



THE More Beautiful World  
Our Hearts Know  
IS Possible

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Sometimes I feel nostalgic for the cultural mythology of my youth, a world in which there was nothing wrong with soda pop, in which the Super Bowl was important, in which America was bringing democracy to the world, in which the doctor could fix you, in which science was going to make life better and better, and they just put a man on the moon.

Life made sense. If you worked hard you could get good grades, get into a good college, go to grad school or follow some other professional path, and you would be happy. With a few unfortunate exceptions, you would be successful if you obeyed the rules of our society: if you followed the latest medical advice, kept informed by reading the *New York Times*, got a good education, obeyed the law, made prudent investments, and stayed away from Bad Things like drugs. Sure there were problems, but the scientists and experts were working hard to fix them. Soon a new medical advance, a new law, a new educational technique would propel the onward improvement of life. My childhood perceptions were part of a narrative I call the Story of the People, in

which humanity was destined to create a perfect world through science, reason, and technology: to conquer nature, transcend our animal origins, and engineer a rational society.

From my vantage point, the basic premises of this story seemed unquestionable. My education, the media, and most of all the normality of the routines around me conspired to say, "Everything is fine." Today it is increasingly obvious that this was a bubble world built atop massive human suffering and environmental degradation, but at the time one could live within that bubble without need of much self-deception. The story that surrounded us was robust. It easily kept anomalous data points on the margins.

Nonetheless, I (like many others) felt a wrongness in the world, a wrongness that seeped through the cracks of my privileged, insulated childhood. I never fully accepted what I had been offered as normal. Life, I knew, was supposed to be more joyful than this, more real, more meaningful, and the world was supposed to be more beautiful. We were not supposed to hate Mondays and live for the weekends and holidays. We were not supposed to have to raise our hands to be allowed to pee. We were not supposed to be kept indoors on a beautiful day, day after day.

And as my horizons broadened, I knew that millions were not supposed to be starving, that nuclear weapons were not supposed to be hanging over our heads, that the rainforests were not supposed to be shrinking, or the fish dying, or the condors and eagles disappearing. I could not accept the way the dominant narrative of my culture handled these things: as fragmentary problems to be solved, as unfortunate facts of life to be regretted, or as unmentionable taboo subjects to be simply ignored.

On some level, we all know better. This knowledge seldom finds clear articulation, so instead we express it indirectly through covert and overt rebellion. Addiction, self-sabotage, procrastination, laziness, rage, chronic fatigue, and depression are all ways that we withhold our full participation in the program of life we are offered. When the conscious mind cannot find a reason to say no, the unconscious says no in its own way. More and more of us cannot bear to stay in the "old normal" any longer.

This narrative of normal is crumbling on a systemic level too. We live

today at a moment of transition between worlds. The institutions that have borne us through the centuries have lost their vitality; only with increasing self-delusion can we pretend they are sustainable. Our systems of money, politics, energy, medicine, education, and more are no longer delivering the benefits they once did (or seemed to). Their Utopian promise, so inspiring a century ago, recedes further every year. Millions of us know this; more and more, we hardly bother to pretend otherwise. Yet we seem helpless to change, helpless even to stop participating in industrial civilization's rush over the cliff.

I have in my earlier work offered a reframing of this process, seeing human cultural evolution as a story of growth, followed by crisis, followed by breakdown, followed by a renaissance: the emergence of a new kind of civilization, an Age of Reunion to follow the Age of Separation. Perhaps profound change happens only through collapse. Certainly that is true for many on a personal level. You may know, intellectually, that your lifestyle isn't sustainable and you have to change your ways. "Yeah, yeah. I know I should stop smoking. Start exercising. Stop buying on credit."

But how often does anyone change without a wake-up call, or more often, a series of wake-up calls? After all, our habits are embedded in a way of being that includes all aspects of life. Hence the saying, "You cannot change one thing without changing everything."

On the collective level the same is true. As we awaken to the interconnectedness of all our systems, we see that we cannot change, for example, our energy technologies without changing the economic system that supports them. We learn as well that all of our external institutions reflect our basic perceptions of the world, our invisible ideologies and belief systems. In that sense, we can say that the ecological crisis—like all our crises—is a spiritual crisis. By that I mean it goes all the way to the bottom, encompassing all aspects of our humanity.

And what, exactly, is at the bottom? What do I mean by a "transition between worlds"? At the bottom of our civilization lies a story, a mythology. I call it the Story of the World or the Story of the People—a matrix of narratives, agreements, and symbolic systems that comprises the answers our culture offers to life's most basic questions:

- Who am I?

- Why do things happen?
- What is the purpose of life?
- What is human nature?
- What is sacred?
- Who are we as a people?
- Where did we come from and where are we going?

Our culture answers them more or less as follows. I will present a pure articulation of these answers, this Story of the World, though in fact it has never dominated completely even as it reached its zenith in the last century. You might recognize some of these answers to be scientifically obsolete, but this obsolete nineteenth- and twentieth-century science still generates our view of what is real, possible, and practical. The new physics, the new biology, the new psychology have only barely begun to infiltrate our operating beliefs. So here are the old answers:

Who are you? You are a separate individual among other separate individuals in a universe that is separate from you as well. You are a Cartesian mote of consciousness looking out through the eyes of a flesh robot, programmed by its genes to maximize reproductive self-interest. You are a bubble of psychology, a mind (whether brain-based or not) separate from other minds and separate from matter. Or you are a soul encased in flesh, separate from the world and separate from other souls. Or you are a mass, a conglomeration of particles operating according to the impersonal forces of physics.

Why do things happen? Again, the impersonal forces of physics act upon a generic material substrate of fundamental particles. All phenomena are the result of these mathematically determined interactions. Intelligence, order, purpose, and design are illusions; underneath it all is merely a purposeless jumble of forces and masses. Any phenomenon, all of movement, all of life, is the result of the sum total of forces acting upon objects.

What is the purpose of life? There is no purpose, only cause. The universe is at bottom blind and dead. Thought is but an electrochemical impulse; love but a hormonal cascade that rewires our brains. The only purpose of life (other than what we manufacture ourselves) is simply to live, to survive and reproduce, to maximize rational self-interest. Since

we are fundamentally separate from each other, my self-interest is very likely at the expense of your self-interest. Everything that is not-self is at best indifferent to our well-being, at worst hostile.

What is human nature? To protect ourselves against this hostile universe of competing individuals and impersonal forces, we must exercise as much control as possible. We seek out anything that furthers that aim; for example, money, status, security, information, and power—all those things we call “worldly.” At the very foundation of our nature, our motivations, and our desires, is what can only be called evil. That is what a ruthless maximizer of self-interest is.

What, therefore, is sacred? Since the blind, ruthless pursuit of self-interest is antisocial, it is important to overcome our biological programming and pursue “higher things.” A holy person doesn’t succumb to the desires of the flesh. He or she takes the path of self-denial, of discipline, ascending into the realm of spirit or, in the secular version of this quest, into the realm of reason and the mind, principles and ethics. For the religious, to be sacred is to be otherworldly; the soul is separate from the body, and God lives high above the earth. Despite their superficial opposition, science and religion have agreed: the sacred is not of this world.

Who are we as a people? We are a special kind of animal, the apex of evolution, possessing brains that allow the cultural as well as the genetic transfer of information. We are unique in having (in the religious view) a soul or (in the scientific view) a rational mind. In our mechanical universe we alone possess consciousness and the wherewithal to mold the world according to our design. The only limit to our ability to do so is that amount of force we can harness and the precision with which we can apply it. The more we are able to do so, the better off we are in this indifferent or hostile universe, the more comfortable and secure.

Where have we come from and where are we going? We started out as naked, ignorant animals, barely hanging on to survival, living lives that were nasty, brutish, and short. Fortunately, thanks to our big brains, science replaced superstition and technology replaced ritual. We ascended to become the lords and possessors of nature, domesticating plants and animals, harnessing natural forces, conquering diseases, laying bare the deepest secrets of the universe. Our destiny is to complete that conquest: to free ourselves from labor, from disease, from

death itself, to ascend to the stars and leave nature behind altogether.

Throughout this book I will refer to this worldview as the Story of Separation, the old story, or sometimes outgrowths from it: the Story of Ascent, the program of control, and so forth.

The answers to these questions are culturally dependent, yet they immerse us so completely that we have seen them as reality itself. These answers are changing today, along with everything built atop them—which basically means our entire civilization. That is why we sometimes get the vertiginous feeling that the whole world is falling apart. Seeing the emptiness of what once seemed so real, practical, and enduring, we stand as if at an abyss. What's next? Who am I? What's important? What is the purpose of my life? How can I be an effective agent of healing? The old answers are fading as the Story of the People that once answered them crumbles around us.

This book is a guide from the old story, through the empty space between stories, and into a new story. It addresses the reader as a subject of this transition personally, and as an agent of transition—for other people, for our society, and for our planet.

Like the crisis, the transition we face goes all the way to the bottom. Internally, it is nothing less than a transformation in the experience of being alive. Externally, it is nothing less than a transformation of humanity's role on planet Earth.

I do not offer this book as someone who has completed this transition himself. Far from it. I have no more authority to write this book than any other man or woman. I am not an avatar or a saint, I am not channeling ascended masters or ETs, I have no unusual psychic powers or intellectual genius, I have not passed through any remarkable hardship or ordeal, I have no especially deep spiritual practice or shamanic training. I am an ordinary man. You will, therefore, have to take my words on their own merits.

And if my words fulfill their intention, which is to catalyze a next step, big or small, into the more beautiful world our hearts know is possible, my very ordinariness becomes highly significant. It shows how close we all are, all of us ordinary humans, to a profound transformation of consciousness and being. If I, an ordinary man, can see it, we must be almost there.

# BRAIDING SWEETGRASS

INDIGENOUS WISDOM, SCIENTIFIC KNOWLEDGE,  
AND THE TEACHINGS OF PLANTS



ROBIN WALL KIMMERER

*"A great teacher, her words are a hymn of love to the world."* —ELIZABETH GILBERT



## Old-Growth Children

We're chatting like vireos as we hike with long, easy strides through rolling stands of Doug Fir. Then, at some invisible boundary, the temperature drops in a cool breath and we descend into a basin. The conversation halts.

Fluted trunks rise from a lawn of deep moss-green, their canopies lost in the hanging mist that suffuses the forest with hazy silver twilight. Strewn with huge logs and clumps of ferns, the forest floor is a featherbed of needles dappled with sun flecks. Light streams through holes over the heads of young trees while their grandmothers loom in shadows, great buttressed trunks eight feet in diameter. You want to be quiet in instinctive deference to the cathedral hush and because nothing you could possibly say would add a thing.

But it wasn't always quiet here. Girls were here, laughing and chatting while their grandmas sat nearby with singing sticks, supervising. A long scar runs up the tree across the way, a dull gray arrow of missing bark tapering off among the first branches, thirty feet up. The one who took this strip would have backed away, up the hill behind her, with the bark ribbon grasped in her hands, pulling until it tore loose.

In those days the ancient rainforests spread from Northern California to southeastern Alaska in a band between the mountains and the sea. Here is where the fog drips. Here is where the moistureladen air from the Pacific rises against the mountains to produce upward of one hundred inches of

rain a year, watering an ecosystem rivaled nowhere else on earth. The biggest trees in the world. Trees that were born before Columbus sailed.

And trees are just the beginning. The numbers of species of mammals, birds, amphibians, wildflowers, ferns, mosses, lichens, fungi, and insects are staggering. It's hard to write without running out of superlatives, for these were among the greatest forests on earth, forests peopled with centuries of past lives, enormous logs and snags that foster more life after their death than before. The canopy is a multilayered sculpture of vertical complexity from the lowest moss on the forest floor to the wisps of lichen hanging high in the treetops, raggedy and uneven from the gaps produced by centuries of windthrow, disease, and storms. This seeming chaos belies the tight web of interconnections between them all, stitched with filaments of fungi, silk of spiders, and silver threads of water. *Alone* is a word without meaning in this forest.

Native peoples of the coastal Pacific Northwest made rich livelihoods here for millennia, living with one foot in the forest and one on the shore, gathering the abundance of both. This is the rainy land of salmon, of wintergreen conifers, huckleberries, and sword fern. This is the land of the tree of ample hips and full baskets, the one known in the Salish languages as Maker of Rich Women, as Mother Cedar. No matter what the people needed, the cedar was ready to give, from cradleboard to coffin, holding the people.

In this wet climate, where everything is on its way back to decay, rot-resistant cedar is the ideal material. The wood is easily worked and buoyant. The huge, straight trunks practically offer themselves for seagoing craft that could carry twenty paddlers. And everything that was carried in those canoes was also the gift of cedar: paddles, fishing floats, nets, ropes, arrows, and harpoons. The paddlers even wore hats and capes of cedar, warm and soft against the wind and rain.

Along the creeks and bottomlands, the women sang their way down well-worn trails to find just the right tree for each purpose. Whatever they needed they asked for respectfully, and for whatever they received they offered prayers and gifts in return. Notching a wedge in the bark of a

middle-aged tree, the women could peel off a ribbon a hands-width wide and twenty-five feet long. Harvesting bark from just a fraction of the tree's circumference, they ensured that the damage would heal over without ill effect. The dried strips were then beaten to separate the many layers, yielding inner bark with a satiny softness and a glossy sheen. A long process of shredding bark with a deer bone yielded a pile of fluffy cedar "wool." Newborn babies were delivered into a nest of this fleece. The "wool" could also be woven into warm, durable clothing and blankets. A family sat on woven mats of outer bark, slept on cedar beds, and ate from cedar dishes.

Every part of the tree was used. The ropy branches were split for tools, baskets, and fish traps. Dug and cleaned, cedars' long roots were peeled and split into a fine, strong fiber that is woven into the famous conical hats and ceremonial headgear that signify the identity of the one beneath the brim. During the famously cold and rainy winters, with a perpetual twilight of fog, who lit the house? Who warmed the house? From bow drill to tinder to fire, it was Mother Cedar.

When sickness came, the people turned again to her. Every part is medicine for the body, from the flat sprays of foliage to the flexible branches to the roots, and throughout there is powerful spiritual medicine as well. Traditional teachings recount that the power of cedars is so great and so fluid that it can flow into a worthy person who leans back into the embrace of her trunk. When death came, so came the cedar coffin. The first and last embrace of a human being was in the arms of Mother Cedar.

Just as old-growth forests are richly complex, so too were the oldgrowth cultures that arose at their feet. Some people equate sustainability with a diminished standard of living, but the aboriginal people of the coastal old-growth forests were among the wealthiest in the world. Wise use and care for a huge variety of marine and forest resources, allowed them to avoid overexploiting any one of them while extraordinary art, science, and architecture flowered in their midst. Rather than to greed, prosperity here gave rise to the great potlatch tradition in which material goods were ritually given away, a direct reflection of the generosity of the land to the

people. Wealth meant having enough to give away, social status elevated by generosity. The cedars taught how to share wealth, and the people learned.

Scientists know Mother Cedar as *Thuja plicata*, the western red cedar. One of the venerable giants of the ancient forests, they reach heights of two hundred feet. They are not the tallest, but their enormous buttressed waistlines can be fifty feet in circumference, rivaling the girth of the redwoods. The bole tapers from the fluted base, sheathed in bark the color of driftwood. Her branches are graceful and drooping with tips that swoop upward like a bird in flight, each branch like a frond of green feathers.

Looking closely, you can see the tiny overlapping leaves that shingle each twig. The species epithet *plicata* refers to their folded, braided appearance. The tight weave and golden-green sheen make the leaves look like tiny braids of sweetgrass, as if the tree itself was woven of kindness.

Cedar unstintingly provided for the people, who responded with gratitude and reciprocity. Today, when cedar is mistaken for a commodity from the lumberyard, the idea of gift is almost lost. What can we who recognize the debt possibly give back?

The blackberries clawed at Franz Dolp's sleeves as he forced himself through the bramble. Salmonberry grabbing an ankle threatened to pull him down the nearly vertical hill, but you can't fall far before the thicket, eight feet tall, will trap you like Br'er Rabbit in the briar patch. You lose any sense of direction in the tangle; the only way is up, toward the ridgetop. Clearing trail is the first step. Nothing else is possible without access, so he pressed on, machete swinging.

Tall and lean in field pants and the tall rubber work boots that are endemic in this muddy, thorny terrain, he wore a black baseball cap pulled low. With artist's hands in worn work gloves, he was a man who knew how to sweat. That night he wrote in his journal: "This is work I should have started in my twenties, not my mid-fifties."

All afternoon he lopped and slashed a way toward the ridge, hacking blindly through the brush, his rhythm broken only by the clang of the blade off an obstacle hidden in the brambles: a huge old log, shoulder high, cedar by the looks of it. They were only milling Douglas fir in those early days,

so they left the other trees to rot. Only thing is, cedar doesn't rot: it can last for a hundred years on the forest floor, maybe more. This one was a remnant of the missing forest, left over from the first cut more than a century ago. It was too big to cut through and a long way around, so Franz just created another bend in the trail.

Today, now that the old cedars are nearly gone, people want them. They scrounge old clear-cuts for the logs that were left behind. Shakebolting, they call it, turning old logs into high-priced cedar shakes. The grain is so straight the shakes split right off.

It's amazing to think that, within the lifetime of those old trees on the ground, they have gone from being revered to being rejected to nearly being eliminated, and then somebody looked up and noticed they were gone and wanted them again.

"My tool of preference was a Cutter Mattock, commonly known in this area as a Maddox," Franz wrote. With this sharp edge, he could chop roots and grade trail, defeating, if briefly, the march of the vine maples.

It took several more days of wrangling impenetrable brush to break through to the ridgetop, where a view of Mary's Peak was the reward. "I remember the exhilaration as we reached a certain point and savored our accomplishment. Also the days when with the slopes and the weather contributing mightily to the feeling that everything had gotten out of hand and we just fell down laughing."

Franz's journals record his impressions of the view from the ridge, across a crazy-quilt landscape, the panorama broken up into forestry management units: polygons of dead brown and mottled patches of gray and green next to "dense plantations of young Doug Fir like sections of manicured lawn" in squares and wedges, all broken up like shards of shattered glass on the mountain. Only at the top of Mary's Peak, within the boundaries of a preserve, is there a continuous span of forest, rough textured and multihued from a distance, the signature of the old-growth forest, the forest that used to be.

"My work grew out of a deeply experienced sense of loss," he wrote, "the loss of what should be here."

When the Coast Range was first opened to logging in the 1880s, the trees were so big—three hundred feet tall and fifty feet around— that the bosses didn't know what to do with them. Eventually two poor sods were told to man the “misery whip,” a thin, two-man crosscut saw that they pulled for weeks to fell the behemoths. These were the trees that built the cities of the west, which grew and then demanded even more. They said in those days, “You could never cut all the old growth.”

About the time the chain saws last growled on these slopes, Franz was planting apple trees and thinking of cider, with his wife and kids on a farm hours away. A father, a young professor of economics, he was investing in home economics, his dream of an Oregon homestead, embedded in the forest, like the one he grew up on, and where he would stay forever.

Unknown to him, while he was raising cows and kids, the blackberries got started in the full sun above what would become his new land on Shotpouch Creek. They were doing their work of covering the stump farm and rusting remnants of logging chains, wheels, and rails. The salmonberries mingled their thorns with the rolls of barbed wire while moss reupholstered the old couch in the gully.

While his marriage was eroding and running downhill on the home farm, so was the soil at Shotpouch. The alders came to try to hold it in place, and then the maples. This was a land whose native language was conifer but now spoke only the slang of leggy hardwoods. Its dream of itself as groves of cedar and fir was gone, lost under the unrelenting chaos of brush. Straight and slow has little chance against fast and thorny. When he drove away from the farm intended for “till death do us part,” the woman waving good-bye said, “I hope that your next dream turns out better than your last.”

In his journal he wrote that he “made the mistake of visiting the farm after it was sold. The new owners had cut it all. I sat among the stumps and the swirling red dust and I cried. When I moved to Shotpouch after leaving the farm, I realized that making a new home required more than building a cabin or planting an apple tree. It required some healing for me and for the land.”

And so it was that a wounded man moved to live on wounded land at Shotpouch Creek.

This patch of land was in the heart of the Oregon Coast Range, the same mountains where his grandfather had made a hardscrabble homestead. Old family photos show a rough cabin and grim faces, surrounded by nothing but stumps.

He wrote, “These forty acres were to be my retreat, my escape to the wild. But this was no pristine wilderness.” The place he chose was near a spot on the map called Burnt Woods. Scalped Woods would have been more apt. The land was razed by a series of clear-cuts, first the venerable old forest and then its children. No sooner had the firs grown back than the loggers came for them again.

After land is clear-cut, everything changes. Sunshine is suddenly abundant. The soil has been broken open by logging equipment, raising its temperature and exposing mineral soil beneath the humus blanket. The clock of ecological succession has been reset, the alarm buzzing loudly.

Forest ecosystems have tools for dealing with massive disturbance, evolved from a history of blowdown, landslide, and fire. The early successional plant species arrive immediately and get to work on damage control. These plants—known as opportunistic, or pioneer, species—have adaptations that allow them to thrive after disturbance. Because resources like light and space are plentiful, they grow quickly. A patch of bare ground around here can disappear in a few weeks. Their goal is to grow and reproduce as fast as possible, so they don’t bother themselves with making trunks but rather madly invest in leaves, leaves, and more leaves borne on the flimsiest of stems.

The key to success is to get more of everything than your neighbor, and to get it faster. That life strategy works when resources seem to be infinite. But pioneer species, not unlike pioneer humans, require cleared land, hard work, individual initiative, and numerous children. In other words, the window of *opportunity* for opportunistic species is short. Once trees arrive on the scene, the pioneers’ days are numbered, so they use their photosynthetic wealth to make babies that will be carried by birds to the

next clear-cut. As a result, many are berry makers: salmonberry, elderberry, huckleberry, blackberry.

The pioneers produce a community based on the principles of unlimited growth, sprawl, and high energy consumption, sucking up resources as fast as they can, wresting land from others through competition, and then moving on. When resources begin to run short, as they always will, cooperation and strategies that promote stability—strategies perfected by rainforest ecosystems—will be favored by evolution. The breadth and depth of these reciprocal symbioses are especially well developed in oldgrowth forests, which are designed for the long haul.

Industrial forestry, resource extraction, and other aspects of human sprawl are like salmonberry thickets—swallowing up land, reducing biodiversity, and simplifying ecosystems at the demand of societies always bent on having more. In five hundred years we exterminated old-growth cultures and old-growth ecosystems, replacing them with opportunistic culture. Pioneer human communities, just like pioneer plant communities, have an important role in regeneration, but they are not sustainable in the long run. When they reach the edge of easy energy, balance and renewal are the only way forward, wherein there is a reciprocal cycle between early and late successional systems, each opening the door for the other.

The old-growth forest is as stunning in its elegance of function as in its beauty. Under conditions of scarcity, there can be no frenzy of uncontrolled growth or waste of resources. The “green architecture” of the forest structure itself is a model of efficiency, with layers of foliage in a multilayered canopy that optimizes capture of solar energy. If we are looking for models of self-sustaining communities, we need look no further than an old-growth forest. Or the old-growth cultures they raised in symbiosis with them.

Franz’s journals recall that when he compared the fragment of old growth he could see in the distance with the raw land at Shotpouch— where the only remnant of the ancient forest was an old cedar log—he knew he had found his purpose. Displaced from his own vision of how the world should



be, he vowed that he would heal this place and return it to what it was meant to be. “My goal,” he wrote, “is to plant an oldgrowth forest.”

But his ambitions ranged beyond physical restoration. As Franz wrote, “It is important to engage in restoration with development of a personal relationship with the land and its living things.” In working with the land, he wrote of the loving relationship that grew between them: “It was as if I discovered a lost part of myself.”

After the garden and the fruit trees, his next goal was building a house that would honor the self-sufficiency and simplicity that he sought. His ideal had been to build the cabin from the red cedar— beautiful, fragrant, rot-resistant, and symbolic—left behind by the loggers on the slopes above. But the repeated logging had simply taken too much. So, regrettably, he had to purchase the cedar timber for the cabin, “with the promise that I would plant and grow more cedar trees than would ever be cut for my use.”

Lightweight and highly water-repellent, sweet-smelling cedar was also the architectural choice for indigenous rainforest peoples. Cedar houses, constructed of both logs and planks, were emblematic of the region. The wood split so readily that, in skilled hands, dimensional boards could be made without a saw. Sometimes trees were felled for lumber, but planks were more often split from naturally fallen logs. Remarkably, Mother Cedar also yielded planks from her living flanks. When a line of wedges of stone or antler were pounded into a standing tree, long boards would pop from the trunk along the straight grain. The wood itself is dead supportive tissue, so the harvest of a few boards from a big tree does not risk killing the whole organism—a practice that redefines our notions of sustainable forestry: lumber produced without killing a tree.

Now, however, industrial forestry dictates how the landscape is shaped and used. To own the land at Shotpouch, which is designated as timberlands, Franz was required to register an approved forest management plan for his new property. He wryly wrote his dismay that his land was classified “not as forestland, but timberland,” as if the sawmill was the only possible destiny for a tree. Franz had an old-growth mind in a Doug Fir world.

The Oregon Department of Forestry and the College of Forestry at Oregon State University offered Franz technical assistance, prescribing herbicides to quell the brush and replanting with genetically improved Douglas fir. If you can ensure plenty of light by eliminating understory competition, Douglas fir makes timber faster than anything else around. But Franz didn't want timber. He wanted a forest.

“My love of this country motivated me to purchase land at Shotpouch,” he wrote. “I wanted to do right here, even if I had little idea of what ‘right’ meant. To love a place is not enough. We must find ways to heal it.” If he used the herbicides, the only tree that could tolerate the chemical rain was Douglas Fir, and he wanted all the species to be present. He vowed to clear the brush by hand.

Replanting an industrial forest is backbreaking labor. Crews of tree planters come in, progressing sideways on steep slopes with bulging sacks of seedlings. Walk six feet, dibble in a seedling, tamp it down. Walk six feet, repeat. One species. One pattern. But at that time there was no prescription for how to plant a natural forest, so Franz turned to the only teacher he had, the forest itself.

Observing the locations of species in the few existing old-growth plots, he tried to replicate their patterns on his own land. Douglas fir went on sunny open slopes, hemlock on the shady aspects, and cedar on the dimly lit, wet ground. Rather than getting rid of the young stands of alder and big-leaf maple as the authorities recommended, he let them stay to do their work of rebuilding soil and planted the shade-tolerant species beneath their canopy. Every tree was marked and mapped and tended. He hand-cleared the brush that threatened to swallow them up, until back surgery eventually forced him to hire a good crew.

Over time, Franz became a very good ecologist, reading his way through both the printed library and the more subtle library of texts offered by the forest itself. His goal was to match his vision for an ancient forest with the possibilities that the land provided.

His journals make it clear that there were times when he doubted the wisdom of his endeavors. He recognized that no matter what he did, the

land would eventually turn back to some sort of forest whether he slogged up hills with a sack of seedlings or not. Human time is not the same as forest time. But time alone is no guarantee of the oldgrowth forest he imagined. When the surrounding landscape is a mosaic of clear-cut and Douglas fir lawns, it is not necessarily possible for a natural forest to reassemble itself. Where would the seeds come from? Would the land be in a condition to welcome them?

This last question is especially critical for the regeneration of “Maker of Rich Women.” Despite its huge stature, cedar has tiny seeds, flakes wafted on the wind from delicate cones not more than half an inch long. Four hundred thousand cedar seeds add up to a single pound. It’s a good thing that the adults have a whole millennium to reseed themselves. In the profusion of growth in these forests, such a speck of life has almost no chance at all to establish a new tree.

While adult trees are tolerant of the various stresses that an always changing world throws their way, the young are quite vulnerable. Red cedar grows more slowly than the other species who quickly overtop it and steal the sun—especially after a fire or logging, it is almost entirely outcompeted by species better adapted to the dry, open conditions. If red cedars do survive, despite being the most shade tolerant of all the western species, they do not flourish but rather bide their time, waiting for a windthrow or a death to punch a hole in the shade. Given the opportunity, they climb that transient shaft of sunlight, step by step, making their way to the canopy. But most never do. Forest ecologists estimate that the window of opportunity for cedars to get started occurs perhaps only twice in a century. So at Shotpouch, natural recolonization was out. In order to have cedars in the restored forest, Franz had to plant them.

Given all cedar’s traits—slow growth, poor competitive ability, susceptibility to browsing, wildly improbable seedling establishment—one would expect it to be a rare species. But it’s not. One explanation is that while cedars can’t compete well on uplands, they thrive with wet feet in alluvial soils, swamps, and water edges that other species can’t stand. Their favorite habitat provides them with a refuge from competition. Accordingly,

Franz carefully selected creekside areas and planted them thickly with cedar.

The unique chemistry of cedar endows it with both life-saving and tree-saving medicinal properties. Rich with many highly antimicrobial compounds, it is especially resistant to fungi. Northwest forests, like any ecosystem, are susceptible to outbreaks of disease, the most significant of which is laminated root rot caused by the native fungus *Phellinus weirii*. While this fungus can be fatal for Douglas firs, hemlock, and other trees, the red cedars are blessedly immune. When root rot strikes the others, the cedars are poised to fill in the empty gaps, freed of competition. The Tree of Life survives in patches of death.

After years of working alone to keep the cedar thriving, Franz found someone who shared his notion of a good time: planting trees and chopping salmonberry. Franz's first date with Dawn was on the ridgetop at Shotpouch. Over the following eleven years, they planted more than thirteen thousand trees and created a network of trails with names that reflect intimacy with their forty acres.

Forest Service lands are often named something like Management Unit 361. At Shotpouch, more evocative place names are penned on the hand-drawn trail map of the property: Glass Canyon, Viney Glen, Cow Hip Dip. Even individual trees, remnants of the original forest, are named: Angry Maple, Spider Tree, Broken Top. One word appears on the map more than any other: Cedar Springs, Cedar Rest, Sacred Cedar, Cedar Family.

Cedar Family is especially evocative of how cedar often lives in familylike groves. Perhaps in compensation for its difficulty in sprouting from seed, cedar is a champion at vegetative reproduction. Almost any part of the tree that rests on wet ground can take root, in a process known as layering. The low swooping foliage may send roots into moist beds of moss. The flexible branches themselves can initiate new trees—even after they're cut from the tree. Native peoples probably tended the cedar groves by propagating them in this way. Even a young cedar that has tipped over or been flattened by hungry elk will reorient its branches and start over. The

aboriginal names for the tree, Long Life Maker and Tree of Life, are appropriately bestowed.

One of the most touching place names on Franz's map is a spot he called Old Growth Children. To plant trees is an act of faith. Thirteen thousand acts of faith live on this land.

Franz studied and planted, studied and planted, making a lot of mistakes and learning as he went. Franz wrote, "I was a temporary steward of this land. I was its caretaker. More accurately I was its caregiver. The devil was in the details and the devil presented details at every turn." He observed the reaction of the old-growth children to their habitats and then tried to remedy whatever ailed them. "Reforestation took on the flavor of tending a garden. This was a forestry of intimacy. When I am on the land, it is very hard to keep from messing around. Planting one more tree, cutting a limb. Transplanting what has already been planted to a more favorable spot. I call it 'anticipatory redistributive naturalization.' Dawn calls it tinkering."

Cedar's generosity extends not only to people, but to many other forest dwellers as well. Its tender, low-hanging foliage is among deer and elk's favorite food. You'd think that seedlings hidden under the canopies of everything else would be camouflaged, but they are so palatable that the herbivores hunt them out as if they were hidden chocolate bars. And because they grow so slowly, they remain vulnerable at deer height for a long time.

"The unknowns pervading my work were as pervasive as shade in the forest," Franz wrote. His plan to grow cedars on the stream banks was a good one, except that's where the beavers also live. Who knew that they eat cedar for dessert? His cedar nurseries were gnawed to oblivion. So he planted them again, this time with a fence. The wildlife just snickered. Thinking like a forest, he then planted a thicket of willow, beavers' favorite meal, along the creek, hoping to distract them from his cedars.

"I definitely should have met with a council of mice, boomers, bobcats, porcupines, beaver, and deer before I started this experiment," he wrote.

Many of these cedars today are gangly teens, all limbs and floppy leader, not yet grown into themselves. Nibbled by deer and elk, they become even

more awkward. Under the tangle of vine maple they struggle toward light, reaching an arm here, a branch there. But their time is coming.

After completing the final plantings, Franz wrote, “I may heal the land. Yet I have little doubt of the direction that the real benefits flow. An element of reciprocity is the rule here. What I give, I receive in return. Here on the slopes of Shotpouch Valley, I have been engaged less in a personal forestry of restoration than in a forestry of personal restoration. In restoring the land, I restore myself.”

Maker of Rich Women, there is truth in her name. She made Franz rich, too, with the wealth of seeing his vision alive in the world, of giving a gift to the future that only grows more beautiful with time.

Of Shotpouch he wrote, “This was an exercise in personal forestry. But it was also an exercise in the creation of personal art. I could have been painting a landscape or composing a cycle of songs. The exercise in finding the right distribution of trees feels like revising a poem. Given my lack of technical expertise, I could not reconcile myself to the title of ‘forester,’ but I could live with the idea that I am a writer who works in the forest. And with the forest. A writer who practices the art of forestry and writes in trees. The practice of forestry may be changing, but I am unaware of any instances where proficiency in the arts is sought as a professional qualification by timber companies or schools of forestry. Perhaps that is what we need. Artists as foresters.”

In his years on this plot, he watched the watershed start to heal from a long history of damage. His journal describes a time-travel visit to Shotpouch one hundred and fifty years in the future, when “the venerable cedars have captured the landscape where an alder thicket once stood.” But he knew that, in the present, his forty acres were just a seedling, and a vulnerable one at that. Meeting his goal would require many more careful hands—and hearts and minds too. Through his art on the land and on the page, he had to help shift people toward the worldview of old-growth cultures, a renewal of relationship to land.

Old-growth cultures, like old-growth forests, have not been exterminated. The land holds their memory and the possibility of regeneration. They are

not only a matter of ethnicity or history, but of relationships born out of reciprocity between land and people. Franz showed that you can plant an old-growth forest, but he also envisioned the propagation of an old-growth culture, a vision of the world, whole and healed.

To further this vision, Franz co-created the Spring Creek Project, whose “challenge is to bring together the practical wisdom of the environmental sciences, the clarity of philosophical analysis and the creative, expressive power of the written word, to find new ways to understand and reimagine our relation to the natural world.” His notion of foresters as artists and poets as ecologists takes root in the forest and in the cozy cedar cabin at Shotpouch. It has become a place of inspiration and solitude for writers, writers who could be the restoration ecologists of relationship. Writers who could be like birds in a thicket of salmonberry, carrying seeds to a wounded land, making it ready for renewal of old-growth culture.

The cabin is a gathering spot for fertile collaborations among artists, scientists, and philosophers, whose works are then expressed in a dazzling array of cultural events. His inspiration has become a nurse log for the inspiration of others. Ten years, thirteen thousand trees, and countless inspired scientists and artists later, he wrote, “I had confidence now that when it came time for me to rest, I could step aside and let others pass upon a path to a very special place. To a forest of giant fir, cedar, and hemlock, to the ancient forest that was.” He was right, and many have followed the path he blazed from weedy brambles to old-growth children. Franz Dolp passed away in 2004 in a collision with a paper mill truck on his way to Shotpouch Creek.

Outside the door of his cabin, the circle of young cedars look like women in green shawls, beaded with raindrops catching the light, graceful dancers in feathery fringe that sways with their steps. They spread their branches wide, opening the circle, inviting us to be part of the dance of regeneration. Clumsy at first, from generations of sitting on the sidelines, we stumble until we find the rhythm. We know these steps from deep memory, handed down from Skywoman, reclaiming our responsibility as cocreators. Here in a homemade forest, poets, writers, scientists, foresters, shovels, seeds, elk,

and alder join in the circle with Mother Cedar, dancing the old-growth children into being. We're all invited. Pick up a shovel and join the dance.



THE  
**NATURE**  
of **DESIGN**

**Ecology, Culture, and Human Intention**

**David W. Orr**

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# 1

## **Introduction: The Design of Culture and the Culture of Design**

Environmentalists are often regarded as people wanting to stop one thing or another, and there are surely lots of things that ought to be stopped. The essays in this book, however, have to do with beginnings. How, for example, do we advance a long-delayed solar revolution? Or begin one in forest management? Or materials use? How do we reimagine and remake the human presence on earth in ways that work over the long haul? Such questions are the heart of what theologian Thomas Berry (1999) calls “the Great Work” of our age. This endeavor is nothing less than the effort to harmonize the human enterprise with how the world works as a physical system and how it ought to work as a moral system. In the past two centuries the human footprint on earth has multiplied many times over. Our science and technology are powerful beyond anything imagined by the confident founders of the modern world. But our sense of proportion and depth of purpose have not kept pace with our merely technical abilities.

#### 4 THE PROBLEM OF ECOLOGICAL DESIGN

Our institutions and organizations still reflect their origins in another time and in very different conditions. Incoherence, disorder, and violence are the hallmarks of the modern world. If we are to build a better world—one that can be sustained ecologically and one that sustains us spiritually—we must transcend the disorder and fragmentation of the industrial age. We need a perspective that joins the hard-won victories of civilization, such as human rights and democracy, with a larger view of our place in the cosmos—what Berry calls “the universe story.” By whatever name, that philosophy must connect us to life, to each other, and to generations to come. It must help us to rise above sectarianism of all kinds and the puffery that puts human interests at a particular time at the center of all value and meaning. When we get it right, that larger, ecologically informed enlightenment will upset comfortable philosophies that underlie the modern world in the same way that the Enlightenment of the eighteenth century upset medieval hierarchies of church and monarchy.

The foundation for ecological enlightenment is the 3.8 billion years of evolution. The story of evolution is a record of design strategies as life in all of its variety evolved in a vast efflorescence of biological creativity. The great conceit of the industrial world is the belief that we are exempt from the laws that govern the rest of the creation. Nature in that view is something to be overcome and subordinated. Designing with nature, on the other hand, disciplines human intentions with the growing knowledge of how the world works as a physical system. The goal is not total mastery but harmony that causes no ugliness, human or ecological, somewhere else or at some later time. And it is not just about making things, but rather remaking the human presence in the world in a way that honors life and protects human dignity. Ecological design is a large concept that joins science and the practical arts with ethics, politics, and economics.

In one way or another all of the important questions of our age have to do with how we get on with the Great Work, transforming human activity on the earth from destruction to participation and human attitudes toward nature from a kind of autism to a competent reverence. It would be foolish to think that what has taken several centuries or longer can be undone quickly or even entirely. But it would also be the height of folly to continue on our present course or to conclude that we are doomed and give up hope. For most of us the Great Work must begin where we are, in the small acts of everyday

life, stitching together a pattern of loyalty and faithfulness to a higher order of being. The hallmarks of those engaged in Great Work everywhere must be largeness of heart, breadth of perspective, practical competence, moral stamina, and the kind of intelligence that discerns ecological patterns.

### Ecological Design Principles

As creatures more ignorant than knowledgeable, what principles can safely guide our actions over the long term? There is no operating manual for planet Earth, so we will have to write our own as a set of design principles. Ecological design, however, is not so much about how to make things as about how to make things that fit gracefully over long periods of time in a particular ecological, social, and cultural context. Industrial societies, in contrast, work under the conviction that “if brute force doesn’t work, you’re not using enough of it.” But when humans have designed with ecology in mind, there is greater harmony between intentions and the particular places in which those intentions are played out that preserves diversity both cultural and biological; utilizes current solar income; creates little or no waste; accounts for all costs; and respects larger cultural and social patterns. Ecological design is not just a smarter way to do the same old things or a way to rationalize and sustain a rapacious, demoralizing, and unjust consumer culture. The problem is not how to produce ecologically benign products for the consumer economy, but how to make decent communities in which people grow to be responsible citizens and whole people who do not confuse what they have with who they are. The larger design challenge is to transform a wasteful society into one that meets human needs with elegant simplicity. Designing ecologically requires a revolution in our thinking that changes the kinds of questions we ask from how can we do the same old things more efficiently to deeper questions such as:

- Do we need it?
- Is it ethical?
- What impact does it have on the community?
- Is it safe to make and use?
- Is it fair?
- Can it be repaired or reused?
- What is the full cost over its expected lifetime?
- Is there a better way to do it?

The quality of design, in other words, is measured by the elegance with which we join means and worthy ends. In Wendell Berry's felicitous phrase, good design "solves for pattern," thereby preserving the larger patterns of place and culture and sometimes this means doing nothing at all (1981, 134–145). In the words of John Todd, the aim is "elegant solutions predicated on the uniqueness of place."<sup>3</sup> Ecological design, then, is not simply a more efficient way to accommodate desires; it is the improvement of desire and all of those things that affect what we desire.

Ecological design is as much about politics and power as it is about ecology. We have good reason to question the large-scale plans to remodel the planet that range from genetic engineering to attempts to reengineer the carbon cycle. Should a few be permitted to redesign the fabric of life on the earth? Should others be permitted to design machines smarter than we are that might someday find us to be an annoyance and discard us? Who should decide how much of nature should be remodeled, for whose convenience, and by what standards? In an age when everything seems possible, where are the citizens or spokespersons for other members of biotic community who will be affected? The answer is that they are now excluded. At the heart of the issue of design, then, are procedural questions that have to do with politics, representation, and fairness.

It follows that ecological design is not so much an individual art practiced by individual designers as it is an ongoing negotiation between a community and the ecology of particular places. Good design

3. The phrase by John Todd is from a personal communication; see also John and Nancy Todd, *From Eco-Cities to Living Machines: Principles of Ecological Design* (Berkeley: North Atlantic Books, 1994).

results in communities in which feedback between action and subsequent correction is rapid, people are held accountable for their actions, functional redundancy is high, and control is decentralized. In a well-designed community, people would know quickly what's happening, and if they don't like it, they know who can be held accountable and can change it. Such things are possible only where livelihood, food, fuel, and recreation are, to a great extent, derived locally; where people have control over their own economies; and where the pathologies of large-scale administration are minimal. Moreover, being situated in a place for generations provides long memory of the place and hence of its ecological possibilities and limits. There is a kind of long-term learning process that grows from the intimate experience of a place over time. Ecological design, then, is a large idea but is most applicable at a relatively modest scale. The reason is not that smallness or locality has any necessary virtue, but that human frailties limit what we are able to comprehend and foresee, as well as the scope and consistency of our affections. No amount of smartness or technology can dissolve any of these limits. The modern dilemma is that we find ourselves trapped between the growing cleverness of our science and technology and our seeming incapacity to act wisely.

The standard for ecological design is neither efficiency nor productivity but health, beginning with that of the soil and extending upward through plants, animals, and people. It is impossible to impair health at any level without affecting it at other levels. The etymology of the word "health" reveals its connection to other words such as healing, wholeness, and holy. Ecological design is an art by which we aim to restore and maintain the wholeness of the entire fabric of life increasingly fragmented by specialization, scientific reductionism, and bureaucratic division. We now have armies of specialists studying bits and pieces of the whole as if these were separable. In reality it is impossible to disconnect the threads that bind us into larger wholes up to that one great community of the ecosphere. The environment outside us is also inside us. We are connected to more things in more ways than we can ever count or comprehend. The act of designing ecologically begins with the awareness that we can never entirely fathom those connections. This means that humans must act cautiously and with a sense of our fallibility.

Ecological design is not reducible to a set of technical skills. It is anchored in the faith that the world is not random but purposeful and

stitched together from top to bottom by a common set of rules. It is grounded in the belief that we are part of the larger order of things and that we have an ancient obligation to act harmoniously within those larger patterns. It grows from the awareness that we do not live by bread alone and that the effort to build a sustainable world must begin by designing one that first nourishes the human spirit.

Finally, the goal of ecological design is not a journey to some utopian destiny, but is rather more like a homecoming. Philosopher Suzanne Langer once described the problem in these words: "Most people have no home that is a symbol of their childhood, not even a definite memory of one place to serve that purpose. Many no longer know the language that was once their mother-tongue. All old symbols are gone. . . . The field of our unconscious symbolic orientation is suddenly plowed up by the tremendous changes in the external world and in the social order" ([1942] 1976, 292). In other words, we are lost and must now find our way home again. For all of our technological accomplishments, the twentieth century was the most brutal and destructive era in our short history. In the century ahead we must chart a different course that leads to restoration, healing, and wholeness. Ecological design is a kind of navigation aid to help us find our bearings again. And getting home means recasting the human presence in the world in a way that honors ecology, evolution, human dignity, spirit, and the human need for roots and connection.