In Search of The Canary Tree

A Reader's Guide

When I set out to study the climate-induced death of the yellow cedar trees, I found myself immersed in a bigger and unexpected story: how the people of Alaska were adapting to the tree's disappearance, and how the forest was adapting to the changing climate conditions. *In Search of the Canary Tree* chronicles the six years that I spent, as a young scientist at Stanford University, studying thousands of trees and countless plants, plus interviewing local residents whose lives were affected by the loss of this majestic species. What I found profoundly changed my understanding of how people respond to the reality of climate change and what could spur us all into action.

In the months following the publication of this book, many teachers and members of various reading groups contacted me. They shared stories of the ways in which *In Search of the Canary Tree* had inspired them to learn more about the impacts occurring in their hometowns and to take action in their communities. These thoughtful responses highlighted many themes that have resonated with readers: the struggle with the question of "What can I do?" in the face of climate change; the reticence to adopt a doom-and-gloom outlook and eagerness to address the problem; the difference between feeling hopeful and having faith in our capacity to cope with a rapidly changing planet. Students and professors in ecology and environmental programs expressed how *In Search of the Canary Tree* provided a helpful window into the challenging process of scientific inquiry and the field work that goes along with it.

This guide is designed to enhance discussion of this book in your classroom or reading group. Although I crafted a few questions, most of these came directly from engaged readers who sent me their reflections. Thank you to those who contributed to this guide: Gail Dewsbury from Gainesville, Florida; Angela Eib Kraus from Stoneham, Massachusetts; John Krapek from Juneau, Alaska; Matt Rafferty from Anchorage, Alaska; Alessandra Marcone from Oakland, California; Christy Bingham from Three Rivers, California; Olivia Sprinkel from London, England; and Bonnie Gulas-Wroblewski from Alleyton, Texas.

1. In what ways was yellow cedar "the canary in the coal mine" for the people that Oakes interviewed and later, for Oakes, as well. What has awakened you to the realities of climate change, and what motivates you to act? How would you describe your canary?
2. On the outer coast of southeast Alaska, Oakes discovered a forest flourishing again with the passage of time, where some yellow cedars survive and other species thrive. Philosophically, what parallels could apply to the future of humanity in a changing climate? Are there places, for example, where some communities may be affected more than others?
3. In her review of other climate change studies, Oakes quotes an interview with scientist Abe Miller-Rushing (page 45). He says, "Now that we know what's changing, what are we going to do about it, and what are species going to do on their own about it?" Today, many land managers struggle with the challenge of helping species and ecosystems adjust to climate change. What actions, if any, do you think we should take to conserve species that might go extinct under climate change? Why? What are some of the potential risks and benefits of

taking aggressive actions, such as moving species to habitat where they may be more likely to survive?

4. On page 78, as Oakes was sampling an area where yellow cedar trees had been dead the longest, she notes that the forest was "letting go of what was and becoming something new," and that other "members of the community were finding ways to make the best of their shifting surroundings." Given the extent of impacts occurring around the globe, what are your hopes for the future of our forests, coral reefs, prairies, or other ecosystems? What types of changes are you willing and able to accept, and what do we need to work to preserve?
5. Many interviews in the book focus on people's knowledge of climate change, including how it is affecting their surroundings; what they think people should do about it; and how they are already coping with these changes. On page 166, Oakes asks of her most knowledgeable witnesses to the changes around them, "How did they know it was climate change? What did (or didn't) they do with that knowledge?" What changes are you seeing in your own community that may be consequences of climate change? What changes have you learned about in the news? Do you feel compelled to do something with this knowledge? If so, what?
6. The Tlingit weaver, Teri Rofkar, who relied on yellow-cedar bark for her craft, stated that one of her goals was to eliminate the term *natural resource* and replace it with the term *natural relationship* (page 154). How do the frames of natural resource versus natural relationship shape how we interact with the environment, or the natural world? What, if anything, would change if approached management of natural resources as management of natural relationships? Where could you replace the idea of a resource with that of a relationship in your own life, and what might be the result?
7. In an interview with Oakes, Dr. Craig Allen, a forest ecologist, states, "In the end, nature is so extraordinarily resilient… It's like burning libraries to be eliminating species and some of the most glorious expressions of individual organisms within a species. I would consider old-growth trees and forests to be a part of that. But the planet will still spin without them, and there will be forests again on this planet someday" (page 208). He then describes the importance of preserving the stories, meanings, songs, sights, sounds, and smells of our old-growth forests for the next generation. How would you define resilience in the context of climate change? Does the "extraordinary resilience" of nature give you hope in spite of what may be lost?
8. The author reflects on how many people have become numb in the face of the widespread destruction likely to accompany climate change. She argues that, in order to counter that numbness, we need to start focusing on local, not just global, solutions. "What happens at the local scale matters when it comes to climate change," she writes on page 194, "because that's where people's lives are carried out." What lessons from the Oakes' work in Alaska support the argument for acting at the local scale? If place matters when it comes to coping with climate change, what can you do in your community to contribute to both adaptation and mitigation efforts?
9. Hope, hopelessness, and faith are themes that Oakes explores throughout the book to explain how humans cope with a changing climate and a natural world that is subject to increasing human pressures. On page 197, she writes, "My work in Alaska showed me that *doing something* is not only about fighting for mitigation, educating others, or reducing home energy use through small actions; it's about finding ways to cope with embracing opportunities, and accepting some unavoidable losses. It's acting out of faith...not just letting hope blow in the wind." How do you cope with daunting environmental challenges on a personal level?
10. Much of the author's personal journey is about finding a way to maintain a positive outlook amidst loss. Oakes experiences loss through her time in the forests, the stories Alaskans share with her, and through the death of her father. On page 126, she writes, "Loss was a common

theme in those interviews, and with a sense of loss ever present in my life, I could relate and see the pattern more clearly. *Grief over the loss of the cedars is a powerful emotion and unfortunately it's a rare emotion,* one thoughtful man told me, explaining his experience of witnessing the death of yellow-cedar trees. *You have to cultivate a certain level of affection to understand the significance of the loss. Just to love a cedar is a meditation in and of itself, and then to grieve for the loss of the cedar is another piece of the meditation. Then to act from that meditation is yet another piece of it.*" What aspects of nature would you grieve, if they were to disappear? Why? What experiences in life have helped you develop a connection to nature and what actions can you take to maintain that relationship into the future?

Additional Discussion Questions for Students in Environmental Fields:

1. On page 86, Oakes describes the benefits of intensive field study, even in the face of the challenging weather and taxing conditions that she encountered on the outer coast: "By the third trip, I could pick up a soggy datasheet from any plot, scan the list of observations, and then see the forest in my mind. It was a privilege that office scientists rarely get." In our increasingly technological world, what benefits do you think intensive field study (or laboratory, classroom, or other experience-based learning) offer? How can technology and field study complement each other?
2. In a conversation with Oakes, Greg Streveler, the naturalist in the town of Gustavus, observes, "One of the things that humanity seems to do, almost instinctively, is to substitute youth for antiquity in natural systems. Nothing is ever allowed to get old" (page 12). What do we lose when we substitute youth for antiquity in natural systems? What values do you attribute to long-lived species?
3. When she started her social research in towns throughout Southeast Alaska, Oakes was interested in the "K-A-B" theory (page 109). It suggests that *knowledge* (K) can lead to certain *attitudes* (A) about the environment, which then lead to *behavioral change* (B). Oakes wondered if K-A-B could apply to the ways in which Alaskans might be adjusting to the impacts of climate change. What she found is that one's relationship to this species—or perhaps to nature itself—has a lot to do with how they respond to the changes they are experiencing. Those most attached, either functionally or emotionally, are among the first to change their behaviors alongside the changing environment. What are some ways that you are attached to "the natural world"? In what ways could climate change affect your relationship with nature and the many benefits it provides people?
4. Oakes interviews people with many different life experiences and points of view, which helped her gain insights in her research. Can you think of a time in your own work when you've reached outside your comfort zone and social circle to gain understanding of an issue? What did you learn in the process—about both the issue itself and the process of trying to experience the world in someone else's shoes?
5. Compassion fatigue commonly affects professionals, such as healthcare practitioners or aid workers, that work directly with others who suffer. Research indicates the most common symptoms are hopelessness, chronic anxiety, and persistent negative attitudes, all of which have detrimental effects on an individual's professional and personal well-being. Do you believe that researchers, conservationists, and/or community members in ecosystems highly impacted by climate change, or by other forms of environmental degradation, are susceptible to compassion fatigue? In communities faced with losses similar to those in Southeast Alaska, what can foster resilience for the people most affected?