

tations use the same map projection, with Europe and Africa in the centre and the Americas and Australasia at the extreme left and right. For North American readers, this projection can seem strange, since we are more used to seeing the Americas displayed centrally with other continents on the periphery. Much of the base information is quite complicated but the maps show good use of colour and symbols to convey information and summarize complex ideas. One of the more interesting maps shows greenhouse gas emissions, with countries' size distorted according to the amounts emitted. The effect is quite startling, with the dominance of the industrialized regions (USA, Europe, CIS, and East Asia) standing out. Perhaps more telling is the minuscule contribution from Africa, which shows up as a small polygon, despite its large land area and population.

Even with the references and sources, I did find myself wondering exactly how some of the figures underlying these maps are derived, especially because so many of the data are presented at a regional level, where regions may include several countries, and are "binned" into a few categories to simplify cartographic presentation. Uncertainties or error estimates are not provided for the data. Inevitably, there must be some fairly broad assumptions and generalizations underlying the figures. To take one example, what kinds of measurements could be available to allow an estimate of methane emissions on a per capita basis? Are the same or comparable measurements, that is, the same data quality, really available for all areas of the world? How are data integrated even within one country, given that there

are different ecoregions and uneven population distribution? How much of the disparity shown is real and how much attributable to varying levels of data available for different areas of the world? In fact, how far are the numbers behind the maps realistic estimates based on reliable instrumentation or simply informed "guesstimates"? Notwithstanding the beguiling presentation, I did find myself asking many questions about the methodology behind the mapping.

Perhaps the greatest drawback with this book is that, because it deals with current and rapidly changing issues, the information presented will quickly become dated. The authors note that no new material was added after spring 2006, but they also indicate that they intend to update the volume, especially after the next Intergovernmental Panel on Climate Change (IPCC) report, expected in 2007 (page 13). It will be interesting to see how future editions compare to this one and whether detectable changes in some of the indicators show up on that time scale. One could argue that such information is better presented on a website, where it could be updated as needed. However, having the information gathered together in book form makes it easier to consult and compare the different maps. The book's greatest advantage is its accessibility, with its clear presentation and distillation of an enormous amount of complex information into a readily understandable format.

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## **An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It**

By Al Gore. 2006. Rodale, New York, USA. 328 pages.  
US\$28.95 Paper.

I freely admit that I picked up this book already predisposed to dislike it. After all, it's supposedly a book about climate science by a politician, so how good could that possibly be? I am relieved to report that this volume pleasantly surprised me; the book is considerably more readable and worthwhile than I expected it to be. Surprisingly, it also projects, an air of intelligence and careful consideration. Yes, the book is a call to action and a strong statement of a particular point of view, but the hype and hyperbole are at a lower volume than I had feared. More importantly, the book is largely based on solid science and the presentation of that science is done in a remarkably straightforward fashion.

In his introduction, Gore says that the book was developed from a slide show and, judging by the layout and design, that presentation mode has carried over and set the book's style. It is arranged as a continuous narrative, with clear graphs and graphics, some on fold-out pages, colourful eye-catching photographs, short sentences and paragraphs, and large type. Graphics are

sourced, though complete citations are not provided. Text and explanatory captions are generally written in plain conversational language. The book surveys the evidence for global warming and outlines the main forcing factors, highlighting the importance of greenhouse gases and the role of human activities in the increasing rate of, especially, carbon dioxide content in the atmosphere.

Gore drives home the message that human activities, in particular industrial activities, are responsible for much of the recent increase in greenhouse gas concentrations in the atmosphere and therefore the increasing rate of global warming. He sets these trends in context by showing, for example, recent rates compared to the carbon dioxide trend inferred from Antarctic records extending back to 600 000 years before present. Other long-term records, such as tree-rings and Greenland ice-cores, are also used to provide perspective. Several times, the point is made that it is not simply the absolute amount of increase that is important but the increasing rate of increase. Taking it as given that global warming will continue, even if actions are taken now to reduce rates of carbon dioxide emissions, Gore then exam-

ines what the implications are likely to be during the next few decades.

The book presents many different types of evidence for global warming and covers a lot of territory. It draws on data and images from across the world. Gore amasses a formidable array of information to support his argument. Some of the topics he features include: droughts and shrinking lakes (including an intriguing sequence of images showing the reduction in Lake Chad), reduction in Arctic ice, shrinking of large ice sheets (notably on Greenland and Antarctica), effects on temperatures and seasonality, impact of rising sea-levels (including the inundation of islands), damage to coral reefs, effects of climate on human health and diseases rates, frequency and occurrence of extreme weather events (including, not surprisingly, hurricanes), and climate impacts on biodiversity and distribution of plants and animals. The evidence for global warming includes some striking "then and now" photographs of glacier forefields showing recent ice retreat. Two issues that also stand out are the effects of exceptionally high summer temperatures, as seen in recent years in Europe especially, and increased storminess, especially on low-lying islands and coastal areas. The evidence and implications are shown from a global and not just a U.S. perspective. This worldwide coverage underlines the urgency of the issues presented, since some of the impacts are not just hypothetical but are being felt by people across the world now.

This leads Gore into a consideration of the roots of the problem, in particular the main sources of greenhouse gas emissions. Some striking graphics visually emphasize the large contribution to greenhouse gas emissions made by the U.S. Gore points out some of the global inequities in consumption that have led to this situation and militate against any remedial action. He identifies energy production as the main culprit and highlights the need to move to alternate energy sources, such as wind power. Here, the text gets more overtly political with Gore taking aim at the Bush administration for obfuscating the issue and refusing to act, for example, by not ratifying the Kyoto Protocol.

Interspersed within the text are eight short essays, most of which recount anecdotes and incidents from Gore's life. These stand out from the rest of the narrative by being printed in smaller font on tan-coloured pages. The essays highlight some of the reasons for his passionate concern about global warming. What they show is that this is not a recent preoccupation but something that has engaged his attention for many years, growing out of life-long interest in environmental issues. Clearly, he wants to let readers know that he is not simply "jumping on a bandwagon" and taking

up a trendy issue out of opportunism, but is following an interest that has underpinned his political career. Here, I did feel that I was reading a political manifesto at times. There's a lot of name-dropping and there are rather too many "warm and fuzzy" pictures of Gore and his family for my taste. Nevertheless, these essays bring the issue from the abstract to the personal, which does sharpen the sense that these concerns matter to individuals. By being set off from the rest of the text, it is clear that the message in these essays differs from the rest of the book.

The final section of the book, offset by being printed on light-green paper, is the call to action, outlining some things that individuals can do to make a difference. Most of these actions will already be familiar to most readers: buy a hybrid car, bag your groceries in re-usable shopping bags, replace incandescent light-bulbs with compact fluorescent bulbs, and so on. Generally, these actions are an appeal to a sense of guilt in affluent people living in western countries, where, Gore maintains, most of the problem originates anyway. Some of the suggestions run counter to many driving forces in the economy. When the TV screen is filled with ads encouraging us to be tourists and travel to sunny beachside resorts, how realistic is it to tell people to reduce air-travel? Interspersed among these exhortations are ten common misconceptions about global warming and Gore's recommended responses. These misconceptions include the ones you might expect, such as the assertion that "it's all just natural variation", though there was one I hadn't heard before, attributing global warming to after-effects of the Tunguska event.

In such a brief statement of the global warming issue, Gore obviously does not get into any topic in detail. There's clearly a lot more that could be said about all lines of evidence he presents but, unfortunately, there is no reading list for readers to follow up on any topics raised in the book. Nevertheless, Gore does assemble a persuasive argument that global warming is a problem and we need to do something about it immediately. However, this is very much a book that is "preaching to the converted". I can't see many people who are not already convinced there is a problem reading it. On the other hand, Gore is a well-known figure so perhaps some people may take a look at this book because of name-recognition. As a politician, Gore has to overcome a good deal of cynicism in order to reach people. This is a pity because this book is an articulate and thought-provoking presentation of a global phenomenon that affects us all.

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