

Phytoplankton at base of Antarctic food web at risk from ocean acidification

Two new studies have found that the productivity and diversity of phytoplankton in the ocean surrounding Antarctica are at risk from rising CO₂ levels.

Single-cell phytoplankton are at the base of the Antarctic food web but the studies led by Institute for Marine and Antarctic Studies (IMAS) researchers found they will be increasingly threatened over coming decades as rising carbon levels cause the Southern Ocean to become more acidic.

The two studies published in the scientific journal [Biogeosciences](#) involved collaboration between IMAS, [ACE CRC](#), the Australian Antarctic Program and the Australian Research Council -funded [Antarctic Gateway Partnership](#)

Using tanks located at Prydz Bay in East Antarctica, researchers Alyce Hancock and Stacy Deppeler tested phytoplankton at different levels of CO₂, mimicking rises expected by the end of the century.

They found that ocean acidification would lead to changes in the productivity and composition of phytoplankton communities in the Antarctic, affecting the way nutrients are cycled and reducing the energy available to higher organisms.

Ms Hancock said the Southern Ocean is particularly vulnerable to ocean acidification as it is one of the world's largest sink of CO₂ emissions. s8

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