

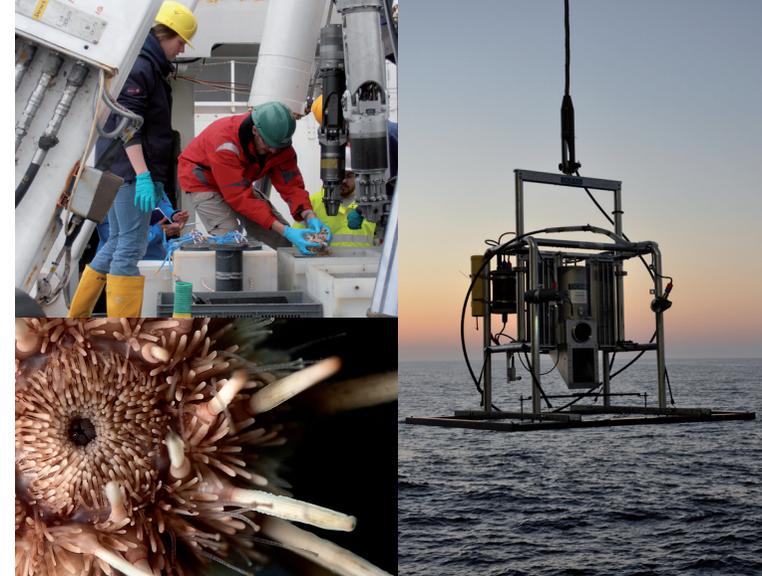
## Two international workshops to date:

### 1. Focus on open ocean measurements

University of Washington, Seattle, 26-28 June 2012  
62 participants from 23 countries

### 2. Focus on coastal and shelf sea measurements

St Andrews, Scotland, 24-26 July 2013  
87 participants from 26 countries



## Supporting organizations and programmes

The Ocean Acidification International Coordination Centre of the International Atomic Energy Agency; the Intergovernmental Oceanographic Commission of UNESCO and its Global Ocean Observing System; the International Ocean Carbon Coordination Project; the NOAA Ocean Acidification Program; UK Ocean Acidification research programme (UKOA, co-funded by the Natural Environment Research Council, the Department for Environment, Food and Rural Affairs, and the Department of Energy and Climate Change); the UK Science & Innovation Network; and the University of Washington

## GOA-ON Executive Council

**Co-chairs:** Phillip Williamson (UK – UKOA/NERC), Libby Jewett (US - NOAA).

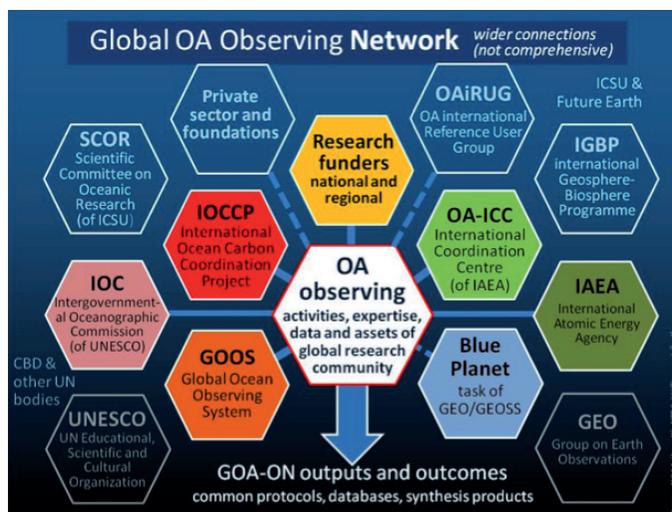
**Members:** Richard Bellerby (Norway - NIVA), Chen-Tung Arthur Chen (Taiwan – National Sun Yet-Sen University), Richard Feely (US – NOAA), Albert Fischer (Global Ocean Observing System), David Osborn (IAEA/OA International Coordination Centre), Jeremy Mathis (US – NOAA), Pedro Monteiro (South Africa - CSIR), Jan Newton (US – University of Washington/IOOS), Yukihiro Nojiri (Japan – NIES), Majiec Telszewski (IOCCP), Bronte Tilbrook (Australia – CSIRO), Jorge Luis Valdes (IOC).

**Technical Architect:** Cathy Cosca (NOAA PMEL).



Global Ocean Acidification  
Observing Network

## GOA-ON linkages



Note that some of the linkages shown above are under development or to be confirmed, e.g. to the GEO Blue Planet activity.

More information

<http://www.pmel.noaa.gov/co2/GOA-ON/>

## Contacts

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### Photo credits:

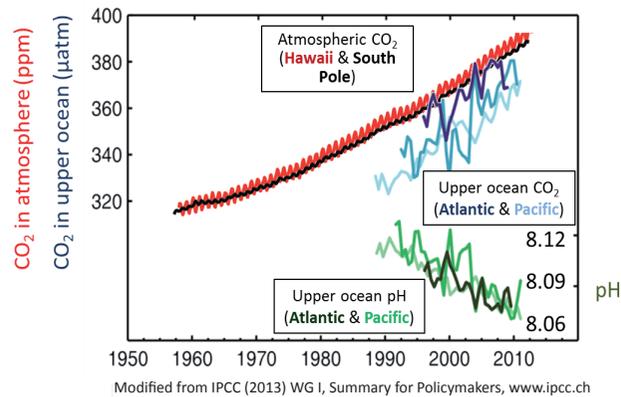
Dan Naber, Ocean Acidification Research Center, University of Alaska Fairbanks  
UK Ocean Acidification research programme (UKOA)  
Woods Hole Oceanographic Institution (WHOI)  
National Oceanic and Atmospheric Administration (NOAA)



# Toward a Global Ocean Acidification Observing Network

**Ocean acidification** is the result of the uptake of about one quarter of human-made CO<sub>2</sub> emissions by the oceans every day, leading to changes in seawater chemistry. This «other CO<sub>2</sub> problem» has emerged as a major environmental problem of international concern in the last 15 years.

Ocean acidification is already visible. Regular measurements during the past 20 years at three different stations in the Pacific and the Atlantic Oceans show a clear trend in decreasing oceanic pH.



## THE NEED

Robust measurements are needed to understand how ocean acidification affects marine organisms and biogeochemistry, to feed models projecting future responses of marine ecosystems and, ultimately, to inform policy action. A coordinated, global approach is essential to avoid duplication of efforts and define a common research strategy.

## THE RESPONSE

An international partnership has initiated efforts to facilitate the merging of regional and national efforts that monitor effects of ocean acidification into **one global observing network**, while identifying areas of common concern, optimizing use of resources, and improving data quality and comparability.

## GOA-ON goals

### Goal 1 : Provide an understanding of global ocean acidification conditions:

- Determine status of and spatial and temporal patterns in carbon chemistry, assessing the generality of response to ocean acidification
- Document and evaluate variation in carbon chemistry to infer mechanisms (including biological mechanisms) driving ocean acidification
- Quantify rates of change, trends, and identify areas of heightened vulnerability or resilience.

### Goal 2: Provide an understanding of ecosystem response to ocean acidification:

- Track biological responses in concert with physical/chemical changes
- Quantify rates of change and identify locations as well as species of heightened vulnerability or resilience.

### Goal 3: Acquire and exchange data necessary to optimize modeling for ocean acidification:

- Provide spatially and temporally-resolved chemical and biological data to be used in developing models for societally-relevant analyses and projections

## Countries involved in GOA-ON planning

Australia, Bermuda, Brazil, Canada, Chile, China PR, France, Germany, Iceland, India, Ireland, Israel, Italy, Japan, Rep Korea, Malaysia, Mexico, New Zealand, Norway, The Philippines, South Africa, Spain, Sweden, Taiwan, Thailand, United Kingdom, United States, Venezuela

Map of current inventory of global ocean acidification observing activities. Interactive version available at [http://www.pmel.noaa.gov/co2/GOA\\_ON/2013/](http://www.pmel.noaa.gov/co2/GOA_ON/2013/).

