

# WAKE-UP CALL

## IAEA PROMOTES GLOBAL ACTION ON OCEAN ACIDIFICATION



Ocean acidification is already affecting marine ecosystems and their services to humankind.

(Photo: iStockphoto)

The IAEA is fostering scientific collaboration to provide the sound, fact-based understanding needed to be able to assess human impact on coastal and marine environments.

Well-known scientific journals have drawn attention to the impending dangers from ocean acidification and its implications for coastal zones and marine life. *Nature* in its July 2013 issue commented: "Although researcher numbers, funding and methodologies will always be limiting, we think that the field is being held back by a much bigger problem — a lack of knowledge of the overarching principles for how ocean

acidification affects species and ecosystems. These will be crucial for addressing issues including shifts in biogeochemical processes, such as nitrogen fixation, and the interactions between animals, plants and bacteria.

Elaborating these unifying principles will require an interdisciplinary approach that structures research within and between multinational and national projects on ocean acidification. The Ocean Acidification International Coordination Centre, announced in June 2012, is a welcome first step.

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In light of the millennia it will take to reverse changes in ocean chemistry, we believe that research should be oriented towards finding solutions, rather than to simply documenting the disaster. Ultimately, only the reduction of atmospheric CO<sub>2</sub> levels will alleviate the challenges of ocean acidification. Meanwhile, researchers can improve their understanding of the biological impacts of ocean acidification and identify the organisms and ecosystems that are most at risk. We can also buy some time through reducing human pressures such as overfishing, eutrophication and pollution.”<sup>1</sup>

## The Mission of the OA-ICC

Over the past 10 years, international scientific research has shown the dangers that ocean acidification can pose for marine life. One of the first multinational projects on ocean acidification was the European Project on Ocean Acidification (EPOCA)<sup>2</sup>, a four-year European project that ended in 2012. This project recognized the need to continue to develop international activities, as did the SOLAS–IMBER<sup>3</sup> Ocean Acidification Working Group and the International Ocean Acidification Reference User Group (IOA-RUG). These groups stressed the need for a broader international effort to coordinate, promote and facilitate ocean acidification science and related activities. The IAEA announced at Rio+20 in June 2012 the establishment of the Ocean Acidification International Coordination Centre (OA-ICC) at the IAEA Environment Laboratories in Monaco. The OA-ICC’s mission is to facilitate global actions and responses to ocean acidification.

Established initially for a three-year period as a project, the work of the OA-ICC is funded and supported by several IAEA Member States through the IAEA’s Peaceful Uses Initiative. It cooperates with other major national and international projects involved in ocean acidification research. An Advisory Board assists the work of the OA-ICC, and is comprised of members from UNESCO’s Intergovernmental Oceanographic Commission, the United States National Oceanic and Atmospheric Administration, the Food and Agriculture Organization of the United Nations, the Prince Albert II of Monaco Foundation, the International Ocean Acidification Reference User Group, as well as distinguished scientists.

## The Work of the OA-ICC

The OA-ICC’s goal is to serve as a platform for information sharing and promotion of international collaboration, training, development of best practices, access to ocean acidification data, and other collaborative actions. The OA-ICC website and its news centre provide information to various audiences, including policy- and decision-makers.

The OA-ICC also enhances awareness of the use of conventional and nuclear and isotopic techniques to understand variations in coastal and marine environments and to assist in providing a basis for effective management responses to maintain the resilience of these ecosystems. In its outreach activities, the OA-ICC demonstrates how research can be used to help ensure sustainable development and strengthen the resilience of these ecosystems.

The IAEA promotes a comprehensive approach to the study, monitoring and protection of marine, coastal and terrestrial ecosystems. The OA-ICC supports effective and global cooperation to address the threat to our oceans from ocean acidification.

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<sup>1</sup>Reprinted by permission from Macmillan Publishers Ltd: *NATURE*, Vol. 498, p. 429, Dupont, S.; Poertner, H, 27 June 2013.

<sup>2</sup> European Project on Ocean Acidification was Europe’s first large-scale research initiative devoted to studying the impacts and consequences of ocean acidification. More than 100 scientists from 27 institutes and nine countries were involved bringing their expertise to the project, resulting in a multidisciplinary and versatile consortium. The project was funded for four years (2008 to 2012) by the European Commission within its Seventh Framework Programme.

<sup>3</sup> SOLAS: Surface Ocean — Lower Atmosphere Study, and IMBER: Integrated Marine Biogeochemistry and Ecosystem Research.