

**Huw Griffiths**

British Antarctic Survey, UK

***More losers than winners in a century of future Southern Ocean seafloor warming***

Huw J Griffiths\*, Andrew JS Meijers, Thomas J Bracegirdle

British Antarctic Survey, Cambridge, UK

The waters of the Southern Ocean are projected to warm over the coming century, with potential adverse consequences for native cold-adapted organisms. Warming waters have caused temperate marine species to shift their ranges poleward. The seafloor animals of the Southern Ocean shelf have long been isolated by the deep ocean surrounding Antarctica and the Antarctic Circumpolar Current, with little scope for southward migration. How these largely endemic species will react to future projected warming is unknown. By considering 963 invertebrate species, we show that within the current century, warming temperatures alone are unlikely to result in wholesale extinction or invasion affecting Antarctic seafloor life. However, 79% of Antarctica's endemic species do face a significant reduction in suitable temperature habitat (an average 12% reduction). Our findings highlight the species and regions most likely to respond significantly (negatively and positively) to warming and have important implications for future management of the region.