



futureearth
Research. Innovation. Sustainability.



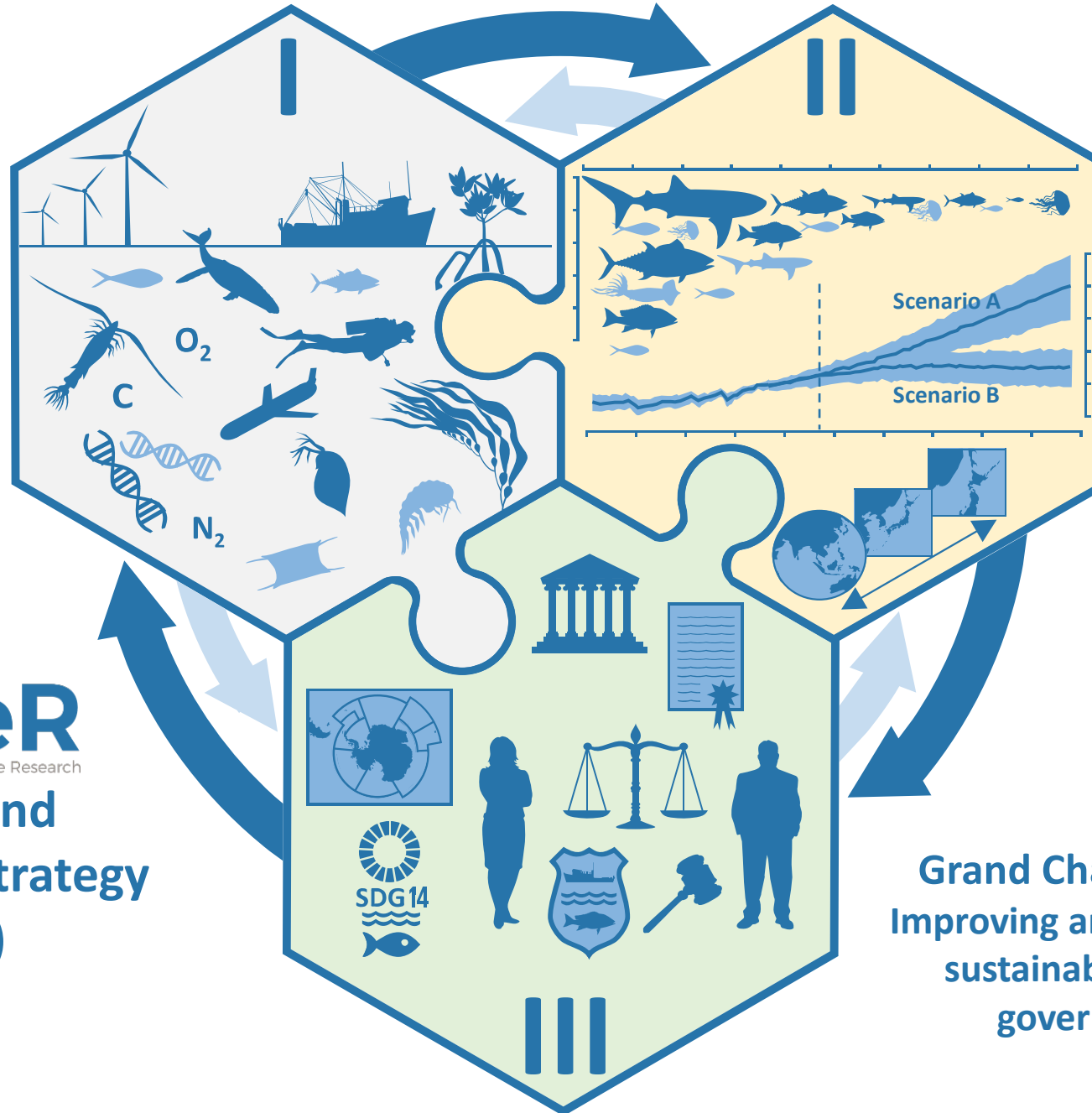
Ocean sustainability under global change for the benefit of society

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Halifax, Nova Scotia
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State Key Laboratory of Estuarine and Coastal Research
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Grand Challenge I
Understanding and
quantifying the state and
variability of marine
ecosystems



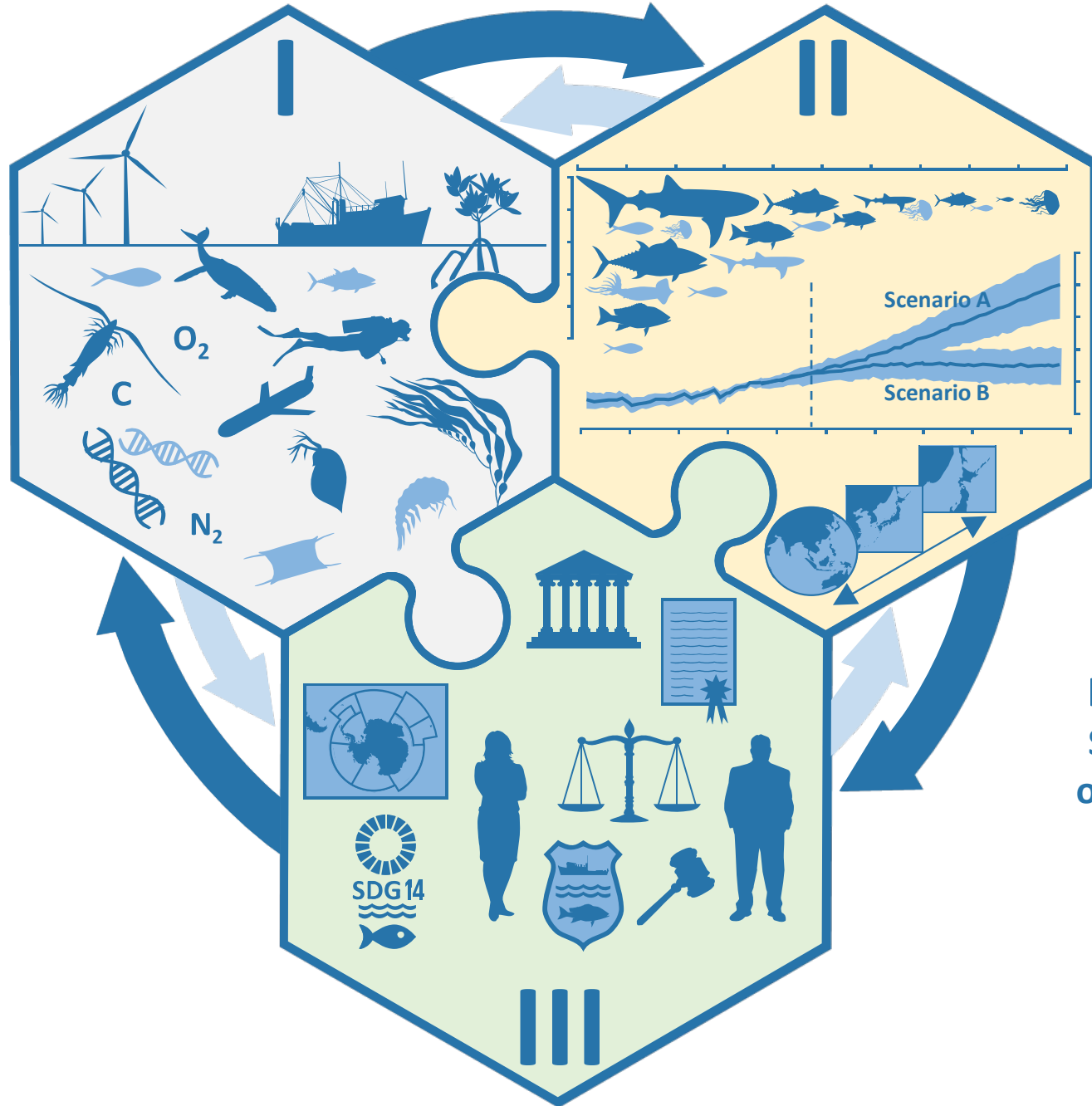
Grand Challenge II
Improving scenarios,
predictions and
projections of future
ocean-human systems at
multiple scales



**Science Plan and
Implementation Strategy
(2016-2025)**

Grand Challenge III
Improving and achieving
sustainable ocean
governance

Innovation Challenge 3
advancing understanding
of ecological feedbacks in
the Earth System



Innovation Challenge 5
Interventions to change
course of climate impacts

Innovation Challenge 4
advancing and improving
the use of social science
data for ocean
management, decision
making and policy
development

Innovation Challenge 6
Sustainable management
of Blue Carbon ecosystems

Mid-Term Review 2016-2020



HUMAN-OCEAN SYSTEM INTERDISCIPLINARY

Priority Research Areas

Grand Challenge I

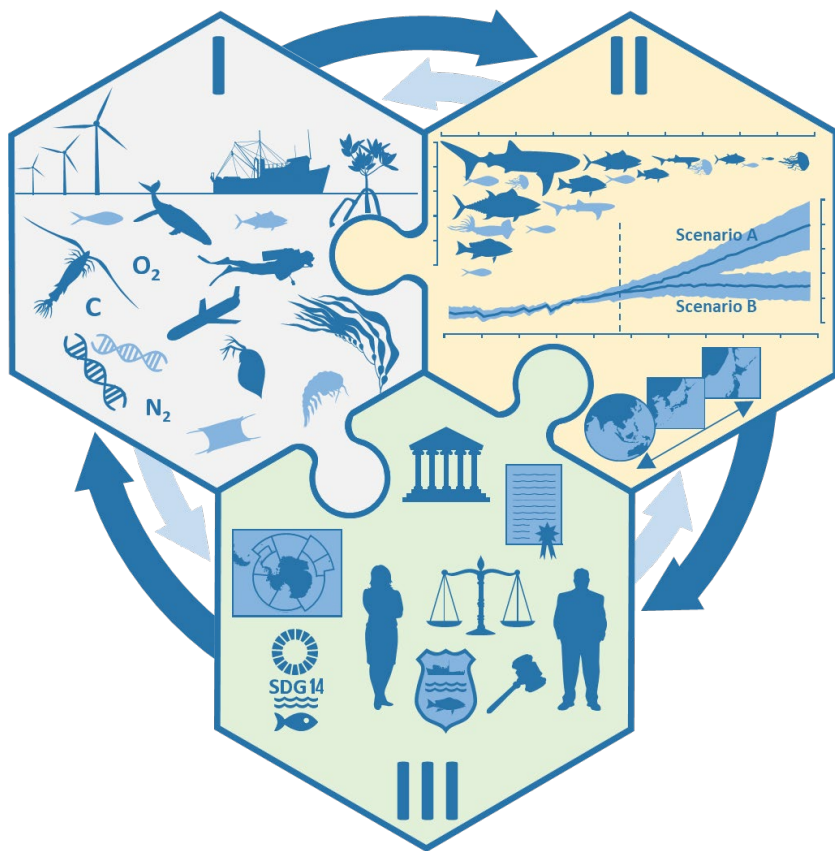
1. Evaluate and predict the cumulative effect of multiple stressors
2. Integration of climate change and climate variability
3. Impacts on society – preparation for a changed future

Grand Challenge II

4. Development of integrated data systems and approaches for predictions and projections
5. Development of predictive models and projections for use at regional scales
6. Development of alternative scenarios to bridge the gap between physical climate sciences and humanities

- ### Grand Challenge III
7. Support and advance sustainable, equitable and inclusive governance approaches to ocean climate adaptation and mitigation
 8. Support and advance sustainable, equitable and inclusive governance approaches to fisheries and aquaculture
 9. Supporting implementation of international targets for marine spatial planning, marine protected areas and other effective area-based conservation measures

SCIENCE



Scientific Steering Committee



International Project Offices



IMBeR
Integrated Marine Biosphere Research

Scientific Steering Committee 2023

Ongoing search for new SSC Chair



IMBeR
Integrated Marine Biosphere Research

International Project Offices

Halifax, Canada: **CAN** FRONTIER INSTITUTE, MEOPAR, DALHOUSIE UNIVERSITY

Shanghai, China: **SKLEC**

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Scientific Steering Committee 2023

Ongoing
search for
new SSC Chair





IMBeR International Project Offices

Integrated Marine Biosphere Research

Halifax, Canada

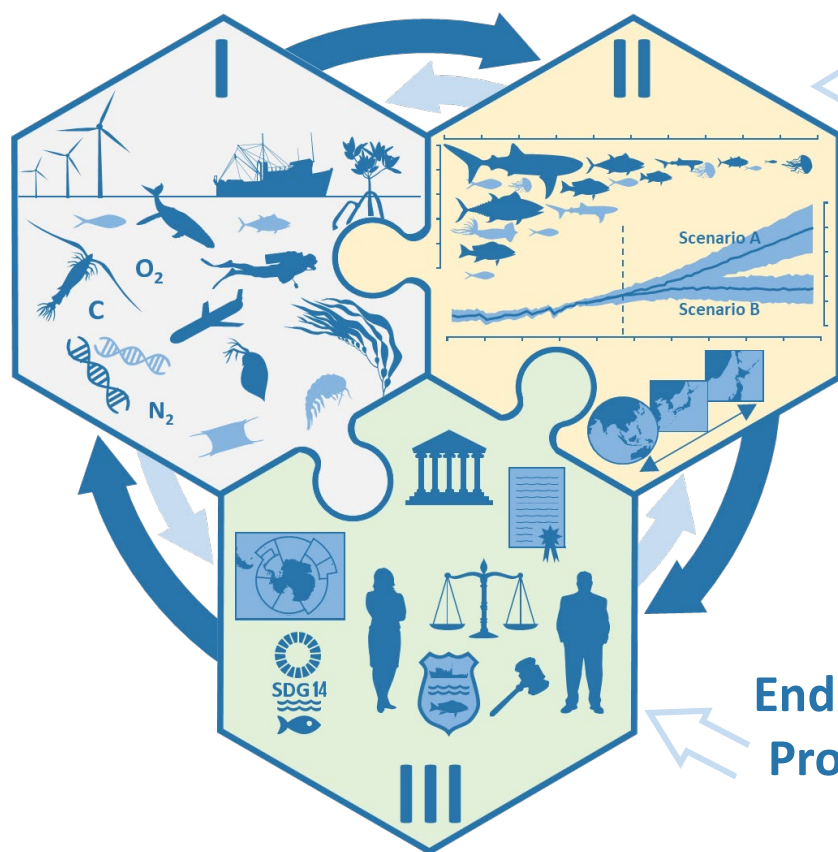


Shanghai, China



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SCIENCE



Scientific Steering
Committee

International
Project Offices

Regional Programmes

+

Working Groups



Climate Impacts on
Oceanic Top Predators



Ecosystem Studies of
Sub-arctic and Arctic Seas



Integrating Climate and
Ecosystem Dynamics



Sustained Indian Ocean
Biogeochemistry and
Ecosystem Research



Continental Margins
Working Group¹



IMBeR Working
Group



Integrated Ocean Carbon
Research²

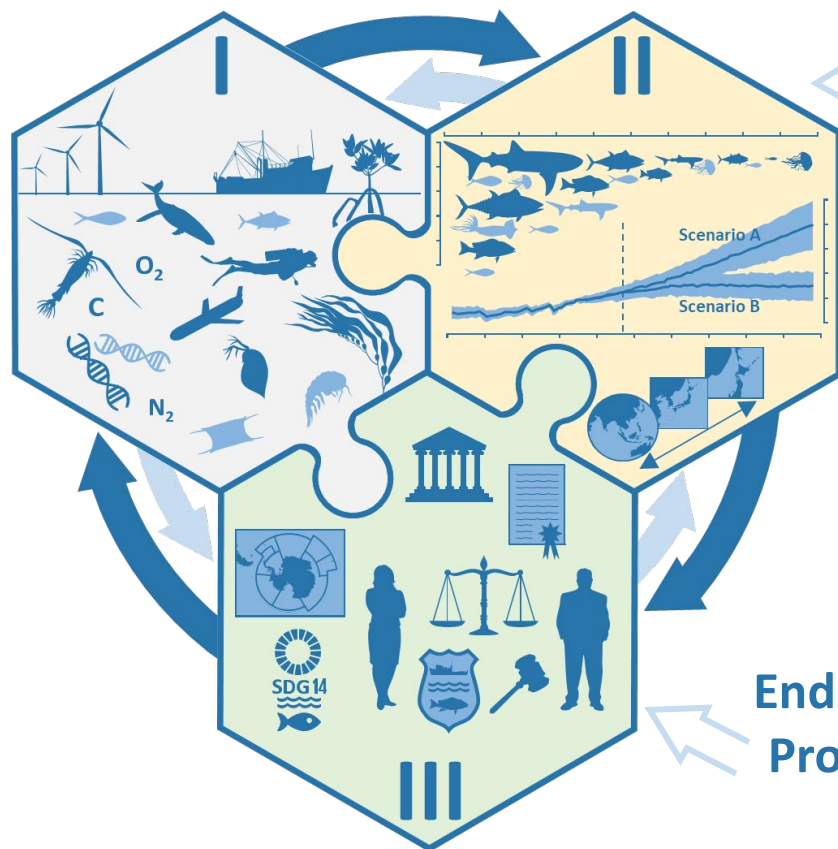


SOLAS-IMBeR Ocean
Acidification³

Endorsed
Projects
+

Study Groups

SCIENCE



Scientific Steering
Committee



International
Project Offices

Regional Programmes

+

Working Groups

+

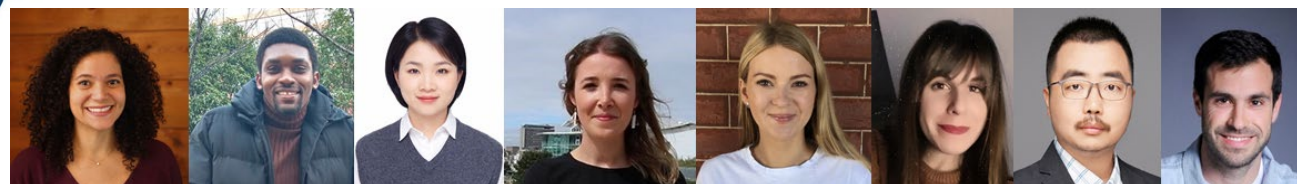
Interdisciplinary Marine Early Career Network



IMECaN
Interdisciplinary Marine Early Career Network

Opportunities

Collaboration | Training | Leadership



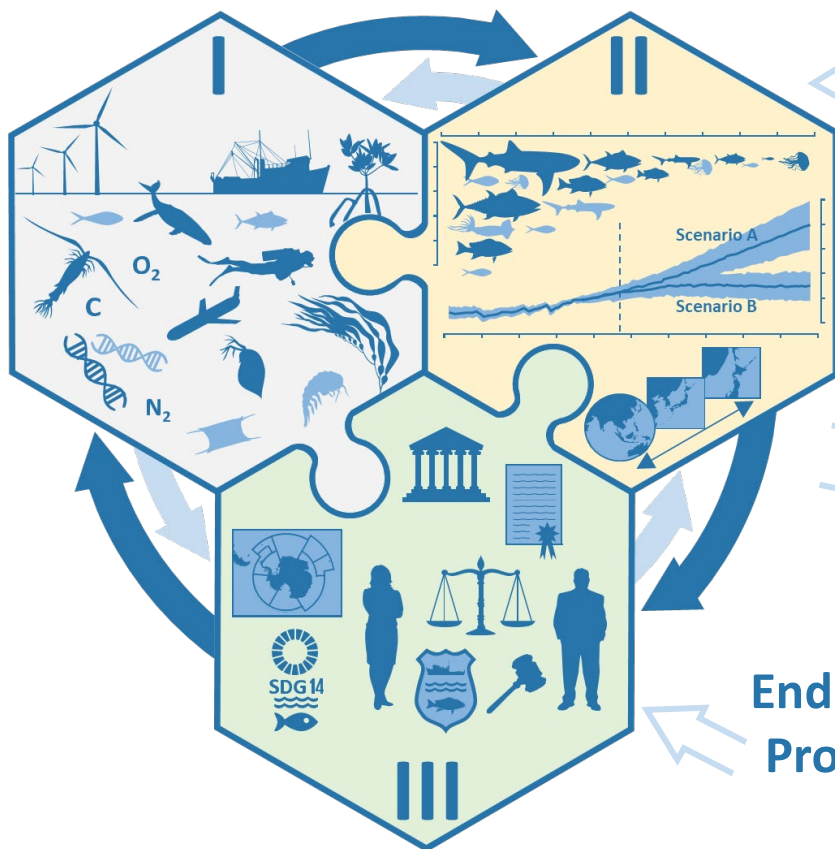
1184 members | 103 countries

Endorsed
Projects

+

Study Groups

SCIENCE



Scientific Steering
Committee

International
Project Offices

Regional Programmes

+

Working Groups

+

Interdisciplinary Marine Early Career Network

ACTIVITIES

Conferences | Workshops

Summer Schools | Field Schools

Early Career Days

IMPACT

Policy & Governance | Change in Behaviour

Ocean Literacy | Developing Capacity

Endorsed
Projects

+

Study Groups



1500+
publications



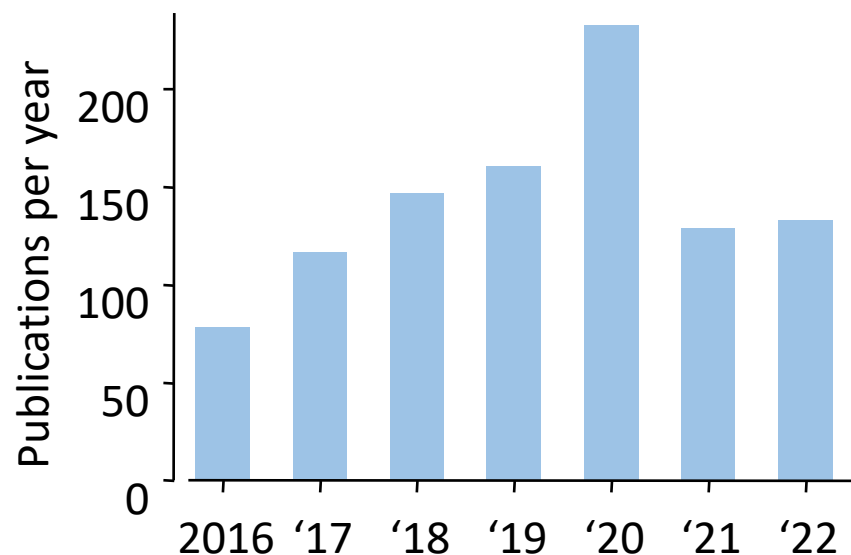
IMBeR Publications

Integrated Marine Biosphere Research

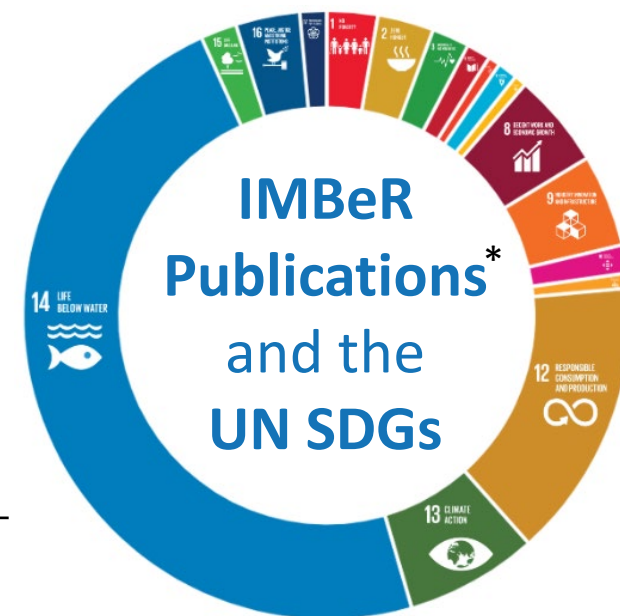
2022 – 2023

- 31** Arising from IMBeR
- 53** Benefitted from IMBeR
- 2** Policy relevant reports

Rate over time



SDGs



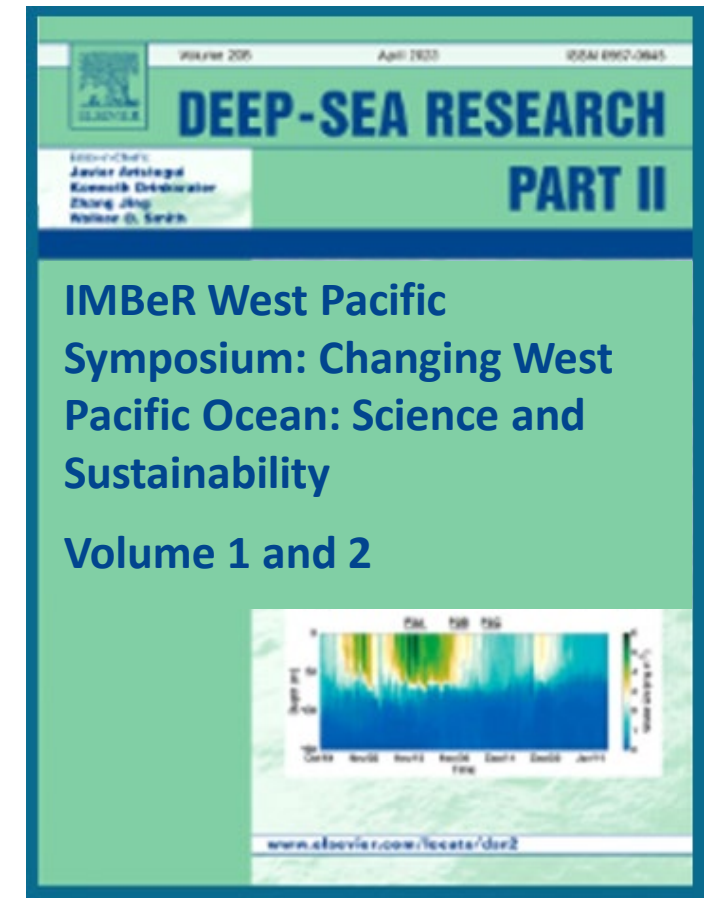
*Publications from 2016 to 2021 only



Editors: Constable et al. (2023)



Editors: Belgrano et al. (2023)



Editors: Hong et al. (2023)

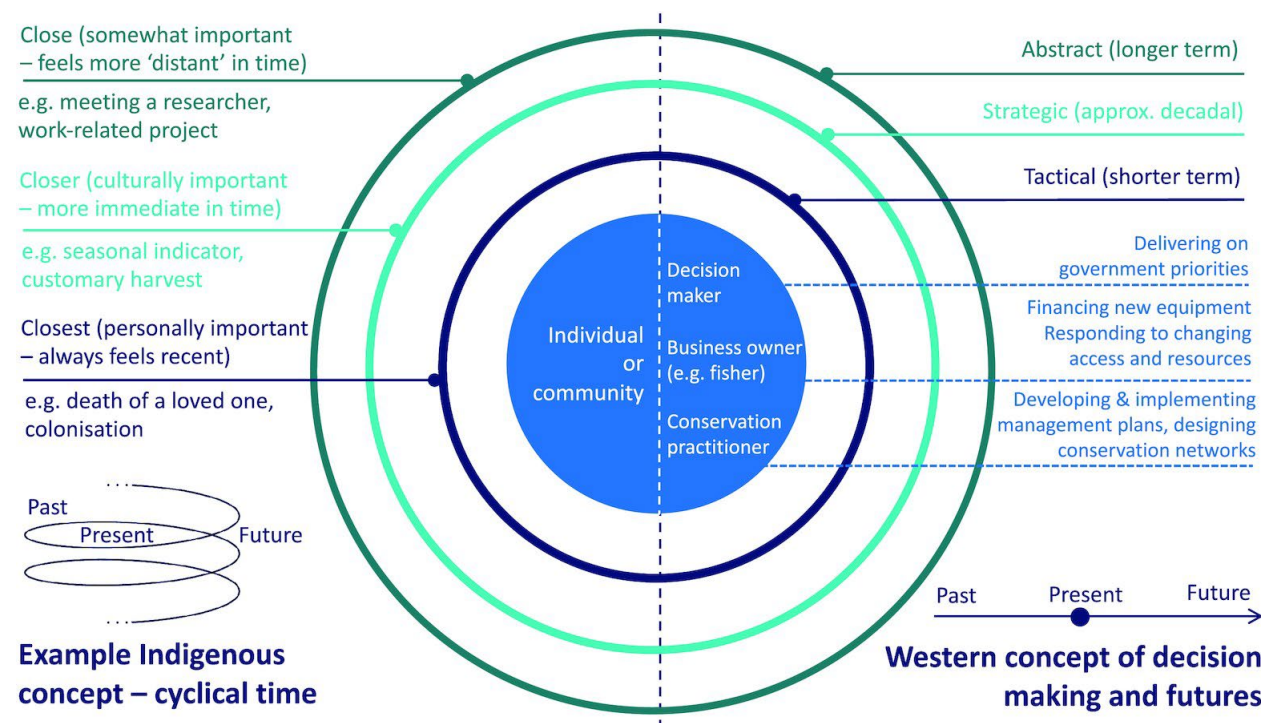


ICED Integrating Climate and Ecosystem Dynamics of the Southern Ocean



Integrating human dimensions in decadal-scale prediction for marine social–ecological systems: lighting the grey zone

Jess Melbourne-Thomas ^{1,2,*}, Desiree Tommasi ^{3,4}, Marion Gehlen ⁵, Eugene J. Murphy ⁶, Jennifer Beckensteiner ⁷, Francisco Bravo ⁸, Tyler D. Eddy ⁹, Mibu Fischer ^{2,10}, Elizabeth Fulton ^{1,2}, Mayya Gogina ¹¹, Eileen Hofmann ¹², Maysa Ito ^{13,14}, Sara Mynott ^{2,15}, Kelly Ortega-Cisneros ¹⁶, Anna N. Osiecka ¹⁷, Mark R. Payne ¹⁸, Romeo Saldívar-Lucio ¹⁹ and Kim J. N. Scherrer ²⁰



Grand Challenge II + Innovation Challenge 4



2021
2030 United Nations Decade
 of Ocean Science
 for Sustainable Development

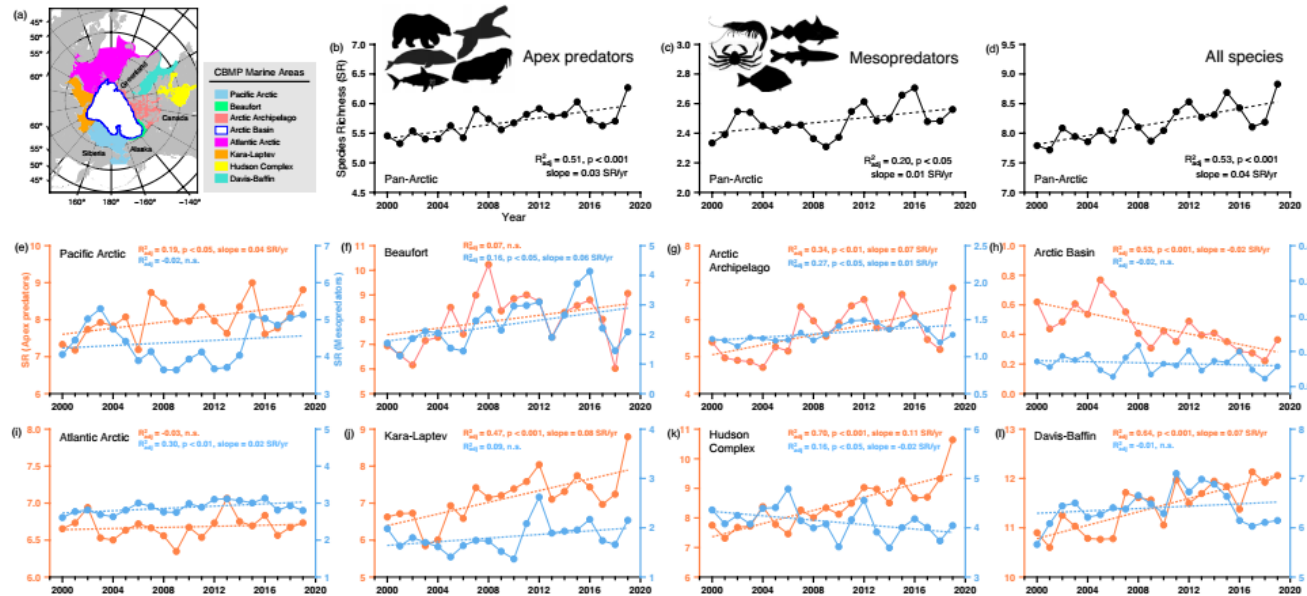
Pan-Arctic marine biodiversity and species co-occurrence patterns under recent climate

Irene D. Alabia¹✉, Jorge García Molinos¹, Takafumi Hirata¹, Franz J. Mueter² & Carmen L. David³



Ecosystem Studies of Sub-arctic and Arctic Seas

Grand Challenge I



A dynamic framework for assessing and managing risks to ecosystems from fisheries: demonstration for conserving the krill-based food web in Antarctica

Andrew J. Constable^{1,2,3,4*}, So Kawaguchi¹, Michael Sumner¹, Philip N. Trathan^{5,6} and Victoria Warwick-Evans⁵



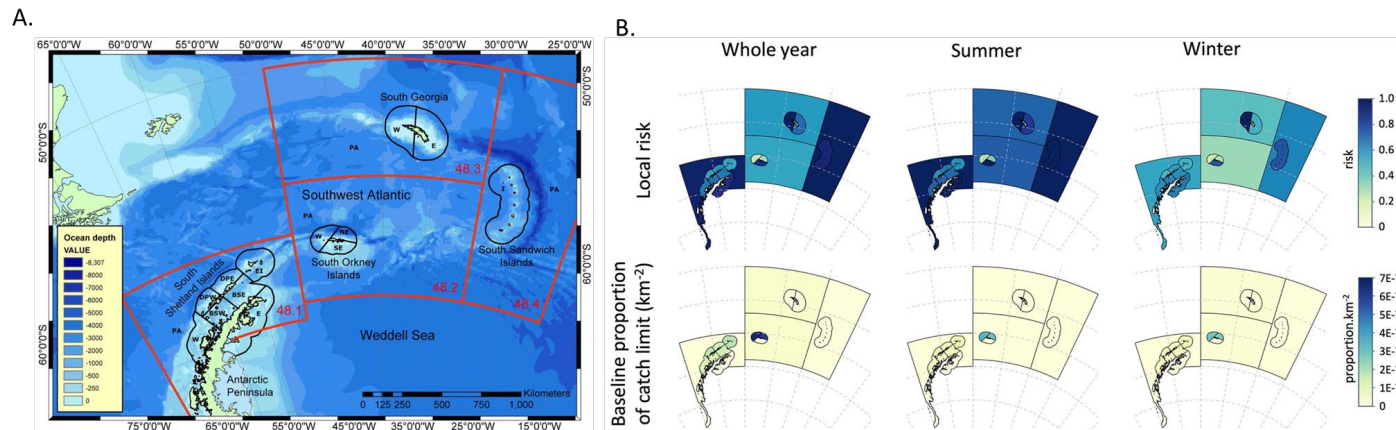
ICED

Integrating Climate and
Ecosystem Dynamics in
the Southern Ocean

Grand Challenge I

+

Grand Challenge III





Available online at www.sciencedirect.com

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journal homepage: www.journals.elsevier.com/oceanologia



ORIGINAL RESEARCH ARTICLE

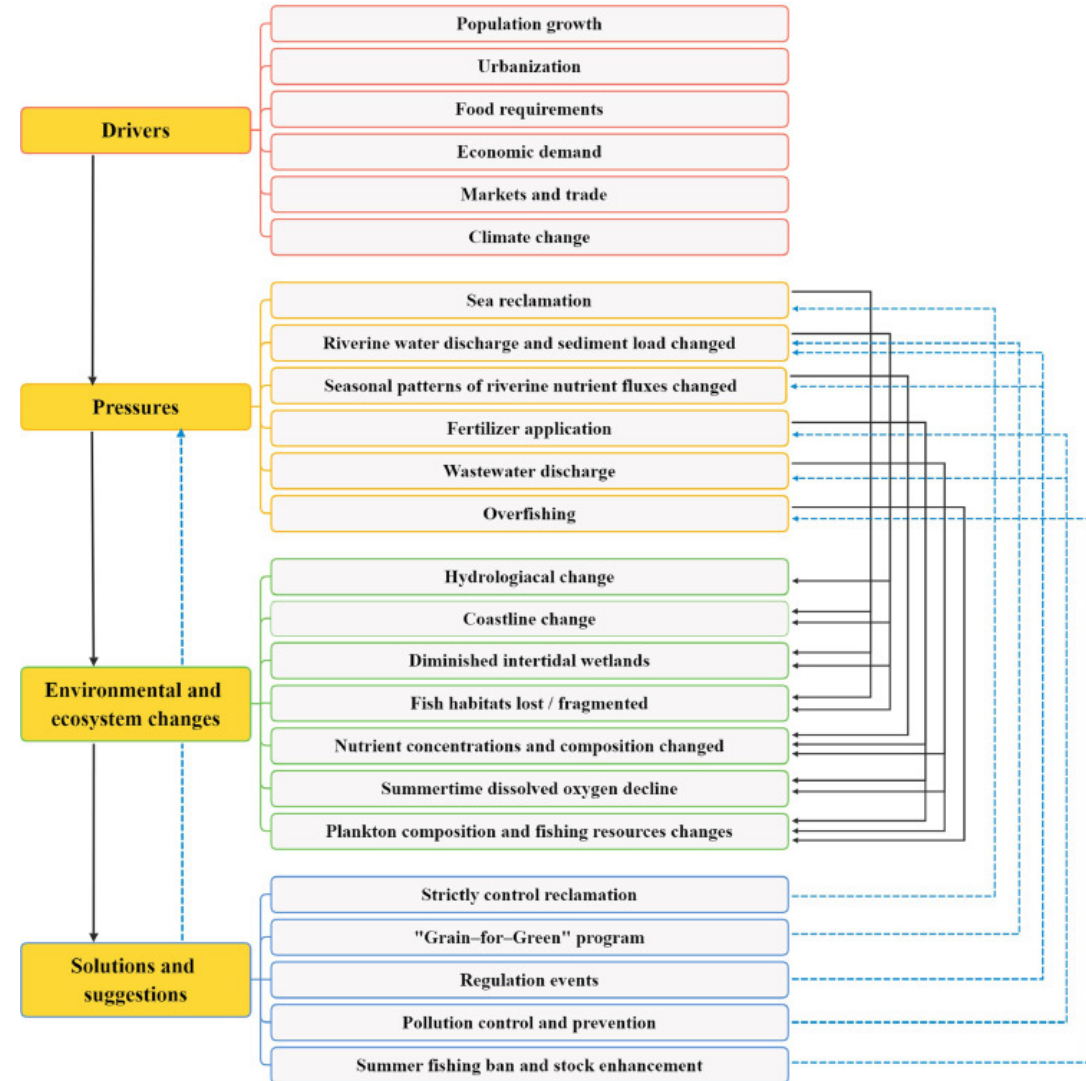
Biogeochemistry-ecosystem-social interactions on the Chinese continental margins

Su Mei Liu^{a,b,*}, Wen Liang^a, Xinyu Guo^c, Nian Wu^{a,b}, Wuchang Zhang^{b,d}, Xiujuan Shan^e, Hua-De Zhao^f, Juying Wang^f, Jin Huang^a

Grand Challenge I
+ Grand Challenge III
+ Innovation Challenge 3
+ Innovation Challenge 4



**Continental Margins
Working Group**



The Global Pandemic Has Shown We Need an Action Plan for the Ocean

Eugene J. Murphy^{1*}, Carol Robinson², Alistair J. Hobday^{3,4}, Alice Newton⁵, Marion Glaser⁶, Karen Evans³, Mark Dickey-Collas^{7,8}, Stephanie Brodie⁹ and Marion Gehlen¹⁰

nature

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CORRESPONDENCE | 20 September 2022

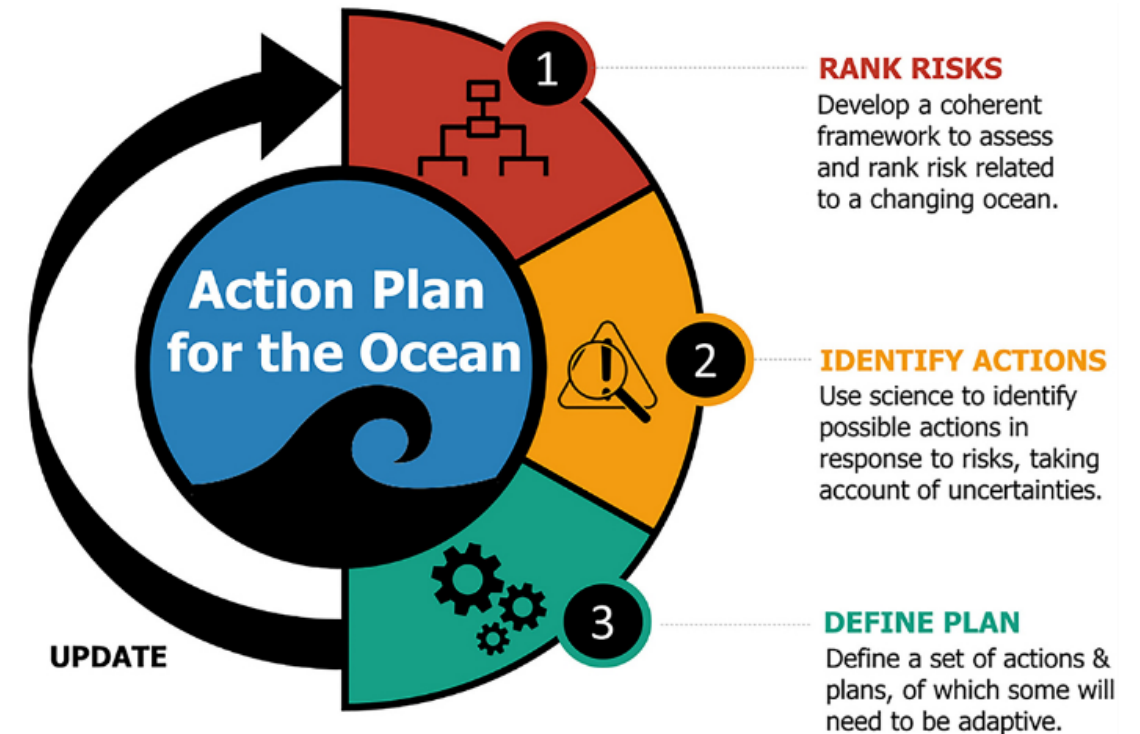
Ocean sustainability: act before it's too late

[Eugene J. Murphy](#) 



The United Nations Ocean Conference in Lisbon in June sounded the alarm over [the global emergency facing the oceans](#). The international ocean community must act now if humanity is to [mitigate and adapt to ocean change](#).

ACTION PLAN FOR THE OCEAN



1st Workshop 25 October 2023
2nd Workshop 2024

5th CSD Annual Conference on Sustainable Development 2022

Unpacking Sustainability, Resilience, and Equity

Dhaka, Bangladesh
11-15 October 2022



Fostering DEI into Interdisciplinary Marine Research

Tuesday 11 October 2022, Virtual Format
Time: 12-3PM UTC



VULNERABILITY TO VIABILITY
GLOBAL PARTNERSHIP



ClimEco8

Sustaining the ocean we need for the future we want

IMBeR Summer School
Koper, Slovenia, 19-24 June 2023



PROJEKT J2-2024



ESSAS Annual Science Meeting

Ecological, social, and economic dynamics of high-latitude coastal systems



June 19-22, 2023

Institute of Marine Research,
Bergen, Norway



Ecosystem Studies of
Sub-arctic and Arctic Seas



IMBeR Major Events Timeline 2021-2025

Integrated Marine Biosphere Research





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Thank you SCOR

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