

THE PALAEOECOLOGY OF ANTARCTIC FRESHWATER LAKE FAUNA AND IMPLICATIONS FOR ANTARCTIC BIOGEOGRAPHY

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Palaeolimnological studies of environmental change focusing on select species are useful, yet cannot give information on changes in whole lake community structure and dynamics. Analysis of entire fossil zooplankton communities, in addition to interpretation of diatom, pigment and sedimentological data, can provide this community information and allow for the determination of a lakes palaeoecology. Through analysis of faunal microfossils from several Eastern Antarctic freshwater lake sediment cores, we have built up a detailed picture on the effects of both large and small-scale environmental events on Antarctic freshwater faunal communities. Here we present the palaeoecology of three lakes; Waterfall Lake (Vestfold Hills), Lake Reid (Larsemann Hills) and Lake Terrasovoje (Amery Oasis) whose basal sediments range in age from pre-Last Glacial Maximum through to late Holocene. These lakes also represent a cohesive biogeographical unit, which is geographically isolated from western and maritime Antarctica and can therefore provide important information on the palaeobiogeography of the region. In particular, results from Lake Reid will be presented that provide the first direct evidence of a lacustrine faunal refuge on the Antarctic continent during the Last Glacial Maximum.