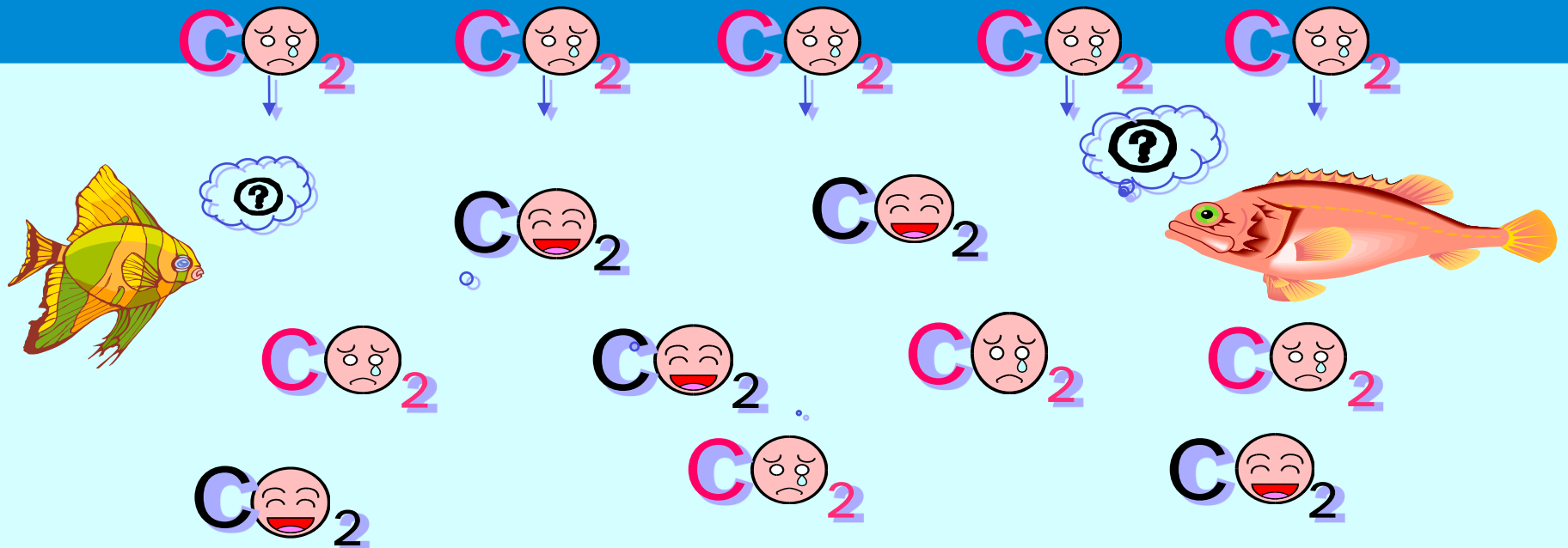
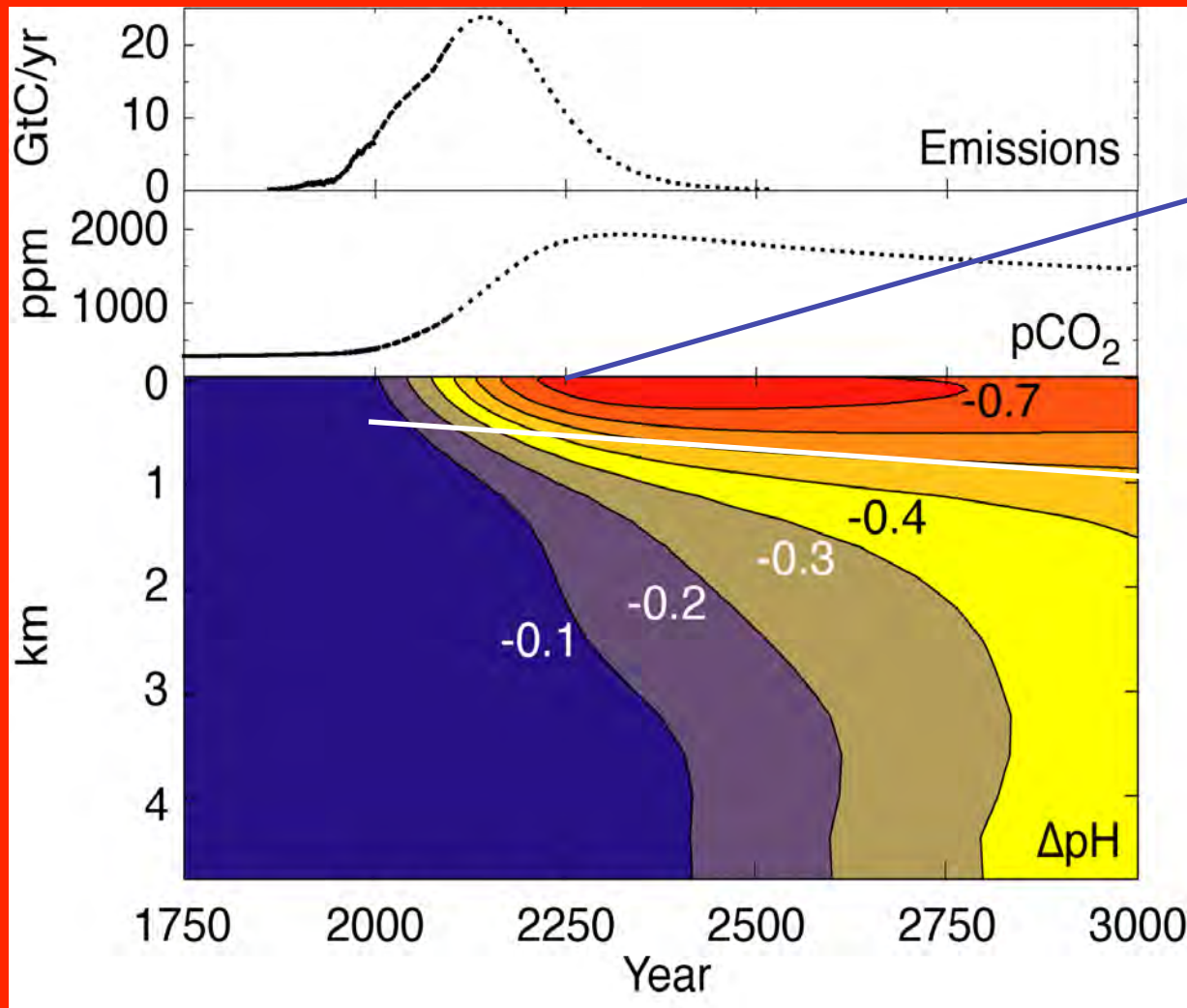


Ocean acidification studies: the Brazilian contribution

Rosane Gonçalves Ito
USP/FURG



Predictions of Marine Acidification



Anthropogenic CO₂ is predicted to decrease sea surface pH by 0,77

pH has changed in surface seawaters, due to absorption of anthropogenic CO₂

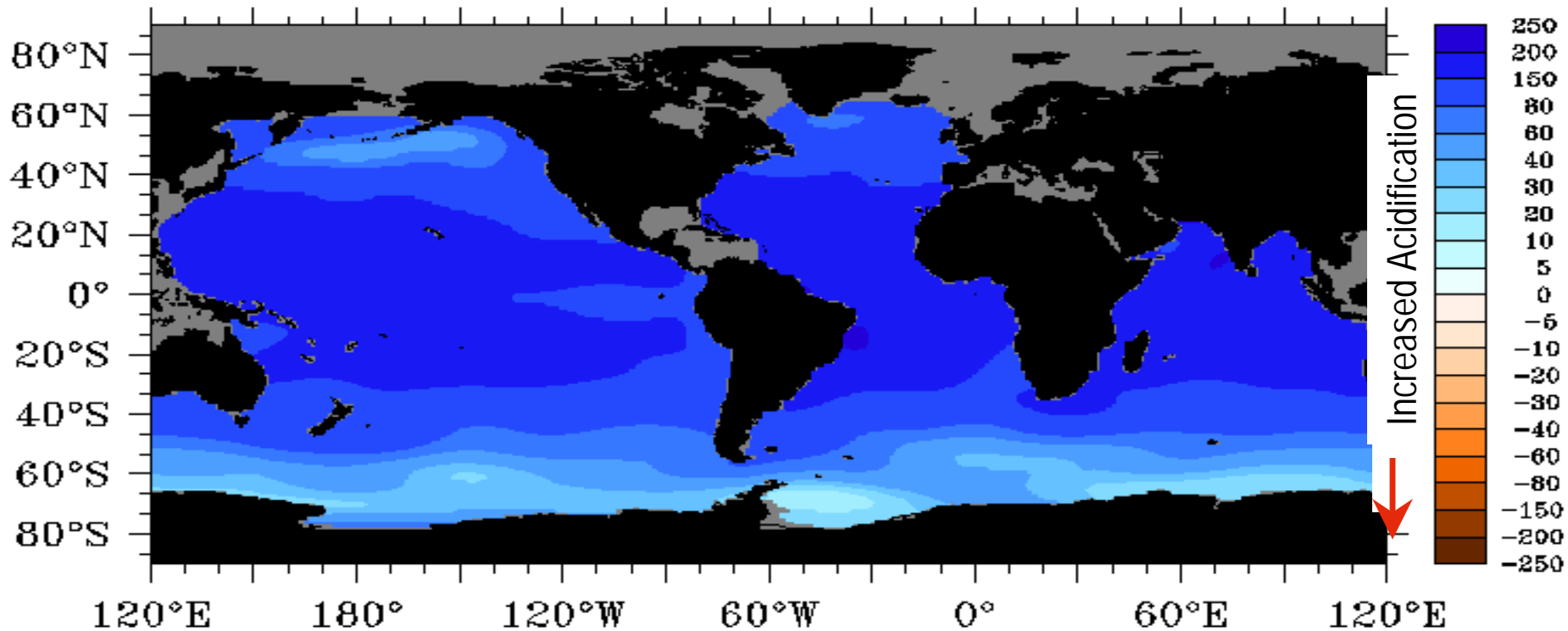
Predictions of Marine Acidification

$$\Delta[\text{CO}_3^{2-}] = [\text{CO}_3^{2-}] - [\text{CO}_3^{2-}]_{\text{sat}}$$

Model Simulations

Year 2000

$\Delta[\text{CO}_3^{2-}]_{\text{Aragonite}}$



Current Strategies

- To protect the marine environment from more drastic changes than the current ones.
- Mitigation: to better understand the acidification impacts on ocean processes, as well as the socioeconomic impacts on fisheries, aquaculture and other ecosystem services resulting from it.

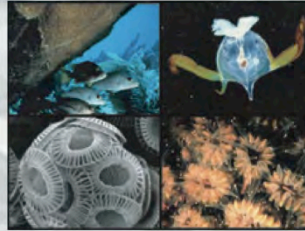


CHANGES IN MARINE BIOGEOCHEMISTRY THAT COULD NEGATIVELY IMPACT MARINE ECOSYSTEM SERVICES BY OCEAN ACIDIFICATION

Supporting	habitat / nurseries biodiversity relation predator / prey nutrient dynamics
Provisioning	fish invertebrates carbonates, coral ornamental resources
Regulating	climate protection storms / floods
Cultural	cultural / spiritual tourism / recreation aesthetic education / research

IMPACTS OF OCEAN ACIDIFICATION ON CORAL REEFS AND OTHER MARINE CALCIFIERS

A GUIDE FOR FUTURE RESEARCH



REPORT OF A WORKSHOP SPONSORED BY
NSF NOAA USGS

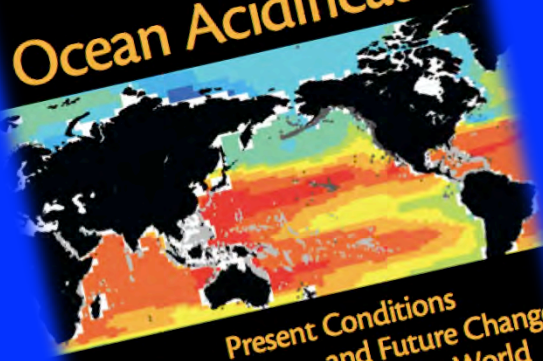
JA KLEYPAS . RA FEELY . VJ FABRY
C LANGDON . CL SABINE . LL ROBBINS



SPECIAL ISSUE FEATURE

BY RICHARD A. FEELY, SCOTT C. DONEY, AND SARAH R. COOLEY

Ocean Acidification



Present Conditions
and Future Changes
in a High-CO₂ World

76 Oceanography Vol.22, No.4



Guide to best practices for ocean acidification research and data reporting

Guide to best practices for ocean acidification research and data reporting

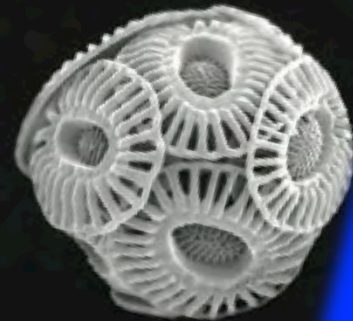
GENERAL INFORMATION

EUR 24322 EN



THE ROYAL SOCIETY

Ocean acidification due to increasing atmospheric carbon dioxide



Policy document 12095
June 2005

ISBN 0 85403 817 2

This report can be found
at www.rsc.org.uk

excellence in science

Report on
Research Priorities for Ocean Acidification

SECOND INTERNATIONAL SYMPOSIUM
ON
**THE OCEAN IN A HIGH-CO₂
WORLD**
MONACO - OCTOBER 6-9, 2008



BrOA

BRAZILIAN OCEAN ACIDIFICATION RESEARCH GROUP
Grupo Brasileiro de Pesquisa em Acidificação dos Oceanos

- *BrOA is a Brazilian initiative established in December 2012, during the Workshop "Studying Ocean Acidification and its effects on marine ecosystems".*
- *Short-term goal: to integrate Brazilian researchers in a wide national network of interdisciplinary cooperation in the ocean acidification studies, and to contribute with international programs in progress.*



Participating Institutions of BrOA



Research themes

- Studies of the past and present changes of ocean acidification
- Impacts of ocean acidification on marine biota
- Regional Models

Brazilian Ocean Acidification Research Group

What can we do about this problem?



- ① ***Identification of research priorities.***
- ② ***Intercalibration of methodology and quality control of data between national institutions.***
- ③ ***Training of new scientists (through courses, workshops, scientific projects).***
- ④ ***Promoting closer national and international cooperation agreements.***

*The impossible we do
immediately, miracles
take a little longer*



Obrigada

Thank you