

themselves—with a privileging of modern, Danified ways of knowing.

The story resonates with the effects of “colonization” as a form of knowledge production and of “decolonization” as a focus of education reform in many contexts across the world. It is, in this instance, a story that is powerfully told in its commitment not to shy away from complexity. As such, it should be of interest to those engaged in gender studies, the sociology of education, anthropology, Arctic studies, and development.

## REFERENCES

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**NORTH PACIFIC TEMPERATE RAINFORESTS: ECOLOGY & CONSERVATION.** Edited by GORDON ORIAN and JOHN SCHOEN. Anchorage: Audubon Alaska and the Nature Conservancy in Alaska; Seattle: University of Washington Press, 2013. ISBN 978-0-295-99261-7. xi + 383 p., maps, b&w illus., 20 contributors, literature cited, index. Hardbound. US\$60.00.

Very few places on earth are as productive as the temperate rainforests along the Pacific coast of North America. Here, wild rivers connect marine, freshwater, and terrestrial environments to verdant rainforests distributed on thousands of islands and the mainland. These forests are young by geological standards (< 10 000 years) but populated by centuries-old rainforest trees. Only three other temperate rainforests share the distinction of relative intactness with those of this region: portions of the Valdivia rainforests of Chile and Argentina, cool-temperate rainforests of the Russian Far East and inland southern Siberia, and ancient Gondwana temperate rainforests of Tasmania. Thus, the region's importance is noteworthy globally.

In particular, the Tongass and Great Bear rainforests in this region are champions in storing vast quantities of carbon important in regulating global climates; they contain the most productive salmon runs in the world; and they support intact predator-prey dynamics, a rarity in temperate areas globally. These rainforests certainly deserve the kind of meticulous attention provided by editors Gordon Orians and John Schoen and the many distinguished chapter authors.

The book is well written, thoroughly researched, and balanced in its approach to conservation and responsible forest management, taking into account dependencies of aboriginal peoples on the rainforest's life-giving ecosystem services (Chapter 5); the historical and transitioning economics of the region, including changes in the forestry sector (Chapter 9); the role of island biogeography and glaciation in rainforest biodiversity (Chapter 2); riparian ecology (Chapter 3) and watershed planning (Chapter 8), and disturbance ecology (Chapter 4). I highly recommend this book for students of forest ecology and land managers concerned about the fate of these remarkable rainforests as rainforests around the globe face off against rising land-use demands and unprecedented climate change.

The book's greatest strengths are its solid scientific underpinnings. The science is interpreted through the lens of practical applications to ways of recalibrating forest management so that it can operate within rainforest limitations (Chapters 9, 10). We have the scientific knowledge to do this right now through advances in conservation biology, climate change modeling, and reserve design (Chapters 7, 8, 10), and efforts are underway to trigger a concomitant shift toward compatible and bio-regionally based economies. However, we do not yet have a policy-relevant means for achieving the book's bold and much needed vision, as the authors rightfully let others schooled in the sausage-making of conservation policy figure out how to navigate the region's stormy political waters. Most notably, the Chapter 10 synthesis cites the need to transition the timber industry into second-growth management in order to save what is left of remaining old-growth forests. Advances in second-growth management and restoration forestry can be combined with production of specialty wood items, obtained from a small number of old Sitka spruce trees harvested for community purposes, to enable a speedy transition out of large-scale old growth logging. Getting to that vision, however, will require a new business model that must overcome the economic challenges of small-diameter wood products in northern latitudes, as the authors aptly note. Also needed for this transition to take place are federal subsidies to provide the means for sawmills to retool to accept smaller logs and the emergence of value-added and job-producing wood products, such as wood pellets for home heating. These efforts are currently underway and will require new investments in infrastructure and market demand as noted by the chapter authors.

The only weaknesses in this book are minor. Some of the materials repeated in several of the chapters could have been summarily condensed as a more integrated reference. And while the authors cite new work on temperate rainforests since the 1990s, they rely on prior inventories that are outdated, for example, Ecotrust's estimate that the region's rainforests represent 50% of the global total (vs. the 35% provided by new estimates using standardized computer mapping techniques). The authors could also have added a section on emerging carbon markets as a tool for rainforest conservation on nonfederal lands given the globally significant carbon stores in this region and the need to provide an economically

level playing field for conservation on important old-growth forests otherwise destined for industrial-scale logging.

Continued old growth logging of the Tongass and Great Bear rainforests has global consequences because few such intact areas remain around the globe, and farther south, the rainforests of Clayoquot Sound and the Pacific Northwest are highly fragmented. Notably, Chapter 6 discusses the concept of a region-wide successional debt whereby intact rainforests are fragmented by industrial logging and then managed under short rotations that result in a bimodal distribution of forest age classes. For instance, logging on the Tongass began in earnest in 1954. Thus, forests are either old growth or plantations, and there are few intermediate-age forests except for the occasional blowdown that has aged over time.

Chapter 9 outlines an experimental approach to forestry largely on the Great Bear rainforest but to some degree on the Tongass, where forest management attempts to mimic natural disturbance processes (small-scale blowdowns and avalanches are the predominant disturbances; fire is rare). The tree retentions in forestry operations appear to benefit some species that use old-growth forests but not others that are dependent on intact areas with forest interior conditions. Although tree retentions in logging operations hold promise over industrial logging, the trees retained in clearcuts are generally low (15%–20%) and are influenced by edge effects, including blowdown. Moreover, it is not known whether this kind of experimental forestry can offset the successional debt noted in Chapter 6 and what sort of carbon dioxide emissions it will release compared to industrial logging and no logging.

Several places in the book identify gaps in rainforest ecology and management. In addition to the gaps noted by the authors, there is the need for basic inventory work on the region's rainforest canopies. The type of canopy biota found in these forests (e.g., small trees and shrubs growing on massive tree branches, arboreal lichens, mosses and liverworts, salamanders, small mammals, threatened species, and endemic invertebrates in rainforest canopies on the Olympic Peninsula and the redwoods) is unique to rainforests and serves to identify them worldwide. Many lichens, in particular, are highly sensitive to desiccation that might occur as a result of clearcuts or variable retention harvests.

In closing, *North Pacific Coastal Rainforests: Ecology & Conservation* is a reference textbook about these rainforests that builds on the seminal work of *The Rainforests of Home: Profile of a North American Bioregion* (Schoonmaker et al., 1997), *High-Latitude Rainforests and Associated Ecosystems of the West Coast of the Americas: Climate, Hydrology, Ecology, and Conservation* (Lawford et al., 1996), and *Temperate and Boreal Rainforests of the World: Ecology and Conservation* (DellaSala, 2011). Conservationists, managers, and students need to have each of these references to understand basic rainforest ecology and the demands now being placed on rainforests while there is still time to implement a grand vision of conservation and responsible stewardship. The book should also be

stocked in libraries and sold as a textbook for forest ecology classes.

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THE CANADIAN RANGERS: A LIVING HISTORY.  
 By P. WHITNEY LACKENBAUER. Vancouver: UBC Press, 2013. ISBN 978-0-7748-2453-8 (Pb). xv + 618 p., maps, b&w and colour illus., notes, bib., index. Hardbound, Cdn\$95.00, US\$99.00; Softbound, Cdn\$34.95, US\$37.95.

*The Canadian Rangers* offers a detailed history of this unique quasi-militia group, from its origins to the much-publicized organization we know today. Despite their somewhat tenuous beginnings, followed by periods of disorganization and neglect, the Rangers in the last decade or so have finally become sufficiently established to assure a future role in the defence of the Canadian Arctic. This handsome volume is well organized into multiple chapters and subheadings; it has more than 480 pages of text, supported by another 121 pages of endnotes and bibliography, plus an excellent index. While a weighty tome and occasionally repetitious, it is filled with a super-abundance of photographs, maps, and graphs. For this reason alone, the book will be of particular interest to those who were directly or indirectly involved in the Ranger organization—perhaps the only ones who can fully attest to its accuracy. For scholars, this important addition to the history of the Canadian Arctic provides a virtual encyclopedia of new information.

Whitney Lackenbauer's passion and enthusiasm for the subject are self-evident throughout. His personal interest in the Canadian Rangers began over 25 years ago when he was working as an undergraduate co-op student for the Director of Aboriginal Affairs, Department of National Defence. Subsequent years of intensive study and archival research were accompanied by many firsthand experiences with