

ments and societies. Nowadays, Global Change and Poverty are probably the single biggest failures of the free market system.

In this book, I found no major shortcoming (other than that Germany does not have a 48h working week, modern Russia and China get hardly mentioned, and the book index is incomplete), but some of the thoughts presented by the author could be challenged. It is correct that all natural commodities (mining, forestry, agriculture and fish products) but oil are going down in value. However, likely these commodities just loose due to the dominance, and convenience brought by, oil. Unfortunately, despite its catching and fascinating subject, this text makes for a hard and long read: I find it unnecessarily boring and repetitive.

In conclusion, we lack a global citizen movement. The reader of this book will whole heartedly agree that

globalization also requires the definition of minimum standards for welfare, environment, taxation and wages. We are left with the need for crucial reforms: (i) we need a media reform, (ii) a social science reform away from "economics only", (iii) a radical election campaign finance reform, (iv) progress in the reduction of total work time with families at least to the level that was normal prior to the decline in civic participation, (v) and an appreciation of the need for global governance rooted in restored democracy at the level of the nation-state. I recommend reading this book and getting into action.

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Emulating Natural Forest Landscape Disturbances: Concepts and Applications

Edited by Ajith H. Perera, Lisa J. Buse, and Michael G. Weber.
2004. Columbia University Press, New York. 315 pages.

Disturbance is ubiquitous in forest ecosystems. Disturbed by the extremes of either catastrophic, stand-replacing events including fire, insect herbivory and extensive wind throw, or periodic, small-scale gap processes mediated by fungal pathogens, forests are in constant flux when viewed from a long-term, landscape perspective. A wide range in the periodicity, intensity and scale of disturbance events, and in the diversity of bio-edaphic interactions creates a complex, fluid, heterogeneous forest landscape.

Practitioners of sustainable forest management have accepted the essential links among natural disturbances, forest and stand structural heterogeneity and organism biodiversity. Recognition of these links has generated the conceptual and empirical development of a natural disturbance-based forest management defined as "an approach in which forest managers develop and apply specific management strategies and practices, at appropriate spatial and temporal scales, with the goal of producing forest ecosystems as structurally and functionally similar as possible to the ecosystems that would result from natural disturbances, and that incorporate the spatial, temporal, and random variability intrinsic to natural systems." (page 4)

Widely accepted is the assumption is that forest biological, structural and functional diversity developed within the boundaries defined by natural disturbances. As such, human interventions, such as logging or the use of prescribed fire, that conform "more or less" to the temporal and spatial dimensions of natural, historic disturbances are deemed to be those most successful in conserving biological diversity.

The book's editors include a forest landscape ecologist (Perera) and a forest biologist (Buse), both from the Ontario Forest Research Institute, and a fire ecologist (Weber) from the Great Lakes Forestry Centre of

the Canadian Forest Service. Together they have produced a significant volume with contributions from both practitioners and academics who are actively engaged in the development of natural disturbance-based forestry.

The collection of essays is broken down into three main sections. The first section deals with the theoretical and conceptual foundations of emulating natural disturbance in forest management. The authors of the five essays in this first section do a commendable job of describing the ecological foundations and biodiversity implications of emulating natural disturbance in forest management. The eight contributors to the second section treat a host of case studies from different forest ecosystems throughout the United States and Canada. With the help of computer simulation models, historic natural disturbance regimes are assessed for use in disturbance-based forest management. These empirically-based technical studies are site- and computer-model specific and provide state of the art concrete applications of natural disturbance-based forestry. A 16-page suite of computer-generated full-colour maps provides examples of output from the various simulation models. The final section composed of seven chapters addresses the actual feasibility and practice of emulating natural disturbance through forest stand-based management. Industry and environmental non-governmental perspectives are also treated in this final section. The final chapter is an excellent synthesis of the current state of knowledge about emulating natural disturbance in northern North American forests.

Palaeoecological and historical evidence reveal that many forest ecosystems are shaped by the interaction of climate change, natural disturbances and human activities. The emulation of natural disturbance, therefore, can be akin to shooting at a constantly moving target. This book does not present emulation of natural disturbance as a forest management panacea. Nor does one

get a sense that forest managers must slavishly follow natural patterns and processes. Emulation of natural disturbance provides a sensible guide to sustainable forest management. It cannot, however, be carved in stone. The dynamic nature of forests, the existence of multiple successional pathways in response to disturbance and the even more dynamic needs and values of human societies would prevent that. The last lines of the book say as much: "Over the long term, the ultimate success of the approach will be determined by the answers to the questions of whether it is ecologically superior to other forest management paradigms, economically feasible for forestry practitioners, and socially acceptable." (page 274)

The editors consider the book well suited to all forestry professionals including practitioners, policy makers

and researchers. To this list I would add conservation biologists, environmentalists and even environmental philosophers. The book deals not only with the conceptual and practical considerations of the emulation of natural disturbance, but helps to raise broader questions about biodiversity conservation in dynamic forests subject to both natural and human-induced change. This book should stimulate those philosophical questions, but you will have to resort to other works for the beginnings of a response.

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MISCELLANEOUS

The Nature Journal: A Handbook

By Frederick W. Schueler and Aleta Karstad. 2004. Bishops Mills Natural History Centre, RR 2, Oxford Station, Ontario K0G 1T0 and Little Ray's Reptile Zoo, 5305 Bank Street, Ottawa Ontario K1X 1H2 [www.thenaturejournal.ca]. \$40.00

For any naturalist, whether professional or hobbyist, some form of notes are an essential reference to past observations. At one level they can serve for comparison with new observations or as reminders of where and when to look for certain species or seasonal phenomena. At another, they can be the basis for preparation of accurate published accounts. How to format and organize them for permanence and accessibility has more solutions than observers as even individual systems evolve over time. For those just starting to keep records or dissatisfied with previous efforts, Fred and Aleta Schueler offer a solution.

Since the 1960s, one or both have been observers and commentators of nature, collectors of biological specimens for museums, and writers and illustrators of both popular accounts and scientific papers. They have recorded their raw field data in a variety of journal and data formats. Here, they attempt to standardize this experience and outline a universal system that will produce notes not only of use to observers themselves but also serve as a permanent record of value for others. The Schueler's rightly regard leaving a useable record for future naturalists as a prime responsibility of us all.

What is outlined here is partly adapted from the once widely used system credited to Joseph Grinnell, Curator of the Museum of Vertebrate Zoology at Berkeley, California, in the first half of the 20th century. It also draws on field data entry sheets developed

at the National Museum of Canada (now the Canadian Museum of Nature) in ichthyology and herpetology in the 1960s and 1970s.

A sturdy seven-ring binder is prefixed with 37 pages of instruction including: The role of archival naturalists, What needs study? What should I look for? What should I record? What if I do not know its name? Who is interested in what I observe? and explanation: The pages, Archival materials, Fine tuning accounts, Interpreting the datasheet, The Grinnell System: a brief history, Notes on journal-keeping, Acknowledgments, and Resources. An irritation is that an included reprinting of an unpublished report with three references has no documentation for these.

The *Nature Journal* contains acid-free archival paper of 50% cotton (Ernscliffe Linen Bond): 30 lined journal pages, 15 pocket pages, 15 "catalog" pages, 15 species account pages, 15 datasheets, 30 blank pages for drawings, 2 heavy acid-free pages for watercolour or labels, 4 acid-free separators. Also included is one archival ink "Pigma" felt tip pen and a ruled plastic page finder. An enthusiastic field-naturalist would soon use up the initial stock but additional pages are available from the authors.

In promised progress is an electronic data base for field notes. Although, as is pointed out here, this is far easier to search later but can be more time-consuming than written notes. The web address www.thenaturejournal.ca will provide updates.

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