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VICTORIA LAND COAST MACROBENTHIC COMMUNITIES: DIFFERENCES WITH DEPTH AND LOCATION?

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In February 2004 RV *Italica* visited five Ross Sea locations, from Cape Adare in the north, to Coulman Island and Cape Russell in the south. The aim of this cruise was to characterise and quantify both latitudinal and depth-related changes in benthic communities along the Victoria Land coastline. A range of deep environments (i.e., 100-500 m) was sampled; these locations have varying levels of sea-ice cover and iceberg disturbance, proximity to polynyas and advected primary production. Seafloor sediment characteristics, and richness and diversity of macrofaunal communities were compared between these locations. Previous generalisations that suspension feeders are more abundant in shallow Ross Sea waters, and deposit-feeding taxa increase at the deepest sites were not apparent for macrofauna. There was no consistent pattern of sediment grain size, number of individuals or taxa, the specific taxa collected, or their functional groups with station depth across locations, and considerable variability was apparent within locations. The environmental variables measured explained only a small amount of the variability in assemblage composition (17.3%). It is likely that broader scale environmental factors (e.g., sea ice cover, iceberg disturbance, circulation patterns, local hydrodynamic conditions), and their subsequent effects on factors such as primary production and supply and dispersal of larvae and food, will be major determinants of benthic diversity, and population and community structure. The low correlation found in this study between the infaunal community and the (largely physical) habitat characteristics measured, in combination with similar results of our previous shallow water studies in McMurdo Sound, highlights the need for caution when choosing areas for environmental protection based only on physical variables.