

**TEMPERATURE LIMITS IN ANTARCTIC MARINE SPECIES**

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Studies to date investigating the effects of environmental change have been either observational or experimental. Observational research has focussed mainly on alterations in species range and identifying species removal, and then linking these to observed regional change. Experimental studies have measured organism tolerances to changes in holding conditions. This body of work has predominantly been aimed at elucidating the underlying physiological mechanisms setting upper lethal temperature limits in animals, and explaining why Antarctic marine species are poor at coping with elevated temperature. In a few recent cases these studies have included evaluations of abilities to adapt to new conditions over periods of weeks and months, which have shown both better than expected and poorer than expected capacities for adaptation. A major problem with this type of work for predicting ecosystem level changes is that few species are used in each study, and obtaining information on how whole communities will respond has not been a priority in the marine environment. Here I present data on temperature tolerances in 10 Antarctic marine species representing different trophic groups: primary consumers, scavenger/carnivores and predators. Obtaining data on larger numbers of species allows wider scale evaluations of change effects, and differences between these groups permits the identification of potential imbalance in communities and larger scale systems.