

# 85

## LEADING QUESTIONS

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To lead into a future as full as possible of thriving life, members of each generation must raise orienting questions about how to live in ways that will promote that goal. This has never been truer than today when humanity is faced with unprecedented challenges, including how to act justly in a world where actions in one place have rippling consequences as far away as the opposite side of the planet. Human relationships with Earth's forests are a prime example of such rippling effects. All 7 billion humans on Earth have their "physical, economic, and spiritual health tied to the health of our forest ecosystems," as Jan McAlpine, director of the United Nations (UN) Forum on Forests, recently said (April 13, 2011). In response to this reality, she urged humanity in 2011—during the UN's International Year of Forests—to "celebrate forests for people," that is, to celebrate forests, which "are amazing and breathtaking and spectacular and awesome." What we need, she suggested, in order to promote forest health inseparably linked with global health, is to go beyond preaching only the negatives of recent, widespread anthropogenic deforestation to tell positive stories about people and forest interdependencies at multiple scales that encourage human care (as cited in Notaras, 2011).

Of course, we can't tell authentic positive stories that stimulate care and authentic hope while ignoring the negative ones. With our rising population, consumptive expectations, and technological powers, Earth's forest geographies have become mirrors of our internal mental ones. We need to reinvigorate human imaginations with more intimate understandings of the physical realities of the natural world, which include lessons learned from past mistakes and the consequences of land abuses, to promote the health of human-forest relationships and of whole land communities. "As a land user thinketh," wrote

the American 20th-century conservation thinker Aldo Leopold, "so is he" (Leopold, 1949/1968, p. 225). So when I was asked to talk to a rising generation of young leaders attending the International Model United Nations gathering in New York City in May 2011 about sustainable forestry for the 21st century, the original context for the chapter to follow, I addressed how we think about land. I first asked attendees to remember their own personal forest stories and then to try to view everyone's stories as interlinking ecologically and globally. Then I shared two other forest-people stories, which raised seven questions along the way that may help orient our imaginations toward a future full of the most possible thriving life—something to celebrate.

The two stories that follow capture, I believe, many common facets of modern human-forest relationships, repeated in countless local places. They help raise considerations of how individuals, communities, and systems interact, with various consequences for health and justice in the short and long terms. One story is a personal one for me—about my family's small, rural hometown of Prattsville, New York, in the forested Catskill Mountains of the United States and the history of its ideas about and use of surrounding forests. The second is a story that belongs to Kenyan Nobel Peace Laureate Dr. Wangari Maathai. In her 2010 book *Replenishing the Earth*, she shares her experiences as the goodwill ambassador of the Congo Basin rain forest in central Africa, when she was given the responsibility of raising the world's attention to its biodiversity and global climate-regulating roles. Dr. Maathai embodied ideals of health and justice—giving her own life to helping others, especially women, step outside abusive systems, plant millions of trees, and help restore their whole communities to well-being.

Remarkably, each of these stories has evolved since the May 2011 Model United Nations talk. In fact, both the town of Prattsville and Dr. Maathai have since passed away. In the case of Prattsville, two centuries of land abuse by its inhabitants had already created an unhealthy place to live in, though not without signs of possibilities for a regenerative future. Alas, however, at the end of August 2011, making headlines in the *New York Times* and internationally, an unusually intense tropical storm, Irene, swept this tiny, all-too-vulnerable place into the river—its soils and trees, homes and businesses, and future opportunities. A month later, on September 25, 2011, Dr. Maathai died in a Nairobi hospital at the age of 71 after a quiet struggle with cancer. This is a disease increasingly linked with degraded environmental conditions (e.g., Carson, 1962; Steingraber, 1997; Wargo, 2009; Williams, 1991), ironically the very ones she fought so hard against to create positive forest-people stories.

These tales of the forests of the Catskills and the Congo are not unconnected. Within two centuries of settlement, even in small U.S. industrial and agricultural towns like Prattsville, half of America's forests were cut down, millions of acres of native prairies were plowed up, and a consumer economy run on fossil fuels was created. In the process, America has come to contribute 25% of the world's total greenhouse gas emissions into Earth's atmosphere (Kolbert, 2006, p. 148). We, Prattsville included, are significantly responsible for the rise in greenhouse gas concentrations to levels unprecedented in the history of our species and of human civilization, bringing about global climate change and its repercussions of melting glaciers and tundras, rising and acidifying oceans, the loss of many species and unusual outbreaks of others, and more intense droughts and deluges. In other words, the unprecedented intensity of a storm like Irene and the weakness of the land, which could not hold fast in rushing waters, was at least partly our own fault. What has happened to Prattsville as a community, in other words, is arguably just. Though perhaps no one person deserved to suffer the loss of his or her home in exchange for the cumulative effects of everyone, everyone who lived there as part of the abusive system that cut down the trees, polluted the waters, and overgrazed the hillsides contributed. On the other hand, people living in villages in central Africa who have not contributed to climate change are suffering losses of generations-old ways of food-growing due to recently unpredictable droughts and torrential downpours brought about by the polluting members of the industrial world, including Prattsville. This is not just at any level.

Indeed, Dr. Maathai tried to help the world understand the values of the Congo forest. It is one of the planet's few remaining vast forest communities, which has built up an immense store of carbon in its soils and trees and is therefore part of our hope. Further destruction of the Congo forest would release large amounts of carbon dioxide into the atmosphere, intensifying climate change. Again, these

consequences would be felt unjustly by people such as the indigenous Aka people who have long made the Congo forest their home, as well as by many other people who have not contributed to the climate problem—members of traditional oceanic island communities being flooded by rising sea levels, native people of the thawing frozen north, nomadic people of the Middle East, and the poor, especially of the Global South and in flood- and drought-prone places everywhere (Intergovernmental Panel on Climate Change [IPCC], 2007; Royal Society 2010). Climate change from cutting the Congo forest would also be felt, to some degree justly, by cash-empowered Westerners who paid for the timber to floor their homes on the other side of the world.

Each person living in the Democratic Republic of Congo, one of the six countries through which the Congo forest's 700,000 square miles reaches, uses on average fewer than 2 hectares to supply his or her needs. This is well under what the forest would be able to supply. Each American, however, uses close to 8 hectares, well above what the U.S. land area is able to sustainably supply. In other words, Americans are draining their own lands as well as reaching into the ecological wealth of others, continuing to change the climate of the whole globe as a result (Global Footprint Network, 2010).

Our relationships, rights, and responsibilities within a complex, interdependent world are obviously complicated. Both ancient and modern societies have recognized that one way to work through complexity and make ethical decisions is through stories and the questions they stimulate (McLerran, 2011; Swimme & Tucker, 2011; van den Broek, 2010; Wilson, 2002). How might our personal experiences with land, particularly forests, connect us with an honest global celebration of them? What do we understand scientifically about forests, and how do our values direct us to use and add to our knowledge about them? Who is responsible for what when it comes to harmful and beneficial relationships? Where places are already damaged, how can they be healed? How may the physical and spiritual be connected, and why might this matter? In what ways must and can people change in order to promote health justly? What do we do about what we can't seem to change in ourselves and the rest of the world to orient our own natures to benefit Earth's community?

## A Tree and You

### Question 1: What Are Your Own Forest Stories?

Take this seriously. Think of one tree that has been part of your life. Perhaps you planted or climbed it. Perhaps you ate fruit or nuts from it. Perhaps you decorated it or built something from it or burned it. Perhaps it was struck by lightning. Perhaps you noticed a bird nesting in it. Perhaps you sat under this tree with a friend. Perhaps it simply grew

as one of many in a wood, and you admired it because it was beautiful.

## A Tree and You and the Whole Forest

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### Question 2: How Are Things Connected?

No tree stands apart. Its roots reach into the soil. Trees and other forest plants help hold the developing soil in place so that rain and wind don't blow it away. Tree roots drink up water. In this way, trees also keep rivers flowing clear and in their banks, preventing many floods and keeping soils moist and fertile. Some tree roots reach to bedrock, helping nudge out atoms of minerals that are food for plants, which they may pull up into their leaves. The leaves eventually drop off, returning nutrients to the soil. The leaves also contain chlorophyll, which uses sunlight and water and carbon dioxide to make food. Through the processes of photosynthesis, respiration, and transpiration, trees contribute to creating and maintaining the proportions of atmospheric gases that have proven excellent for life. They work with other plants, soil bacteria, worms, and other underground creatures, including insects that eat parts of trees and help pollinate them, the birds, fish, and mammals that eat insects, and the larger animals that eat the smaller ones. Trees make the world livable for our species, *Homo sapiens*—also a unique member of this whole *amazing* community of life. Moreover, trees—in fact, all of life, including our own—have an ancient lineage that stretches across vast time and space that we cannot even comprehend. And life has an ultimate source that remains mysterious to humanity.

When we consider a tree, ourselves, and whole forests as interdependent communities, the trends resulting from how people have recently thought about and used them are disturbing. Over the past couple of decades alone humans have reduced the forested areas of Earth by 7 to 13 millions of hectares per year, including primary forests that may be very old—perhaps even older than the reach of humanity's collective memory. Presently, about 31% of Earth is forested, about 4 billion acres. Though the good news for forests and people is that the global rate of human-caused deforestation may have diminished lately due to conservation efforts and economic downturns, the bad news is that our actions are still reducing Earth's remaining forests at a net loss. Human activities are reducing forests annually by 5.2 million hectares a year, an area about the size of Costa Rica (Food and Agriculture Organization of the United Nations [FAO], 2011a).

Because the Earth is ecologically interconnected, when we cut down forest, we lose not only the trees but also the forests' facets, including human economies interacting with them. Earth's forests contain around 80% of Earth's terrestrial biodiversity or, in other words, 80% of all the variety of life on land. There are also 300 million people

who call forests their homes, such as the Aka of the Congo forest. Moreover, 1.6 billion humans depend on forests for their livelihoods—coming to it for hunting, fishing, gathering, cropping, and craft making. Forests have become a significant element of present-day global economics—transferring its local wealth into hundreds of billions of dollars in trade (United Nations, 2011). And, of course, taking into consideration the ways forests help regulate Earth's atmosphere, it is clear that cutting down a forest anywhere may affect all of us in ways other than economic ones. The UN Intergovernmental Panel on Climate Change in 2007 announced that global warming is “unequivocal” and with very high certainty is due largely to human industrial activities taking place since 1750 (IPCC, 2007). Presently, the amount of atmospheric carbon dioxide, a key greenhouse gas, is about 391 parts per million (ppm) and rising. Top scientists are telling us that this amount is already above the “safe” limit of 350 parts per million (Hansen, 2008), well above the amount our species has known for most of its 200,000-year history and for hundreds of thousands of years before that. By releasing carbon stored in wood, leaves, and soil and reducing photosynthesis, deforestation has been contributing nearly 20% of current greenhouse gases (FAO, 2011b). Climate change, in turn, is exacerbating forest and biodiversity losses as well as many other unfolding consequences.

Furthermore, deforestation destroys something amazing that we cannot fully account for; whole, vibrant, self-renewing forests are something we do not fully understand and cannot ourselves create.

## Two Tales: In the Hemlocks of the Catskills and a Sapele of the Congo Forest

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### Question 3: What Are Human Rights and Responsibilities in Relation to Forests?

First the Catskills: This story is personal.

I come from the Catskill Mountains, a forested region with a complicated landownership and land use history. It is located west of the Hudson River about 150 miles north of Manhattan in New York State. In fact, after it rains, many of the waters that travel down the slopes of the Catskills and into its waterways are now contained behind dams in reservoirs and then piped through aqueducts to supply the city with much of its fresh water.

Within this forested region, my grandparents lived in a large house in a small town named Prattsville. When they died, part of my family's mourning included cleaning out their barn, which stored about 150 years of stuff. You could date history from what we found—front to back: hundreds of Styrofoam egg cartons, family business feedstore ledgers, a Model-T car starter key, and a large slab of tree a couple of feet across (at least) and around 200 years old by a quick tree-ring estimate. The tree slab was eastern

hemlock—an evergreen species with soft, flattened sprays of green needles. Near the tree slice were some unfamiliar tools—a long pair of tongs and a long-handled wooden plunger.

Recently, I learned that these were the tools of the 19th-century leather-tanning trade, which helped build Prattsville. The town was founded in 1824 when its namesake, Zadock Pratt, arrived and set up his tanning factory on the banks of the wide-flowing Schoharie Creek. He built a straight road, cutting off a big bend in the creek, along which he built his own home and those of his workers, which soon attracted churches and other businesses.

Pratt needed the creek's water to run his factory, but the surrounding old hemlock trees were what drew him and his factory to the region. These trees once grew as far as the eye could see—for miles around. The bark of these hemlocks contained enough tannins to process hundreds of thousands of cowhides into leather. The leather was manufactured into shoe soles and machine belts, which were sold in the United States and Europe. The mystery tools from the garage—the tongs and plunger—were used to pull and dip the cowhides through a brew of tannins cooked out of hemlock bark.

Pratt's factory employed many workers, evidently members of my family included, and generated the wealth that made Prattsville prosperous—for a short while, that is.

Pratt and his men cut down virtually every hemlock tree in a 10-mile radius. Then, they reached farther, taking trees down as far away as 50 miles. They cut them, stripped off the bark, and then, using horses, hauled the bark back to the factory. By 1845, just 20 years after Pratt opened his business, he had to close it because there were no trees left within an economically viable range (Millen, 1995). In a mere 20 years, he and his men had removed centuries of forest—once also home to mountain lions, a host of insects, songbirds, mushrooms, wildflowers. This forest community, too, had included the indigenous Mahican people and the Mohawk tribe of the Iroquois, which earlier Dutch and British settlers had ousted before Pratt's arrival.

As a result of forest destruction, the Schoharie Creek ran lower and warmer than it formerly had. Trout suffered, altering the aquatic food web that, in actuality, was inseparable from the terrestrial one. Moreover, the factory had dumped the used brews of tanning solution into the river, further harming it in ways perhaps no one will ever really know.

Insisting that Prattsville could continue thriving with the trees gone, Pratt next turned his attention to butter making. Citizens began using the cleared hillsides as cow pastures. My family made award-winning butter, for example. Their feed store full of heavy bags of sweet-smelling grains for livestock supplemented the grass, which quickly wore out under the pressure of many grazing animals on sloping, fragile, easily erodible soils.

Today, Prattsville is famous only for falling apart. Most farmers left years ago, as did most of my family. There are

no thriving industries. Many houses have literally fallen down and rotted away; there are virtually no stores in town, no places to buy socks or shoes. There is one grocery. The eggs and butter you can buy there come from Canada.

There is only a small possibility that the hemlock trees will ever reforest the mountainsides of the Catskills, even in protected forest reserve areas. There are a few small remnant patches of old trees here and there, and some are regenerating across the region. The abuse of the past, though, still haunts them. For a number of reasons, some of the changes people made to this landscape are irreversible.

#### **Question 4: Can a Sick Place Like Prattsville Become Healthy Again?**

Amazingly, where all these hemlocks once grew, there now are flourishing maples and oaks, reaching skyward. Their leaves are famously vibrant with reds, yellows, and oranges in the fall. These trees, which were present in smaller numbers when the hemlocks thrived, with more sunlight grew and reproduced on the abandoned farmland. They are building up the worn-out soil, retaining water, and providing shade so that streams run colder and fuller—better habitat for trout and trout fishers. Some people tap the maples for their sap, which they boil to make sweet syrup. The new forests host many summer warblers and other songbirds and maybe even a mountain lion or two—maybe. There are a few new small farms, here and there, and some older ones have been revived, growing food for their neighbors and for people downstate. And some artists have been moving to the quiet and remarkably beautiful area.

When Irene hit, the town of Prattsville was already falling apart, although, at the same time, showing these signs of slow regeneration on the outskirts and uplands. Such hope, however, was not visible on a walk down the forlorn sidewalks of Main Street. When I walked up and down Main Street a couple of weeks after the storm, even the sidewalks were gone. The famous O'Hara's gas station, built on faith before there were enough roads and cars to support it in 1925, was gone—washed into the raging Schoharie, which feeds into the Gilboa Reservoir, which flows into New York City drinking fountains. "Everything's gone," said Kory O'Hara, gas station heir and then town supervisor. "My life is gone," he said, according to an August 29 *New York Times* article somewhat ironically titled "In Catskill Communities, Survivors Are Left With Little But Their Lives" (Rosenberg & Applebome, 2011). Nearly every house not washed away was hung with a piece of white paper reading "condemned." The land itself subsided in many places, leaving gaping holes. These have since been filled in with gravel. In other places, silt, smelling of household chemicals and grease, covered still intact lawns. I noticed, though, that in the garden behind what had been my grandparents' house, under the silt, a zucchini

plant seemed to have survived. The current residents of the house, the family of the Dutch Reformed Church minister (a position my maternal grandfather once briefly held), presumably had planted it. It was bearing two or three fruits, and something small had been gnawing at them. The town is now holding visioning meetings. Some are hoping to rebuild with state and national funding, creating what will be, in New York governor Andrew Cuomo's words, "better than ever before" (Rosenberg & Applebome, 2011). What could that look like, though, with the soil gone, the river polluted, and the full knowledge that Main Street travels through a damaged flood plain in a climate-changed world?

There have been other ways to think about forests rather than in terms of numbers of cowhides tanned, pounds of butter sold, or even houses built from or in them. Why did my ancestors keep that slab of hemlock in the barn? For novelty? Some future use? Pride? Nostalgia? Love? Perhaps in the keeping of that piece of dead tree there is still hope—for personal, cultural, and forest regeneration.

### **Question 5: How Can We Reconcile Human Needs With the Forest Community's Spirit?**

I have yet another family member who was once famous for a different way of thinking about hemlock trees in the Catskills. A couple of decades after Pratt ran out of hemlocks and closed his tannery, the naturalist-author John Burroughs wrote an essay published in 1871 about a walk he took in one of the surviving hemlock remnants near his farm. The wood still stands today. "I counted over 40 varieties of summer birds," wrote Burroughs, "quite a number peculiar to these ancient solitudes."

The ancient hemlocks . . . are rich in many things besides birds. Indeed, their wealth in this respect is owing mainly . . . to their rank vegetable growths, their fruitful swamps, and their dark, sheltered retreats. Their history is of an heroic cast. Ravished and torn by the tanner in his thirst for bark, preyed upon by the lumberman, assaulted and beaten back by the settler, still their spirit has never been broken, their energies never paralyzed. . . . Standing in these fragrant aisles, I feel the strength of the vegetable kingdom, and am awed by the deep and inscrutable processes of life going on so silently about me. . . . In the deep moss I tread as with muffled feet, and the pupils of my eyes dilate in the dim, almost religious light. . . . This nook is the chosen haunt of the winter wren. (Burroughs, 1871, pp. 63–65)

The song of the winter wren makes Burroughs think of "a tremulous vibrating tongue of silver" (Burroughs, 1871, p. 65).

The wealth of the forest to Burroughs's mind encompassed not only its economic uses but also, in today's terms, its ecological health. The healthy forest exuded birdsong and the fragrance of its moist soils, its capacity to sustain life for generation after generation. Its "spirit," in Burroughs's words, sustained his spirit.

Forest relationships are complex, though. Burroughs also wore tanned leather shoes and wrote many books published on paper that came from trees somewhere, and I'm pretty sure he liked butter. So do I.

Humans cannot live by either butter or birdsong alone. We need both—food and spirit, perhaps even shoes, emerging from ecologically healthy places—to sustain us.

This is something that Dr. Wangari Maathai, growing up in a small village in Kenya, perhaps understood better than anyone. When she was a child, she recounts, her mother told her to gather firewood, warning, "Don't pick any dry wood out of the fig tree or even around it." When Maathai asked why, her mother replied, "Because that's a tree of God. . . . We don't use it. We don't cut it. We don't burn it" (Maathai, 2007, p. 45). At that time, Maathai obeyed without understanding. As she matured, she understood so well that her early obedience was transformed into a way of life—a way of meeting human needs not merely by *not* cutting trees but by planting them.

### **Question 6: Why Do We Do What We Do? For How Long Are We Going to Continue?**

Dr. Maathai won her Nobel Peace Prize in 2004 for starting the Green Belt Movement, which helped and continues helping mostly rural women plant millions of trees in Africa and beyond, restoring land and helping them feed, shelter, and clothe their families, providing jobs and giving them more voice as community members.

In 2009, as goodwill ambassador of the Congo rain forest, Dr. Maathai traveled to an area of the 700,000 square mile forest near the border of the Republic of Congo and Cameroon. She went to evaluate the "sustained management forestry" being practiced by a timber company.

"Without the Congo forest, Africa would be one huge desert," writes Maathai (2010, p. 37). Without it, the planet's atmosphere would contain much more carbon dioxide than it already does. Yet millions of acres of forest have already been logged or are under titles to be logged largely to supply people in Europe, America, and Asia with wood. The forest is being destroyed at rates that, if continued, will remove two thirds of it by 2040 (Eccleston, 2008).

As she traveled to the site, Dr. Maathai noticed that the Sangha River, a tributary of the great Congo River, was running clear and full, a sign of ecological health. An area along the way that had been logged previously appeared to be regenerating. At their destination, Dr. Maathai was greeted by local inhabitants, including Aka pygmies who live in the forest. They were welcoming, and their faces were joyful. But Dr. Maathai could see that they were very thin and wore tattered clothes, signs that they were poor.

The timber company had agreed to save some of their logging area for the Aka people who had lived there as integral members of the forest community for generations. But Dr. Maathai could not help but notice that the area being logged was far larger.

## 820 • XIII. ADDRESSING ENVIRONMENTAL INJUSTICES

The loggers chose a large sapele tree to show Dr. Maathai and her group their careful method of felling a tree, engineering the process so that it would not crush others around it. Sapele wood, like the more famous mahogany, is sold to people around the world for making things like beautiful floorboards, furniture, boats, and guitars. This particular tree was about 70 feet tall, Dr. Maathai tells us, and about 8 feet in diameter. It had wide, fanning roots and a broad, umbrella-shaped canopy “filled with smallish, dark green leaves” (Maathai, 2010, p. 39). Its leaves are a unique food source for a kind of caterpillar that is a nutritious part of the diet of the indigenous people. After about 10 minutes of work by 10 men with chain saws, the tree fell just as intended. By looking at the rings, the forester knew this tree had been more than 200 years old. About 35% of this big, old tree, Dr. Maathai learned, would become timber. The rest, not as economically useful, would be burned—its stored carbon rapidly spewed into the air.

Dr. Maathai understood that the loggers were trying their best, better than most timber companies, in fact, to take down this tree and others carefully. They were trying to be fair to people and good to the forest during their operations generally—working toward sustainability. Nonetheless, she could not hold back her tears as the large sapele tree hit the ground with a reverberating thud. “Don’t worry,” said the forester to her. “There are millions of other trees out there in the forest” (Maathai, 2010, p. 40).

This was true, Dr. Maathai understood. And yet she was little comforted.

Consider this view of the situation: Commander Eileen Collins, the first woman to lead a U.S. space shuttle mission, had the chance to observe the Earth from 200 miles away. She saw parts of central Africa burning. “I am not sure why they do that,” she said, reporting on the great cloud of smoke hanging over the rain forest from the burning trees and dust arising from desertified and eroding soils. Commander Collins, in Dr. Maathai’s words, witnessed the “great mantle of sorrow hanging over the African continent” (Maathai, 2010, p. 58).

It wasn’t that Dr. Maathai could not appreciate the need to use trees, even to cut some down. But Dr. Maathai saw something deeply troubling underlying her forester-host’s comment after the felling of the large sapele tree—“Don’t worry. There are millions of other trees out there in the forest.” In this response to her emotion, she identified something fundamentally wrong—a disturbing worldview that, in her words is

all too common, . . . that there are always more trees to be cut, more land to be utilized, more fish to be caught, more water to dam or tap, and more minerals to be mined or prospected for. It’s this attitude toward the earth, that it has unlimited capacity, and the valuing of resources for what they can buy, not what they do, that has created so many of the deep ecological wounds visible across the world. . . . The destruction of the environment is driven by an insatiable craving for more.

This desire and the capacity to forget the lessons of the past and ignore the demands of the future seem as old as time. (Maathai, 2010, p. 40)

When the trees are gone, Maathai asks of all of us, will our cravings for them be satisfied?

### Question 7: What Should We Do With Our Cravings?

This question encompasses consumption, reproduction and population numbers, and our deepest soul’s attitudes.

As the hemlock to Burroughs was worth more than boots, books, and butter in that it was home to winter wrens and dark solitude, the sapele tree, to Maathai’s mind and soul, was worth more than floors, guitars, and charcoal. Its value included the caterpillars, the Aka people, and the Congo River. It also helped regulate the climate of the entire Earth that sustains all life. Burroughs’s hemlock forest while in ecological health expressed its spirit. The sapele, to Dr. Maathai’s understanding, came out of and returned to what she calls The Source—the creator, God, the Great Mystery. The tree was part of a lineage of life going beyond the reach of time and space that humans can grasp. To live sustainably, to her understanding, we need to change the dominating world consciousness, to change our perspective from “there are always more trees” to “these trees are a gift—and they are, gratefully, more than enough.”

Meanwhile, even after Irene, the hemlock remnant Burroughs loved still stands. Maple trees took root and continue to grow on the abused Catskill hillsides. Maathai’s massive tree planting and forest community restoration work continues—spreading out of Africa and even into the streets of Manhattan. Trees grow again where they had disappeared, rivers that had disappeared are reappearing, and soils are rebuilding. The trees are taking in carbon dioxide and storing it. Some of the harm humans have caused are irreversible—some species will never reappear, for example; they are gone forever, including many we’ll never even have known about. Other ousted species, however, will return to reforested areas, and women will feed their children, men and women will find new jobs, and families will flourish as members of healthy communities.

Each of us contains countless positive stories—potential and actual—but the reality remains that humans are still cutting down more trees than are being regrown. And the planet is heating up.

Though the consequences of the rapid, widespread, and violent ways humans have recently altered nature are grave and urgent, there are seeds of hope. And, as far as we know, the Source of Life itself is beyond the power of humans to harm. As far as we know, it will keep doing what it does—creating and re-creating life. Sustainable forest management that keeps the welfare of the whole planet in mind will help us figure out how to harmonize with that Source.

## Postscript

“Conservation is a state of harmony between men and land,” wrote the 20th-century American ecologist and conservationist Aldo Leopold. By *land*, he meant every part of Earth—soils, waters, air, plants, and animals (including humans) in the totality of its beauty. “Harmony with land,” he said, “is like harmony with a friend; you cannot cherish his right hand and chop off his left. . . . The land is one organism” (Leopold, 1993, p. 145). In other words, in a world that is interdependent, positive stories of just relationships between humans and land cannot include ongoing, large-scale deforestation to provide luxuries for the few because they end up jeopardizing the thriving lives of the many. Yet people need to use forests in some ways to survive and thrive. “A conservationist,” Leopold also wrote, “is one who is humbly aware that with each stroke [of his axe] he is writing his signature on the face of his land” (Leopold, 1949/1968, p. 68).

Leopold, who began his career as a scientific forester and ended up as a wildlife and then landscape ecologist, had a special personal relationship with pine trees. He loved all trees, but he gladly admitted to this bias. He tried to figure out the reason for it one day as he stood in front of one particular pine tree with his axe in hand, considering which to cut—the pine or a red birch—that were crowding each other. His preexisting bias was to save the pine. Was he drawn to it because he had planted it in an effort to restore the worn-out farm he had purchased? Was it because it would live longer than many other species in his land community? Was it because it was rarer than others? Was it because it stayed green all winter whereas deciduous trees lose their leaves? Was it because it was at that time valued economically as good timber? Was it because it sheltered grouse in winter and trailing arbutus, Indian pipe, a pyrola, or a twin flower in spring and summer? Or maybe it was because it somehow stimulated his imagination and hopes more deeply than other trees?

He never could figure out exactly why. He simply loved pines best. But he came to realize that to love a pine tree also meant to love the birch standing next to it and all the

other trees, plants, and animals, as well as the soils underfoot, the river flowing nearby, and the air he breathed. This was so because an individual tree cannot be healthy apart from the health of the whole community. Nor can a whole community be healthy when its individual members are in jeopardy. We have learned even more clearly since Leopold’s death in 1948 that the health of a land community in one place is ultimately inseparable from that of every other place, even places separated by long distances—like that between the Catskills and Congo Basin forests. Indeed, the health of the planet depends on the sustained health of every place—the ones we inhabit and the ones we don’t—and the health of the places we live in depends on the health of the planet. In Leopold’s words, the perpetuation of the “integrity, stability, and beauty” (Leopold, 1949/1968, p. 224) of every place adds up to a whole, complex Earth community that has evolved over billions of years. And the perpetuation of Earth’s self-renewing capacity depends on how humans think about land, including forests.

As Leopold, with axe in hand, considered the pine and the birch within the context of the health of the whole ecological community, he recognized that to wield his power wisely he needed first to raise and address many questions—about his own biases and values, about scientific knowledge, about responsibility, health, love, and justice. As he pondered these two trees and the multiple facets of his relationship with them, Leopold realized that they, too, had stories to tell, as did every land community member. When he listened for their tales, his own unfolding story as a caring person was changed in response. He learned to apply his love for all life more skillfully.

We stand today on an Earth already gravely harmed by human activities. If, however, we who once believed that human power equaled human right turn now to listen respectfully to the voices of other members of Earth’s community, becoming changed ourselves, we may find pathways toward increasingly positive stories of human-human, human-forest, -marshland, -desert, -tundra, -ocean, -river—that is, paths toward healthy human-Earth community relationships as a whole. That would be something to celebrate.

## References and Further Readings

- Alpine, J. (2011, April 13). Upcoming UN backed summit. *UN News Center*. Retrieved May 15, 2011, from <http://www.un.org/apps/news/story.asp?NewsID=38099&Cr=forest&Cr1>
- Burroughs, J. (1871). *Wake robin*. New York, NY: Hurd and Houghton.
- Carson, R. (1962). *Silent spring*. New York, NY: Houghton Mifflin.
- Eccleston, P. (2008, June 17). Fund to save Congo Basin rain forest launched. *The Telegraph*. Retrieved November 19, 2011, from <http://www.telegraph.co.uk/earth/earthnews/3344620/Fund-to-save-Congo-Basin-rainforest-launched.html>
- Food and Agriculture Organization of the United Nations (FAO). (2011a). Deforestation and net forest area change. Retrieved May 15, 2011, from <http://www.fao.org/forestry/30515/en>
- Food and Agriculture Organization of the United Nations (FAO). (2011b). Forests and the environment. Retrieved May 15, 2011, from <http://www.fao.org/forestry/28814/en>
- Global Footprint Network. (2010). Trends. Retrieved May 15, 2011, from <http://www.footprintnetwork.org/en/index.php/GFN/page/trends/unitedstates>

## 822 • XIII. ADDRESSING ENVIRONMENTAL INJUSTICES

- Hansen, J. (2008). Target atmospheric CO<sub>2</sub>: Where should humanity aim? *Open Atmospheric Science Journal* 2, 217–231.
- Intergovernmental Panel on Climate Change (IPCC). (2007). *Climate change 2007: Synthesis report* (Contribution of Working Groups I, II, III to the Fourth Assessment Working Report of the Intergovernmental Panel on Climate Change; R. K. Pachauri & A. Reisinger, Eds.). Geneva, Switzerland: Author. Retrieved May 15, 2011, from [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/spms1.html](http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms1.html) and [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/spms2.html](http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms2.html)
- Kolbert, E. (2006). *Field notes from a catastrophe: Man, nature, and climate change*. New York, NY: Bloomsbury.
- Leopold, A. (1968). *A Sand County almanac*. New York, NY: Oxford University Press. (Original work published 1949).
- Leopold, A. (1993). *Round River* (L. Leopold, Ed.). New York, NY: Oxford University Press.
- Maathai, W. (2007). *Unbowed: A memoir*. New York, NY: Anchor Books.
- Maathai, W. (2010). *Replenishing the Earth*. New York, NY: Doubleday.
- McLerran, J. (2011). Mapping memory. In J. Enoté & J. McLerran (Eds.), *A:shíwi A:wán Ulohnanne-the Zuni world* (pp. 10–21). Flagstaff, AZ: Museum of Northern Arizona.
- Millen, P. (1995). *Bare trees: Zaddock Pratt, master tanner and the story of what happened to the Catskill Mountain Forest*. Hensenville, NY: Black Dome Press.
- Notaras, M. (2011, January 17). More than just planting trees. *Our World 2.0*. [Newsletter]. Retrieved May 15, 2011, from <http://ourworld.unu.edu/en/more-than-just-planting-trees>
- Rosenberg, N., & Applebome, P. (2011, August 29). In Catskill communities survivors are left with little but their lives. *New York Times*. Retrieved August 29, 2011, from <http://www.nytimes.com/2011/08/30/nyregion/storm-leaves-catskill-towns-little-but-debris.html>
- Royal Society. (2010). *Climate change: A summary of the science*. Retrieved from [http://royalsociety.org/uploadedFiles/Royal\\_Society\\_Content/policy/publications/2010/4294972962.pdf](http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/publications/2010/4294972962.pdf)
- Semple, K., & Rosenberg, N. (2011, August 31). Storm's cost may reach \$1 billion, Cuomo says [Web log post]. *New York Times*. Retrieved August 31, 2011, from <http://cityroom.blogs.nytimes.com/2011/08/31/irenes-cost-may-reach-1-billion-cuomo-says>
- Steingraber, S. (1997). *Living downstream: An ecologist's personal investigation of cancer and the environment*. Boston, MA: Addison-Wesley.
- Swimme, B., & Tucker, M. E. (2011). *Journey of the universe*. New Haven, CT: Yale University Press.
- United Nations. (2011). International Year of Forests. Retrieved May 15, 2011, from <http://www.un.org/en/events/iyof2011>
- United Nations News Service. (2010, March 25). Deforestation in decline but rate remains alarming, UN agency says. Retrieved May 15, 2011, from <http://www.un.org/apps/news/story.asp?NewsID=34195>
- van den Broek, P. (2010). Using texts in science education: Cognitive processes and knowledge representation. *Science*, 328, 453–456.
- Wargo, J. (2009). *Green intelligence*. New Haven, CT: Yale University Press.
- Williams, T. T. (1991). *Refuge: An unnatural history of family and place*. New York, NY: Pantheon Books.
- Wilson, E. O. (2002, Spring). The power of story. *American Educator*, 28, 8–11.