



Forests in Peril: Tracking Deciduous Trees from Ice-Age Refuges into the Greenhouse World

by Hazel R. Delcourt

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Book Description (Amazon.com)

Delcourt takes readers on her personal journey to document the history of the forest from its elusive and nebulous presence at the peak of the last ice age through its development as a magnificent natural resource to its uncertainty in today's, and tomorrow's, greenhouse world. Along this journey, the reader is introduced to methods of studying vegetation, collecting and interpreting data, and applying the insights of forest ecology and history to project future needs of the forest in a world that is increasingly dominated by human activities. The philosophical, intellectual, and methodological perspectives contained in the book will appeal to readers interested in understanding how the natural history of North America has been studied and how that study can contribute to the protection and preservation of America's important biological resources.

Book Reviews by Torreya Guardians

[A Deep-Time Perspective on Global Warming](#) • August 28, 2008

review by **Connie Barlow**, Torreya Guardian

This is the book that launched our citizen naturalists group on the internet: Torreya Guardians. In reading Hazel's book, I was struck by how important the "pocket reserves" were to the preservation of rich forest species during the peak of the last glacial episode some 18,000 years ago (as well as all the previous glacial episodes). One of those pocket reserves runs along the edge of the Apalachicola River in the Florida Panhandle. And it is here that the most endangered conifer tree in the world, *Torreya taxifolia*, is gravely imperiled.

Torreya taxifolia was just one of many species that hunkered down in this furthest south patch of rich soil, while cold-adapted spruces dominated the landscape in Georgia and points north. But as the glacial subsided and warming ensued, it was time for *Torreya* and its companions to begin their migration north, back into the Appalachian Mountains and beyond. For one reason or another, however, *Torreya taxifolia* was left behind. It did not disperse back to the north; it just lingered in the little Florida reserve. Thus, even without post-1960s increases in atmospheric CO₂, *Torreya taxifolia* would have been doomed without human assistance. For in the 1960s was when it stopped producing seeds. But because ecologists are not trained with a deep-time perspective, "native range" for this beleaguered tree is still considered to be only where it was

historically found -- not where it likely was found pre-historically, during previous interglacial episodes.

"Forests in Peril" was thus a wake-up call for myself and others who joined to discuss and take actions to save this tree in ways that mainstream ecology and the Endangered Species Act still do not allow: by engaging in "assisted migration" ("assisted colonization") for this beautiful relative of the yew. We formed [Torreya Guardians](#) and in July 2008 we purchased from a plant nursery 31 seedlings of *Torreya taxifolia* and planted them ("rewilded" them) into forested landscapes of two private properties in the mountains of North Carolina. Welcome home, *Torreya taxifolia*! And thank you, Hazel Delcourt, for your magnificent and worldview-shifting book.

(review written by) Connie Barlow, Founder of Torreya Guardians, author of "The Ghosts of Evolution"

[Historic implications of climate change](#) • January 27, 2009

review by **Russ Regnery**, Torreya Guardian

Forests in Peril is well-done popular scientific writing that focuses on a very interesting and important question: where was the North American deciduous forest during the peak of the last ice age and what are the implications for the current and future ecologies of this continent? The author leads the reader through an interesting and increasingly sophisticated (but readily comprehended) progression of theories and the data-driven scientific processes used to prove or disprove the various hypotheses.

This book should appeal to any person with an interest in understanding the evolution and ecology of native American flora, as well as the implications for continuing climate change. The book leaves the reader with a wealth of new knowledge, several stimulating unanswered questions to think about, and a new appreciation for climate-associated environmental change (including implications for extinction of valued species). *Forests in Peril* should be required reading for anyone with an interest in the past, present, and future of the environment in which we live, or for anyone who has simply ever wondered about the amazing natural histories of the forests around us.

A temperate deciduous forest is a biome that has many deciduous trees which drop their leaves in the fall. These forests are also known as broad-leaf forests because the trees have wide, flat leaves. Temperate deciduous forests lie in the mid-latitude areas of the Earth, between the Arctic poles and the tropics. These biomes are exposed to warm and cold air masses, causing them to have four seasons: winter, spring, summer and fall. As winter approaches and daylight decreases, the production of chlorophyll in the leaves slows and eventually stops, revealing the bright red, yellow and orange colors we associate with fall. Temperate forests began to form in the Cenozoic Era about 65.5 million years ago when the Earth began to cool. Since then, forests have dominated the world since they did not have to compete with grasslands, deserts or shrub lands until about 15 million years ago and tundra ecosystems about seven million years ago. But forests have always shifted their borders and their composition in concert with the prevailing climate. As the Eocene greenhouse gases were gradually sequestered by forests and geologic activities, the world slowly cooled. At the end of the Eocene, 34 million years ago, South America and Australia separated from Antarctica enough to create the Antarctic Circumpolar Current, which prevented the mixing of Antarctic and tropical waters. Tune into the next issue for the sequel: From out of Siberia it came! The Ice Age 2: Human Invasion!

Includes the Amazon Rainforest, Congo Basin Forest, Daintree Rainforest, Forests of New Guinea, Sequoia Forest, Sumatra Rainforest, Tiara Biome/Boreal Forest, and more. Despite these commonalities, the biggest forests in the world are impressively diverse. Each offers its own unique combinations of trees and understory plants. Each is home to a diverse array of animals, fungi, mosses, insects, and people. These incredible forests produce all sorts of food for us to eat, and provide medicines that have healed humans for centuries. In other words, forests are really, really cool, which is why so many of us want to explore them when we travel the world.

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