth of grass. By reason of this grass, prairie fires swept across the valley and kept it devoid of large timber. The river channel, now so filled with silt that it is actually higher than the valley floor, was then so far below the floor that irrigation was difficult, except at points where steep gradients facilitated the building of intakes. In short we now have scant grass, much erosion, and a river so choked with silt that it bogs its own bottoms with seepage and poisons their fertility with alkali. In Pattie’s day there was grass everywhere, little erosion, a normal river, and bottomlands of sweet well-drained soil.

Pattie’s testimony is really superfluous; there is hardly an acre that does not tell its own story to those who understand the speech of hills and rivers. The Galisteo which winds across Pattie’s “handsome plain” has since been lived upon. We see the skeletons of ancient fruit trees, toppling one by one into the parched arroyo, which year by year gnaws away at the loam of what was once a farm.

That farm was irrigated once—one can trace the old ditches winding across the remnants of bottomland. If irrigated, there must have been a stream. There is no stream now, only a trickle in the sand.

The stream banks must have been shallow and gentle, else the water could not have been led upon the land. They are not shallow now. The channel is a flood-torn chasm.



If there were ditches, there must have been wide stretches of level, friendly soil to irrigate. That soil has been dumped as silt into the main river; one farm washed away to curse another in the making, somewhere below.

Pattie's handsome plain is still green, at times, but it is the kind of green which could deceive only a tourist. It is not the greenness of grass, it is the greenness of tumbleweeds and snakeweed and pinque—worthless substitutes which a denuded nature has invoked to cover her nakedness. On this same Galisteo, Doniphan, in 1846, found "grass and water abundant and of good quality. . . ."

Nothing has changed in the watershed . . . except *grass*. Coronado and those who came after him brought sheep and goats and cattle to the Indians, and the subsequent overgrazing of the whole watershed is what upset its equilibrium. Throughout the Southwest the worst erosion is in the regions of the oldest settlements, because it is there that over-grazing has been most severe through the longest time. . . .

Let us now rejoin Pattie on his trip down the Rio Grande. He left the river near what is now San Marcial and crossed southwesterly to the copper mines at Santa Rita del Cobre. From Santa Rita he went to the head of the Gila River to trap beavers. He caught "trout" where the river emerges from the mountains, probably near the present settlement of Cliffs (sic). (If these were really trout, rather than 'bony-tails,' then the trout extended fifteen miles farther downstream than they do now.) The first night of trapping at this point yielded 30 beavers. But the important thing is not so much the abundance of beaver, as the fact that these hardy trappers "*were much fatigued by the difficulty of getting through the high grass which covered the heavily timbered bottom.*"

Today, at this spot, and for miles above and below, the river is flanked by naked bars of sand and cobblestones, and the bottoms, except where fenced, are as bare of grass, as naked of timber, as the top of a billiard table.

Ascending the box of the Gila, Pattie describes "*a thick tangle of grapevines and underbrush*" through which he crawled, sometimes on hands and knees. At the forks of the river (now the XSX ranch) the banks were still "very brushy, and frequented by numbers of bears." Here too, there is now little brush and many cobble bars.

Chop down the oldest of the young sycamores and alders that have found rootage on the cobble bars which have replaced Pattie's bottoms, and you will find that few are older than the cow-business, which invaded these hills in the early eighties. . . .

There was once a widespread impression that forest fires, as well as overgrazing, were an important cause of watershed damage. Recent evidence in other regions supports this belief, but not here. On the contrary, observations on their sequence and relative importance in the Arizona brushfields, indicates that when the cattle came the grass went, the fires diminished, and erosion began.

The foregoing comparisons of what Pattie saw and what we see today are merely random examples of what has happened, in some degree, to almost every



watershed in the Southwest. On many of the National Forests and on a few well-managed private ranches the damage is partial and confined mainly to the loss of bottomlands. Near many old settlements the damage is complete, erosion having exposed enough rocks to substitute what might be called a mechanical equilibrium for the vegetative one which once existed. In most places the damage is still in process, and the process is cumulative.

It has been necessary to offer proof of these changes because most people do not know that any change has taken place, and some who do know deny that overgrazing is the primary cause. They persist in believing either that abnormal erosion was always there, or that it is somehow an act of God instead of an act of goats, sheep, and cows.

In trying to picture the meaning of the term overgrazing, it is important that the reader divest his mind of the assumption that overgrazing constitutes a uniformly distributed excess of consumption over growth. More often than not the excessive utilization of one plant or type of ground is accompanied by the underutilization of another. For this reason the very diversity of the country has contributed to its undoing. If a mountain cow on a cold winter day has the choice of basking in the warm sun of a hardwood bottom, or of climbing upon the wind-swept mesa, or scrambling among the rocky slopes between the two, she will choose the bottom. In fact, she may browse the last bottomland willow to death before the bunch grass on the slopes is even touched. It seems as if the greater the diversity of types, the less uniform their utilization and the quicker the inception of damage.

The reader must grasp the fact that overgrazing is more than mere lack of visible forage. It is rather a lack of vigorous roots of desirable forage plants. An area is overgrazed to the extent its palatable plants are thinned out or weakened in growing power. It takes more than a few good rains, or a temporary removal of livestock, to cure this thinning or weakening of palatable plants. In some cases it may take years of skillful range management to effect a cure; in others erosion has so drained and leached the soil that restoration is a matter of decades; again it has removed the soil entirely. In the latter event restoration involves geological periods of time, and thus for human purposes must be dismissed as impossible.

The rivers on which we have built storage reservoirs or power dams deposit their deltas not only in the sea, but behind the dams. We build these to store water, and mortgage our irrigated valleys and our industries to pay for them, but every year they store a little less water and a little more mud. Reclamation, which should be for all time, thus becomes in part the source of a merely temporary prosperity. . . .

How now shall we sum up the degree of doubt as to the future—the possible damage to the tempo of our time, which inheres in this question?

We are, of course, in the position of a biographer who cannot evaluate a contemporary because he knows too much and understands too little. The forces at work are still in operation; it is too early to foresee their final outcome.

But we can say this with assurance: If erosion proceeds unchecked the ranges, irrigation reservoirs, and wild life will be gone.



If we do check it, we will lose the mountain valleys, and eventually the reservoirs will be much impaired, but the ranges can come back.

We can say this: That what we call “development” is not a uni-directional process, especially in a semi-arid country. To develop this land we have used engines that we could not control, and have started actions and reactions far different from those intended. Some of these are proving beneficial; most of them harmful. This land is too complex for the simple processes of “the mass-mind” armed with modern tools. To live in real harmony with such a country seems to require either a degree of public regulation we will not tolerate, or a degree of private enlightenment we do not possess.

But of course we must continue to live with it according to our lights. Two things hold promise of improving those lights. One is to apply science to land-use. The other is to cultivate a love of country a little less spangled with stars, and a little more imbued with that respect for mother-earth—the lack of which is, to me, the outstanding attribute of the machine-age.

Excerpted from “The Virgin Southwest,” by Aldo Leopold, 1933. From: Flader, Susan L. and J. Baird Callicott, eds. *The River of the Mother of God and Other Essays by Aldo Leopold*. © 1991. Reprinted by permission of the University of Wisconsin Press.

Discussion Questions

1. What time periods are covered in his essay?
2. According to Leopold, what is the major cause of erosion in the Rio Grande Valley? Use evidence from the essay to support your answer.
3. Who was James Ohio Pattie? How does Leopold use Pattie’s account to support his main idea?
4. How was the Rio Grande valley different when Pattie wrote his account from when Leopold wrote his essay?
5. What does Leopold state is the public’s responsibility in this changed Southwest?

Discussion/Essay Questions

1. Do you think that Leopold was a visionary—ahead of his time? Why or why not?
2. What would Leopold think about the Rio Grande Valley today?
3. Imagine you were Leopold in 1918, and you were lobbying the New Mexico Legislature to pass a law to protect the Rio Grande Valley. Write a law and give supporting evidence why this law should be passed.

4. Leopold made a persuasive case for “the importance of nature as a prerequisite of human well-being.” What do you think that means? Use evidence from Leopold and also from your own thinking to support your ideas.
5. Write a paragraph or several paragraphs about Aldo Leopold. Use at least 10 of the following terms and concepts: *conservation, preservation, bosque, aquatic, adaptation, aquifer, ecosystem, endangered, erosion, ground water, habitat, irrigation, depletion, dams, reservoirs, riparian, runoff, watershed.*



Estella and Aldo Leopold

This photo was taken at Tres Piedras, NM, in 1912. (Courtesy of New Mexico State Records and Archives, the Bergere Collection, negative no. 21354.)





Aldo Leopold and New Mexico

By Sterling Grogan

Middle Rio Grande Conservancy District

Aldo Leopold (born 1887, died 1948) was a forester, ecologist, hunter and pioneer who wrote about nature in ways that few Americans before him ever had. He studied forestry in college, created the field we now call “wildlife management,” and wrote dozens of essays that combined ecology, aesthetics, and ethics to describe the connections between humans and the natural environment. *A Sand County Almanac*, a collection of his essays about land conservation published after his death in 1948, is sometimes called the “bible” of modern environmentalism.

Aldo Leopold came to New Mexico in 1911, just six years out of college, to be the deputy supervisor of the Carson National Forest. He lived first in Tres Piedras and later in Albuquerque with his wife Estella, a member of the prominent Luna-Otero family of Santa Fe. He explored much of New Mexico on horseback as part of his many jobs in the Forest Service. In 1918, Leopold left government service for 18 months to become the first secretary of the Albuquerque Chamber of Commerce.

In the first and second decades of the 20th century, flooding and water-logged land were among the biggest problems facing Albuquerque. Leopold advocated formation of a drainage district that could fund necessary improvements like flood control levees, drains, and improved irrigation ditches. He believed that Albuquerque would prosper by improving conditions for agriculture in the Middle Rio Grande Valley. His vision and leadership led to the establishment by the State Legislature in 1925 of the Middle Rio Grande Conservancy District. The Conservancy was given responsibility for preventing Rio Grande flooding, draining the water-logged farm fields, and improving the irrigation water delivery system, as Leopold had envisioned years before. Today the Conservancy looks a little different than it did in the 1920s, but its fundamental mission is much as Leopold imagined it could be. He also campaigned for an Albuquerque river park, and a little more than fifty years later the Legislature created the Rio Grande Valley State Park.

An avid duck hunter, Leopold paid close attention to the condition of rivers, including the Rio Grande, with observations of how erosion on the mesas that line the Rio Grande Valley lead to sediment filling the river channel. As Leopold’s ideas of ecology evolved, he placed greater emphasis on the need to understand and improve the management of watersheds. He saw that the study of watersheds required the integration of ecology, forestry, geology, esthetics and ethics, an integration that he knew was essential to our understanding of the whole earth.

Leopold left New Mexico in 1924, and except for occasional family visits he did not return until the 1930s to work on erosion control with the Civilian Conservation Corps. Scholars think that New Mexico, and Estella’s deeply-rooted New Mexican family, profoundly influenced Leopold’s thinking about the environment. For example, the first wilderness area in the U.S., the Gila Wilderness in southern New Mexico, exists because Leopold used his experience as a forest ranger there, along with his



growing interest in land management for wildlife, to push the idea of setting aside “wild and scenic” (i.e., wilderness) areas. Leopold also argued against the prevailing American attitude of “progress at any cost,” pointing out that when wildlife (he called it “game”) habitat is lost, the loss affects more than just a few animals.

Leopold was not alone in thinking of water, wild animals, trees, grass, and the land itself as intimately connected to every human being. However, he distinguished himself from other “nature philosophers” and conservationists of his day by making a persuasive case for the importance of nature as a prerequisite of human well-being. Leopold saw that without the values of open space, well cared-for land, and healthy wildlife, humans were somehow diminished, poorer, and perhaps less human.

Leopold’s life is a testament to the importance of life-long learning. His persistent studies of the natural world led him to continually question and occasionally change his own views. He disowned and argued against ecological principles that in his early writing he had advocated. For example, his early career in the Forest Service was marked by essays supporting the suppression of all forest fires because they “set back succession.” He also argued for the extermination of predators to protect and expand the herds of wild deer and elk. After he had spent decades observing nature and challenging the assumptions of experts, he wrote about the essential role of fire in the ecology of western pine forests, and he decried the extermination of wolves and other “varmints” because of the degradation their absence from the ecosystem would cause. Now, the value of fire is widely understood, and predators like wolves and coyotes are beginning to be seen as important components of the ecosystem.

Leopold was ahead of his time, and his thinking did not always find receptive audiences. He argued for the importance of grass as the main component of healthy watersheds, long before most foresters and ranchers conceded that overgrazing might be detrimental to watershed health. As early as 1923, Leopold wrote about the concept of the whole Earth as a living organism with some kind of soul or consciousness: “Plants, animals, men, and soil are a community of interdependent parts, an organism.” That idea contrasted radically with the prevailing “mechanistic” view of nature, in which the natural environment is seen as a machine that can be manipulated by humans for our own purposes.

Today, Leopold’s ideas are commonplace, forming the basis for what we call “environmental management.” However, we need to remember that it took more than fifty years for those ideas to take root and blossom and for Leopold’s vision of the natural world to be accepted.



Discussion Questions

1. Who was Aldo Leopold?
2. What is the Middle Rio Grande Conservancy District?
3. What is environmental management?
4. What did Leopold study in college? What was his first job in New Mexico?
5. What was the first wilderness area in the United States? How was Leopold involved in the designation of this wilderness area?
6. According to Leopold, how are human beings connected to nature?
7. What is *The Sand County Almanac*?



“The Binnacle Bat”

Aldo Leopold and his boat, “The Binnacle Bat,” on the Rio Grande, south of Albuquerque, in 1918. (X251729, courtesy of University of Wisconsin–Madison archives.)

Leopold's Land Ethic

By Cary Weiner

New Mexico Museum of Natural History & Science

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In the early 1900s, while most people fought for their right to water, Aldo Leopold fought for the river's right to water. He created the Middle Rio Grande Conservancy District and promoted the establishment of what would become the Rio Grande Valley State Park. While most people fought for the right to mine the Wild West, Aldo Leopold fought for the West to remain Wild. He advocated for the establishment of America's first designated Wilderness, in the Gila National Forest. While most people attempted to conquer the land, Aldo Leopold realized he was a "plain member and citizen" of it. He developed an environmental ethic that challenges humanity's entire relationship to nature.

Many people feel no ethical obligation to the environment. They believe that wherever humans can exploit an ecosystem for their own benefit, they should. Politicians, economists, foresters, and special interest groups commonly clash over how people should use the environment. The first Chief of the National Forest Service, Gifford Pinchot, managed America's forests to provide "the greatest good for the greatest number [of people] over the long run."

Leopold himself even formed his early ideas of the environment based on his personal interests. As an avid hunter, he argued for the extermination of predators in order to protect and expand the herds of wild deer and elk for hunting purposes. Then one day, while eating lunch "on high rimrock," Leopold and his party were startled by the presence of an old wolf with her grown pups downhill:

In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging its leg into impassable slide-rocks.

We reached the old wolf in time to see 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."

—A Sand County Almanac

Here, Leopold writes eloquently about how he realized the ecological connections between wolves, deer, and mountains. After spending great lengths of time in wild New Mexico as an employee of the National Forest Service, Leopold realized his own intimate connections to ecosystems. He acknowledged the beauty of wild



nature, the diversity of its inhabitants, and the complexities of its workings. He knew he depended on it, was privileged to experience it, and was ill-equipped to fully understand it. So he established an ethic to preserve it—the 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.”

This environmental ethic is truly significant because it provides a clear and simple way of judging our actions toward the environment. Instead of managing the wild to benefit *people only*, Leopold insists that the wild should be managed to benefit the *ecosystem*, in which people are simply a “plain member and citizen.” To put it another way, Leopold saw that “we abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

Aldo Leopold questioned his own views and those of others as he studied nature throughout his life. This led to the preservation of thousands of acres of land in New Mexico and elsewhere. More importantly, it led to the establishment of the land ethic, which is a living, growing testament to the wild that can shape the attitudes of others for generations to come.

Discussion Questions

1. What does it mean to be a “plain member and citizen” of the land?
2. In Leopold’s anecdote, what did the “fierce green fire” represent?
3. Do you think that people are “ill-equipped” to understand nature? Why or why not?
4. How do you think Leopold was perceived during his time?
5. Write your own environmental ethic.