Media Release

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World-first research uses satellites and ocean models to explain Antarctic seafloor biodiversity

In a world-first, a research team of Australian and international scientists has used data collected by satellites and an ocean model to explain and predict biodiversity on the Antarctic seafloor.

The researchers combined satellite images of phytoplankton colour on the sea surface with a suite of connected models of how the microscopic phytoplankton are swept by ocean currents, sink to the seafloor and are then redistributed across it, to accurately predict the extent of seafloor life without the need for extensive physical sampling.

The study's lead author, IMAS PhD student Jan Jansen, said the breakthrough, published in the prestigious journal *Nature Ecology*

Co-author IMAS Professor Craig Johnson said that while the study was based on a region in eastern Antarctica, the new approach could be used to generate maps of biodiversity across the continental shelf right around the Antarctic continent, including areas where information is currently limited or difficult to collect.

"This information would be very valuable and is an exciting prospect," Professor Johnson said.

"Jan Jansen is to be congratulated for his lead role in pulling together many threads across several disciplines to help answer a major research question. It is a remarkable achievement by a scientist so early in his career

"With further research, this system of models has the potential to provide valuable insights into seafloor biodiversity across other parts of the world's oceans.

Professor Johnson said an extraordinarily diverse team of researchers were involved in this study, including earth scientists, physicists, geologists and biologists.

The research team included Jan Jansen, Dr Nicole Hill and Professor Craig Johnson from IMAS, and scientists from the Australian Antarctic Division (AAD), CSIRO, ACE CRC, Geoscience Australia, Macquarie insights into