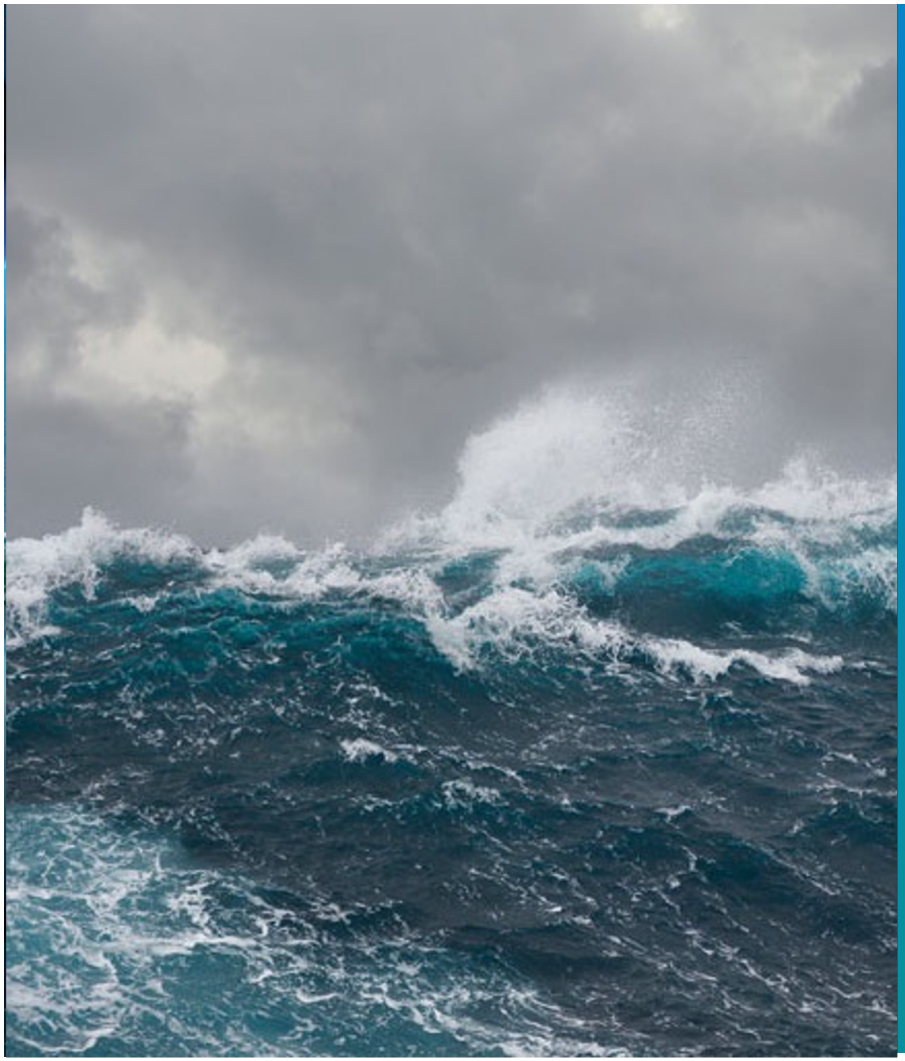


Ocean Observation Physics and Climate panel (OOPC)

Co-sponsored by: Global Climate Observing System (GCOS), the Global Ocean Observing System (GOOS), and the World Climate Research Programme (WCRP)

Provides scientific advice to WMO

Co-Chairs: Sabrina Speich & Weidong Yu

Secretariat: Belén Martin Miguez

GCOS • GOOS • WCRP

OOPC Ocean Observations Panel for Climate

GCOS GLOBAL CLIMATE OBSERVING SYSTEM

The Global Ocean Observing System GOOS

WCRP World Climate Research Programme

UNESCO IOC WMO UN environment International Science Council

Ocean Observations for societal benefit

Global Ocean Observing System



GCOS Climate WCRP Services Ocean Health

- the Ocean component of **GCOS** *(GOOS's cross-panel climate interface with GCOS)*
- the physical variables for **GOOS**,
- while defining sustained ocean observing requirements for **WCRP**

Support the value chain "observation/data – science/knowledge –service/policy"

GCOS • GOOS • WCRP OOPC Ocean Observations Panel for Climate

https://www.goosocean.org https://gcos.wmo.int

OOPC Role

- **Assessment of Ocean Observing System to meet user requirements**
  - Global integration of parts (i.e. Basin systems, and topical systems, platforms)
  - Assess, review and prioritize requirements for EOVs and ECVs
  - Identify gaps
  - Promote consistency of EOVs/ECVs across the observing system
- **Coordination/integrate with other organisation and community panels**
- **Review/Evaluation** of the observing system
- **Advocacy** for the Ocean Observing System
- Work with OCG and regional bodies to **coordinate observing networks**

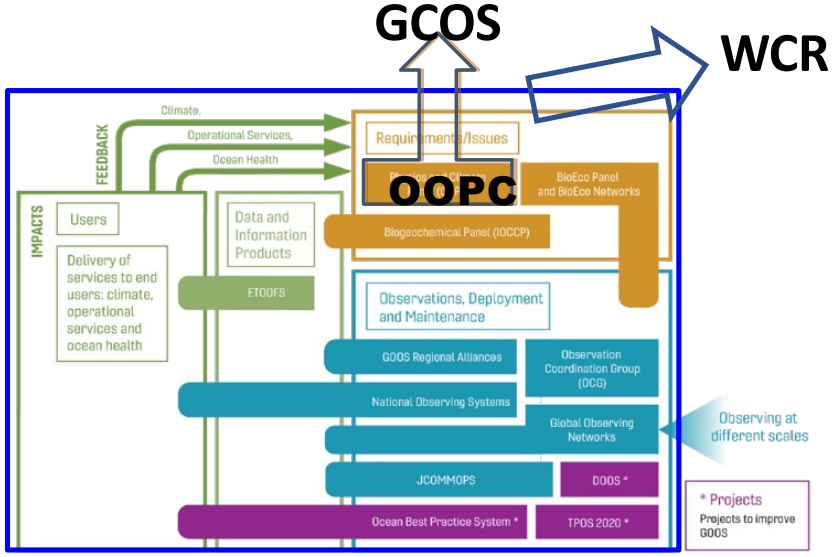
OOPC Review/Evaluation of observing systems

- **Assessment of Ocean Observing System to meet user requirements**
  - Global integration of parts (i.e. Basin systems, and topical systems, platforms)

A GOOS Expert Panel

- Conduit to GCOS and WCRP, with structures covering parallel work in requirements for biogeochemistry and bioeco observations

- Requires wide consultation and proper planning

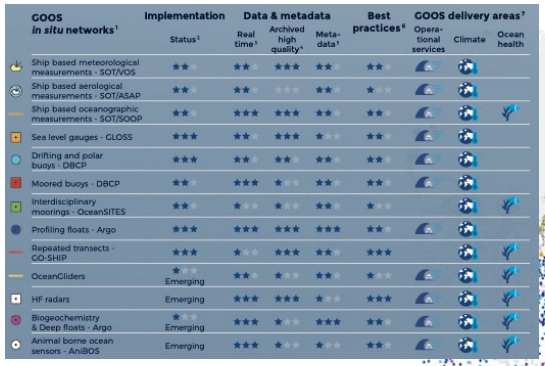


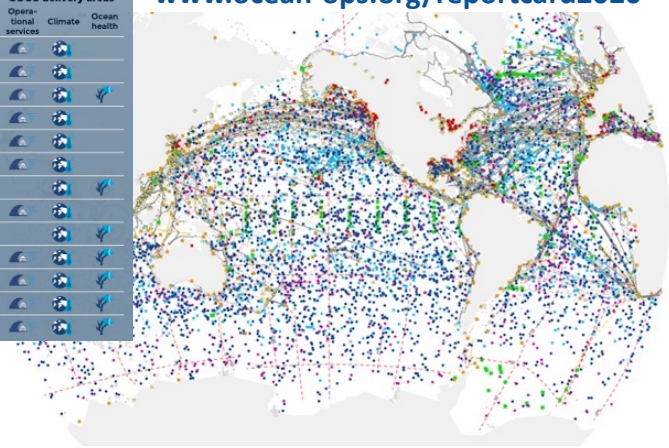
GOOS Structure

Integrating the Ocean Observing

1. OceanOPS network status summary versus EOVs/ECVs

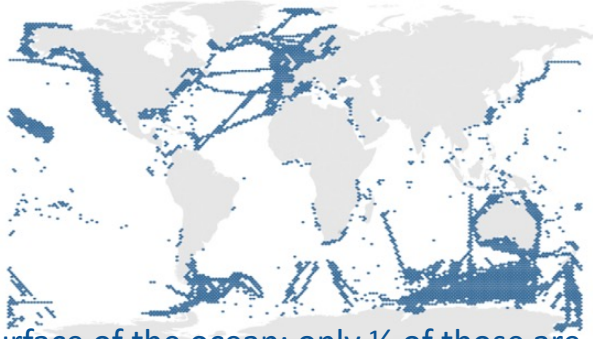
www.ocean-ops.org/reportcard2020





2. First biological “sustained” ocean observations assessment

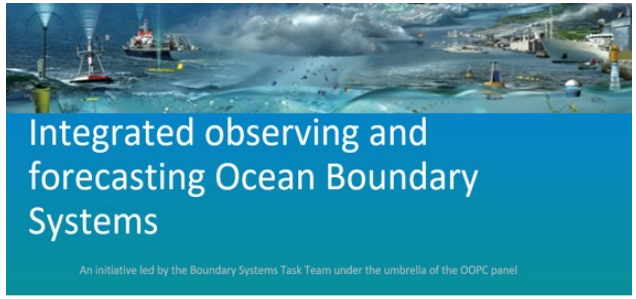
- Biological observations - subsumed into a small number of ECVs that are important for capturing the impact of climate on the ocean;

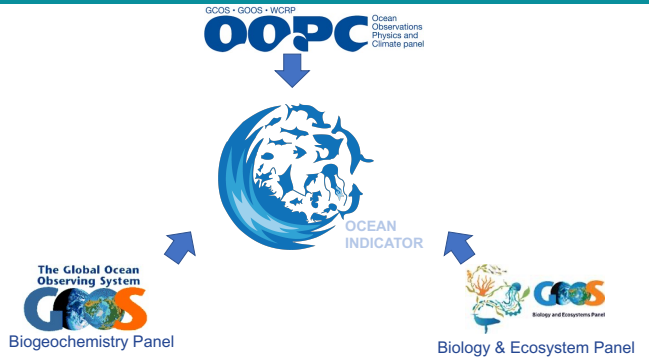


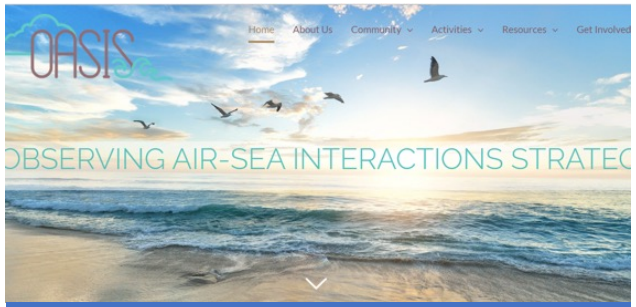
- Sustained obs cover only 7% of surface of the ocean; only ⅓ of those are freely and openly shared;

Satterthwaite et al., in press, 2020

Activities in the work plan for the next 5 years







Boundary Systems

- 5 “dialogues” between the modelling and observing community in 5 boundary systems (one left).
- Paper being prepared with recommendations

Ocean Indicators Framework

- Mutlidisciplinary group of experts mobilized (28 members)
- Round of interviews undertaken
- “Baseline” paper being drafted

This activity has become a Cross-GOOS action

OASIS (has become a Decade program)

- Resolve air-sea fluxes to understand and predict ocean’s influence on weather and climate
- Large multidisciplinary community mobilized: SCOR Working Group #162 + Endorsement by Ocean Decade + Consortium for Ocean Leadership support

+ Ocean in the Climate Cycles (heat, freshwater and carbon storage and transport)

Activities within GCOS

GCOS Status Report presented at COP26

- SBSTA welcomed the Status Report that acknowledges progress but also identifies gaps and needs, in particular to enhance and sustain observations in some areas, including the ocean.

GCOS Implementation Plan finalized and presented at COP27

- GCOS IP recommends actions to improve the climate observing system.
- The IP also presents an update of ECV requirements.

GCOS Climate Observation Conference

- Sabrina Speich: chair of Scientific Committee.
- In person meeting, 3 days, 6 sessions.

https://www.eventsforce.net/gcos-coc

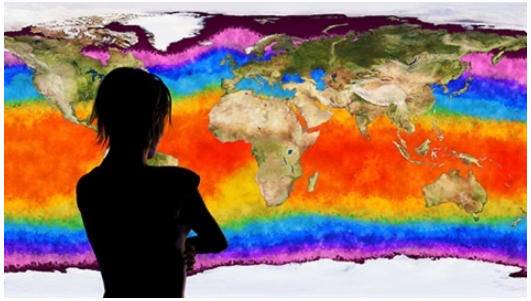
Coordinating observing activities to assess Earth's Climate Cycles but also work on observations for Extremes, Adaptation and measure of Adaptation

Using the UN Decade of Ocean Sciences to focus on integration, system design, connection across value chain with better links to modeling (Co-PI Ocean Observing Co-Design Programme)

GOOS | At the heart of the Ocean Decade

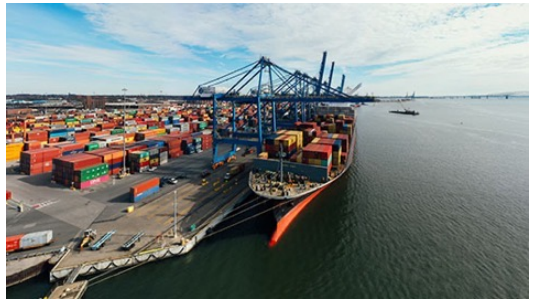
Ocean Observing Co-Design, CoastPredict and Observing Together are the first programmes of many that will actively dri the Ocean Decade to “Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely and actionable data and information to all users."

2021 2030 United Nations Decade of Ocean Science for Sustainable Development



GOOS | Ocean Observing Co-Design
by The Global Ocean Observing System

Creating the partnerships, process, and infrastructure to evolve ocean observing, co-designed with key stakeholders, and delivering the data we need for the future we want.



GOOS | CoastPredict
with The Global Ocean Observing System

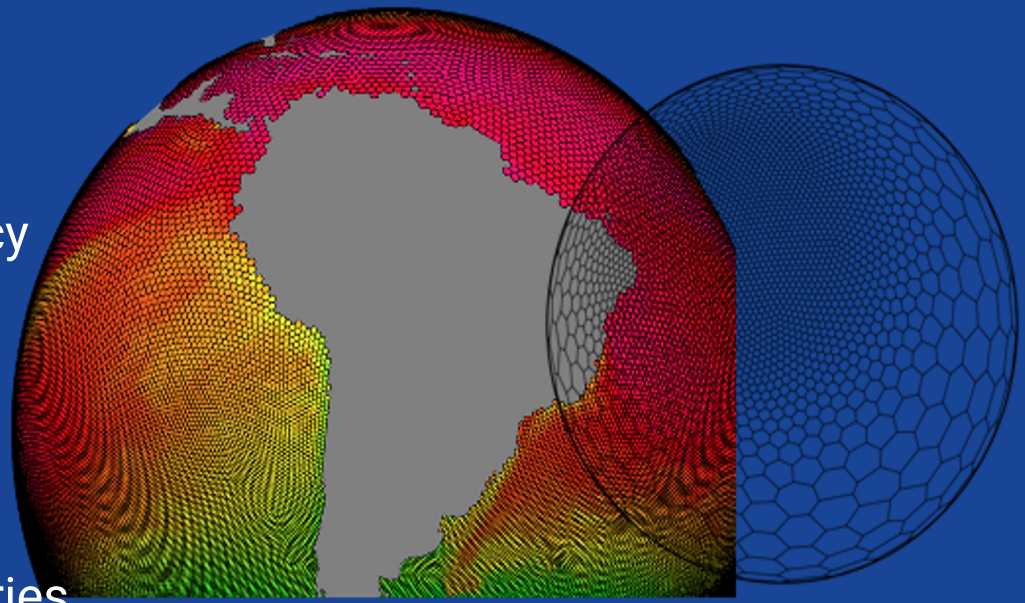
Revolutionising Global Coastal Ocean observing and forecasting, co-designing the needed infrastructure and offering open and free access to coastal information.

GOOS | Observing Together
by The Global Ocean Observing System

Transforming ocean data access and availability by connecting ocean observers and the communities they serve, going further to make every observation count.

Develop process and system capability through co-design 'exemplar' projects

Exemplar areas & community interest:



- **Carbon budgets:** governments carbon policy
- **Marine heatwaves:** aquaculture, fisheries
- **Hurricanes & tropical storms:** national weather forecasting
- **Coastal inundation and storm surge:** coastal managers, urban planners
- **Biodiversity:** marine spatial planning, fisheries
- **Boundary currents:** emergency response / shelf ecosystems / marine transportation

Some co-design exemplar project areas are more mature than others - different levels of model maturity etc. we will work with several to develop a consistent methodology

Ocean Observing Co-Design
by The Global Ocean Observing System

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Exemplar projects will ...

- Engage key user stakeholders to understand their needs
- Look across observing and modelling / assessment capability in an integrated way
- Leverage existing infrastructure, highlight where investment needed in new
- Assess the value to society of different observing system options
- Be integrative and ensure connections across and between existing efforts
- Track and report on progress towards implementation

CO-DESIGN WORKSHOP EXPECTED OUTPUT

- ➔ Outlines of proposals for projects to progress different Exemplars
- ➔ Paper to present initial summary of co-design best practices
- ➔ Working on a way to integrate the Exemplars concept into what will be presented from GOOS during UN Ocean Conference in Lisbon - to highlight the essential link between Exemplars and policy / government ‘end-users’

OOPC & BioEco (& IOCCP)

More consistent, programmed interactions with the 3 GOOS Panels around actions to effectively coordinate, collaborate, cross-feed at least around:

- GOOS Actions
- GCOS ocean integration and interaction with the other GCOS panels
- To strenghten and better integrate the GOOS effort in the UN Ocean Decade to help its transformative ambition
- Reinforcing coordination within GOOS to better integrate and guide WCRP/IPCC/UNFCCC/G7 FSOI observing capabilities