

## **Douglas Fir, The Story of the West's Most Remarkable Tree**

- by Stephen F. Arno and Carl E. Fiedler. Mountaineer Books, Seattle WA, 2020.

I confess, I was pleased when the publisher asked me to review this book. I've been reading Steve Arno's stuff ever since about 1980 and he's never done anything that isn't a fun read; even his academic papers are good. Steve is one of the most respected forest and fire ecologists in the West, and it was exciting to see he'd taken on Douglas-fir for a topic. He couldn't have chosen a better co-author either; Carl Fiedler, a deeply experienced fire ecologist, has previously co-authored two books with Steve. Sadly, this will likely be Carl's last, as he is in a losing battle with cancer. There are also some fine drawings by Zoe Keller, and a few photographs.

Douglas-fir is the most important tree in the world, if you judge by economic standards. Its strong timber, rapid growth rate, and broad climatic tolerances have allowed it to become a commercially dominant species in countries around the globe. It's also quite an attractive tree, and a popular horticultural subject. It's surprising, then, that it has rarely been the subject of a popular book; this is the first one I'm aware of that's been published in English (cf. *Le Douglas* by Remy Claire).

Arno and Fiedler briefly consider the tree's international importance (in Chapter 4). Their main focus, though, is on its natural history and importance in the history of western North America, where Douglas-fir reigns supreme in forests found from northern British Columbia in Canada to central Oaxaca in Mexico. They cover this history in an introduction, seven chapters, and a guidebook.

First, they gush a little bit, as indeed everyone who writes about this tree tends to do, starting with Archibald Menzies, who made the original collections upon which the species was described in 1792. Arno and Fiedler also explain their personal attachments to the species, in words that will make every reader recall their personal introductions to this keystone species of the Northwest forests. They then delve into the basics of the species's biology—its discovery and naming, its rapid rise in horticultural popularity, its morphology and geographic distribution, its remarkable size and longevity, and varied aspects of its role as an ecological keystone species. This information, although grounded in sound and recent science, is delivered in a flowing and accessible prose reminiscent of the best modern nature writers.

The authors then discuss, in Chapter 2, coastal Douglas-fir. Our Douglas-fir, as distinct from the other five species in its genus, is one species (*Pseudotsuga menziesii*) with two very different subspecies—a coastal one (subsp. *menziesii*) that almost defines the wet old-growth forests of Cascadia, and an inland one (subsp. *glauca*) with smaller dimensions but much wider distribution. The treatment of the coastal subspecies provides detailed information on the dimensions and records of “supertrees”, a number of which were taller than any trees now known to survive on the planet.

The authors discuss fundamental ecology of the subspecies, explaining its climatic tolerances and physiological adaptations to that climate, as well as discussing its ecological importance to understory plants and associated wildlife, in particular the threatened spotted owl and marbled murrelet. This is fundamental stuff for anyone who wants to understand the old forests of the

Cascadian bioregion, and is explained clearly and not simplistically; although shelves could be filled with fairly recent books about these forests, the explanations by Arno and Fiedler have never been bettered. The book is worth getting just for this chapter (I could say that about every chapter, though).

Chapter 3 provides the same sort of treatment for the inland Douglas-fir, though in this case the treatment must address a much wider ecological scope. Arno and Fiedler do this by focusing on geographies of special interest, such as the northern Rockies, the desert Southwest, and highlands in Mexico. Cumulatively, they do a wonderful job of communicating the vast ecological amplitude of this species, and you would have to wade through hundreds of pages of highly technical and often obscure papers to get this information otherwise.

In Chapter 4, the authors then tackle the economic and cultural role of Douglas-fir in the settlement and development of the West. They use Pope & Talbot, the first big timber company to operate on the shores of Puget Sound, to introduce this story. From there we are shown the whole panoply of traditional Northwest logging—the hardships of life in the logging camps, the timber schooners, the economic role of Douglas-fir in the growth of the Northwest, its importance in World War One ship-building, and further developments that brought us to the spotted owl/old-growth crisis of the 1980s. Arno and Fiedler also drop a variety of spicy tidbits along the way; for example the old fishing boat John Steinbeck and Ed Ricketts used to tour the Sea of Cortez was made of Douglas-fir. Do you know its final fate? Read the book.

The authors know this tree has roots. Chapter 5 explores its ethnobotany, the varied ways that native peoples have used it throughout its range since pre-Columbian times. The chapter then proceeds to discuss the species's Euro-American ethnobotany: its importance in construction, mining, railroading, and charcoal production during western history, its role in the modern wood products industry, and the nontimber products available from this tree. There's also a review of the species' importance in global agroforestry. Many specific and memorable examples are included. For instance, the largest clear-span wood building in the world is a blimp hangar in Tillamook, Oregon, built of Douglas-fir in 1942 by the U.S. Navy (it's now a museum, and worth a visit).

There is then, of course, a chapter (Ch. 6) on fire. Wildfire is Arno and Fiedler's history and passion; they have written whole books on the subject and I was excited to see their latest views. We learn when Douglas-firs burn, how they burn, where they burn, and how the burns establish the ecological trajectories of forests. We learn how Native Americans managed the forests for fire, and how Euro-Americans have managed them, and the consequences of that management for our current predicament. This sets up the management chapter (Ch. 7): what is the future of these forests?

Here again the authors take an historical approach, showing us how events such as the great fires of 1910 led to laws, policies, and practices that still define forest management in the U.S. They recap the ecological truths that render these practices irrational or counterproductive. And they also introduce the modern cultural changes, such as exurban development and the growth of the wildland-urban interface, that have changed our modern way of life in the forest to something different from what the U.S. experienced in the 19th and 20th centuries. The discussion turns to

innovative new programs and policies that seek to reshape how forests are managed to achieve a new concept, sustainability, that involves maintenance of ecologically diverse and economically viable forests, while also reducing the risks of catastrophic fire.

The book concludes with a "Visitor's guide to North America's notable Douglas-firs." It covers dozens of sites, from Alberta to Texas. Some I've been to; all sound worth a visit. Certainly, it has the germ of a grand road trip.

I distrust reviews that carefully omit mention of a book's gaps or flaws. There is a reference list for each chapter, but I would have really liked to see footnotes. Any book with this much scientific detail deserves a few footnotes. Also, there is almost no discussion of how these forests are likely to respond to global climate change, although there has been quite a lot of research published on the topic. I thought this omission was serious, as most readers would be interested to hear the authors' thoughts on the subject. I also would have liked to see a bit of pathology—the pests and diseases that afflict Douglas-fir and that can play a major role in the death and renewal of the forests. There was also a strong U.S. emphasis, without addressing history or management in Canada or Mexico, where Douglas-fir is a widespread and important species. Those were my only concerns.

To wrap it up, this is an important book; you'll be seeing it around for many years to come. It provides a wealth of scientific information but is also well written, so much so that every nature writer I know could benefit from it. It will provide the average *Douglasia* reader with a great deal of engaging information you don't already know about what is, in all likelihood, the one species of tree that you see nearly every day—perhaps, one you have come to think of as a bit boring. It isn't. Perhaps most importantly, this is a fun read, easy to burn through from the intro to the appendix. It would be an excellent choice for a gift book, so buy two copies.

Claire, Remy. 2010. *Le Douglas, Un Arbre Exceptional*. Drulingen, France: Imprimerie Scheuer. 376pp. (in French).

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