



Coral reef life high on acid

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Average sea-surface temperature and the amount of CO₂ dissolved in the ocean are rising as atmospheric CO₂ increases. Many coral reef fishes appear to be living close to their thermal optimum, and even 2-4° C temperature increases reduce respiratory performance. In addition, predicted future rises in ocean CO₂ levels – even at present temperatures - alter sensory responses and behaviour of marine fishes, such as increased boldness and activity, loss of behavioural lateralization, altered auditory preferences and impaired olfactory function. I will show that these abnormalities relate to GABA-A receptor function, since they can be rapidly and effectively reversed by treatment with an antagonist of this receptor. GABA-A is a Cl⁻/HCO₃⁻ channel and a major neurotransmitter receptor in the vertebrate brain, as well as the nervous system of many invertebrates. Given the ubiquity and conserved function of GABA-A receptors, this predicts that rising CO₂ levels could cause behavioural impairment in a wide range of marine animals. Recent examples of apparent high-CO₂ induced alterations in GABA-controlled functions in both fish and molluscs will be presented.



Thursday March 14th at 13.15

Room 127 (zoofys kaffestue), building 1131