

# Between Earth & Sky

A FILM BY ANDREW NADKARNI



POV

DISCUSSION GUIDE





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# Film Summary



Renowned ecologist Nalini Nadkarni studies “what grows back” after a disturbance in the rainforest canopy. After surviving a life-threatening fall from a tree, she must turn her research question onto herself to explore the effects of disturbance and recovery throughout her own life.

# Using This Guide

This guide is an invitation to dialogue. It is based on a belief in the power of human connection and is designed for people who want to use *Between Earth & Sky* to engage family, friends, classmates, colleagues, and communities. In contrast to initiatives that foster debates in which participants try to convince others that they are correct, this document envisions conversations undertaken in a spirit of openness in which people try to understand one another and expand their thinking by sharing viewpoints and listening actively.

The discussion prompts are intentionally crafted to help a wide range of audiences think more deeply about the issues in the film. Rather than attempting to address them all, choose one or two that best meet your needs and interests. And be sure to leave time to consider taking action. Planning the following steps can help people leave the room feeling energized and optimistic, even in instances when conversations have been difficult.

For more detailed event planning and facilitation tips, visit <https://communitynetwork.amdoc.org/>.

## A NOTE TO FACILITATORS

# Dear POV Community,

We are so glad you have chosen to facilitate a discussion inspired by the film *Between Earth & Sky*. Before you facilitate, please prepare yourself for the conversation, as this film invites you and your community to discuss experiences of mental and emotional health, the relationship between humanity and nature, childhood trauma, recovery, and representation in STEM. We urge you, as a facilitator, to take the necessary steps to ensure that you are prepared to guide a conversation that prioritizes wellbeing, curiosity, and connection.

## Tips and Tools for Facilitators

Here are some supports to help you prepare for facilitating a conversation that inspires curiosity, connection, critical questions, recognition of difference, power, and possibility.

# Share Community Agreements

## Community Agreements: What Are They? Why Are They Useful?

Community agreements help provide a framework for engaging in dialogue that establishes a shared sense of intention ahead of participating in discussion. Community agreements can be co-constructed and created as an opening activity that your group completes collectively and collaboratively. Here is a model of community agreements you can review. As the facilitator, you can gauge how long your group should take to form these agreements or whether participants would be amenable to using pre-established community agreements.

## Opening Activity (Optional): Establishing Community Agreements for Discussion

Whether you are a group of people coming together once for this screening and discussion or a group whose members know each other well, creating a set of community agreements helps foster clear discussion in a manner that draws in and respects all participants, especially when tackling intimate or complex conversations around identity. These steps will help provide guidelines for the process:

- **Pass around** sample community agreements and take time to read aloud as a group to make sure all participants can both hear and read the text.
- **Allow time** for clarifying questions, make sure all participants understand the necessity for the agreements, and allow time to make sure everyone understands the agreements themselves.
- **Go around in a circle** and have every participant name an agreement they would like to include. Chart this in front of the room where all can see.
- **Go around two to three times** to give participants multiple chances to contribute and also to give a conclusive end to the process.
- **Read the list aloud.**
- **Invite** questions or revisions.
- **Ask** if all are satisfied with the list.



## COMMON CONCEPTS & LANGUAGE

### **Ecological Disturbance**

This is the process of and focus of Nalini's current research and includes: striping experiments performed on epiphytes to better understand what grows back after disturbance and re-disturbance. Through this approach, Nalini aims to learn if epiphytes can grow back stronger, identically, or weaker than they were prior to disturbance.

### **Epiphytes**

Plant or plantlike organisms (such as orchids, ferns, mosses, or lichen) that grow on the surface of another plant, but derive nutrients from external factors like air, rain, or water. Nalini discovered these in the canopy and realized

that plants create self-sustaining ecosystems through regenerative soil.

### **Equity**

In basic terms, to achieve equity is to treat everyone fairly. An equity emphasis seeks to render justice by deeply considering structural factors that benefit some social groups/communities and harm other social groups/communities. Sometimes for the purpose of equity, justice demands an unequal response.

### **Model Minority**

Asian Americans are often stereotyped as studious, successful, smart—a model minority who excel in education and accomplish the “American dream.” Despite its positive overtones, this ste-

reotype is damaging for Asian Americans and other people of color. The model minority myth pits people of color against each other and ignores the reality of systemic racism that they continue to encounter.

### **STEM**

Common acronym for “science, technology, engineering, and mathematics.”

## LETTER FROM THE FILMMAKER, ANDREW NADKARNI

Growing up, I saw my Aunt Nalini as Treetop Barbie, on Imax screens in National Geographic films, in Bill Nye the Science Guy. I always looked up to her as a pioneering superhero, “the queen of the canopy.” Our mixed “Hin-jew” family often shared success stories with each other, but we rarely talked openly about our struggles or mental health. After Nalini’s 2015 fall from a tree, I initially set out to make an inspirational film about resilience, chronicling her miraculous recovery back to what I saw as her “original state”: fearless, resolved, and impenetrable. But, as we deepened our relationship, I began to understand Nalini more deeply, as she embarked on a challenging but essential journey towards her “third state”, examined her legacy, and grappled with the unresolved effects of disturbance throughout her life.

Making this film has also allowed me to begin an exploration of myself - to find connection and feel seen as a full, imperfect, vulnerable, and worthwhile person. To be valued not just for my achievements, but for all of the things that make me who I am, including a complex and evolving definition of my identity, struggles with anxiety and depression, questioning of my sexuality, and processing an experience of sexual assault that’s had long-lasting effects on my intimate relationships. I now find myself not resolved, but in process - taking steps, often non-linearly, towards who I might become.

The film weaves together Nalini’s professional and personal journeys, using archival, nature, and verité imagery to track her relationship to trees since childhood. Her present-day research question of “what grows back” after a disturbance in the rainforest canopy serves as a central metaphor of how we can reconcile our own experiences, redefine our own legacy, and plant new seeds for the next generation.

Through the process of making this film, I now see Nalini’s strength not only in her achievements, but in her vulnerability, her willingness to question, and her openness to what’s unresolved. I see the third state after a disturbance not as a fixed destination, but as a process, ever changing. This film is an attempt to begin to make sense of the pain, pressure, and values that can be silently passed down across generations if they are not addressed, particularly in immigrant families. I hope that people watching the film feel less alone in dealing with whatever disturbances they face. And I hope to communicate to each viewer that regardless of our productivity or achievement, we are inherently valuable. We are all worthy of love, safety, and understanding.

— Andrew Nadkarni, Director

# Participants

## **Nalini Nadkarni**

The main subject of the film, Nalini Nadkarni is a scientist, professor, and public speaker.

## **Andrew Nadkarni**

The director of the film, Andrew Nadkarni is also Nalini Nadkarni's nephew.

## **Amy McDermott**

A science writer for PNAS (Proceedings of the National Academy of Sciences), a peer-reviewed journal of the National Academy of Sciences, McDermott interviews Nalini Nadkarni in the film.

## **Keylor Muñoz Elizondo**

Nalini's climbing assistant in Monteverde, Costa Rica who utilizes more recent climbing techniques than Nalini, and namesake of the fallen tree documented in the film that he and Nalini discovered.



# Key Issues

*Between Earth & Sky* is an excellent tool for outreach and will be of particular interest to people who want to explore the following topics:

- Personal connections to nature
- Mental health
- Childhood trauma
- Family storytelling
- Disturbance and recovery
- Representation in STEM
- Rainforest ecology
- Conservation



# Background Information

## Studying the Rainforest Canopy

Rainforests contain more than half of Earth’s plant and animal species, making them incredibly important for biodiversity and the planet’s wellbeing. Rainforests have four distinct but interconnected layers: topmost is the *emergent* layer, where trees as tall as the Brazil nut in South America or the spruces of Washington’s Olympic peninsula meet the skyline. Under the emergent layer is the *canopy* layer, the dense network of vegetation formed by tree branches and leaves. The canopy is home to many species of animals (like sloths, monkeys, birds, and insects) because it provides shade and stillness while blocking sun, rain, and wind. The *understory* layer is several yards beneath the canopy, where short plants like palms and philodendrons thrive despite low light and higher humidity. The *forest floor* is the darkest layer of the rainforest, where decomposed matter provides vital nutrition for insects, fungi, and larger mammals like anteaters and wild pigs.

Nalini Nadkarni’s work focuses on the canopy, which she refers to as the “last biotic frontier” because it remained virtually unexplored in the field of ecology through the 1970s. This was, in large part, due to the difficulty of reaching the canopy, and it’s what prompted Nadkarni to find new ways of breaking this knowledge barrier.

Much as marine biologists rely on scuba gear to explore the ocean floor, Nadkarni required a safe and effective method of climbing trees in order to study the canopy. With the help of a fellow graduate student who was employing mountain-climbing techniques to scale trees, Nadkarni developed her own tree-climbing technology, called a master caster. The device fuses a slingshot and a fishing reel. When shot up over a specific bough or branch, it can support the climber's weight in their harness as they ascend the side of the tree. While prior researchers used ropes with metal spikes (called pitons), tools like the master caster are much more sustainable, as they cause no damage to the tree's trunk and surfaces.

At the center of Nadkarni's decades-long research are epiphytes, plants that dwell on the canopy and derive nutrients from air, water, and surrounding debris. In turn, they provide resources and nutrients to birds and invertebrates. Some common epiphytes include mosses, orchids, and bromeliads. Nadkarni wanted to study what effect disturbances (both natural and manmade) had on epiphytes and their resilience within the larger canopy ecosystem.

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## Model Minority Myth

The idea of an American “model minority” was first introduced by publications like *The New York Times Magazine* and *U.S. News and World Report* in the 1960s, amid ongoing civil rights struggles across the country. In contrast to other minority groups, such as African Americans, Latinx Americans, and Native Americans, Asian Americans were extolled for their work ethic, education, and ostensible success in achieving the American dream. In 1987, *Time* ran a cover story titled “Those Asian American Whiz Kids” that described the growing number of high-achieving Asian students in academia and skilled labor markets.

Critics of this “model minority” myth argue that it perpetuates harmful stereotypes about Asian Americans while ignoring the complexity and diversity of Asian-American experiences across class and culture. Moreover, scholars like Vijay Prashad argue that the myth of the Asian-American model minority has historically been weaponized against Black Americans and other racial minorities, who are often constructed as problematic. The toll of the model minority myth, then, is twofold: it obscures the real material injustices and class disparities that plague multiple Asian-American communities (such as refugees from Cambodia and Laos, or Bangladeshis), while it also creates a hierarchy of “good” and “bad” racial minorities.

### Sources:

“Model Minority Myth.” *The Asian American Education Project*. [asianamericanedu.org/3.1-Model-Minority-Myth-lesson-plan.html](https://asianamericanedu.org/3.1-Model-Minority-Myth-lesson-plan.html)

Prashad, Vijay. *The Karma of Brown Folk*. Minneapolis: University of Minnesota Press, 2000.

## **The Nature Gap**

It's not hard to grasp the immense impact nature has had on human history—from spiritual tradition to art and culture to recreation and sport. But while we may perceive nature as being all around us, studies consistently show that access to nature is highly determined by intersecting factors of race, class, and geography. Communities of color and low-income communities are especially unlikely to have safe and easy access to parks, forests, coastline, and outdoor spaces. As a result, they don't experience the benefits of trees and wetlands filtering their air and water, nor the psychological and emotional benefits of communion with the natural world.

Nature deprivation is shown to have serious consequences for human health and happiness. Studies have shown that children who spend time in nature develop greater cognitive function, motor skills, and social skills, while also experiencing reduced stress. Students who spent more time outdoors even performed better academically and attended school more regularly.

For incarcerated people, access to nature is virtually nonexistent. Through Nadkarni's work and the work of other scientists and activists, prisons are beginning to see the positive effects of bringing nature into inmates' lives through hands-on activities, visual presentations, and even lecture series. Contact with the natural world improved inmates' physical and mental health, strengthened their sense of self, and cemented positive ties to society. Other populations who face severe nature deprivation include residents of juvenile detention centers, hospitals, nursing homes, psychiatric care facilities, schools, and isolated religious communities.



## Sources:

Reddon, John R., and Salvatore B. Durante. "Prisoner exposure to nature: Benefits for wellbeing and citizenship." *Medical Hypotheses* 123 (February 2019): 13–18. [sciencedirect.com/science/article/abs/pii/S0306987718303530](https://www.sciencedirect.com/science/article/abs/pii/S0306987718303530)

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# DISCUSSION PROMPTS

The discussion prompts, which follow specific chapters of the film, are an invitation to dialogue. Please select discussion questions that are relevant to your community.

## Starting The Conversation

Immediately after the film, you may want to give people a few quiet moments to reflect on what they have seen. You could pose a general question (examples below) and give people some time to themselves to jot down or think about their answers before opening the discussion. Alternatively, you could ask participants to share their thoughts with a partner before starting a group discussion.

- What resonated with you most in the film *Between Earth & Sky*?
- What were some important themes that emerged in the film?
- How would you describe Nalini Nadkarni's journey in the film?
- Were there any moments in the film that made you look at the world (or yourself) differently?

## Trees and Conversation

The vantage point Nadkarni enjoys from the treetop canopy gives her a sense of home.

- Imagine your favorite tree (or natural landscape). What values make it special to you?
- In what ways does nature make you feel at home?
- Are there spaces in your life that offer you a unique vantage point on the world?

In her efforts at conservation, Nadkarni has tried to bridge the divide between science and the arts. Her foliage-pattern blazer is a scan of her favorite tree.

- What are some unexpected ways we can forge kinship with the natural world beyond scientific work, perhaps through visual art, fashion, performance, sport, or other practices?
- How might Nadkarni and her work challenge our assumptions about what a conservationist looks like or does?

## Access to Nature and Women in STEM

In the film, Nalini Nadkarni shows us Mattel's treetop Barbie, inspired by her own life and experience as a scientist. She says that she's as proud of the doll as any academic accolade because it might allow other young girls to imagine themselves as scientists in the future.

- What are some of the factors that may contribute to the underrepresentation of women and girls in STEM fields?
- What from Nadkarni's life could serve as inspiration for women and girls in STEM?

As a science communicator, Nadkarni wants to reach communities who typically don't have access to nature. Incarcerated populations are among the most nature-deprived people in our society. The United States is notorious for its large prison population. While attitudes toward incarceration and incarcerated people are shifting, there is often a perception that inmates' isolation is a form of justice for the crimes they may have committed.

- How can nature access programs challenge our understanding of inmate populations and what they might need?
- What are the potential benefits of bringing nature into prisons?
- What are some other nature-deprived groups in your community or other communities?
- What are some activities or exercises you might introduce to these populations in order to strengthen their connections to the natural world?

## **Disturbance, Recovery, and Intergenerational Healing**

The film returns to concepts of disturbance and recovery, both as central tenets of Nadkarni's research and as broader units for understanding our own lives. In ecological terms, disturbance to trees might include stripping off stems and leaves and the broader impact wrought by climate change. Part of Nadkarni's work is to uncover the long-term effects of these disturbances and track what the canopies' recovery might entail. She notes that it is "very rare for any system after a disturbance to revert to its former state. It doesn't happen in nature. It doesn't happen in human lives." Instead, organisms assume a "third state."

- What connections do the filmmakers draw between ecological disturbance and recovery and Nadkarni's personal disturbance and recovery?
- How might envisioning a "third state" upend our assumptions about any form of recovery, whether from injury, trauma or abuse, addiction, or otherwise?
- What are some disturbances in your own life? How might you have changed as a result?

One of the most profound disturbances in Nadkarni's life that the film alludes to is the experience of childhood abuse within the home. She describes a patriarchal environment in which boys were given more freedoms than girls, and in which she felt she had to compete for attention. "The outside of the house always looked really good," she explains. "But there were these sort of

incongruities about the inside of the house.” In turn, Nadkarni sought the refuge and safety of the maple trees that lined her childhood home.

- What does the film suggest are the kinds of pressures mixed-race or immigrant households might face?
- How does intergenerational trauma linger within your family or other families you know? What are some steps you have taken or might take to heal?
- What is your interpretation of the film’s ending?

# OPENING/CLOSING ACTIVITY

## OPTIONAL

At the end of your discussion, to help people synthesize what they've experienced and move the focus from dialogue to action steps, you may want to choose one of these questions

**Take three deep breaths in and out.**

**Imagine your favorite tree, plant, or memory in nature.**

- **What qualities made that special?**
- **What brought you joy, safety, or a sense of home at a young age?**
- **How can you carry that with you in your life today?**
- **Where do you come from? Where do you want to go?**
- **What curiosities do you have about the world around you?**
- **What do you hope for in the future?**

**End with three deep breaths.**

## TAKING ACTION

If the group is having trouble generating their own ideas for next steps, these suggestions can help get things started:

- Organize a community "walkshop" or hike into an accessible natural area, such as a state park or beach. Use this activity to connect with others in your community or as an integrated meditative practice.
- Learn about nature-deprived populations and how you might be able to help bridge the "nature gap," whether it's through an educational organization or individual connection.
- Plant a tree, or gift a plant to someone who could use it. The mere presence of plants and trees in and around our homes is shown to reduce stress and anxiety, promote health and wellbeing, and reinforce our connection to the planet.
- Volunteer in your local community in spaces that create safe harbor for survivors of climate disaster, domestic violence, or sexual assault.

# Resources

## Climate Mental Health Network

A program that provides people, especially young people, with the tools and resources needed to act in meaningful ways to address the climate crisis, while feeling supported and emotionally resilient.

## Nature and Health Alliance

An organization that recognizes the need for more research and programs about the benefits of being in nature for human physical, mental, and emotional health. The group brings together both academics and people outside of academia—people in parks, outdoor recreation, business, natural resource agencies, and spiritual groups—to generate collaborations and projects.

## RAINN

RAINN (the Rape, Abuse, and Incest National Network) is the nation's largest anti-sexual violence organization. RAINN operates the National Sexual Assault Hotline in partnership with more than 1,000 local sexual assault service providers. RAINN also carries out programs to prevent sexual violence and help survivors.

## TreeNote

Nalini Nadkarni's weekly two-minute podcast on fun tree facts.

## The Nature Conservancy

A global environmental nonprofit working to create a world where people and nature can thrive. Its mission is to conserve lands and waters on which all life depends, while envisioning a world full of thriving, diverse life, where people work to conserve nature for its own sake.





# Credits & Acknowledgments



## About the Author, Swetha Regunathan

SWETHA REGUNATHAN is a writer and filmmaker with an MFA from NYU's graduate film program and a PhD in English literature from Brown University. Her films as a writer, director, and producer have played festivals like Tribeca, True/False, MDFF, Big Sky, and HollyShorts, and on platforms like NOWNESS, Hulu, Short of the Week, and NoBudge. Her scripts were selected for the 2023 NYU Purple List, 2023 NYU Production Lab Development Studio, 2020 Cine Qua Non Lab, and 1497 South Asian writers lab. She was a finalist for the Showtime® Tony Cox Screenplay Competition, and she's received awards from the BlueCat Screenplay Competition, Peter S. Reed Foundation, Rhode Island Foundation, and Alfred P. Sloan Foundation. She was also a 2020–21 Gotham (IFP) Marcie Bloom Fellow. Regunathan has published in *Huffington Post*, *n+1*, *Guernica*, and other publications. In 2009 she was nominated for a Pushcart Prize for best American essay.

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