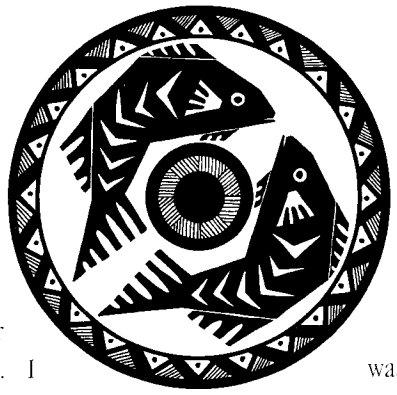
# Mistaken Impressions of the Natural World

*Stephanie Kaza*

*Why do stereotypes of nature form in the human mind? Perhaps they stem from a natural need for all organisms to recognize patterns in their ongoing orientation to the world.*

Kaza, Stephanie. 1995. **Mistaken Impressions of the Natural World,** *Whole Terrain: Reflective Environmental Practice*, vol. 4:5-11.



This winter Dry Creek broke all its stereotypes. Not only was it not "dry", it was not a "creek". After seven straight days of rain, the tropical torrential downpour took the little creek to flood stage. I watched my images and expectations of creek behavior dissolve before my eyes.

As soon as it was light, I walked down the road to assess the flow levels upstream. A small side canyon tributary was spilling out of its channel, overflowing the culvert and sheeting across the road. A three foot wide stream gurgled downhill back towards our driveway. The rest of the volume poured over the retaining wall and formed a mini-Niagara Falls battering the willows below. The familiar meandering creek had disappeared and been replaced by a raging river with class three rapids.

By nightfall the roar of the river had become almost insufferable. We left the water lapping at our deck for higher ground and some respite from the relentless coursing of adrenaline in our blood. Up at the big house we ate some dinner and tried to remember the isolated wading pools of summer, the leaf-filled channels of early fall, the melodic trickles after the first rains. It was impossible. The creek had erased even our own memories of its former self. We were too awestruck to retain our stereotypes.

Several days later the floodwatch was over. The creek had dropped five feet and seemed willing to remain in its channel for a time. Dry Creek Road was covered with landslides and debris from overflowing culverts. Pieces of asphalt had fallen away where the road was undermined by water and liquefied soil. I was left puzzling over the human inclination to assume landscape stability despite the obvious variability and impermanence of all landforms.

Why do stereotypes of nature form in the human mind? Perhaps they stem from a natural need for all organisms to recognize patterns in their ongoing orientation to the world. Animals must look for food, shelter, and water and have some reliable sense of which forms will yield the necessary requirements for sustaining life. Salmon recognize the chemical make-up of their native watercourses as they empty into the sea. Kingfishers recognize camouflaged stream banks as safe nesting habitat. Herons recognize the still pools of water in ponds and wetlands where small fish congregate. What do

humans recognize as patterns? How do these perceptions affect the way different people value nature?

Stereotypes are a form of perceptual shorthand convenient for simplifying a very complex landscape. It

*Bright red poison dart frogs perched on umbrella-sized leaves; white puffy flowers bloomed out of the sides of tree trunks. Everywhere I turned I saw something completely contrary to my previous ideas of forests.*

is impossible for any organism's perceptual system to process all the incoming information about a landscape on either a micro or macro scale. Pattern recognition simplifies this complex input into manageable bits toward the useful end of survival. Human stereotypes grow out of this natural process. The conceptual step from pattern recognition to stereotype is marked by the addition of value judgments. A person recognizes the familiar shape of drooping oaks and adds the human valuation, "good for firewood". Or one sees a sparsely vegetated desert and curses its "barrenness". A hawk swoops out of the sky and snares a small chicken and becomes a "nasty predator". In each case, the natural pattern is interpreted through a value filter and simplified to overlook the complexity of the specific organism and its habitat. Stereotypes of nature are shaped by value-laden meaning born out of human experience and mental conditioning.

For some time now I have been investigating stereotypes of trees and forests.[1] As part of a three-year book project for *The Attentive Heart*, I spent time sitting with trees, seeking what Martin Buber called I-Thou intimate contact. I drew on my training as a naturalist and Zen Buddhist to minimize projections, fantasies, and cultural bias towards trees. During my encounters writing the tree essays, I discovered a number of personal and cultural stereotypes of individual trees, species, and landscapes based on clusters of unconscious assumptions.

Like many, I had read *The Giving Tree* by Shel Silverstein, a well-known children's book which promotes the generosity of a tree in anthropocentric terms. First the tree provides fruit and shade; as it ages, it offers its branch as a perch for a swing, its trunk as wood for a boat. Finally, when it is cut down, it willingly gives its stump as a seat for a tired man. The book is a story about friendship between trees and people, but mostly it conveys the benefits of trees for people, with little mention of the benefits of people for trees. My early experience in our very large backyard apple tree, reinforced by this book and others, led me to conclude that trees were Big, Old, and Generous. Looking back now, I am impressed by how quickly childhood stereotypes are formed. Authors of children's books often pass on limited views of the natural world, unwittingly perpetrating cultural stereotypes of plants and animals.

In a visit to a red fir forest during the writing project, I was delighted to deconstruct my childhood stereotype of the Grand Tree. There at my feet were inch high seedlings from the previous year, across the trail were five foot saplings springy with new needles, and beyond them were 50-100 year old trees of classic shape and dimension. The very old trees were much less perfect than my stereotype, with missing branches and craggy broken tops. Thus not all trees were Old or Big or even Perfect. Coast live oaks showed me not all trees were Generous. One fall I spent many hours searching for acorns for a Green Gulch Valley restoration project in northern California and was surprised to find many trees empty of acorns. Only a few were consistent producers, recognizable by branches filled with many pale brown smooth seeds and by the proliferation of seedlings around the base of the canopy. Although I knew these oaks tended to alternate bearing years, I still had to confront my stereotype that not all oak trees produce great quantities of acorns.

Some individual trees are recognized as having lives that go beyond the limit of stereotypes. Local people single out certain trees as teaching trees or elders because of their distinctive presence's. In efforts to save Thai village forests from government harvest, local monks ordained their most beloved elder trees by wrapping them in orange monk robes and reciting the precepts with them.[2] In Russia, inheritors of ancient Slavic sorcery practices use the energies of trees for healing and initiation. One is encouraged to make friends with a

specific tree, recognize its state of consciousness and energy field, and draw on the tree in times of emotional unbalance.[3]

One of the problems with stereotypes is that they override time and history. Each tree I spent time with during my writing project had a very specific history of place and companions. Some had many human visitors, like the giant sequoias at Calaveras State Park, while others were mostly left alone to the woodpeckers and ants. Some showed a history of storm impact, with fallen branches and broken limbs, while others showed evidence of insect invasion or fungal rot. Each tree's experience of life was unique; it could not be summarized adequately by a shorthand stereotype. To overlook these particular stories was to be deprived of the potential for much richer relationships. For this experiment in writing I engaged trees by investigating the context of their lives. I looked to see who else lived with them; I asked for stories of life-shaping floods and fires from local biologists; I dug into natural history texts to learn what I could from other students of trees.

In addition to individual tree stereotypes, I also ran into species level stereotypes. These can bear serious consequences for policy issues, to the disadvantage of the species. One problem arises from the inadequate biological assessment of unique tree habitats. The Sargent cypress at first glance does not seem much different from any other windblown cypress. Yet this species grows only on serpentine rock outcrops in the north coast counties of California, where the unusually poor soil is high in magnesium, and low in calcium, nitrogen, and phosphorus.[4] Taken for another cypress this unusual plant community might be overlooked. A second consequence is that one species' properties may be mistaken for another's. Giant sequoias discovered in the Sierra Nevada were seen as a goldmine of timber, much like the versatile coast redwoods. But once cut, they fell with enormous weight and shattered into brittle unusable shards. Many trees were taken down in the attempt to make the species conform to the mistaken stereotype.

A third challenge has been exposed during recent forest restoration projects. Modern genetic research has shown that not all trees in a species carry the same genotype, or set of chromosomes. Some species, like the loblolly pine, have fairly plastic genotypes with a range of configurations according to the habitat or latitude of the trees. Other trees such as red pine are relatively conservative and consistent in genotype no matter what the location or environmental conditions.[5] This type of information may explain why some trees have failed in replantings. Managers holding species stereotypes may also overlook critical differences in soil and associated mycchorhizae affecting tree survival. Many restorationists now favor replanting with locally raised plants or seeds to insure a continuity of genotype in the damaged area.

Perhaps the greatest problem with species stereotypes is the habit of focusing on species as ecological constants despite the huge variability in habitat. This habit is the fundamental fault in the Endangered Species Act. The Act addresses endangered or threatened species, not habitats. Though agency biologists include habitat restoration in recovery plans, the act itself does not protect the complex of species associated with and dependent on the endangered species. In California, for example, several of the 30 varieties and species of oaks are threatened because of grazing, agricultural expansion, and urbanization.[6] But protecting the trees does not necessarily protect the habitat. For example, city ordinances to save venerable old oaks have encouraged a wave of cutting trees just under the size code. California's rolling open hills are classic oak savanna. To lose these wide expanses of dry grassland and valley oaks or live oaks is to lose the heart of California itself.

Landscape stereotypes of trees in forests tend to develop naturally in residents of specific forest regions. Growing up in the Pacific Northwest I was used to forests of tall Douglas firs with shaggy limbs and dripping lichens. The forest floor was a thick sponge of mosses and decaying leaves. My sense of a forest was based on a temperate rainforest, most highly developed in the Olympic Peninsula in Washington. When I moved to California I was not prepared for the dry open groves of widely spaced Ponderosa pines in the Sierra Nevada. Neither conifer forest was much like a hardwood forest of alders and maples or a woodland of oaks and madrones. The soils, leaf size, shade patterns, and bird and insect life were all significantly different.

The first time I realized the depth of my temperate climate stereotypes was on a birdwatching field trip to Costa Rica and Panama in 1986. Following our leader

towards scissors-tailed flycatchers, violet hummingbirds, and resplendent quetzals, I discovered the central American forest was not all "rain" forest. On mountain tops we found cool and wet cloud forests similar to temperate forests; on the Pacific coast were dry open Savannah forests much like California's oak woodlands. But nothing prepared me for the complexity of the lowland tropical moist forest. Draping vines as wide as small trees interlaced the massively buttressed hardwoods; epiphytes bloomed in the crotches of rainwater far above us. Bright red poison dart frogs perched on umbrella-sized leaves; white puffy flowers bloomed out of the sides of tree trunks. Everywhere I turned I saw something completely contrary to my previous ideas of forests. It was shocking for me to realize how completely conditioned I was by temperate forests. In Panama the disorientation was so complete I found myself walking into danger before I knew it — banging into thorny palms, stumbling on a nest of seed ticks, brushing too near the fiery giant ant whose bite packs a wallop. As a naturalist, usually at home in most native environments, I was completely at a loss to comprehend this forest. All my familiar pattern recognition failed me, and in so doing, freed my mind from limited stereotypes of trees and forests based entirely on my temperate experience.

Four years ago I moved east to teach Environmental Studies at the University of Vermont. This forest too shook up my west coast stereotypes. The long cold winters and humid almost tropical summers select for hardwoods which are better suited for the long period of winter dormancy. The first year I noticed my mind forming very rough forest stereotypes based on scanty information and relatively little field experience. After the dancing colors of fall, there was a very long stretch when nothing seemed to happen; then finally everything turned green. After 23 years of rainy green winters and dusty brown summers in California, my body refused to accept the almost complete reversal of seasons.

The second year I began to look for the subtle changes out of self defense. I knew I could not survive another six months of cold and snow under the oppressive stereotype of an endless unchanging winter. Sure enough, in early March birch trunks were photosynthesizing, lending a faint green tinge to the bark. With mud season the buds began to show signs of swelling. The so-called "explosion of green" actually stretched over several weeks from late April into May. After many cloudy days, the first stretch of sunlight activated photosynthesis, and within a few days, the already extended pale yellow leaves turned green. Once again my stereotypes were dismantled before me in a stunning display of beauty that did not match up to my old concepts.

The forest means many things to many people. This meaning is not based entirely on physical or biological attributes of the forest. It is based on personal experience, held in the body as kinesthetic, sensory based memory. Some of this personal experience is shared and reinforced culturally, leading to widespread practices of worship or destruction of forests. Godfrey-Smith outlines a number of stereotyped forest perceptions based on human experience.[7] For the recreationally inclined, the forest is a delightful playground, a sort of complex gymnasium most highly developed in wilderness areas. This experience is based in adventure, travel, fun, and a sense of satisfaction in meeting the physical challenges of survival in the backcountry. The most prominent elements of the gymnasium forest stereotype are the topography, trails, valleys and passes, and in certain areas, the presence or absence of perfect bear-deterring food hanging trees.

For the aesthetically inclined the forest is an art gallery, site of one spectacular being after another. The bristlecone pine forests of the White Mountains offer a fine example. Here the trees are polished and angular, shaped by the short growing season and the bitter sandblasting winds. Many are over 1000 years old, adding to their value as ancient art. This experience of wilderness is based in beauty, subtlety, form and color, and the sensual pleasure of the visual and kinesthetic senses. The most prominent elements of the stereotyped aesthetic forest experience are a well-developed sense of wonder and an appreciation for exquisite individual organisms and scenic landscape views.

For the spiritually inclined, the forest may be perceived as a cathedral or sacred space. To me, the majestic redwoods most evoke this experience of worship. The enormous trees are living temples, points of pilgrimage for millions of travelers from many continents. Each massive individual commands its own space, inviting human visitors to enter the hollowed out fire zones or

walk the perimeter of each oversized tree. The experience is based in awe, reverence, and the recognition of one's own very short lifetime in the context of these much older beings. The prominent elements of the cathedral experience seem to include very old or large trees, serene quiet, and a quality of being witness to undisturbed life.

For builders and resource managers, the forest is a building supply store — board feet for the taking. Pines and firs are most desirable for framing; oaks and maples are suited to cabinetry and woodworking. Trees are evaluated for their productivity, accessibility, and versatility. Old growth forests mean prized long boards, rare and highly valued these days as tree plantations replace 2000 year old legacies. The experience of forest as resource is based on a sense of craftsmanship and knowledge of materials, the desire to provide for human needs, and the trade market mind. Key to a satisfactory experience from this perspective is a sense of one's role in the wood products industry and one's capacity to effectively gather resources of value to consumers.

Robert Pogue Harrison describes the forest as refuge for outlaws during the early days of England's abundant forests.[8] As forests lay on the outskirts of towns, they were seen as marginal territory, uncivilized and untraveled by those who lived within the law. For those who could survive independent of civilization, the forest provided shelter, camouflage, and protection. The wilderness of the forest was seen as dangerous and uninviting to most people, thus leaving it to only the roughest bandits and social outcasts. This experience of refuge is echoed today in the backpacker's escape from society, in the desire to be free from obligation, responsibility, and social indebtedness.

In my work with trees, I was surprised to encounter another stereotyped experience of forest — as a place of fear. Walking in an old-growth Douglas fir forest late one afternoon, I grew more and more insecure as the shadows deepened. The broken moss-covered branches took on spooky shapes, sending off alarm bells in my mind. I was alone in an unfamiliar forest and vulnerable to danger. Because I was writing about trees, I studied the fear and found a primeval response to disorientation and strangeness. It was unsettling. I could see the connection between fear for one's own survival (against attacks by Indians, wolves, snakes) and the desire to cut the forest down. At the heart of this experience of fear is the relentless demand for self protection, instinctive in all animals. The overpowering nature of this fear eradicated all other possibilities of experience in the forest.

Stereotyping is most often thought of as the categorization of humans into narrow repressive roles — i.e. the rabid environmentalist, the redneck logger, the yuppie environmental professional. Many people relate to stereotypes as truths, a kind of social gossip reduced to pat phrases which sum up the key characteristics of a group of people. Similar shorthand is used to stereotype animals: the playful dolphin, the mean rattlesnake,

*Stereotypes are constructs in the mind, assembled from experience, cultural values, and limited information. The great danger in stereotyping is the ignorance it perpetuates.*

the graceful hawk. Stereotypes only reveal the limitations of someone's knowledge about a group of people, animals, or plants. For example, those who study dolphins know they can be quite aggressive in defending their young. Rattlesnakes are actually quite timid and would prefer to avoid encounters with people.

Stereotypes are constructs in the mind, assembled from experience, cultural values, and limited information. The great danger in stereotyping is the ignorance it perpetuates. A person tends to perceive trees, animals, and landscapes according to his or her currently existing ideas and beliefs, which reduces the capacity to see things outside of human projection. One sees only one's ideas of the plant or animal which eclipse the full complexity of the lived organism's experience.

This is demonstrated most graphically in patterns of "enemyism".[9] Stereotypes have been successfully applied in times of war to galvanize people to attack other people: witness the portrayal of Arabs during the Gulf War as mini-versions of Sadam Hussein, or the construction of Vietnamese as "gooks". The process is easily transferred and reinforced in relationships with plants and animals. When weeds or stinging insects are declared

enemies, their eradication is justified. In Maine the consequences of this labeling affect large landholdings. Low growing spruce forests are being clearcut for paper processing over thousands of acres; when hardwoods follow in natural succession, they are sprayed with herbicides to eliminate competing "weed trees".[10]

You cannot get rid of stereotypes. They are too pervasive, subtle, and supported by cultural tradition. However, you can see how they work through careful observation of others and one's self. One can examine which stereotypes have been inherited from family values — racist impressions of blacks, Hispanics, or Asians for example or prejudice against snakes and mice. One can look at how stereotypes form out of fear and disorientation or the desire to control a situation.

One can also observe how groups tend to polarize in self-defense once stereotypes are used in debate. A disarming technique that can shift a stuck environmental conversation away from polarized agendas is to simply not take sides, but investigate the stereotypes openly. "What is it you mean by "useless"? (in discussing wetlands, for example) or "What do you think the public appreciates about oak trees?" Very often environmental controversies become overheated because fundamental differences in values and experiences have crystallized into stereotypes. These are not always apparent at first glance. Sometimes what is required is a clear look at how the "other" has formed a stereotype about you. Environmentalists caught up in the pressing and very real urgency of their agendas have difficulty seeing how they could be perceived as aggressive and anti-human. But stereotypes are not about real people or real landscapes. They are about extracted characteristics chosen to suit the other's need for control and domination.

One of the greatest gifts of grassroots bioregional organizing is the focus on specific places uniquely known and loved by local residents. Friends of the Connecticut River know very well that their watershed is distinctly different from the Hudson River in history, topography, and political culture. The Green Mountain Club in Vermont recognizes the particular needs in the Green Mountains; the Appalachian Mountain Club in Virginia takes care of the Smokey Mountain ridge area. By drawing attention to the unique attributes of the places they support, each group works to overcome stereotypes promulgated by the media, by agency managers, by uninformed locals. Stereotypes tend to encourage the tendency to look for a general solution that will fit diverse variations. Grassroots groups break through these universal approaches by addressing the specific natural history, geology, and hydrology of the area, as well as the cultural history. As real knowledge is shared about diverse landscapes and watersheds, stereotypes naturally lose power and bit by bit are discarded as nonfunctional.

The problem of stereotypes applied to the natural world poses several challenges to the environmental professional. First is the task and responsibility to examine one's own unnoticed stereotypes. These are likely to lurk in areas not part of one's specialty training, i.e. oversimplifying insect life if one is concerned with large land mammals. One may also be prone to bioregional assumptions about landscapes which don't apply in other geographies. Or one might carry race, class, or gender-related assumptions about who prefers what kinds of environments. Stephen Kellert's work on American attitudes toward wildlife showed a clear hierarchy of most favorite and most hated animals.[11] As a teacher of environmental ethics, I sometimes ask my classes to list the top ten animals they most like and dislike. Many of the animals listed by the class were also on Kellert's lists — mosquitoes, snakes, cockroaches as least favored; cats, dogs, and fish as most favored. It seems that everyone has an opinion about this; no one is free of prejudice. For the professional the question is: how do these biases influence environmental decisions?

A second challenge is to be able to examine policy statements for assumed stereotypes. Sometimes these are obvious, as in property rights vs. endangered species. But more subtle assumptions may be operating in the form of class, gender, and race orientation. Ecofeminists have illuminated the unstated western associations of women and nature in the inferior position relative to men and culture. Members of the environmental racism movement have pointed out how hazardous waste has been targeted for black and Hispanic neighborhoods, perpetuating yet another form of racism. Middle class, college educated environmental professionals have been accused of bias toward wilderness and against rural poor people in conflicts over land conservation in the Adirondacks.

A third challenge is to be able to communicate with kindness and nonviolence when speaking of nonhumans. Consider such everyday prejudice in the phrases "black sheep," "scapegoat," or "noxious weed," "barren desert." Through examining assumptions and working closely with language, one can develop more precision and clarity, avoiding the habits of oversimplification and reductionism. One habit I find especially misleading is the use of the pronoun "he" in describing all animals, especially when male and female members of a species have different physical forms and behaviors.

I believe the overarching challenge in dealing with stereotypes of nature is to overcome the false separation between people and the natural world. Stereotypes perpetuate this separation through misinformation. Breaking through stereotypes opens up the possibility of truly coming to meet and appreciate the diversity of experience in the other. It is recognition of this unfathomable range of experience — from mayfly to elephant seal, from willow to white pine, from one person to the next in the courtroom — that fosters humility. Describing the Koyukon natives in Alaska, Richard Nelson reports that despite their deep familiarity with the land they inhabit and the creatures who live there, Koyukons start from the premise that they don't know very much about their world.[12] Only from this point of humility do they consider they can learn.

To work with stereotypes is to open the way to true mystery and recognition of the unknown. To carry this into a public hearing or environmental debate is to temper the human world with the vast world of plant and animal intelligence, evolved long before humans entered the scene. This is, after all, perhaps the primary task in environmental work — awakening to the very rich biological and geophysical world which is our home—independent of our limited ideas and beliefs.

## Notes

1. See my book *The Attentive Heart: Conversations with Trees*. New York: Ballantine Press, 1993.

2. Ken Kraft, "The Greening of Buddhist Practice," *Cross Currents* (Spring 1994): 88-114.

3. Igor Kungurtsev and Olga Luchakova, "The Unknown Russian Mysticism," *Gnosis* (Spring 1994): 20-27.

4. Arthur R. Kruckeberg, *California Serpentines: Flora, Vegetation, Geology, Soils, and Management Problems*. Berkeley: U.C. Press, 1984, pp. 34-37.

5. F. Thomas Ledig, "The Conservation of Diversity in Forest Trees." *Fremontia* 16 no. 4 (1989): 3-10.

6. Bruce M. Pavlik, Pamela C. Muick, Sharon Johnson, and Marjorie Popper, *Oaks of California*. Los Olivos, California: Cachuma Press, 1991, pp. 119-129.

7. William Godfrey-Smith, "The Experience of Wilderness," *Journal of Environmental Ethics*.

8. Robert Pogue Harrison, *Forests: The Shadow of Civilization*. Chicago: University of Chicago Press, 1992, pp. 61-81.

9. See Sam Keene's in-depth and graphically dramatic study, *Faces of the Enemy: Reflections of the Hostile Imagination*. San Francisco: Harper and Row, 1986.

10. Mitch Lansky, *Beyond the Beauty Strip*. Gardiner, Maine: Tilbury House Publications, 1992.

11. Stephen R. Kellert, "Perceptions of Animals in America," in *Perceptions of Animals in American Culture*, ed. R.J. Hoage, (Washington, D.C.: Smithsonian Institution Press, 1989), 5-24.

12. Richard Nelson, *Make Prayers to the Raven*, Chicago: University of Chicago Press, 1983.

***Stephanie Kaza*** *is Assistant Professor of Environmental Studies at the University of Vermont where she teaches environmental ethics, ecofeminism, and nature writing. She holds a Ph.D. in Biology from U.C. Santa Cruz, an M.A. in Education from Stanford, a B.A. in Biology from Oberlin College, and an M.Div. From Starr King School for the Ministry where she studied feminist theory, theology, and ethics. She is the author of the recently published book,* The Attentive Heart: Conversations with Trees *(Ballantine, 1993) and is currently at work on a book on Buddhism and ecology.*