

Unit 2 NALINI NADKARNI

Conserving the Canopy

Part 1

. . . I'd like to take you all on a journey up to the forest canopy, and share with you what canopy researchers are asking and also how they're communicating with other people outside of science.

Let's start our journey on the forest floor of one of my study sites in Costa Rica. Because of the overhanging leaves and branches, you'll notice that the understory is very dark, it's very **still**¹. And what I'd like to do is take you up to the canopy, not by putting all of you into ropes and harnesses, but rather showing you a very short clip from a National Geographic film called "Heroes of the High Frontier." This was filmed in Monteverde, Costa Rica, and I think it gives us the best impression of what it's like to climb a giant strangler fig. . . .

Up in the canopy, if you were sitting next to me and you turned around from those **primary forest ecosystems**², you would also see scenes like this. Scenes of forest destruction, **forest harvesting, and forest fragmentation**³, thereby making that intact **tapestry**⁴ of the canopy unable to function in the marvelous ways that it has when it is not disturbed by humans.

I've also looked out on urban places like this and thought about people who are disassociated from trees in their lives. People who grew up in a place like this did not have the opportunity to climb trees and form a relationship with trees and forests, as I did when I was a young girl. This **troubles**⁵ me. . . .

Part 2

In the Pacific Northwest, there's a whole industry of moss-harvesting from **old-growth forests**⁶. These mosses are taken from the forest; they're used by the floriculture industry, by florists, to make arrangements and make hanging baskets. It's a 265-million-dollar industry, and it's increasing rapidly. . . . [What] has been stripped off of these trunks in the Pacific Northwest old-growth forest is going to take decades and decades to come back. So this whole industry is unsustainable. What can I, as an ecologist, do about that?

Well, my thought was that I could learn how to grow mosses, and that way we wouldn't have to take them out of the wild. And I thought, if I had some partners that could help me with this, that would be great. And so, I thought perhaps

¹ Synonyms for "still" include calm, quiet, motionless.

² When Nadkarni refers to "primary forest ecosystems" she is talking about the rain forest.

³ "Forest harvesting" refers to removing trees from the forest to harvest the wood, and "forest fragmentation" refers to the way in which the forest is broken up in to pieces as a result of harvesting and other means or deforestation.

⁴ A "tapestry," or textile fabric with pictures on it, is used here as a metaphor to describe the way in which all parts of the forest form one important, beautiful whole.

⁵ When something "troubles someone," it worries them.

⁶ "Old-growth forests" refers to very old forests that for the most part have not been disturbed by human development.

incarcerated men and women—who don't have access to nature, who often have a lot of time, they often have space, and you don't need any **sharp tools**⁷ to work with mosses—would be great partners. And they have become excellent partners. The best I can imagine. They were very enthusiastic.

They were incredibly enthusiastic about the work. They learned how to distinguish different species of mosses, which, to tell you the truth, is a lot more than my undergraduate students at the Evergreen College can do. And they embraced the idea that they could help develop a research design in order to grow these mosses. We've been successful as partners in figuring out which species grow the fastest, and I've just been overwhelmed with how successful this has been. Because the prison wardens were very enthusiastic about this as well, I started a science and sustainability seminar in the prisons. I brought my scientific colleagues and sustainability **practitioners**⁸ into the prison. We gave talks once a month, and that actually ended up implementing some amazing sustainability projects at the prisons—organic gardens, **worm culture**⁹, recycling, **water catchment**¹⁰ and beekeeping.

. . . Given the **duress**¹¹ that we're feeling environmentally in these times, it is time for scientists to reach outward, and time for those outside of science to reach towards academia as well. I started my career with trying to understand the mysteries of forests with the tools of science. By making these partnerships that I described to you, I have really opened my mind and, I have to say, my heart to have a greater understanding, to make other discoveries about nature and myself.

When I look into my heart, I see trees—this is actually an image of a real heart—there are trees in our hearts, there are trees in your hearts. When we come to understand nature, we are touching the most deep, the most important parts of our self. In these partnerships, I have also learned that people tend to **compartmentalize**¹² themselves into IT people, and movie star people, and scientists, but when we share nature, when we share our perspectives about nature, we find a **common denominator**¹³. . . .

Thank you very much.

*This is an edited version of Nadkarni's 2009 TED Talk.
To watch the full talk, visit TED.com.*

⁷ By "sharp tools," Nadkarni is referring to knives or anything that prisoners could possibly use as a dangerous weapon.

⁸ A "practitioner" is someone who is currently active in a field of work; often in science or medicine.

⁹ "Worm culture" refers to raising worms in soil.

¹⁰ "Water catchment" refers to collecting water from natural sources (for drinking, etc.)

¹¹ "Duress" occurs when someone is forced to do something that they don't agree with.

¹² When you "compartmentalize," you put things in categories.

¹³ "A common denominator" is something that is shared by many, something that everyone involved has in common.