

News Alerts on EU Research

News Alert

EU research: new insights into the effects of ocean acidification on Arctic and Mediterranean ecosystems

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The Arctic region, which is already affected by climate change more than anywhere else in the world, will be particularly threatened by ocean acidification within the next decade. Only stringent CO2 mitigation measures would limit ocean acidification and global warming. The increase in acidity in the surface waters of the ocean is a consequence of the CO2 emissions caused by human activities and it may severely threaten the existence of various marine species. These are some of the findings of the 6.5 million EUR EU funded "European Project on Ocean Acidification" (EPOCA) which will be presented on the 13th of May in Brussels in a dedicated "Information day". The event will be the occasion to show also the prize-winning documentary on ocean acidification, "Tipping point".

Ocean acidity has increased by 30% in the past 200 years and could increase by at least another 100% by 2100. This is due to the uptake of 25% of the human-produced CO2 by the oceans and seas (about 24 millions tons CO2 every day). While this uptake partly mitigates climate change, ocean acidification threatens marine biodiversity and could affect economically important marine resources, including fish, shellfish and coral reefs.

Among other findings, EPOCA scientists discovered that the uptake of CO2 released by humans will make regions of the Arctic Ocean corrosive to shells and skeletons of organisms which play an important role in the food chain and functioning of Arctic marine ecosystems. In particular, project results indicate that 10% of Arctic surface waters will become corrosive to some forms of calcium carbonate in less than 10 years and that half will become corrosive by mid-century.

According to the EU researchers involved in the project, only stringent, but economically feasible, carbon emission mitigation measures would limit ocean acidification over this century: projected 21st century changes in pH and global mean surface warming are much smaller in emission mitigation (pH change: -0.04 to -0.19 units; Temperature change: 1.1 to 2.1°C) than in the business-as-usual scenarios (-0.21 to -0.36 pH units; 2.4 to 4.2°C).

Another consequence analysed by EPOCA scientists is the effect of ocean acidification on the Mediterranean Sea. About 30% of marine plants and animals could be lost from Mediterranean coastal habitats by the end of this century. Efforts are needed to protect coastal habitats so their natural systems can better withstand the effect of acidification and continue to support food production and provide services such as protection of the coastline from erosion.

Background

The EU FP7 large-scale integrating project EPOCA (European Project on Ocean Acidification) was launched in May 2008 with the goal to fill the many gaps in our understanding of ocean acidification and its consequences. The EPOCA consortium brings together more than 160 researchers from 32 institutes and 10 European countries. The research of this four-year long project is partly funded by the European Commission.

EPOCA will hold its annual meeting in Brussels, 9-11 May 2011 while the Ocean Acidification Reference User Group will meet on 12 May 2011. These two meetings, together with the information day of 13 May, make Brussels the host of the first "ocean acidification week".

For more information:

<http://www.epoca-project.eu/>

[Public day \(registration is free but required\)](#)

Scientific contact:

Jean-Pierre Gattuso, EPOCA Scientific Coordinator, CNRS-Université Pierre et Marie Curie, gattuso@obs-vlfr.fr

Press contact:

Aurora Sanseverino, EC Press Office

Aurora.sanseverino@ec.europa.eu