
RESOURCES & ENVIRONMENT

*Fossil Fuels
and Climate*

"Carbon Dioxide and Climate: The Uncontrolled Experiment" by C. F. Baes, Jr., H. E. Goellner, J. S. Olson, and R. M. Rotty, in *American Scientist* (May-June 1977), 345 Whitney Ave., New Haven, Conn. 06511.

The concentration of carbon dioxide (CO₂) in the earth's atmosphere has increased substantially since the Industrial Revolution (from 295 to 330 parts per million). One cause may be the 5 Gt (trillion metric tons) of carbon annually released into the atmosphere by man's burning of fossil fuels. Can the carbon cycle, which maintains equilibrium among the 40,000 Gt of carbon in the atmosphere, on land, and in the sea, recycle this increase back to earth?

The question deserves urgent attention, suggest the authors, who are scientists at the Oak Ridge National Laboratory and Associated Universities. Plant and animal respiration, fires, and the decay of organic material naturally release CO₂ into the air (about 200 Gt a year), and dissolution of atmospheric carbon in the ocean returns roughly the same amount to earth. However, the authors explain, about half the CO₂ generated by burning fossil fuels appears to remain in the atmosphere. A century from now, it could contain 1.5 to 5 times the 1860 CO₂ concentration. The potential result: an accelerated atmospheric warm-up, conservatively estimated at 1.5-3°C per doubling of CO₂ concentration.

The effects of such rapid warming would fall unevenly around the globe. Increased evaporation would reduce water supplies; melting polar ice would raise sea levels, and plant and animal ecosystems would be altered. The authors predict that man, nevertheless, will continue to burn fossil fuels until the consequences become "clearly unacceptable."

*Managing
the Whales*

"The International Management of Whales, Dolphins, and Porpoises: An Interdisciplinary Assessment" by James E. Scarff, in *Ecology Law Quarterly* (vol. 6, nos. 2 and 3, 1977), Boalt Hall, University of California, Berkeley, Calif. 97420.

The struggle between conservationists and the whaling industry has become increasingly heated. While conservationists have succeeded in limiting "kill" quotas, the resolution of the conflict remains in doubt. In an exhaustive two-part review of the history, economics, and politics of whaling since the 14th century, ecologist Scarff concludes that, although some steps have been taken to ensure the