

Variability in the marine ecosystem of the Prince Edward Islands

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The Prince Edward Islands lie within an oceanographic setting characterised by high mesoscale variability including shifts in the position and intensity of the main frontal systems that delimit the Polar Frontal Zone (PFZ). In addition, the interaction of the Antarctic Circumpolar Current (ACC) with the Southwest Indian Ridge generates both warm and cold core features upstream (west) of the islands. The mesoscale variability in the oceanographic environment in the vicinity of the islands contributes to a high degree of both spatial and temporal variability in the abundance, biomass and species composition of the plankton community within the region. The frontal systems that delimit the PFZ and warm and cold core features are generally characterised by increased plankton biomass and therefore represent important foraging grounds for many of the top predators that are found seasonally on the islands. Unfortunately due to logistical constraints our understanding of seasonal changes, which are likely to be substantial, in the marine ecosystem of the islands is poor. The potential impact of global climate change on the marine ecosystem of the Prince Edward islands will be discussed.