

Research Highlights

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Pipe dreams

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A scheme to fertilize the ocean is unlikely to make any real contribution to carbon sequestration, scientists report. In 2007, James Lovelock and Chris Rapley proposed using floating pipes to bring deep, nutrient-rich sea water to areas of the ocean that are devoid of life. The scheme would fuel productivity by boosting the growth of phytoplankton, which transport carbon to the deep sea.

But an analysis by Andrew Yool of the National Oceanography Centre, Southampton, UK, and colleagues suggests the concept is little more than a pipe dream. Using a numerical model to test the efficiency of such a nutrient transfer system, they found that the overall effect on sequestration was minimal. Nutrient-rich water piped to the surface would enhance productivity surrounding the pipes, but because of its high CO₂ concentration it is likely to release the greenhouse gas back to the atmosphere. In the simulation, pipes located in the tropics were the most successful at transferring atmospheric carbon dioxide to the deep ocean.

The researchers conclude that an unfeasible 189 to 776 million pipes would need to be scattered throughout the low-nutrient waters of the tropics for the scheme to make any significant dent in atmospheric carbon dioxide levels.



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