GRA Background Report

Integrated Marine Observing System (IMOS)

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GOOS Regional Forum-11,

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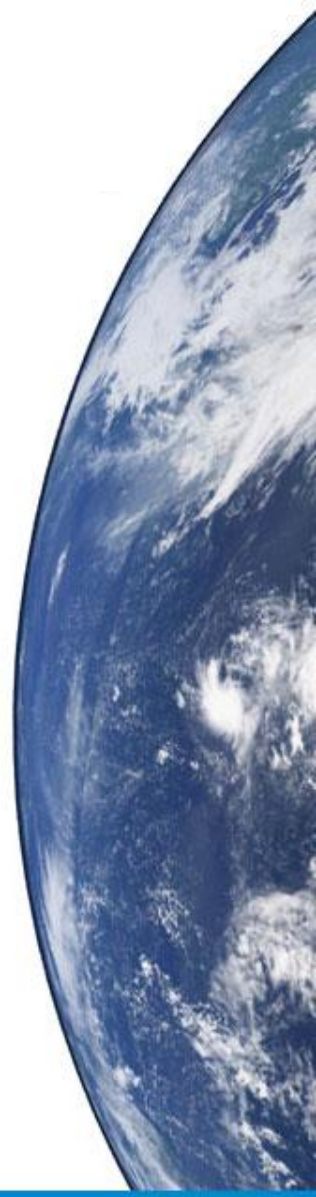
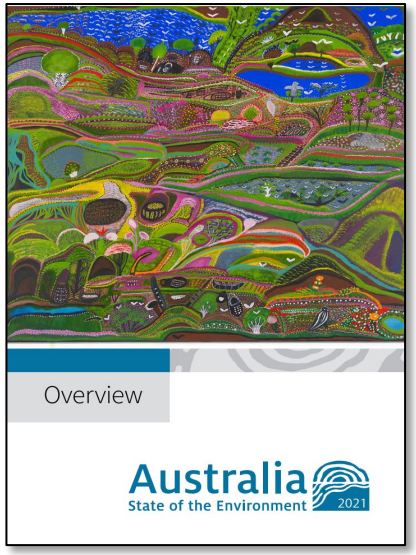


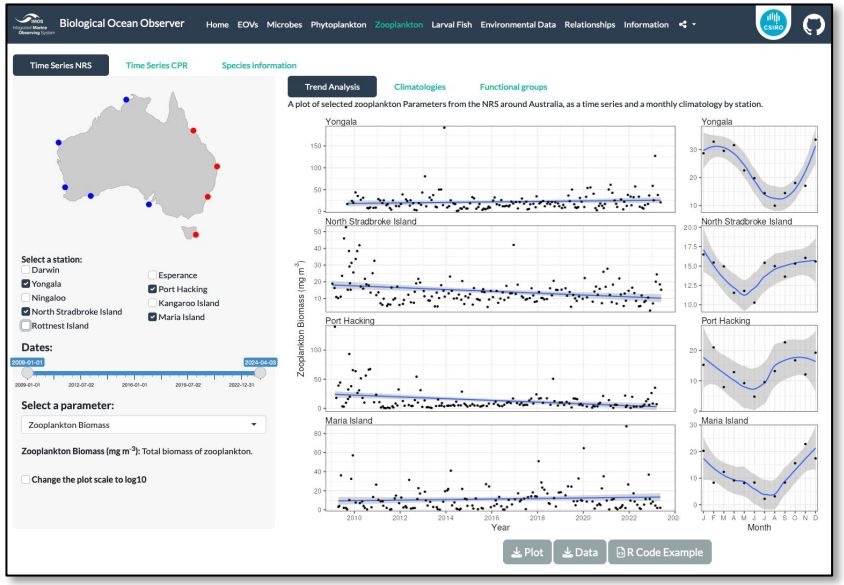
Success Stories

- Recent IMOS examples include application to three areas:
  - #1 Policy and management
  - #2 Climate and ocean models
  - #3 Observing partnerships

Policy & Management

- IMOS provides a reliable source of data and information to inform national strategies and policy.
- IMOS is a major contributor to the Australia State of Environment Report
  - **2021:** cited 99 publications using IMOS data (170 citations) that contributed to the Marine, Antarctica, Coasts, and Climate and Extreme Events chapters.
- New IMOS data products to help deliver information to decision makers (e.g. Biological Ocean Observer dashboard)





Climate & Ocean Models

- IMOS observations are a major contributor to a range of national ocean and climate models providing forecasting services for industry operations.
- IMOS observations are assimilated into models and used for assessing model performance
- IMOS step-change activities include enhanced Near Real-Time delivery of data streams for uptake by models

Bluelink Ocean Forecasting

OeanMAPS model:
The Bureau of Meteorology's operational weather forecast system for daily predictions informing industry operations

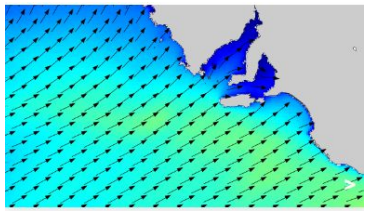
ACCESS
Australian Earth System Simulator
National Research Infrastructure

ACCESS-S model:
Climate forecast system for weekly to seasonal and longer-range climate forecasts

eReefs

eReefs model:
Great Barrier Reef environmental forecasting and modelling to track and predict the condition of the Reef, including water quality and bleaching.

eSA-Marine system



eSA-Marine model:
Informs the planning of infrastructure developments in South Australia
- aquaculture farms
- desalination plant

Observing partnerships

- Collecting observations in an understudied region
- Providing critical environmental data for Defence modelling
- Training Sea Rangers in turtle handling and tracking
- Providing information about a totem species to Traditional Owners

Jarrakarlani (sea turtles) are a key totem for the Munupi Clan on Melville Island

NAVY

TIWI LAND COUNCIL

IMOS
Integrated Marine Observing System

Priorities

- Short term (in the next year or two)
  - Establish national-scale coastal observing capability in Australia
  - Enhance capacity for delivery of data tools and products for non-experts
  - Increased linkages with PI-GOOS and other regional programs
  - Increased partnership with First Nations
- Long term (5+ years)
  - Seamless open ocean to estuary data collection and workflows to understand climate change impacts
  - Co-delivery of observing with First Nations

What support do you need from GOOS?

- From GOOS structures (Steering Committee, panels, the Observations Coordination Group and JCOMMOPS, GOOS Office)?
  - Improved understanding of GOOS priorities and targets over the next 3-5 years
  - Identified areas of linkage and intersection with the UN Ocean Decade
- From other GRAs?
  - Understanding of common issues and how we might all work together to increase ocean observing capability
- From the GRA Forum?
  - Connections into the international community to look for opportunities to work together to solve regional and global issues