

Other than the indirect effects of more vegetation, more food, more animals, and a more lush natural environment, what are the direct effects of higher CO₂ levels upon the quality of human life? Will higher CO₂ levels in our environment cause us to grow larger, live longer, have less disease, and generally have higher quality lives, or will higher CO₂ have no significant direct biological effect upon us - or even have negative, harmful effects?

The answers to these important questions are unknown. There are several reasonable arguments that suggest that higher CO₂ may be good for us. For example, since we now know that the quality of life for individual plants is optimized at higher CO₂ levels, it seems sensible to expect that this will be the case for animals, too. And, generally speaking, optimum biochemical conditions for higher animals are optimum for humans. It is, however, essential that we obtain direct answers to these questions.

Until now scientists have usually assumed that the quality of individual animal life was unaffected by low level changes in CO₂ concentrations. Negative effects have been observed at concentrations of 10,000 to 20,000 ppm in the atmosphere, but this is entirely different from the 360 ppm in the atmosphere now and the possibility of 600 to 1000 ppm.

If 600 ppm CO₂ were found to be beneficial for our health, we might take advantage of this now by simple design changes in our buildings to maintain CO₂ at this concentration. We would not need to wait several generations for the atmosphere to change.

Here at the Oregon Institute of Science and Medicine we are now undertaking an experimental program to measure the health effects on several species of animals from higher CO₂ levels. If we are able to acquire and maintain the necessary financial resources for this work, the answers to these questions will be obtained during the next few years.

FIGURES

Figure 1 - Reprinted from Herman, J.R., McPeters, R., Stolarski, R., Larko, D., and Hudson, Journal of Geophysical Research, Vol. 96, No. D9, p. 17298 (1991).

Figure 2 - Plotted by Zachary Robinson from the data given in Figure 1.

Figure 3 - Reprinted from Access to Energy, Box 2298, Boulder, CO 80306, May (1992) - as reproduced from Scotto, J., Science, 12 February 1988.

Figure 4 - Reprinted from Idso, S.B., Carbon Dioxide and Global Change: Earth in Transition, IBR Press, p. 49 (1989).

Figure 5 - Reprinted from Two Environmental Issues, George C. Marshall Institute, p.13, (1991).

Figure 6 - Reprinted from Two Environmental Issues, George C. Marshall Institute, p.15, (1991).

Figure 7 - Plotted by Zachary Robinson from Forest Statistics of the U.S., U.S. Forest Service (1987).

Figure 8 - Plotted by Zachary Robinson from Forest Statistics of the U.S., U.S. Forest Service (1987).