RU Experimental Ecology – Benthic Ecology (EOE-B)

Responses of benthic communities to multifactorial stress

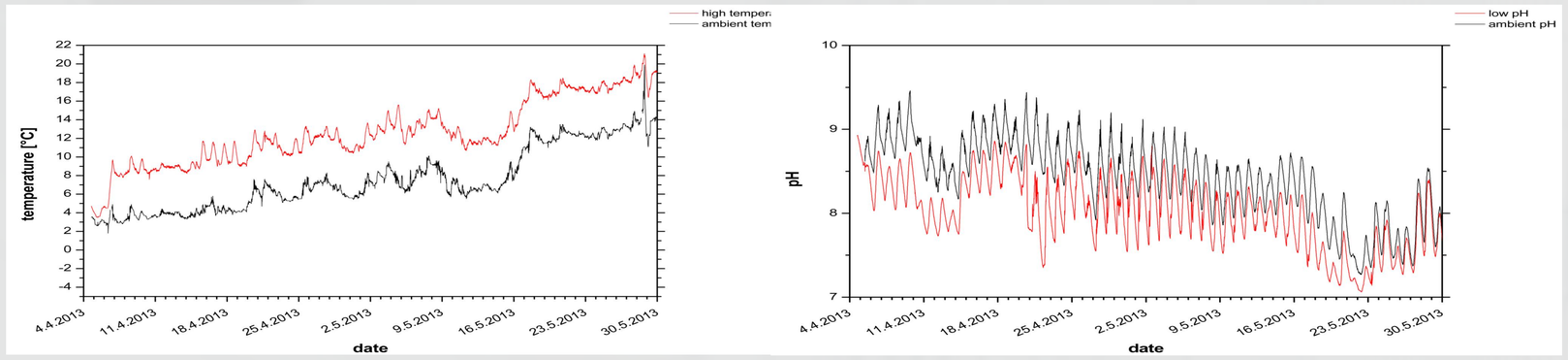
Balsam Al-Janabi (EÖ-B), Martin Wahl (EÖ-B)

Contributions of Björn Buchholz (GEOMAR), Angelika Graiff (AWI), Birte Mensch (CAU), Andreas Pansch (AWI), Stefanie Sokol (GEOMAR), Franziska Werner (GEOMAR), Vera Winde (IOW)

Simulation of stress regimes

Kiel Benthocosms meet a great challenge: stress factors are overlain as a delta-treatment onto naturally fluctuating regimes allowing for biogenic control.

The increase of temperature (left) and pCO_2 (pH right) simulate the climate change predicted for 2100.

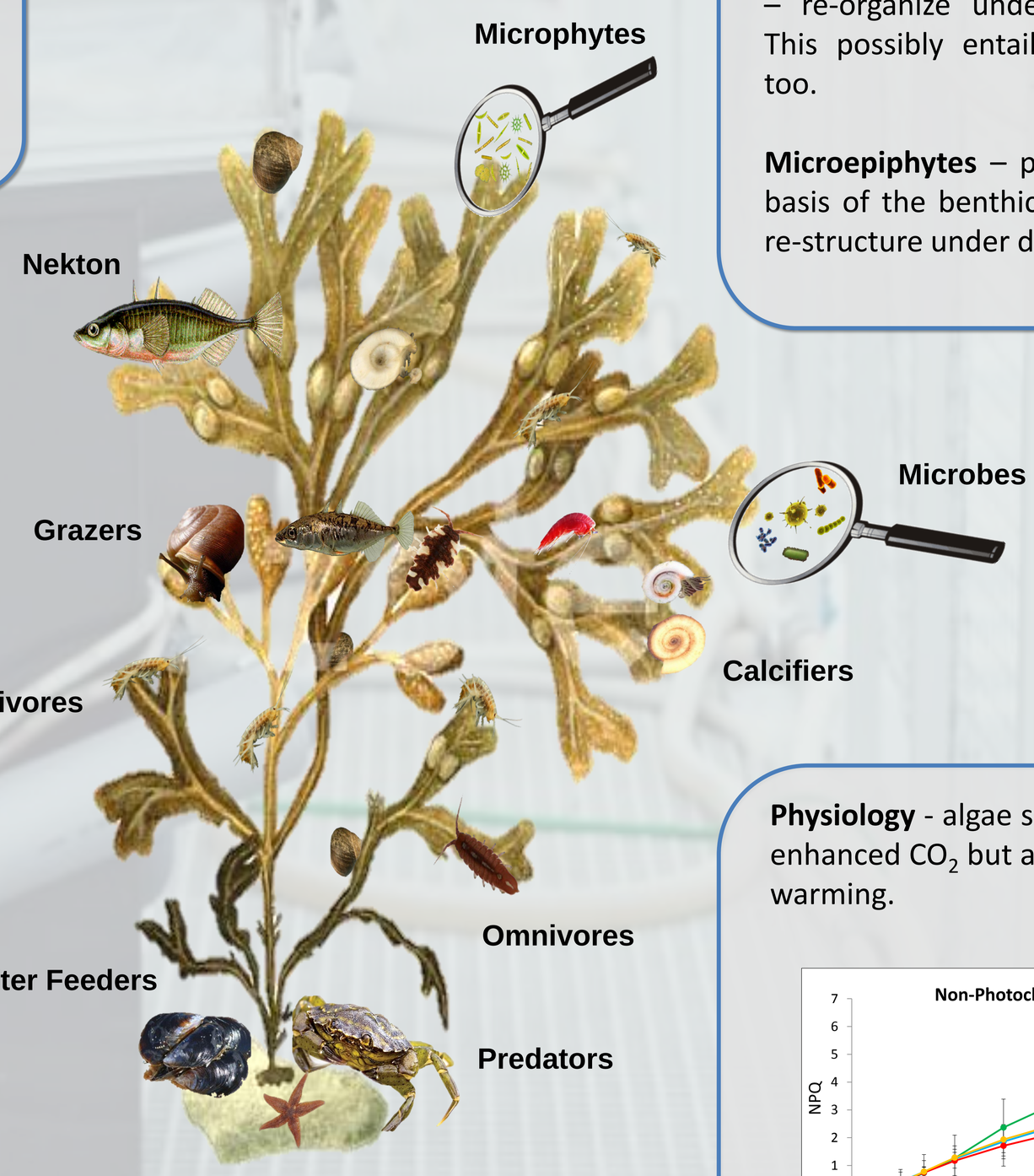


Community network

Macro-ecological approach - using similar mesocosm systems (Reepon, Kiel Benthocosms, Haifa Benthocosms) we compare the stress sensitivity of benthic communities across biogeographic regions: North Sea, Baltic Sea, Mediterranean Sea.

Biogeochemistry – Nutrients fluctuate at different levels in the various stress regimes.

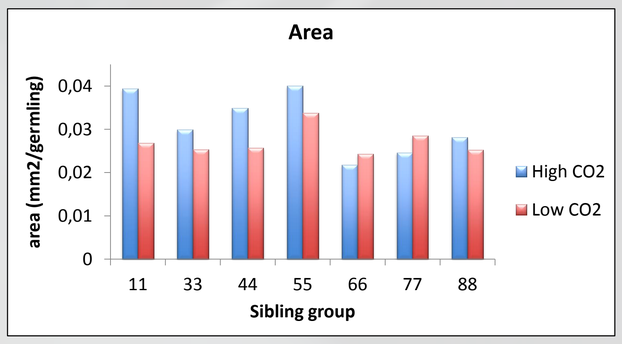
Inorganic and organic compounds are analyzed with regard to diurnal and seasonal variations.



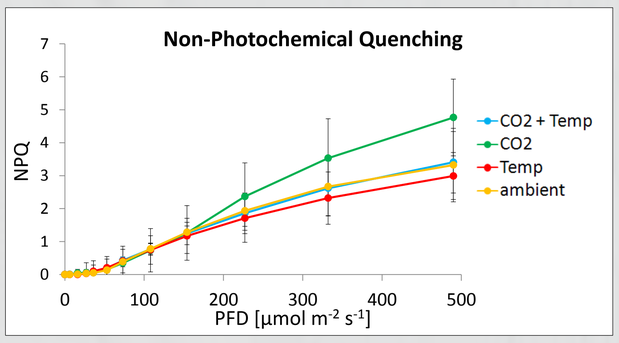
Microbial Biofilms - the functional interface between alga and environment – re-organize under different regimes. This possibly entails a functional shift, too.

Microepiphytes – play a key role at the basis of the benthic food web and may re-structure under different stressors.

Genetic Diversity - the impact of stress on growth differs among sibling groups of *Fucus vesiculosus* illustrating the potential for adaptation.



Physiology - algae seem to benefit from enhanced CO_2 but are not affected from warming.



***Fucus vesiculosus* community**
Several trophic levels and feeding strategies.

BIOACID
Federal Ministry of Education and Research
Landesamt für Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein
CAU Christian-Albrechts-Universität zu Kiel
AWI
Universität Rostock
Leibniz-Institut für Ostseeforschung Warnemünde
Israel Oceanographic & Limnological Research
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