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SENSITIVITY OF POLAR SPECIES TO CLIMATIC CHANGES: THE CASE OF ANTARCTIC KRILL

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High latitudes are the fastest warming regions of the planet, but their marine invertebrates are stenothermal, sensitive even to small temperature changes. For Antarctic species in a warming climate, the continent to the south could also block a compensating shift in their ranges. This talk focuses on one such species, *Euphausia superba*, which is potentially sensitive to such changes. We review firstly the major factors that control their present day distribution, and secondly some critical aspects of their biology that may be sensitive to change. Krill have an unusual circumpolar distribution, with over half of their total stocks concentrated into the SW Atlantic sector. We examine their distribution within this sector in relation to suitable habitat area (defined by water depth, temperature, ice cover, Chl *a* values) and compare with equivalent analyses from the Indian sectors. The Antarctic Peninsula region is changing in two ways that may affect krill. On one hand there is a reduction in winter sea ice, and on the other hand ocean temperatures have risen by ~1^{o}C since 1955. We examine some critical mechanisms by which both of these may affect krill, namely the requirement of sea ice for larval overwintering, and the limitation of postlarval growth at temperatures >2^{o}C. Analyses of critical mechanisms, coupled to an appreciation of what comprises good krill habitat, may help us to predict the future for this key species.