



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

Global Ocean Oxygen Decade (GOOD) Decade Programme

Global ocean oxygen map © Johannes Karstensen, GEOMAR

Lead Institution

GEOMAR Helmholtz Centre for Ocean Research Kiel, on behalf of the Global Ocean Oxygen Network (GO2NE)

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KEY PARTNERS

- OARS (Ocean Acidification Research for Sustainability)
- IUCN (International Union for Conservation of Nature)
- IOCCP (International Ocean Carbon Coordination Project)
- Coastal-SOS (Coastal Support Ocean Sustainability)
- COASTPredict

DECADE CHALLENGES ADDRESSED

CHALLENGE 2: Protect and restore ecosystems and biodiversity

CHALLENGE 3: Sustainably feed the global population

CHALLENGE 5: Unlock ocean-based solutions to climate change

CHALLENGE 8: Create a digital representation of the Ocean

CHALLENGE 9: Skills, knowledge and technology for all

OCEAN BASINS

North Atlantic	Indian
South Atlantic	Arctic
North Pacific	Southern
South Pacific	

<https://en.unesco.org/go2ne>

<https://www.ocean-oxygen.org/>

Summary

Oxygen dissolved in seawater supports the largest ecosystems on the planet. It is alarming that the ocean is losing oxygen, termed ocean deoxygenation, at a rapid rate, primarily due to global warming by anthropogenic greenhouse gas emissions and pollution from nutrients and organic wastes particularly in coastal waters. The Global Ocean Oxygen Decade (GOOD) will raise global awareness about ocean deoxygenation, provide knowledge for action and develop mitigation and adaptation strategies and solutions to ensure continued provision of ecosystem services, and minimize impacts on the ocean economy through local, regional, and global efforts, including transdisciplinary research, innovative outreach, and ocean education and literacy.

Duration: 6/8/2021 - 12/31/2030

Priority Activities (first 2 years)

The first two years, GOOD will focus on four objectives:

- Deoxygenation and ocean life, understanding causes, attributing changes: identifying and understanding threats to improve mitigation and adaptation strategies.
- Mapping and Modelling oxygen: fully exploit data of new platforms with oxygen sensors and develop a Global Ocean Oxygen Atlas (GO2AT) to enhance monitoring and prediction capacities of ocean oxygen on coastal, regional and global scales.
- Deoxygenation and co-stressors: understanding, monitoring and mitigating deoxygenation in a multiple stressors context.
- Deoxygenation and ecosystem services: assessing and valuing the impact of deoxygenation and investigating the societal consequences of deoxygenation.

"The ocean is losing oxygen at an alarming rate, threatening marine ecosystems and ocean services to society. With the GOOD programme we will bring together science and society to better understand and monitor oxygen changes, as well as to develop solutions for mitigation and adaptation."

Andreas Oschlies
Head of Research Unit, GEOMAR

