

“The effects of climate change on oceans” Findings from the IPCC Fifth Assessment Report and Preparations for the Sixth Assessment

Ko Barrett
IPCC Vice-Chair

IPCC Background

IPCC – jointly established by WMO and UNEP, action endorsed by the UN General Assembly

Intergovernmental Panel: 195 member States appointing National Focal Points

Hundreds of **scientists and experts from around the world** are involved in the preparation of IPCC reports

Plenary

Bureaux

Working Group (WG) I
The Physical
Science Basis

WGIII
Mitigation of
Climate Change

WGII
Climate Change
Impacts,
Adaptation &
Vulnerabilities

Task Force on
National
Greenhouse
Gas Inventories

Authors

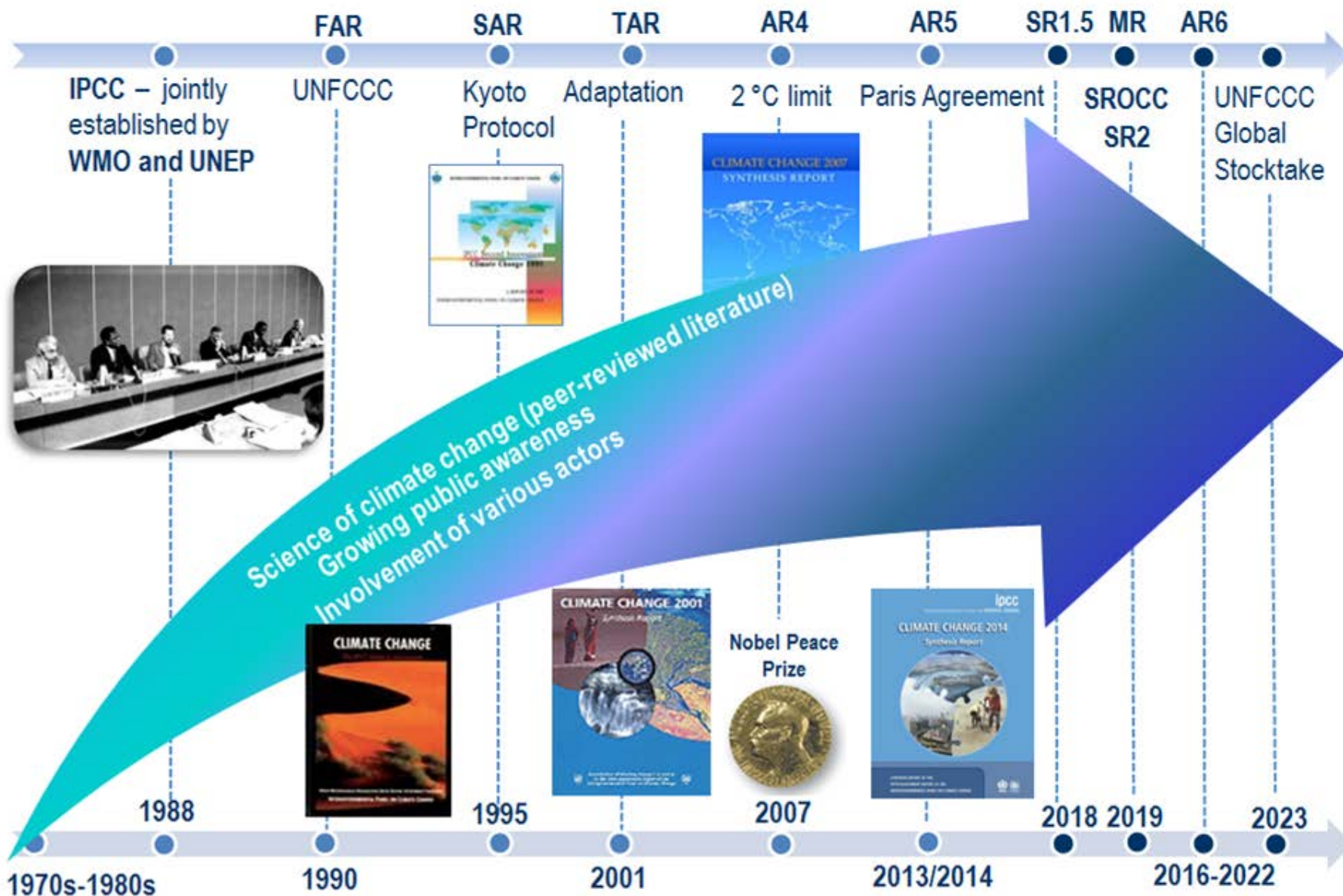
Expert
Reviewers

Review
Editors

ipcc

INTERGOVERNMENTAL PANEL ON climate change



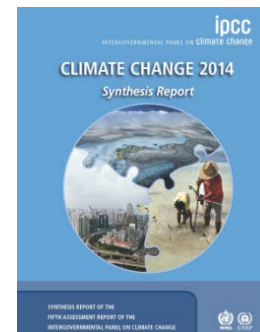
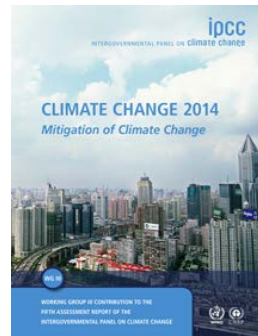


ipcc

INTERGOVERNMENTAL PANEL ON climate change



Fifth Assessment Report (AR5) 2013/2014



Key messages

Human influence on the climate system is clear

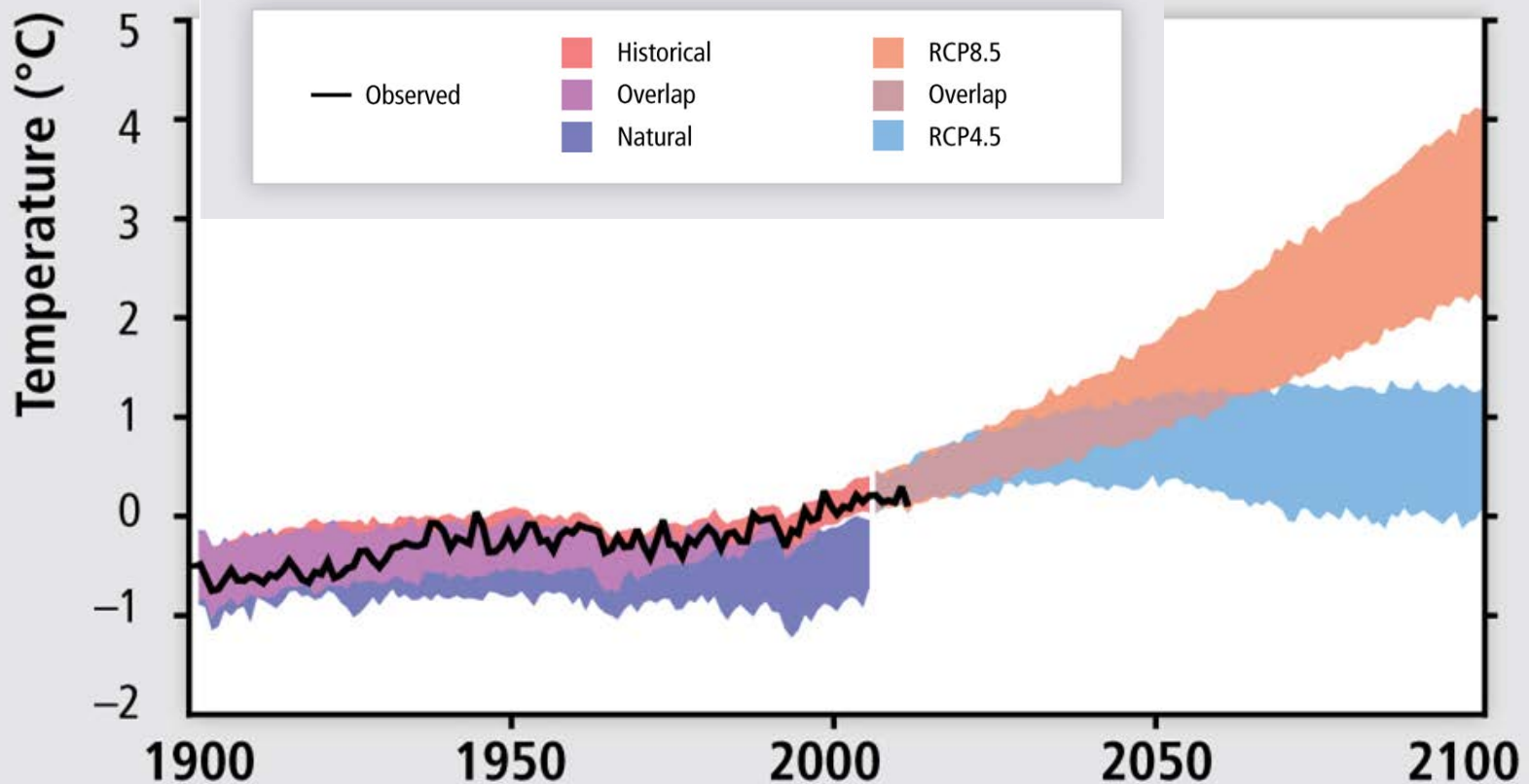
The more we disrupt our climate, the more we risk severe, pervasive and irreversible impacts

We have the means to limit climate change and build a more prosperous, sustainable future

Oceans are...warming

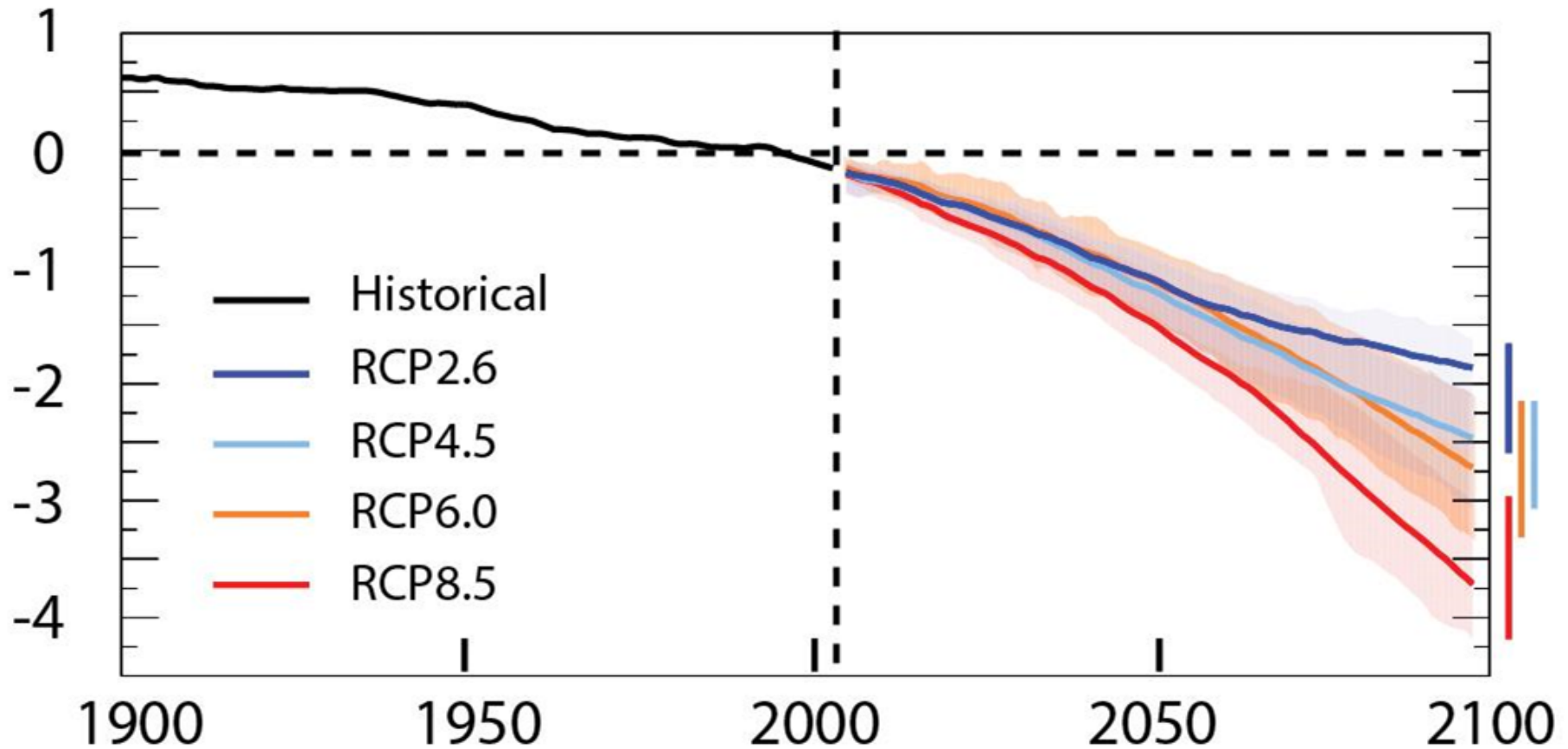
Sea surface temperature

(e) Atlantic Ocean



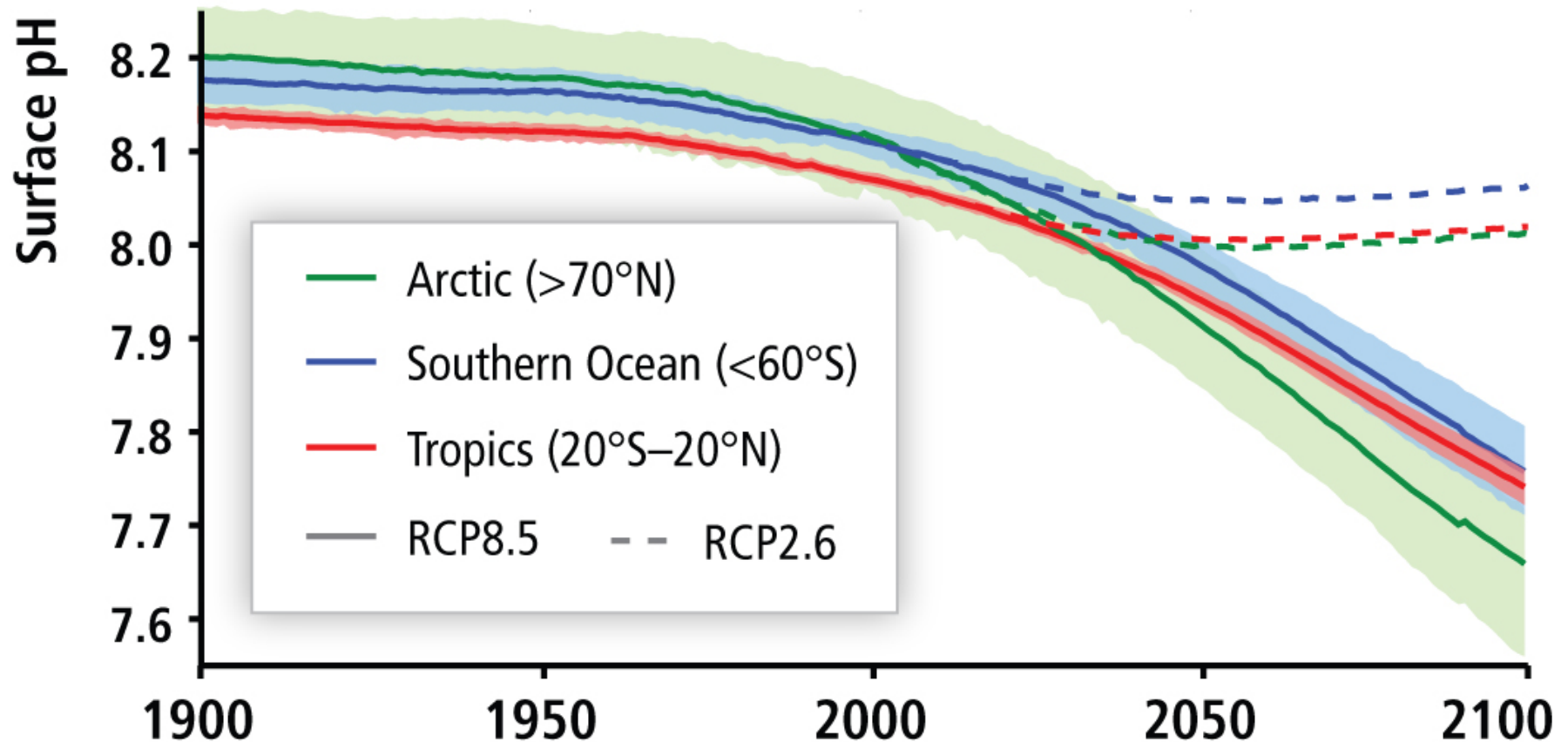
Oceans are...losing oxygen

a. Ocean oxygen content change (%)



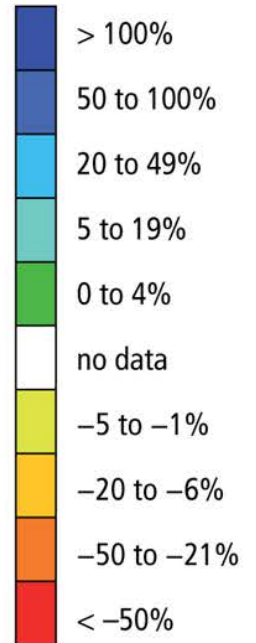
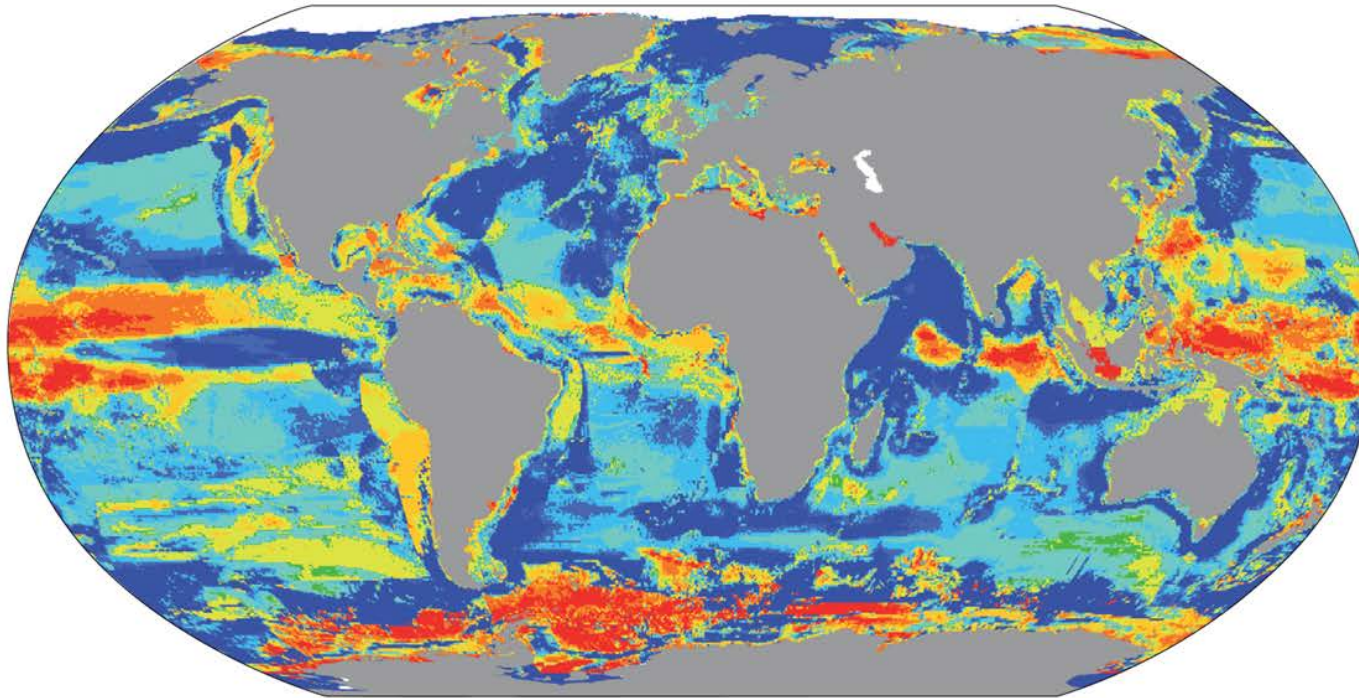
Oceans are...acidifying

Surface pH

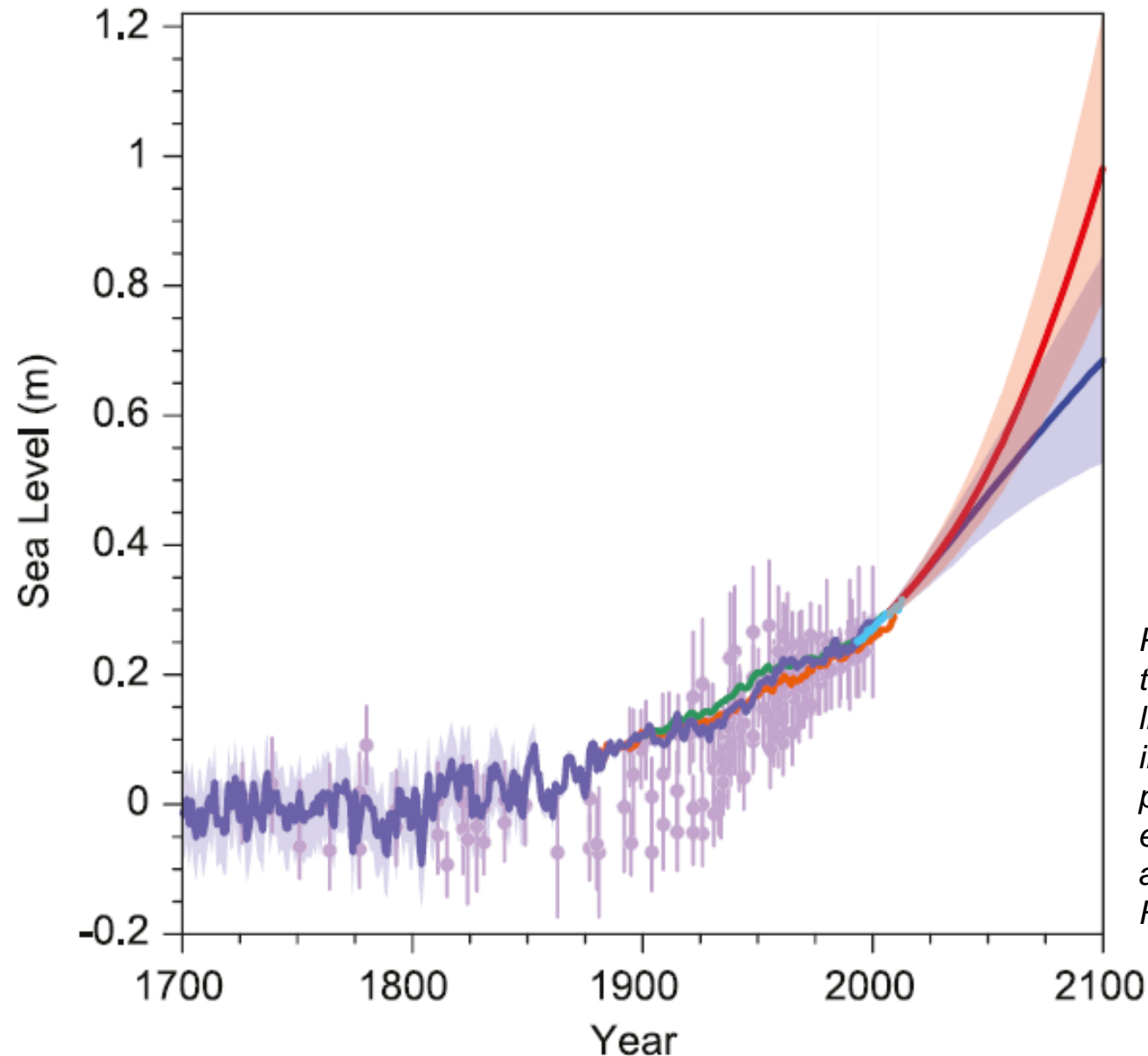


Impact to Fisheries

Change in maximum catch potential



Sea Level Rise



Past and future sea-level rise. For the past, proxy data are shown in light purple and tide gauge data in blue. For the future, the IPCC projections for very high emissions (red, RCP8.5 scenario) and very low emissions (blue, RCP2.6 scenario) are shown.

Sixth assessment cycle timeline

Special Reports: 2018-2019



Global Warming of 1.5 °C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty
September 2018



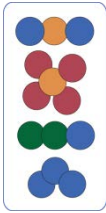
Special Report on the Ocean and Cryosphere in a Changing Climate
September 2019



Special Report on Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems
September 2019

Sixth assessment cycle timeline (cont)

Methodology Report update



2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
May 2019

AR6 Main Report



Working Group I, II, and III contribution to the Sixth Assessment Report in 2021
Synthesis Report to the Sixth Assessment Report April 2022

UNFCCC global stocktake 2023

Cities



Attention on **cities** in AR6 including a conference and special report on cities in AR7

Special Report on the Ocean and Cryosphere in a Changing Climate

Chapter 1: Framing and Context of the Report

Chapter 2: High Mountain Areas

Chapter 3: Polar Regions

Chapter 4: Sea Level Rise and Implications for Low Lying Islands, Coasts and Communities

Chapter 5: Changing Ocean, Marine Ecosystems, and Dependent Communities

Chapter 6: Extremes, Abrupt Changes and Managing Risks

Integrative Cross-Chapter Box: Low Lying Islands and Coasts

Conclusion

“International frameworks for collaboration and decision making are critically important for coordinating policy that will enable mitigation and adaptation by the Ocean sectors to global climate change (e.g., United Nations Convention on the Law of the Sea (UNCLOS)). These international frameworks offer an opportunity to solve problems collectively, including improving fisheries management across national borders (e.g., reducing illegal, unreported, and unregulated (IUU) fishing), responding to extreme events, and strengthening international food security. Given the importance of the Ocean to all countries, there is a need for the international community to progress rapidly to a “whole of ocean” strategy for responding to the risks and challenges posed by anthropogenic ocean warming and acidification.”
- AR5 WGII

THANK YOU FOR YOUR ATTENTION!

For more information:

Website: <http://ipcc.ch/>

IPCC Secretariat: ipcc-sec@wmo.int

IPCC Press Office: ipcc-media@wmo.int

Find us on:



IPCC



IPCC



<http://www.slideshare.net/ipcc-media/presentations>



<https://www.youtube.com/c/ipccgeneva>



@IPCC_CH



<https://www.linkedin.com/company/ipcc>



<https://www.flickr.com/photos/ipccphoto/sets/>



<https://vimeo.com/ipcc>

ipcc

INTERGOVERNMENTAL PANEL ON climate change

