

# How do marine nematodes cope with extreme temperatures and fluctuations?

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Increased temperature fluctuations and maxima have been reported the last decades as main consequences of global climate change. In intertidal areas, the combination of episodically elevated water temperature and short-term exposure to high air temperature at low tide may exceed the tolerance of some organisms, causing local extinctions. Although organisms develop plasticity towards stress, extreme change of the environmental conditions can eventually alter population dynamics. Marine nematodes are the most abundant benthic organisms, and due to their short life span, they are an excellent taxon for the investigation of benthic responses to such stress conditions. Their response will be examined at multiple levels: from individuals to populations and communities, including also interactions among species and/or trophic levels. Specifically, the effects of short-term (daily/weekly) temperature fluctuations on nematode populations and individuals, within the same or between adjacent trophic levels will be examined. In addition, the effects of temperature changes on the ecology of marine nematodes, and in particular their behavior, will be investigated with *in vivo* microcosm experiments. Specifically, we focus on the moving ability and the food selectivity of three closely related nematode species which differ in their tolerance to temperature fluctuations and extremes to detect any effects due to fluctuating temperature.