

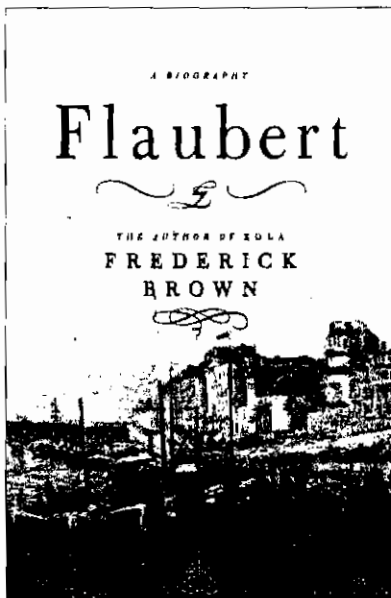
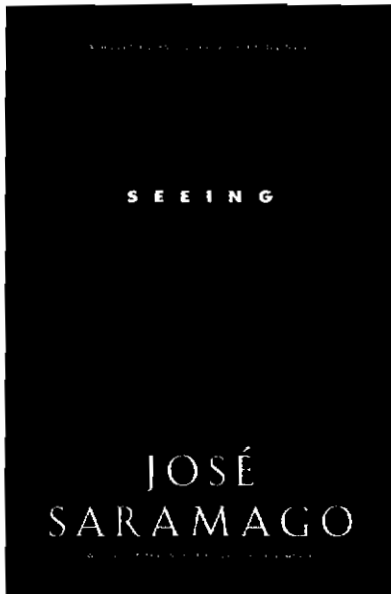
"At last, here is a clear and readable account of one of the most controversial issues facing everyone in the world today."  
—Jared Diamond

# THE WEATHER MAKERS



How Man Is Changing the Climate and What It Means for Life on Earth

TIM FLANNERY



## In the Hot Seat

### The Weather Makers How Man Is Changing the Climate and What It Means for Life on Earth

By Tim Flannery  
*Atlantic Monthly Press. 384p \$24*  
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This year, Americans are hearing more and more about the environment and about climate change. Al Gore's "An Inconvenient Truth" has brought to moviegoers the lecture he has given across the country. A Newsweek cover asks "Why Saving the Environment Is Suddenly Hot" (7/17); a Nation cover proclaims that "Green Goes Grassroots" (7/31). And Tim Flannery, an Australian biologist, conservationist and educator, makes a great contribution to the effort to educate the public about the dangers of climate change in *The Weather Makers*.

This highly engaging book makes recent findings and growing scientific understanding of climate change very accessible to non-scientists. Assuming no prior knowledge on the part of his readers, Flannery defines terms and offers a fascinating science lesson. Readers will discover they enjoy exposure to Dobson units (measure of ozone in the atmosphere) and Sverdrups (scale of ocean currents, measured in cubic yards of water per second). The author is sparing but effective in his use of graphs, charts, diagrams and photos to walk readers through the complex story that features what we now know about ice ages, orbital variations, sunspots and various greenhouse gasses affecting the "great aerial ocean" (a phrase coined by the English naturalist Alfred Russel Wallace).

Only an extremely thin section of the troposphere constitutes breathable atmosphere and makes life on earth possible. "Earth's thermostat is a complex and delicate mechanism," Flannery points out, and our "atmosphere" is highly vulnerable. Slight variations in current conditions could make earth uninhabitable; the author makes clear why life on this planet hangs on by a thin thread. The capacity of the breathable air to retain water vapor that plants and animals need decreases with rising temperature, and CO<sub>2</sub> emis-

sions are linked to temperature increases. Plants and algae keep us from suffocating in carbon dioxide.

And the oceans, the most important of the "carbon kidneys" taking carbon out of the atmosphere, seem to be absorbing less human-made CO<sub>2</sub> because of rising temperatures and changing circulation patterns. For Flannery, the Keeling curve, a graph displaying the dramatic increases in concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere from 1958 to 2000, is "the *Silent Spring* of climate change." Change can be rapid (though not as rapid as the Hollywood version in "The Day After Tomorrow") and cataclysmic.

The existence of positive feedback loops in the earth's climate system—where, for example, heat already generated by CO<sub>2</sub> emissions may turn soil from a storehouse of carbon to a new carbon emitter—make forecasts for habitat and food supply for many of the earth's species frightening. Depressing news is sometimes delivered with a small dollop of color or levity. We learn, for example, that "the geological process for making oil is as precise as a recipe for making soufflé" and that "by trading coal storage for tree storage of carbon, we are exchanging a gilt-edged guarantee for a junk bond." With regard to the migration of species in response to temperature change, "it's as if the researchers had caught CO<sub>2</sub> in the act of driving nature poleward with a lash." Flannery wants readers to think holistically and in terms of interconnections between actions and effects. He does not believe we are quite yet doomed, but he sees the need for action as absolutely urgent.

It would be unfortunate if only firm believers read this book. Flannery is extremely persuasive that there is a great deal readers can do individually to reduce

### The Reviewers

**Carol Nackenoff** is professor of political science at Swarthmore College in Pennsylvania, where she teaches American politics, constitutional law, environmental politics and public policy.

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CO<sub>2</sub> emissions; he includes a list of actions individuals can take, plus online resources on greening power use. Governmental, corporate and international efforts must also be enlisted, and Flannery shows exasperation with administrations in Australia and the United States that refuse to ratify the Kyoto Protocol. These nations, wedded to the myth of limitless growth, are also among those most likely to feel the severe effects of climate change. The book is relentless and convincing in exposing the sham claims of global warming naysayers.

This wide-ranging investigation of causes, consequences and prospects for remediation of the damage from climate change is at its best and most vivid when the author draws on his experience as a scientist and field biologist. Only the final quarter of *The Weather Makers* specifically focuses on impacts on humans (with an interesting discussion likening cities to plants), on policies and on governments. By not employing a "tragedy of the commons" framework, an economic model that assumes human cooperation on CO<sub>2</sub> emissions is unlikely, Flannery is able to accentuate positive responses he finds in some unexpected places. He notes that the slower humans are to take action, the more likely are we to face warfare over habitable space and food security, and that solutions, if any, will be imposed by non-democratic institutions.

Deeply distrustful of corporate influence on politics, Flannery favors steps that encourage individual and grassroots initiatives and democratic action. There is an interesting if brief discussion of a way in which gross inequalities in energy consumption by individuals around the world might be lessened by assigning fixed individual rights to pollute.

Lacking a social science background, Flannery is not as compelling when he discusses public policy. For a systematic exploration of why the Montreal Protocol succeeded and the Kyoto Protocol has been so troubled, the reader will need to go elsewhere. Recent work has examined how prospects for cooperation and positive achievements differ for various global environmental policy regimes (one example is *Global Environmental Politics*, by Pamela Chasek, David Downie and Janet Brown,

2006). The author's faith that legal conventions and courts currently constituted will force democratic governments to act or to pursue justice seems rather naïve. So does his expectation that nations outside the Kyoto Protocol will face unyielding economic pressure to join because of the existence of a large trading bloc, which at a minimum assumes unrealistically that Kyoto will meet its targets.

"Climate change," Flannery notes, "is difficult for people to evaluate dispassionately because it entails deep political and industrial implications, and because it arises from the core processes of our civilization's success. This means that, as we seek to address this problem, winners and losers will be created." In the coming years, Flannery argues, climate change will become the *only* issue. Human actions will very soon account for a greater proportion of climate events than will chance, nature or God, and we will indeed become *The Weather Makers*. Though readers of this book are likely to be gripped by fear at times, they will also find cause for hope and hear a strong call to action. **Carol Nackenoff**

## Citizenspeak

### Seeing

#### A Novel

By José Saramago

Trans. from the Portuguese by Margaret Jull Costa

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If Franz Kafka were to rewrite the British television comedy "Yes, Prime Minister," the result might resemble José Saramago's new novel, *Seeing*. The Nobel Prize-winning novelist weaves wry, sardonic humor into his dark parable of an unnamed nation locked down by fear of terrorism from within, featuring governmental bureaucrats who at first seem to be mere bunglers, but in time reveal themselves to be truly violent, dangerous leaders. Saramago's voluble narrator presents the story as both Platonic dialogue and political thriller.

*Seeing* builds on Saramago's 1990 novel *Blindness*, which described a city ravaged by a plague of blindness and the subsequent descent into savagery by govern-