O13 Population dynamics and species interactions of marine nematodes under climate change

Anna-Maria Vafeiadou[1,2], Chariton Chintiroglou[2], Tom Moens[1]

[1]Ghent University, Biology Department, Marine Biology Research Group, Ghent, Belgium
[2]Aristotle University of Thessaloniki, Biology Department, Thessaloniki, Greece

Although changes in average environmental conditions can have serious consequences, the main impacts of global climate change on populations and communities may well result from changes in short-term climate variability. Those may affect different levels of ecological organization: from the individual to the ecosystem, including changes in reproductive success, population dynamics, species interactions and community structure. The present study focuses on the effects of diurnal temperature fluctuations on the fitness of free-living marine nematodes. We focus on different levels of organization (individual/populations) and complexity (single species/interactions) and test whether: i) short-term temperature fluctuations affect individual performance by investigating their feeding behavior, and ii) medium-term climate change-induced temperature fluctuations affect population dynamics of marine nematodes and their species interactions. Microcosm experiments were performed on two congeneric species, namely *Diplolaimelloides meyli* and *D. oschei*, which co-occur in their natural habitat with asymmetric competitive interactions under constant temperature conditions. The two species were incubated in mono-cultures and in two-species combination under constant and diurnally fluctuating temperature of increased amplitude, and measurements related to individual response to food, reproduction and population growth were performed. Results showed that effects of temperature variations on individual behaviour and on population fitness are species-specific. Inter-specific competition negatively affected both species' fitness regardless of temperature conditions, though the effect was more pronounced under fluctuating temperature. We conclude that changes in amplitude of diurnal temperature fluctuations may be very important determinants of the effects of temperature change on species interactions, potentially affecting also assemblage structure and ecosystem functioning.

O14 Shallow-water surf-zone meiofaunal community responses to ocean warming and acidification

Matthew R. Lee[1], Rodrigo Torres[2], Patricio H. Manríquez[3]

[1]Centro I-Mar, Universidad de Los Lagos, Puerto Montt, Chile
[2]Centro de Investigación en Ecosistemas de la Patagonia (CIEP), Coyhaique, Chile
[3]Laboratorio de Ecología y Conducta de la Ontogenia Temprana (LECOT), Centro de Estudios Avanzados en Zonas Áridas, Coquimbo, Chile

The changes in the environment caused by an increase in atmospheric CO_2 could potentially change the structure of benthic marine communities, of which meiofauna are an important component. The objective of this research was to determine the impact of future levels of temperature and acidification on the meiofaunal communities found in the shallow waters of surf-zone ecosystems off exposed beaches in