Press Release

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Evolution at the Sea

Long-term experiments indicate phytoplankton can adapt to ocean acidification

April 08, 2012/Kiel. **Scientists of the Helmholtz Centre for Ocean Research Kiel (GEOMAR) conducted a one year CO_2 selection experiment using the calcifying microalgae *Emiliania huxleyi* and uncovered an enormous potential for adaptation to rapidly changing environments in this important phytoplankton species. After 500 generations under controlled CO_2 conditions adapted cultures grew and calcified significantly better compared non-adapted control cultures when tested under ocean acidification conditions. These findings show for the first time that evolutionary adaptation may help to mitigate harmful effects of ocean acidification. Still, this is not an all-clear signal for ocean acidification. The results are published in the current issue of Nature Geoscience.**

offspring per generation commonly have a much lower adaptive potential on climate change relevant time scales. “Earth history tells a convincing story about the limitations to evolutionary adaptation” Prof. Ulf Riebesell explains, “environmental changes comparable to what happens right now in the oceans have repeatedly resulted in mass extinctions, even though these changes were 10-100 times slower than what we observe today”.

Another open question is to what extent the evolutionary changes observed under laboratory con-