



Press Release

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New challenges for ocean acidification research

Experts look back at a successful decade and carve out future priorities

December 19, 2014 / Kiel, Villefranche-sur-mer. To continue its striking development, ocean acidification research needs to bridge between its diverging branches towards an integrated assessment. This is the conclusion drawn by Prof. Ulf Riebesell from GEOMAR Helmholtz Centre for Ocean Research Kiel and Dr. Jean



can adaptation keep up with the fast changes we are experiencing today? Are the organisms able to maintain their functions within the changing ecosystem,” Dr. Gattuso wonders.

To make further significant progress in the future, ocean acidification research has to integrate the knowledge gained in its three diverging branches – addressing multiple stress factors, competitive and trophic interactions, and adaptation through evolution. “This requires an interdisciplinary effort, for example through long-term experiments that examine the effects of multiple drivers over many generations at the community level. “Experiments have to be tightly integrated with field studies and model simulations”, Prof. Riebesell recommends. “A key factor in this process will be that funding opportunities are opened up for large-scale integrative projects, long-term monitoring and international collaborations.” Now that a basic understanding of ocean acidification impacts is developing, it is critical to pay special attention to aspects relevant for society. “This will then pave the way to develop management options and provide science-based policy advice.”

Original Publication:

Riebesell, U., Gattuso, J.-P. (2015) Lessons learned from ocean acidification research. Reflection on the rapidly growing field of ocean acidification research highlights priorities for future research on the changing ocean. *Nature Climate Change* 5, 12-14 (2015), doi: 10.1038/nclimate2456

Background: Ocean acidification and the BIOACID project

The oceans absorb about one-fourth of the carbon dioxide (CO₂) produced by humans. As a result of this, the amount of this greenhouse gas remaining in the atmosphere is reduced and global warming progressing slower. This service, however, comes at a price for the ocean as the CO₂ reacts with seawater to form carbonic acid – a process called ocean acidification. This can have adverse effects on marine organisms and ecosystems and may impact food webs and biogeochemical cycles. In the framework of BIOACID (Biological Impacts of Ocean Acidification), the German research network coordinated by GEOMAR Helmholtz Centre for Ocean Research Kiel, 14 institutions examine how marine life reacts to ocean acidification, how this affects marine food production and the exchange of material and energy in the ocean as well as the consequences for ecosystem services. A list of member institutions, information on the scientific programme and the BIOACID committees and facts about ocean acidification can be found on the website www.bioacid.de.

Links:

www.bioacid.de BIOACID (Biological Impacts of Ocean Acidification)

https://oceanacidification.files.wordpress.com/2014/10/gattuso_etal_2014b1.pdf Intergovernmental Panel on Climate Change (IPCC) box on ocean acidification

www.igbp.net/publications/summariesforpolicymakers/summariesforpolicymakers/oceanacidificationsummaryforpolicymakers2013.html Ocean Acidification Summary for Policymakers

www.iaea.org/ocean-acidification Ocean Acidification International Coordination Centre (OA-ICC)

www.geomar.de GEOMAR Helmholtz Centre for Ocean Research Kiel

www.lov.obs-vlfr.fr/en/index.html Villefranche Oceanographic Laboratory

Images:

Images are available for download at www.geomar.de/n2230-e