

Nitrous oxide from ocean microbes

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A large amount of the greenhouse gas nitrous oxide is produced by bacteria in the oxygen poor parts of the ocean using nitrites, Dr Mark Trimmer told journalists at a Science Media Centre press briefing today.

Dr Trimmer looked at nitrous oxide production in the Arabian Sea, which accounts for up to 18 % of global ocean emissions. He found that the gas is primarily produced by bacteria trying to make nitrogen gas.

“A third of the ‘denitrification’ that happens in the world’s oceans occurs in the Arabian Sea (an area equivalent to France and Germany combined)” said Dr Trimmer from Queen Mary, University of London. “Oxygen levels decrease as you go deeper into the sea. At around 130 metres there is what we call an oxygen minimum zone where oxygen is low or non-existent. Bacteria that produce nitrous oxide do well at this depth.”

Gas produced at this depth could escape to the atmosphere. Nitrous oxide is a powerful greenhouse gas some 300 times more so than carbon dioxide, it also attacks the ozone layer and causes acid rain.

“Recent reports suggest increased export of organic material from the surface layers of the ocean under increased atmospheric carbon dioxide levels. This could cause an expansion of the oxygen minimum zones of the world triggering ever greater emissions of nitrous oxide.”

Source: Society for General Microbiology

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