

India. And contrary to popular notion, this lack affects a cross-section of people and organizations. While students continue to be the most affected, other interest groups such as the media, legal experts and community-based organizations also bear the brunt.

It is in this context that books such as the one under review can play a critical role. For instance, a simple question on the number of organisms under various categories of threat in India is often the most difficult to answer. Worse is the case when the Red List and its categories are interchangeably or loosely used. Saha and Mazumdar attempt to fill this lacuna in the current book. Sadly though, the book falls short of expectation. The book, spanning about 160-odd pages, is divided into sections that provide an overview of conservation in India, followed by a detail on the IUCN Red List and its categories, descriptive accounts on each of the mammals listed for India and a conclusion on the various legal provisions in existence for the conservation of mammals.

The first step that one would have to take in such an effort is to identify the target group/readership. Assuming that when this question is not asked, the book would naturally be fit for general reading is rather erroneous. This is amply reflected by the patchy writing in this book, with certain portions being basic, while others suddenly prop up on a completely different plane. Also illustrating our point further is the absence of a glossary and a key, a gross blunder for a book that is replete with technical terms.



The ambit of the book is vast, not only covering a number of threatened mammals but also attempting to highlight their ecology and management. And herein lies the second problem – the book fails to accord equal attention to all aspects. The best section in the book is the Introduction, despite the prosaic admiration for the glorious Indian tradition. Species

accounts dominate the book, while the focus on management is the least. Mammals being described in a nutshell is not only scant, but also rather terse and confounding. Extracts of the existing international and national legal provisions on conservation, under the guise of management of threatened mammals are disappointing. A saving grace of this section is the narrative on the 'Save Barasinga' campaign.

The importance of peer review or the lack of it in this case is illustrated by the numerous errors in the book. For instance, the scientific name of the gaur (*Bos gaurus*) is wrongly mentioned, and so is the endemic status of the Lion Tailed Macaque. That the authors did not accord importance to the numerous scientific studies is exemplified in the species accounts of which we detail the case of the Asian elephant to illustrate our point. It is well known that the Asian elephant is distributed in four major pockets of India, and not two as specified. Musth is a mating signal, more aptly described as a phase that is usually recorded in males over 25 years of age, and is not an indicator of the animal attaining maturity. Further, elephant herds are organized as bond groups and not as a family, each bond group in turn has a number of families. Studies state that the home range of the Asian elephant varies between 150 and over 600 km² – and it is rather perplexing to note that the literature referred to for the book does not contain even a single paper on the elephant. Given the rich experience of the authors on the Red Panda, it is but inevitable that it is this species that is dealt with great confidence in the book.

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CO₂ Rising: The World's Greatest Environmental Challenge. Tyler Volk. The MIT Press, 55 Hayward Street, Cambridge, Massachusetts, 02142, USA. 2008. 223 pp. Price not mentioned.

All authors – from science writers to Indian authors writing in English – face a dilemma on the choice of the audience they write for. Write primarily for an audience unfamiliar with the nuances of one's (sub-) culture, and by explaining too much, risk losing the interest of those who would understand (and may be profit) the most. Write primarily for those like oneself, and risk being incomprehensible to a wider audience.

This book aims to set forth the essential facts about the dynamics of fossil-fuel-derived carbon dioxide, its participation in the global carbon cycle, and its ties to humanity's material well-being. Unfortunately, by trying too hard to write in a style that does not scare readers who are not technically inclined, the author makes it tedious for those who may be so inclined.

As a literary device, the author personifies five different molecules of carbon dioxide, based on how they recently entered the atmosphere: from coal, oil, natural gas, an Antarctic ice core or a glass of beer. He gives them names and follows their movements though different parts of the carbon cycle in and out of the biosphere. But ultimately the choice of the places that each of the five moves through is arbitrary and the path followed by any one of them could be just as easily exchanged for another. It is unimportant to the story where each molecule ends up, where it has been, or if its travels have made it any different from the others.

If you get past the quirky style, there are quite a few nuggets in this book. After all, we are a carbon-based life form that has created a carbon-based civilization predominantly based on carbon-based energy sources. It is a civilization that has difficulty recognizing that too much of a good thing is creating the world's greatest environmental challenge. Ice ages in the past have been associated with slightly lower concentrations of carbon dioxide (180–280 ppm). This should alert us to how delicate these balances are. Now, with concentrations higher than they have been in a million years, human actions threaten to make our planet free of natural ice.

The third quarter of the book is particularly well written and useful, especially the discussion of data obtained from ice-cores (chapter 6) and a part of chapter 8 that deals with airborne fraction – that is, the fraction of carbon dioxide emissions that remains annually in the atmosphere and is not removed either by the oceans or the terrestrial biota. An assumption of what this fraction will be in the future is essential to predicting the concentration and temperature increases that will result.

The author also briefly discusses why faith in geo-engineering solutions, or exclusively in nuclear energy, is misplaced.

He also mentions that half of the improvements in energy intensity (energy consumption per unit of GDP) has come from the increasing share of services sector in the world's economy. The other half comes from efficiency improvements. The book is well annotated with references to other work, sometimes with other points of view.

The author endorses the current view of the Indian Government, forcefully propounded in 1992 by Anil Agarwal and Sunita Narain, Centre for Science and Environment, New Delhi, that international cooperation on this issue must be grounded in some converging degree of equity in per capita emissions. The countries that have large per capita emissions are the ones (by and large) responsible for the global problem and thus are the ones that must cutback at first. The book is weak on how to get countries that bear most of the historic responsibility to agree to this. As the author mentions in another context, there are no obvious solutions out there.

The book has a couple of relatively minor inaccuracies. The author states that 'when plants are burned, there is no net release of carbon, just a return to the air of the same carbon that was taken from the air some years before' (p. 108). This would be true if the burning suc-

cessfully converted all the carbon into carbon dioxide. Generations of engineers have been taught that in order to achieve the maximum combustion efficiency, as much carbon as possible should be converted to carbon dioxide. But as Kirk Smith (University of California at Berkeley) has shown, combustion is never perfect, least of all in traditional burning of biomass. There are gaseous products of incomplete combustion, such as methane, with higher global warming potential than carbon dioxide, and some unburnt carbon in cinders, which make traditional biomass burning less than carbon-neutral.

The other inaccuracy is attributing Brazil's low fossil-fuel carbon dioxide emissions to its substantial and growing production of ethanol from sugar cane (p. 120). But this is only half the story, since Brazil generates most of its electricity from large hydro resources.

The book will tell a reader more than what he/she ever wanted to know about the carbon cycle, but relatively little on how to get out of our present conundrum or impasse.

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