



## Food Security

IMOS data contributes to the management of our valuable marine resources, increasing the resilience and sustainability of the Australian fisheries and aquaculture sectors into the future.

Marine and inland fisheries together with aquaculture provide an important contribution to Australia's food security. Not only is seafood an important source of protein but it also provides a form of income. Australia's fisheries and aquaculture sectors contribute over \$5 billion to the economy each year.

Australian research has led to well-developed fishing and aquaculture industries that contribute nutritious food to domestic and global markets. If Australia is to respond to increasing global demand, we will need to develop internationally competitive, sustainable, profitable, high intensity and high production capacity in new and existing food products, and in new and existing regions of Australia.

## Our role

IMOS contributes to Australia's food security through the provision of observations which contribute to:

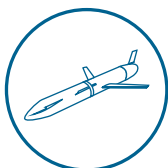
- the sustainable management of fisheries, aquaculture and biodiversity;
- global and regional climate models that predict seasonal weather patterns for use in fisheries and agriculture;
- increasing our understanding of harmful events such as marine heatwaves which impact aquaculture and other fisheries-based industries;
- understanding the spatial movements of species of particular value to our economy, environment and society.



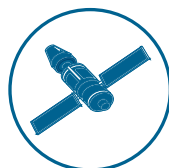
## IMOS observing infrastructure applied



Argo Floats



Ocean Gliders



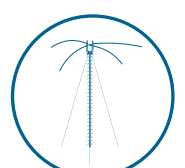
Satellite Remote Sensing



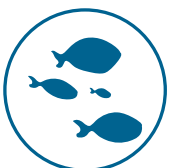
IMOS OceanCurrent



National Mooring Network



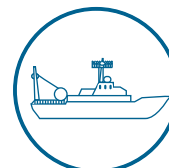
Ocean Radar



Animal Tracking



National Reef Monitoring Network



Ships of Opportunity

# Our relevance and impact

IMOS observations have contributed to Australia's food security in a number of projects for example:

- IMOS makes available data from the citizen-science based National Reef Monitoring Network, which contributed to the assessment of coral reef biodiversity in the North-Western Australian Marine Parks Network. The results of this assessment suggested a positive effect of stricter no-take protection in the last five years. This finding will help inform management decisions related to the establishment and continuation of no-take zones.
- An IMOS mooring monitors the Bonney coast upwelling providing data that helps us understand the physical, chemical and biological mechanisms that underpin this highly productive region. Understanding this ocean system, that supports an abundance of marine species including important State and Commonwealth fisheries, as well as a growing charter and recreational fishing industry, will promote the sustainable management of its ecosystems and fisheries.

- Data from IMOS moorings in South Australia contributed to a Fisheries Research and Development Corporation (FRDC) project into improving early detection surveillance and emergency disease response for the South Australian oyster industry. The associated model into which IMOS observations feed is used to provide real-time monitoring of harmful algal blooms that threaten fisheries and aquaculture sectors around Port Lincoln. Harmful algal bloom data helps industry make operational decisions to sustain their stocks.
- IMOS Ocean Radar data were used in an FRDC project focused on strong currents off the Western Australian coast, creating an app for commercial fishers to assess the risks posed by ocean currents to their fishing operations before setting their gear.
- Animal tracking observations have been used in research supporting the Fishery Status Reports 2019 by the Australian Bureau of Agricultural and Resource Economics and Sciences.

“Austral Fisheries has been working closely with the IMOS as we believe it is the most valuable data repository and analytical tool we can link with, to facilitate researchers in evaluating aspects of fisheries and ecology in the regions we operate both nationally, and internationally.

We provide calibrated and verified data on such varied topics as weather information, acoustic survey data for micro-nekton and mid-layer analyses in the Southern Indian Ocean and Southern Ocean, and standard fisheries data. Combined, that helps inform the many different stock assessment and ecological models which, in turn, help drive efficient, sustainable, management of our fisheries.

We strongly support the critical link that IMOS makes to marine research in Australia and globally.

**Martin Exel**

General Manager Environment and Policy, Austral Fisheries

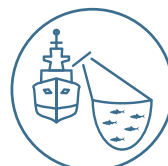
## Use by stakeholders

Key stakeholders that use IMOS observing infrastructure include:

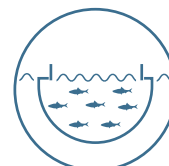
- State and Commonwealth fisheries and aquaculture agencies
- Fisheries Research and Development Corporation
- Australian Bureau of Agricultural and Resource Economics and Sciences



## Industry links



Fisheries



Aquaculture



Agriculture