Australian Government
Bureau of Meteorology

Marine Strategy 2014–2019

Providing Australians with marine environmental intelligence for their safety, sustainability, well-being and prosperity.

Foreword

I am pleased to present the Bureau of Meteorology Marine Strategy 2014–2019.

The Bureau accomplishes its mission through the delivery of products, services and advice that informs decisions by governments, businesses and the community. The breadth of our activity in environmental intelligence has grown over the last decade and we expect it to continue to do so.

In extending our reach, we plan to accord particular priority to marine services, spanning the deep ocean, the continental shelf and the coastal zone.

The Bureau already provides a range of marine services, encompassing observation, research and information services, including some mandated under the *Meteorology Act 1955* and others required under international obligations such as the Safety of Life at Sea (SOLAS) Convention. Noting the strategic significance of oceans and coastal environments to Australians, we see a significant opportunity to do more.

Australia's Ocean Policy Science Advisory Group recently identified six grand challenges facing Australia that relate to our ocean estate and how marine science can contribute to their solution[1].

Through our own consultations we have identified a demand for support in areas as diverse as marine reserve management, air-sea rescue, fisheries management, marine transport, naval defence, coastal development planning and offshore resources industry operations collectively. We have used this guidance to envisage how we might extend our marine service offering for the benefit of Australia.

Whether you are a user of marine services or a potential delivery partner, I commend this strategy to you.

Dr Rob Vertessy
Director of Meteorology and CEO

[1] *Marine Nation 2025: Marine Science to Support Australia's Blue Economy*

About the Bureau of Meteorology

The Bureau of Meteorology is Australia's national weather, climate and water agency, and is increasingly involved in the provision of marine services.

We assist Australians in dealing with the harsh realities of their natural environment, including drought, floods, fires, severe storms, high seas, tsunami and tropical cyclones. Through regular forecasts, warnings, monitoring and advice spanning the Australian region and Antarctic territory, the Bureau provides some of the most fundamental and widely used services of government.

The Bureau contributes to national social, economic, cultural and environmental goals by providing observational, forecasting, warning and advisory services and by undertaking research into science and environment related issues in support of its operations and services.

The Bureau operates under the authority of the *Meteorology Act 1955* and the *Water Act 2007* and contributes to meeting Australia's international obligations under various international conventions. These include the Convention of the World Meteorological Organization, the Convention on International Civil Aviation and the Safety of Life at Sea Convention.

Our mission

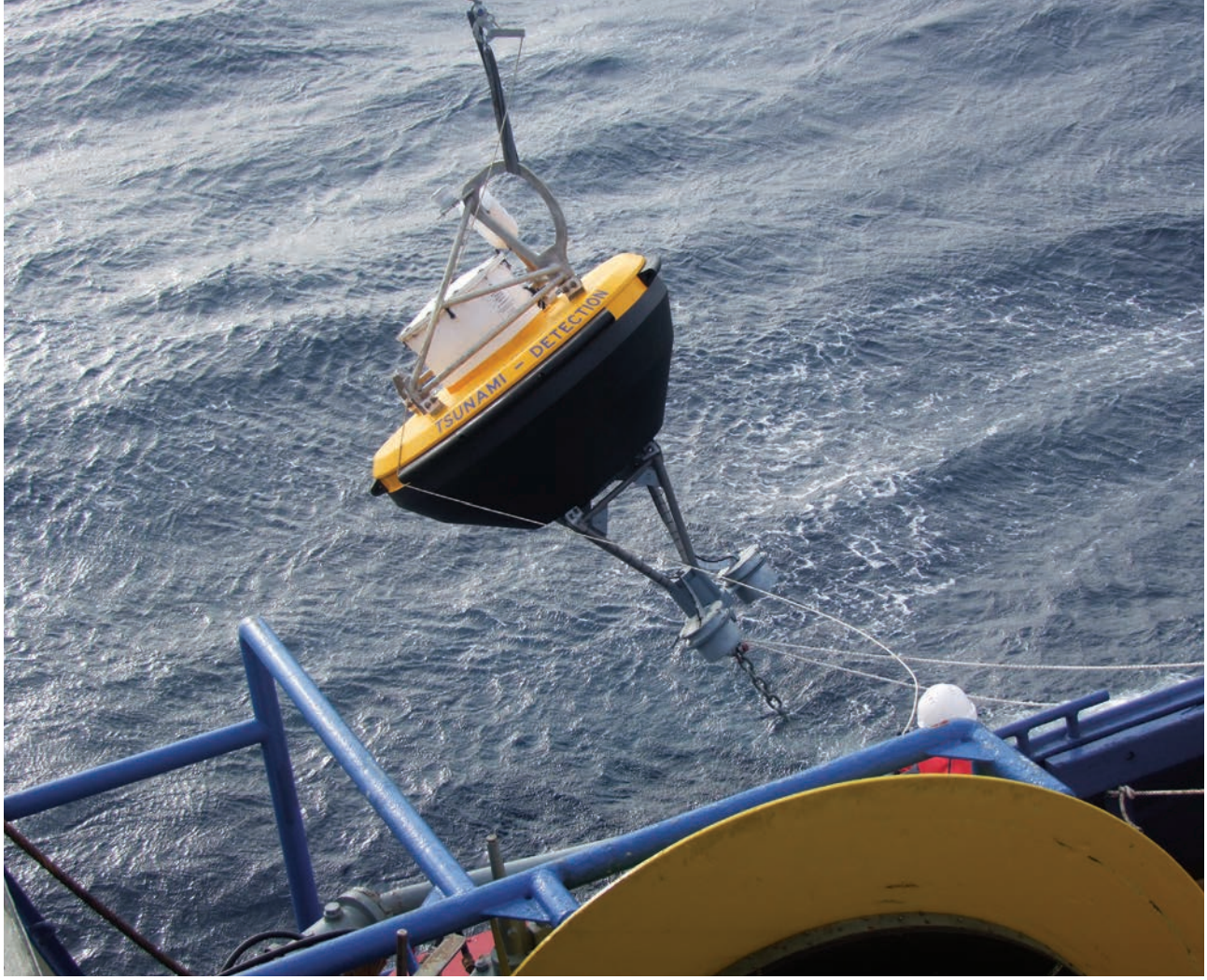
The Bureau's mission is to provide Australians with the information they need to manage and live within their natural environment, encompassing the atmosphere, oceans, water and land. To achieve this, the Bureau of Meteorology:

- monitors and reports on current environmental conditions;
- analyses and explains trends in environmental data;
- provides forecasts, warnings and long-term outlooks on environmental phenomena that affect Australians; and
- fosters greater public understanding and use of environmental intelligence.

Our focus

For more than 100 years, the Bureau's mission has been to observe, understand and forecast the behaviour of the atmosphere. This enables us to provide the public with a reliable weather forecasting service and a sophisticated climate analysis capability. In a world of changing climate and increased exposure to severe weather events, Australians value new scientific and technological advances in our services.

Over the past decade, the Bureau has been directed by government to deliver a range of new services associated with oceans, water resources and space weather, greatly expanding our area of activity. These developments have positioned the Bureau to assume the role as the nation's authority in environmental intelligence for the safety, sustainability, well-being and prosperity of Australians.



Our journey

We are transforming our agency into one capable of providing a comprehensive environmental intelligence service to the Australian public. We will retain a very strong emphasis on meteorological services, but in the future we will also focus on the interactions with our ocean, land and water resources, as well as the ecosystems that depend on them.

The Bureau of Meteorology Strategic Plan 2010–15[1] presents our approach to enhancing outcomes with our stakeholders, developing our products and services, empowering our people, building our infrastructure, sustaining our operations, and leveraging our scientific and technical capability.

The National Plan for Environmental Information initiative has provided further impetus for the Bureau extending its reach beyond its long-standing weather and climate focus. Under this program, the Bureau is developing operational services in coastal water quality monitoring and hydrodynamic modelling, initially focused on the Great Barrier Reef[2].

[1] www.bom.gov.au/info/leaflets/strategic-plan-2010-15.pdf

[2] This work is carried out under the eReefs project, entailing collaboration and co-funding arrangements with the Great Barrier Reef Foundation, CSIRO, the Australian Institute of Marine Science, the Australian and Queensland Governments, the Science and Industry Endowment Fund, BHP Billiton, and the BHP Billiton Mitsubishi Alliance.

Marine Strategy 2014–2019

Vision

To provide Australians with marine environmental intelligence for their safety, sustainability, well-being and prosperity.

Outcomes

Our Marine Strategy seeks to contribute to the following four societal outcomes:

Safety

- warning our communities at risk of dangerous ocean-meteorological conditions.
- supporting border protection and air-sea rescue operations.
- meeting international obligations relating to safety at sea.

Sustainability

- managing development pressures in coastal environments.
- supporting marine conservation objectives.
- enhancing the resilience of communities through improved planning and real-time information.

Well-being

- advising communities of ocean weather for safer living and enjoyment.
- advising on the impacts of sea-level rise on coastal communities.
- supporting citizens to interact with and enjoy coastal environments.

Prosperity

- reducing the costs of industries operating in the marine environment.
- supporting the tourism and fisheries industries.

Proposed focus

To inform the decisions of marine stakeholders, the Bureau proposes to enhance its service offering in the following areas:

Marine observations — Contribute to the extension and enduring maintenance of Australia's marine observing system, in support of improved marine information services.

Marine forecasting — Enhance our forecasting capacity of weather and climate, ocean temperatures, currents, tides, dangerous seas, storm surges and tsunamis using advanced observing, analysis and modelling systems.

Marine information — Improve the utility value of marine information and support its wider use by government, businesses and the general public.

How we would like to work

We think that we can be most effective by:

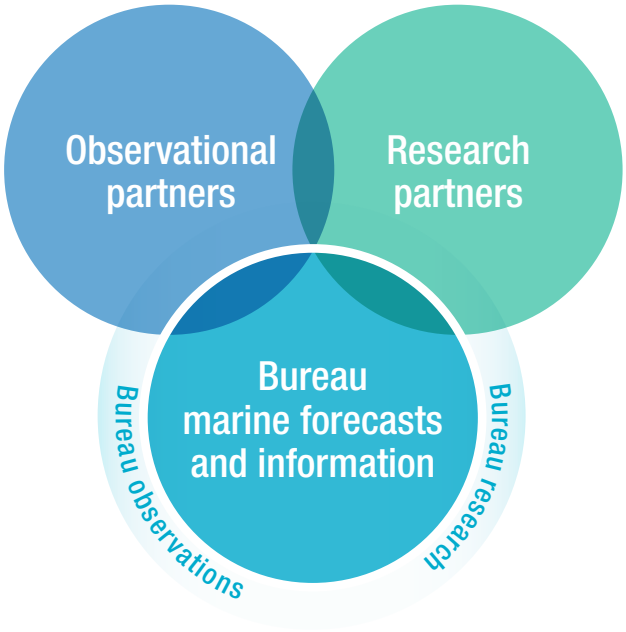
Engaging — We seek to better understand what our stakeholders require and do our best to meet their needs.

Partnering — We seek new relationships, to strengthen our existing partnerships with other agencies delivering marine services to maximise overall impact.

Integrating — Where appropriate, we seek to integrate our marine services with other forms of environmental intelligence required by our stakeholders.

Our stakeholders

Our stakeholders are diverse. In addition to the Australian public, they include governments, research organisations, universities, international programs and a range of industry sectors such as oil and gas, fisheries, tourism, shipping and mining. The Bureau seeks to build on its ongoing engagements as well as respond to the needs of new marine stakeholders.



Our partners

The vast and highly dynamic nature of the marine environment means that no single organisation is able to measure, analyse and manage the entire system. The Bureau relies on working in partnership with a large variety of stakeholders in order to deliver many of its marine services, research and observing systems.

The Bureau's marine services and operational systems also contribute to, and in turn benefit from, collaboration and leveraging with international programs in our broad region of national interest, spanning the Indian, Pacific and Southern oceans.

Together with our observing partners we are delivering a national marine observing network that supports comprehensive marine environmental intelligence. Key partners include the Integrated Marine Observing System, Geoscience Australia, Royal Australian Navy, Australian Antarctic Division, Australian Institute of Marine Science, CSIRO, universities, and state governments.

By partnering with a range of organisations, such as CSIRO through the Centre for Australian Weather and Climate Research, we access a wider range of research skills, make more efficient use of resources and develop more effective research relationships

with governments, industry and other research providers. This means that in collaboration with our research partners we are enhancing our understanding of the marine system. This provides opportunities for collaboration and pathways to transition mature research into operational products. Key partners include the Australian Institute of Marine Science, CSIRO, the Terrestrial Ecosystems Research Network, Cooperative Research Centres and universities.

Our operational partners combine with the Bureau to deliver a range of services spanning historical conditions, current state, imminent warnings, forecasts and seasonal outlooks. Key partners include the Royal Australian Navy, Geoscience Australia and CSIRO.

Priority Areas for Action

Four priority areas for action give effect to the Bureau's Marine Strategy, enabling capabilities critical to achieving the vision of marine environmental intelligence.

PRIORITY AREA 1
Coastal and Ocean Hazards

The Bureau has a long history of advising the public of dangerous conditions in the marine environment. In response to growing vulnerability to these hazards, we are strengthening our forecast and warning capabilities to better protect people, livelihoods and property.

Why this is important

- Establishes or enhances services focused on tsunami and coastal inundation, strong winds, dangerous currents and waves, sea ice, and storm tides.
- Meets the growing demand for information about the impacts of these hazards to users including the shipping, tourism and fishing sectors.
- Improves preparedness, emergency response and disaster recovery.

Key performance indicators

- Active uptake of new marine services by emergency services and other relevant government agencies and offshore industries concerned with coastal and ocean hazards.

PRIORITY AREA 2
Coastal Modelling

Marine modelling currently undertaken by the Bureau focuses on global-scale deep water processes and provides limited information nearer to the coast. We are now seeking to work with our partners to extend our capability in this area to support understanding and management of the coastal zone.

Why this is important

- Supports new services focused on dangerous waves, storm tides and water quality, targeted at coastal communities, tourists, conservation programs, fishers and recreational boaties.
- Meets growing demand for more localised information from local and state government, maritime industry and the tourism sector.
- Improves coastal management through greater access to coastal scale information in near real-time.
- Improves recreational experiences and safety.

Key performance indicators

- Models are fit for coastal scale applications.
- Models enhance existing services and expand the opportunity to deliver new services.
- Active uptake of new marine services by coastal development and management entities.

PRIORITY AREA 3
Marine Climate Analysis and Advice

The Bureau has a long history of analysing the climate record to place current observations into a long-term context. We are strengthening our capacity to apply these analysis skills to marine data and working with our partners to deliver advice on the changing state and condition of our oceans and coastal environments.

Why this is important

- Provides important climate context to the provision of forecasts and warnings of hazards for extreme and unusual events.
- Provides information to the public and key sectors about the nature of changes in marine climate.
- Supports decisions on suitable options for climate change adaptation and mitigation by fisheries, the offshore oil and gas industries, and infrastructure planning and design.
- Meets growing demand for more environment-specific information from the research, policy and management communities.
- Improves coastal management through greater access to information on historical conditions giving context to the current state of the marine environment.

Key performance indicators

- Uptake and impact of new and expanded marine information products and services by government planning authorities and relevant industry sectors.

PRIORITY AREA 4
A Sustained, Nationally Coordinated Network of Marine Observing Networks

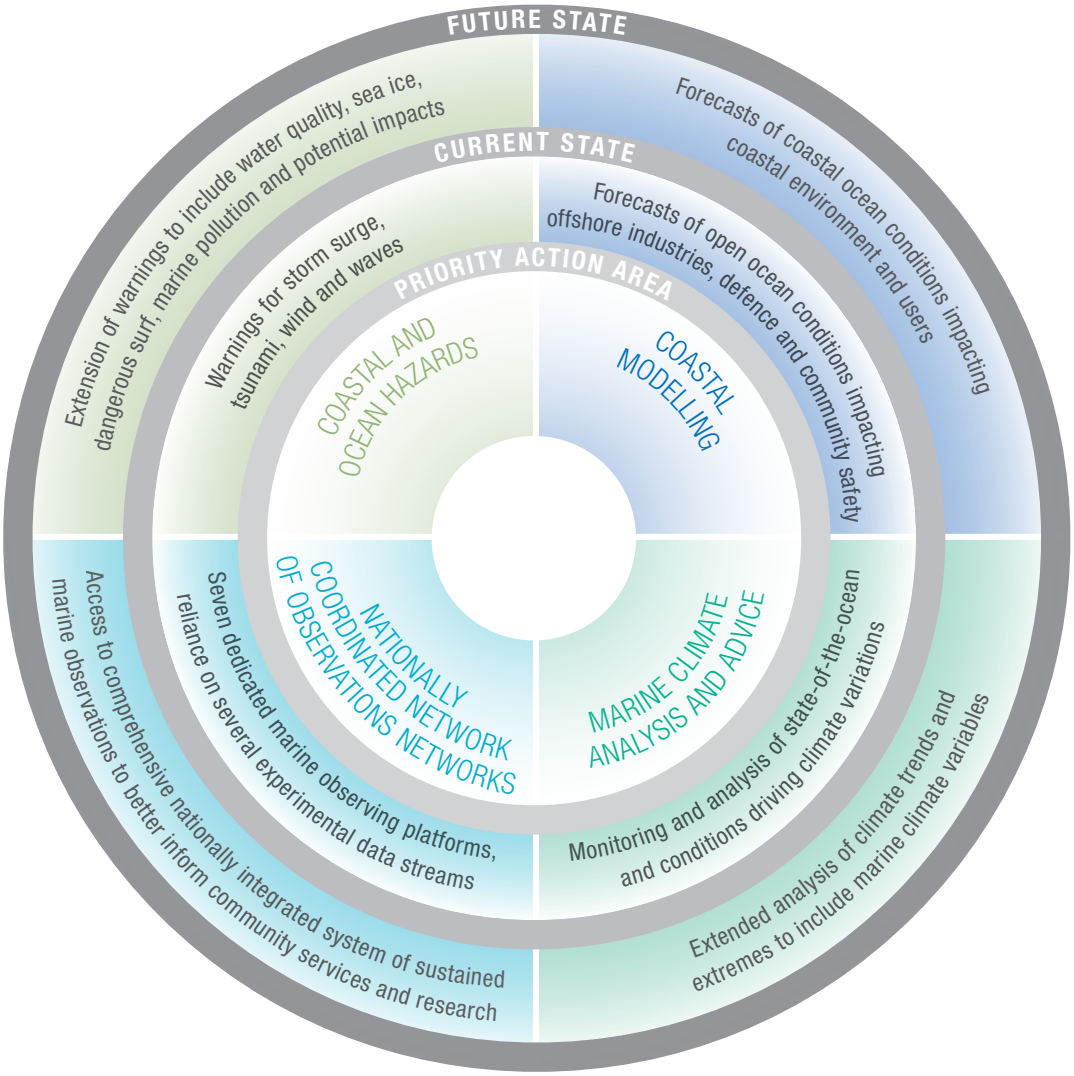
Several organisations invest in, and rely heavily on marine observations in Australian and international waters. To maximise the value of this information and to secure its ongoing availability, we will work with our collaboration partners, notably in the Integrated Marine Observing System towards a sustained and nationally coordinated network of marine observing networks. Our approach will be consistent with leading international efforts, so as to optimise the efficiency and effectiveness of what is a complex and costly, but also vital national endeavour.

Why this is important

- Secures long-term data streams aligned to national marine information needs, providing historical context, situational awareness in times of extreme events and improved forecasting ability.
- Underpins all marine-based research, modelling, analysis and forecast, warning and information services.

Key performance indicators

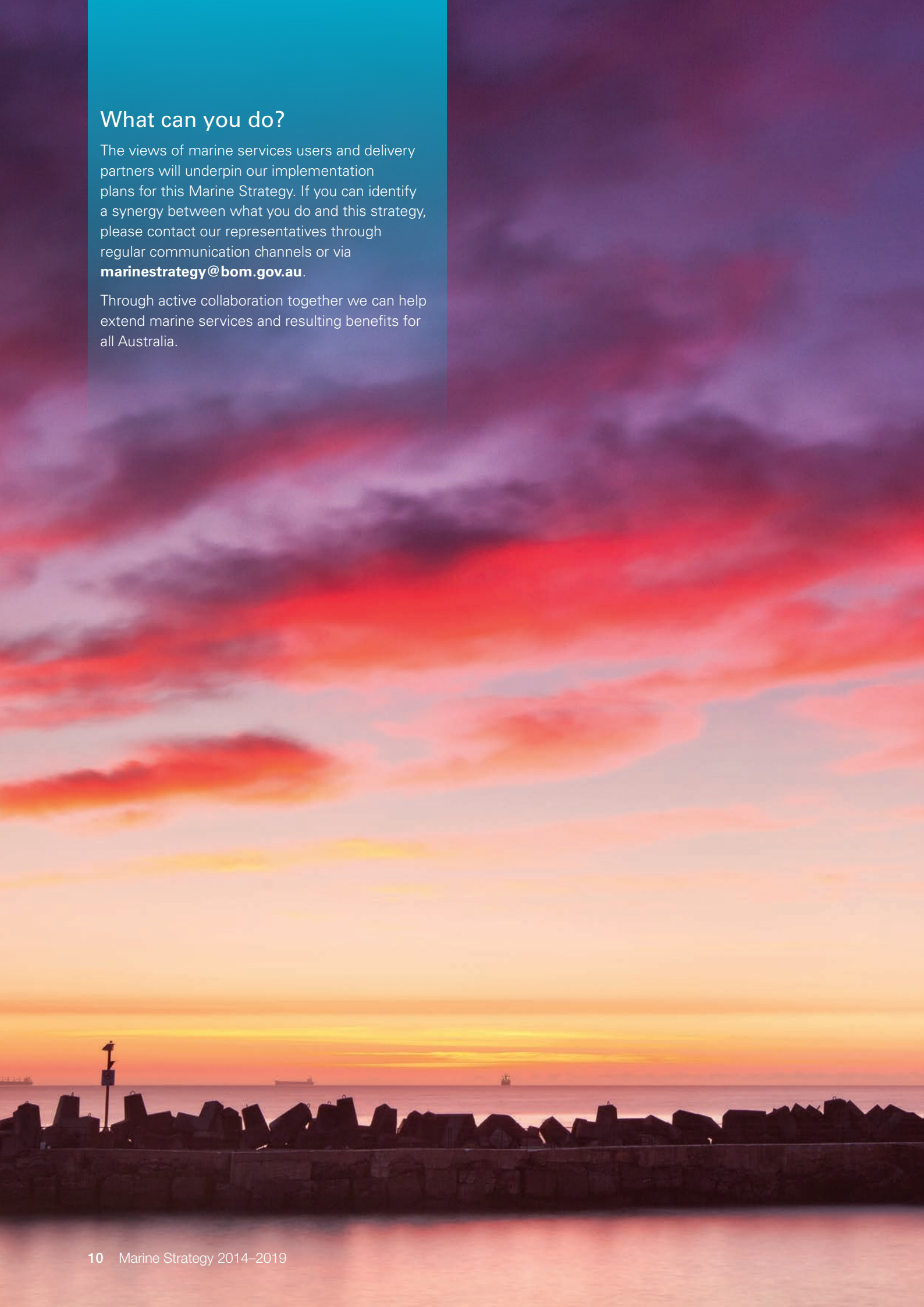
- A sustained, long-term, continuous supply of reliable and high quality marine observations to marine information services.



What can you do?

The views of marine services users and delivery partners will underpin our implementation plans for this Marine Strategy. If you can identify a synergy between what you do and this strategy, please contact our representatives through regular communication channels or via **marinestrategy@bom.gov.au**.

Through active collaboration together we can help extend marine services and resulting benefits for all Australia.



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