

however, is where I had a major problem with this book. There are no maps of the field sites! I found this omission truly surprising. It is impossible for anyone unfamiliar with the area to follow Pruitt's discussion of the course of the fires through the region (pages 58-64). Similarly, Pruitt spends time describing six one acre study plots set up in the field area (pages 49-54). However, I found myself wondering how these are distributed on the landscape, how they relate to each other and other landscape features such as lakes and streams, and what the pattern of substrates might be. There is really not enough contextual information here to make this account intelligible. I had a similar problem with the discussion of the Russian field station.

It is interesting to compare and contrast the difficulties both research directors describe in the running of their respective stations. The institutional and administrative settings differ, but many of the problems are common to both. Pruitt deplores the depredations by forest companies and excoriates the provincial government for lack of support for conservation of the boreal landscape. He also makes an impassioned plea for the sustainable use of the boreal ecoregion, advancing "ecotourism" as a use that is both sustainable and likely in the long-term to generate support for conservation policies. Baskin laments the chaos following the breakup of the Soviet Union and describes the inroads unrestricted hunting, not for sport but for food and subsistence, made into the mammal populations around the field station. It is clear that both stations have struggled with uncertainty and under funding and have battled to keep going.

It is a tribute to the people involved that these stations have been operational for as long as they have. From Pruitt's account, the spirit of camaraderie, companionship, and sense of community engendered in people who have worked at the field station is strong. Pruitt makes it clear that an attitude of "make do" rules at the Taiga Biological Station, with creative scrounging of materials and supplies from unlikely sources and a great deal of "sweat equity" contributed by students and volunteers. I expect that almost every researcher involved in a field-based science or natural history in Canada can only smile wryly in empathy.

The most striking aspect of this book is the presentation of the information. The account is given in two languages with the text arranged in parallel columns, English to the left and Russian to the right, with equivalent paragraphs lined up. This is an interesting approach, though I imagine that very few North American readers will be able to read both languages. Moreover, it makes the book twice as long as it needs to be and therefore probably increases its price. The book is well-produced, on high-quality glossy paper, with 78 photographs, 72 of which are in colour, and robust binding. However, the list price is outrageous for such a slender volume and, unfortunately, will probably severely limit its distribution.

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Democracy's Dilemma: Environment, Social Equity, and the Global Economy

By R Paehlke. 2004. MIT Press, Cambridge Massachusetts, 306 pages. U.S.\$ 16.95 Paper

"Many have a sense that governments are increasingly out of control". This book tackles this complex topic. It is written by one of the leading environmental thinkers and deals with major issues of globalization. Simply by assessing the global state of Forests, Topsoil, Biodiversity, Fisheries, Groundwater and Fossil Fuel, it becomes immediately obvious that we are borrowing the assets from future generations. As Paehlke states, these depressive facts are a logic conclusion when acting under the paradigm of "externalizing internal costs", which is the result of a mis-lead economy promoted by the current view and definition of globalization. Here we get convincingly reminded about the significant political error made in the 90s that "unfettered" markets would be the only way to economic and all other forms of societal success.

The book is divided into eight chapters and subsections which convince that "the assumption that economic expansion will fill our lives with sunshine" is faulty. As examples from India and U.S. indicate, wealthier nations are not the healthier ones. Nicely, the book describes features of our current society: volunteer organ-

izations and voting are in decline; political cynicism is all too normal due to the powerlessness of citizens.

Besides a nice overview and introduction of globalization issues, subsequent chapters deal with the media: the TV is at the heart of globalization, asking us permanently to consume and to be entertained. Paehlke presents how this media is controlled by corporations, and thus not delivering conflicting or alternative messages. Instead, it just focuses in a stereotypical way on natural disasters, accidents and arrests. Despite information technology, we are actually living in an age of "missing information": Electronic media systematically avoids intellectual content in favor of visuals. Further, it is shown in this important book that the public Post Service deteriorated to an advertising bombardment infrastructure fueled by international corporations. In the U.S. alone, seventeen billion catalogues (64 for every man, woman and child) are mailed each year! Paehlke demands instead that the right of participatory access should be more often open to non-commercial interests and that individuals should have the right to establish some autonomy from commercial messages and images.

One entire chapter deals with a 'Three-Bottom-Line Perspective' which eludes to the fact that "There has

not been any effective balancing of economic, social and environmental factors and interests". For instance, GATT deals in its 20000 pages with corporate and business rights, but none deal with society and environmental issues. Other book sections elaborate on how to measure global progress: This matters as national GDPs go up, while there are strong indications that we are actually on the way backwards. For instance, tuberculosis, a disease related to poverty and wiped out in earlier times, returned. In the year 2005 we are producing cloths to similar conditions as done in 1805. This books suggests alternatives to the narrow GDP metric such as an Ecosystem or Human Well-being Index; "Economic growth is a means, not the end".

Major social and democracy aspects are touched upon throughout this book. The author emphasizes that trade panels are empowered to overrule national environmental laws. Therefore, there is a strong need for them to be publicly accountable and elected. The reader will learn why the idea of a full-blown global government is flawed in principle: The challenge is to achieve global governance through the cooperation of effectively democratic national governments. Globalization has flaws, for instance widely traveled products simply cannot be sustainable due to the high travel costs. We are exporting systematically environmental problems from rich to poor countries! Whereas U.S. has a high employment rate, in some countries it is even illegal to form unions. "In Mexico wages are a fraction of what they are in Canada and the U.S., effective pollution controls are more or less non-existent, and taxes for public health and education have been reduced or abolished". Social costs of electronic capitalism are very real and not taken into account by those in business and government who make the relevant decisions.

Paehlke actually shows that there are enough environmental and other warning signs that the current life style cannot be maintained, nor extended to third world countries. I liked best the book sections that deal with global economies and the environment, and with related legal and policy issues. The CEC (Commission for Environmental Cooperation) in NAFTA is basically exposed as being powerless; CITES is widely ineffective and has NOT stopped poaching. ITTO (International Tropical Timber Organization) as well as the Biodiversity Convention have basically failed by not halting tropical forest loss. RAMSAR and the Bonn Convention on Migratory Species are unfortunately not referred to in this book but are known to be inefficient as well. International environmental laws suffer from enforcement and binding rules, whereas the economic counterparts always offer drastic punishments when any of their terms are violated.

NAFTA, WTO and GATT have policies that allow polluters to sue national and local governments for even attempting to protect the environment. IMF (International Monetary Fund) deals only with narrow domestic economic interests. Paehlke gives us nice examples such as the large pier in Cozumel threatening the Paradiso

Reef (CEC jurisdiction), or the infamous dolphin-tuna ruling where the U.S. Marine Mammal Protection Act violated GATT in Mexico and was ruled not to be valid outside of national jurisdiction. Another case is mentioned where the WTO is in conflict with sea turtles and instead puts trade first. At least the ISO has some environmental management standards, but then this organization is again administrated by the corporate industry themselves. Why are environmentalists not asked when it comes to taxation or annual budgets? Perhaps we need a tax on consumption and energy waste?

The Ironies of the Global Age are: Rising poverty in the face of an enormous surge in productive capacities, declining leisure time in the face of increasingly automated industrial production, and reversals in environmental protection in the face of advancing environmental knowledge and high levels of environmental concern. This book fully exposes this "Cult of Impotence", which now is so widely found in governments and responsible agencies in the world. Critical voices are not wanted, discriminated against. It is indeed true, as stated by the author, that major administrative concepts such as communism, failed due to ignoring environmental issues and by being undemocratic!

The reader gets presented with a balanced view though. For instance that Globalization has seen modest successes in regards to human rights, labor rights and the rights of women and children. Computer and WWW spread democracy. Thirdly, the California effect (an increase in economy results into an improved environmental standards; e.g., air) is shown.

This book deals with the substance of democracy, not with its hollow form. The 275 pages are full of fascinating bits and pieces: What's the meaning of the (working) life? We replaced tedious industrial work with tedious and pointless marketing and retail work spending a considerable percentage of today's employees who are devoted to the task of selling us things we do not otherwise even imagine we need. Exotic species problems as a direct function of Globalization. Of interest is also the statistic that during the last 50 years humans have used more resources than during the entire previous human civilization. It is fascinating to learn that one can hire 47 Philipinos for 1 French worker, or that 200 of the wealthiest individuals are as rich as 41% of the world population! Some readers might be surprised to learn that U.S. has replaced Japan when it comes to workload. Subsequently, divorce rates and family breakdowns are on a record high. I am really unclear why such a hard working nation has the highest energy consumption though.

Besides fascinating facts, I also like the conclusions brought forward by Paehlke: Other authors described Globalization already as the "environmental race to the bottom". It is referred to as "laissez faire" capitalism. History shows that "laissez faire" cannot easily be reformed: It needed the disasters of the Great Depression and of World War 2 to shake the hold of an earlier version of the free market orthodoxies on western govern-

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