

MELTING OF POLAR ICECAPS: IMPACT ON MARINE BIODIVERSITY

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Keywords : Regional warming, deglaciation, ice shelf, diachrony, ice scour, Antarctic Peninsula, Spitsbergen, Polar Front, freshening, sedimentation, stratification, stenothermal, chemoautotrophic ecosystems, benthos, planktotrophic, larvae, recolonisation.

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Summary

There is strong evidence that polar ice-caps are, in places, rapidly melting. This is both in response to emergence from the last ice age but also current unprecedented rises in atmospheric carbon dioxide. Melting and the regional warming underlying it, are highly complex and influences on life is debated. In the Arctic and the Antarctic Peninsula the number of glaciers retreating and retreat rates are increasing and there is much consensus on some effects of this on biodiversity. Ice reduction is leading to new sea-ways, and habitat for ice associated organisms is regionally vanishing. Coastlines are changing so more deep areas, shelf, intertidal zones and islands are available for colonisation. More light and heat will enter the water column, increasing primary productivity and sinks for CO₂. Ice-bergs will increase with ice shelf collapses but ultimately decrease as glaciers retreat inland. Lack of ice scouring should increase biodiversity at local scales (less destruction) but greatly decrease it at larger scales as pioneer animals will be smothered by dominant competitors (as mussels do along temperate coastlines). Melt water flow into seas is causing freshening, stratification, and near-shore sedimentation. These negatively influence on biodiversity by clogging and burying the plankton eaters living on the seabed. Changes in water-mass properties and

