



EARTHKEEPERS

PEOPLE WHO MAKE A DIFFERENCE FOR TREES AND FORESTS

High on Conservation

This Washington state forest ecologist and professor shares her research, and her convictions, literally from the treetops.
By Janet Arenofsky

A professor and forest ecologist shares her research—and her beliefs about connections with spirituality, health, and other subjects—literally from the treetops.

Climbing 200-foot trees qualifies as an extreme sport, according to Tree Climbers International and similar organizations. But to Nalini Nadkarni, Ph.D., it's all in a day's work.

Whenever forest ecologist Nadkarni, a professor at Evergreen State College in Olympia, Washington, isn't teaching or mentoring, she's scaling the heights of tropical or temperate rainforests in Monteverde, Papua New Guinea, Costa Rica, or Washington state.

"Climbing a tree is a spiritual experience," says Nadkarni, whose research tools have included a hot air balloon and a 35-story gondola-like crane. "It's very intimate and sensual since you come into close physical contact (with trees). . . you can even smell the pine pitch. You trust the trees and their branches to hold you."

With her harness and helmet and Jumars (mechanical rope ascenders), Nadkarni is a scientist able to connect with a popular audience. A recipient of a Guggenheim Fellowship and grants from the National Science Foundation and the National Geographic Society, Nadkarni is often referred to as the "queen of the forest canopy." Since graduating from Brown University in 1976, she has researched forest canopies and their varied ecosystems.

She has written more than 80 academic papers and two scholarly books on subjects such as root distribution, species diversity, tree damage, and mosses and liverworts.

In 1994 Nadkarni co-founded the International Canopy Network (ICAN; canopy@evergreen.edu), which encourages communication among scientists, educators, and conservationists.

More recently, Nadkarni created the field of "ecoinformatics." Gathering together forest canopy researchers and computer scientists, she asked these experts to develop practical reference resources, including database tools, that ecologists

with no prior knowledge of computer programming skills could easily access. Nadkarni now gives hands-on workshops on the three that resulted: a database designer called DataBank; a visualization tool, CanopyView; and a reference website, Big Canopy Database, or BCD, at www.canopy.evergreen.edu/bcd.

Although Nadkarni has no trouble conveying her enthusiasm for environmental science, it wasn't always so easy. In college, modern dance and pre-med studies absorbed her, but after a

summer's employment in a hospital, Nadkarni abandoned medicine. Her new career choice emerged from childhood memories of safety and security.

Says Nadkarni, "Whenever I felt overwhelmed and needed a refuge from the chaotic parenting techniques of an Indian father and Jewish mother, I climbed a nearby maple tree."

This intimacy with nature has led her to discover various connections between trees and disciplines such as health, recreation, and the arts. Her goal is to devise outreach programs to educate the public about the global need for forest conservation.

Nadkarni's efforts have taken her to many venues, among them churches, synagogues, skateboard



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parks, and prisons. For example, at Cedar Creek Corrections Center, a minimum-security men's prison near Olympia, Washington, Nadkarni hypothesized that interactions with nature—in this case, growing moss—might positively affect the incarcerated. It appears it did. One inmate said the implementation of the scientific method “changed his life”; another said, “It gives me hope and will help sustain me when I get out of here.”

Says Nadkarni, “I turn on a light bulb already present in people. I piggyback on existing values or credos and attach powerful symbols to nature.”

The result? New pathways to conservation. Nadkarni addresses this subject in her forthcoming book, *Trees and Humans: Our Connections to the Arboreal World*, due out this year from University of California Press. Various sections deal with trees in areas such as economics, health, and time. In a section on spirituality Nadkarni describes how people once sacrificed and prayed to deities or spirits in sacred groves; Druids or Celts, for example, performed sacred rituals in oak forests.

Her research in liturgical texts such as the Bible, Koran, and Talmud yielded references to 20 varieties of trees and 328 uses of “tree” and “forest.” In the Bible, symbols from nature are sprinkled within both Testaments—Adam and Eve are caretakers of the Tree of Life in the Garden of Eden, the cross of Christ is “The Tree,” and Jesus the carpenter is a worker of wood. Likewise, many Jewish ceremonies point to the arboreal during events such as Tu B'Shvat, New Year of the Tree; weddings under the chuppah of entwined tree branches; and tree plantings to commemorate births.

Eastern religions also pay homage to trees, says

Nadkarni. Buddhism compares meditation and enlightenment to a silent, rooted tree whose “breathing,” or exchange of gases, illustrates the essence of life. Hindus associate the Banyan tree with providing shade to temples, and Muslims ascend to the tops of palm trees to call religious members to prayer. According to Islamic belief, while harvesting fruits from trees is permitted, uprooting or injuring them is not.

All religions, says Nadkarni, use trees as a metaphor for the human condition, which is finite and ends in death. Trees undergo changes during the seasons and finally succumb to disease or outside forces such as fire or drought. This universality has motivated Nadkarni to deliver guest “outreach” sermons on the importance of trees to denominations from fundamental Christians to Episcopalians, Baptists, Zen Buddhists, Methodists, and Jews.

Nadkarni's future activities will center around developing more canopy database tools. She also plans to expand her NSF-funded Research Ambassador Program (RAP), created in 2003 as a self-sustaining “siblinghood of scientists” that communicate the importance of forest conservation to laypeople through media and arts. Through it a marine biologist has worked with a rap singer to help inner-city middle-schoolers turn field experiences into rap and hip-hop songs, and a wildlife biologist has supplied educational literature on rainforest mammals to an ecotourism company in Costa Rica. Nadkarni's ultimate goal: partnerships with national organizations to promote scientific literacy in nontraditional settings. **AF**

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