

Benthic foraminifera as Quaternary palaeoclimate proxies in the New Caledonia Basin

Briony Mamo^{1*}, Glenn Brock², Elsie Gretton³

¹JAMSTEC, ²Macquarie University, ³Boggabri Coal

In 2001, gravity core GC4 was extracted from the New Caledonia Basin and the uppermost 141 cm, representing approximately the last 140 000 years, was investigated for chemical isotopic, carbonate, non-carbonate and trace element signatures. In this study, sub samples of the same uppermost 141 cm of GC4 were picked and sorted for all foraminiferal taxa. A total of 161 species of benthic foraminifera were obtained from the core and 46 species occurred in sufficient numbers to investigate changing patterns and trends in biodiversity and relative abundance. All changes can be related to broad scale oceanic and palaeoclimatic fluctuations during the last 140 000 years. Within GC4, two distinct foraminiferal assemblages were detected using Bray-Curtis cluster analysis and Multidimensional Scaling (MDS) analysis. Factors that influence the foraminiferal assemblages include environmental setting, SSP, oxygen levels at the sediment-water interface and transportation by oceanic current systems operating within the region.

Keywords: foraminifera