



Australian Government



AUSTRALIAN INSTITUTE
OF MARINE SCIENCE

Corporate Plan

2020-2021



AIMS Corporate Plan 2020-21

The Australian Institute of Marine Science is Australia's tropical marine research agency. We provide world-class research that helps governments, industry and the community make informed decisions about the management of Australia's marine estate.

Copyright

© Australian Institute of Marine Science 2020

You are free to copy, adapt, modify, transmit and distribute this material as you wish (but not in any way that suggests that AIMS or the Commonwealth endorses you or any of your services or products).

Published

Australian Institute of Marine Science

Townsville 2020

ABN 789 61616230 | ISSN 2206-7426

This document, along with a range of other information about AIMS, is available online at www.aims.gov.au. Formal enquires should be directed to: AIMS CEO Dr Paul Hardisty.

Design: TBD Design

Cover Image: Anton Rocconi

Contacts

Townsville, Queensland

PMB No. 3, Townsville MC Qld 4810

Telephone: 07 4753 4444

Facsimile: 07 4772 5852

Darwin, Northern Territory

PO Box 41775, Casuarina NT 0811

Telephone: 08 8920 9240

Facsimile: 07 8920 9222

Perth, Western Australia

Indian Ocean Marine Research Centre

University of Western Australia (M096)

35 Stirling Highway, Crawley WA 6009

Telephone: 08 6369 4000

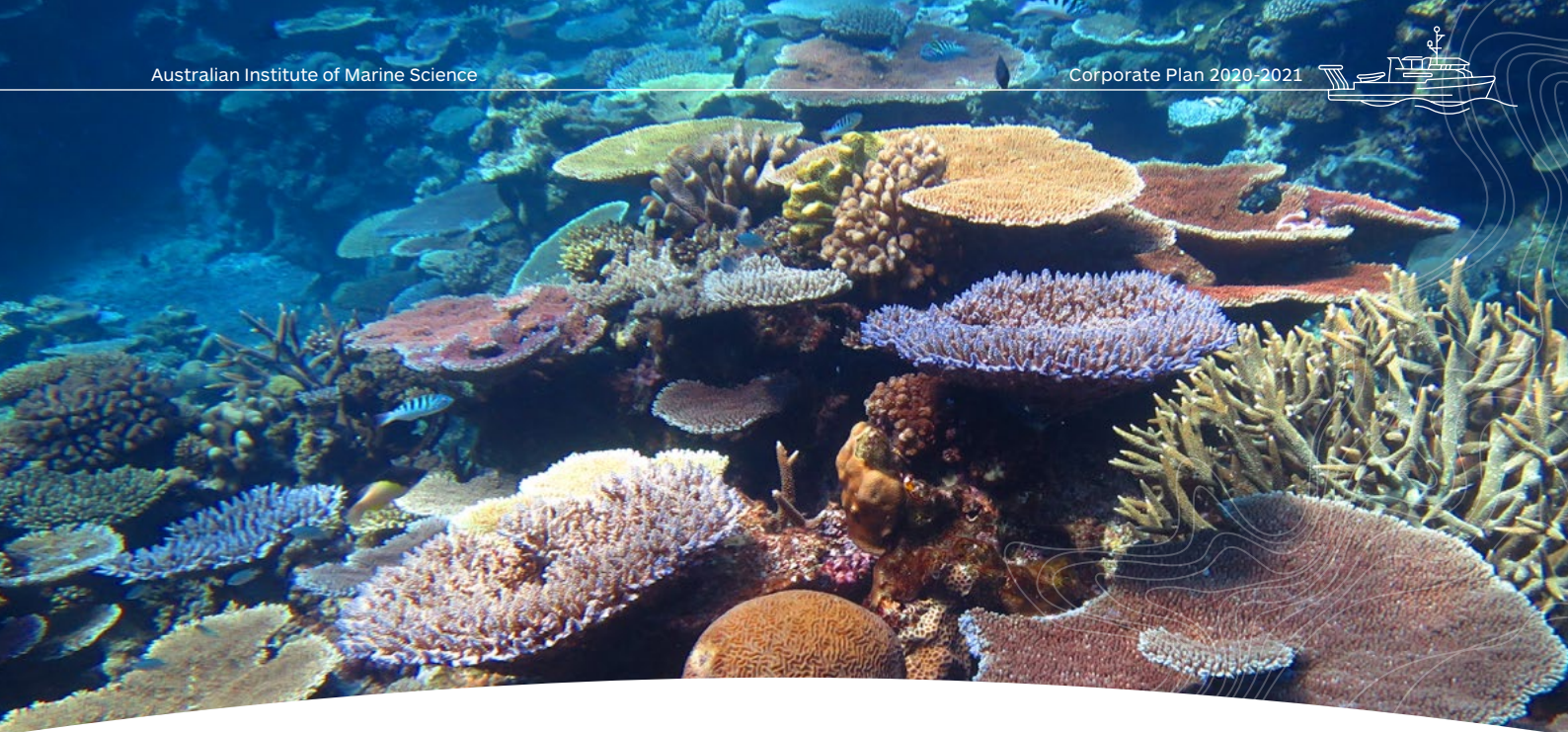
Facsimile: 08 6369 4050

AIMS Liaison Office

Level 6, Industry House

Canberra ACT 2601

Telephone: 02 6243 7182



Opening message

On behalf of the Council of the Australian Institute of Marine Science, we are pleased to present the AIMS 2020–21 Corporate Plan, as required under paragraph 35(1)(b) of the Public Governance, Performance and Accountability Act 2013. This Plan is prepared for 2020–21 and covers the five years from 2020–21 through to 2024–25, as per s. 16E(1) of the PGPA Rule 2014 and the Corporate Plan for Commonwealth Entities: Resource Management Guide No. 132.

Australia is a marine nation. Our marine estate is the third largest on Earth, with an exclusive economic zone of 10 million square kilometres. This massive area is home to some of the most diverse and iconic marine ecosystems and species on the planet. Eighty-five per cent of Australians live on or near the coast, and the oceans have a special place in our national psyche. Our blue economy, which includes tourism, the offshore oil and gas sectors, fishing and aquaculture, contributes almost \$70 billion a year to the nation's prosperity and supports 393,000 direct and indirect jobs.¹

The AIMS Index of Marine Industry 2018 identifies ocean resources as being one of the top 25 future growth sectors in the Australian economy, predicting growth forecasts of 4.4 per cent per annum.¹ It is unclear how the effects of the COVID-19 pandemic will impact this contribution. However, it is certain that the blue economy, through industries such as tourism, oil and gas, and fisheries, will be a major contributor to Australia's economic recovery following COVID-19. Given the size and importance of the marine industries, it is important that marine research continues to unlock the knowledge and understanding required to ensure sustainable use of our marine resources into the future.

AIMS' research plays a crucial role in supporting government, industry and all who value and derive benefit from our marine estate to realise the opportunities and manage the challenges associated with its sustainable growth. By enabling evidence-based decisions by the public and private sectors and providing trusted advice to the community at large about the state of our unique tropical marine ecosystems, we help safeguard the marine estate as a significant and growing source of wealth for all Australians.

Managing a healthy blue economy is not just about protecting species and habitats. It is also about maintaining nature's capacity to deliver goods, services and livelihoods needed by the community. The AIMS Strategy 2025 outlines how our key research and development priorities that support Australia's blue economy and contribute to national prosperity, while improving tropical marine health and protecting coral reefs and other ecosystems from climate change.

¹ <https://www.aims.gov.au/aims-index-of-marine-industry>



COVID-19 has had unprecedented international and national impacts and has disrupted the business of AIMS. The longer-term impact of the pandemic on AIMS, its science and its finances is unclear. However, we do know that in the short term many of our traditional sources of external revenue – particularly from the industry sector – have been heavily affected, and we expect a significant shortfall in external revenue as a result. AIMS' response is to maintain the excellent research that has become our hallmark while seeking to position ourselves to rebuild external revenue in the future.

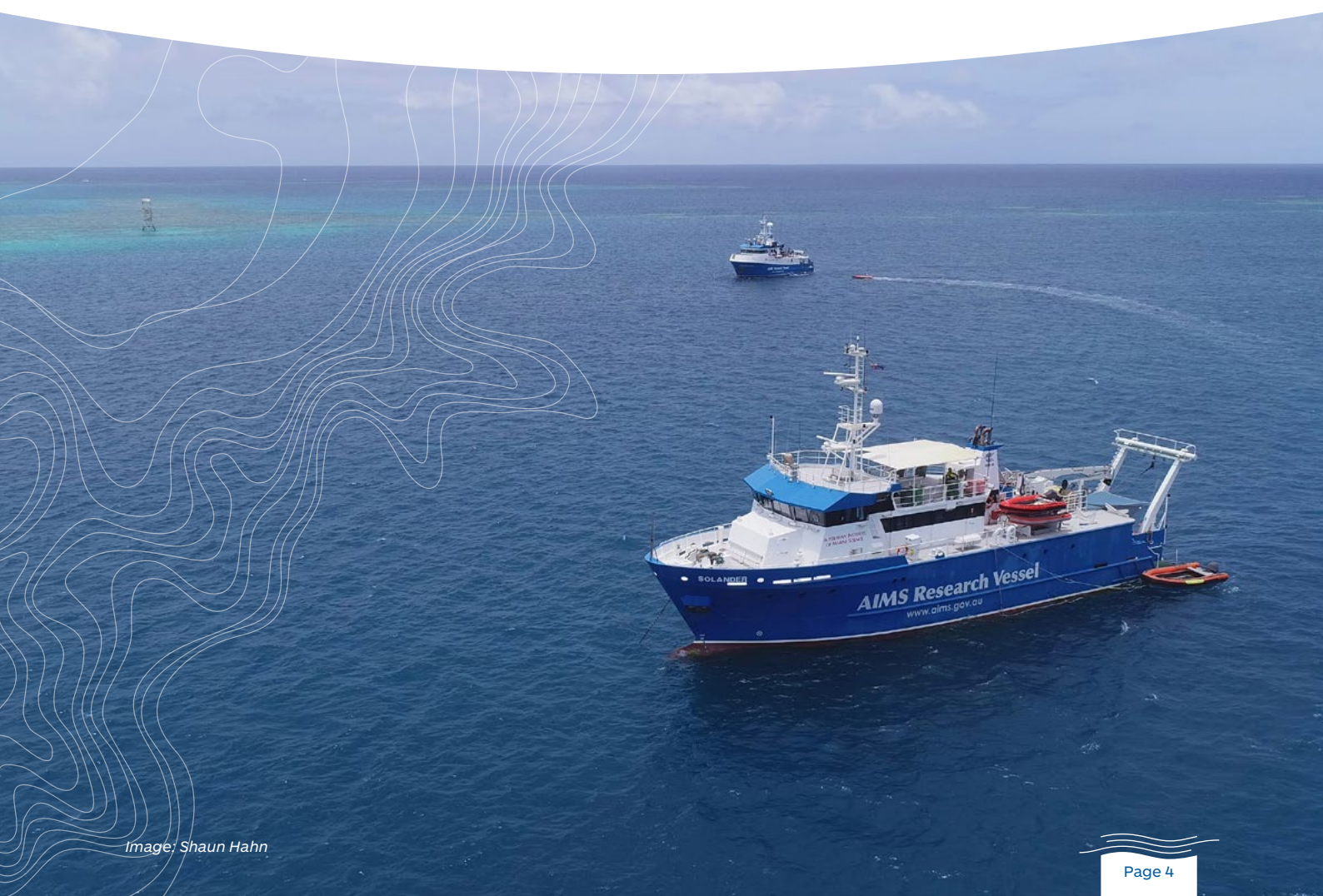
This Corporate Plan outlines how we will deliver on the long-term targets set out in the AIMS Strategy 2025. The Plan focuses on maximising and quantifying the environmental, economic and social benefits that AIMS delivers. Three major areas of focus over the next five years will be:

- reef restoration and adaptation
- embedding new technologies and the latest data science into our core capabilities to transform the way we undertake marine science
- strengthening our Indigenous partnerships to bring together traditional Indigenous knowledge and contemporary science to create new insights into the management of our marine systems.

Our research will continue to deliver the evidence that allows stakeholders to make informed decisions and meet regulatory requirements while we focus on developing real-world solutions to the threats and opportunities within Australia's marine estate.

AIMS Council

The Council (as at 31 August 2020) comprises the Hon. Penelope Wensley AC (Chairman), Dr Thomas Barlow, Professor Sandra Harding AO (JCU Representative), Dr Paul Hardisty (AIMS CEO), Ms Anna Matysek, Ms Jeanette Roberts and Professor Erika Techera.





Contents

Opening message	3	Research planning	27
AIMS Council	4	Research priorities	27
Corporate structure	6	Decision criteria	30
Purpose	6	Excellence and assurance	30
Mission	6	Engagement and communication	31
Strategic objectives	7	Performance measurement	32
Values and behaviours	8	Corporate capability	36
Delivering impact	9	Health, safety and the environment	36
Operating environment	10	Financial	36
Regulatory factors	10	Operating result forecast	38
Meeting expectations	10	Capital investment	38
Marine science priorities	10	Staff	39
The impacts and uncertainty created by COVID-19	12	Research partnerships	40
Intervening to help build reef resilience	13	Risk management	41
Key relationships with government	14	Risk culture	42
Industry partnerships	15	Risk summary	43
Traditional owners	17	Infrastructure	45
Not-for-profit sector	18	The SeaSim	45
Supporting the blue economy	19	The AIMS research fleet	45
Biodiversity, conservation and ecosystem health	19	Systems and processes	46
Urban coastal environments	20	Intellectual assets	46
Climate variability and change	20	Technology development	47
Research environment	21		
Reef Trust partnership	21		
Geographic scope	21		
Scientific scope	22		
Collaboration	23		
Expanding scope and new opportunities	23		
Implementing strategy	25		



Corporate structure

The Australian Institute of Marine Science is a corporate Commonwealth entity established by the Australian Institute of Marine Science Act 1972 (AIMS Act).

AIMS is accountable to the Minister for Industry, Science and Technology and is governed by a Council that reports to the Minister. The Council, which meets quarterly, sets our strategic directions and oversees management of the Institute. The CEO is responsible for the day-to-day operations of the Institute.

AIMS' enabling legislation is the Australian Institute of Marine Science Act 1972 (AIMS Act) and the Public Governance, Performance and Accountability Act 2013 (PGPA Act).

Purpose

Mission

To provide the research and knowledge
of Australia's tropical marine estate
required to support growth in its
sustainable use, effective environmental
management and protection of its
unique ecosystems.





Strategic objectives

AIMS strives to achieve three **key impacts** for the nation, measured by **two impact targets** (Table 1). These impacts are detailed in the AIMS Strategy 2025 and the Portfolio Budget Statements 2019–20. Our research portfolio is encapsulated in **nine research outcomes** (Table 2).

Table 1: Our key impacts and targets

Key impacts	Impact Targets
Improve the health and resilience of marine and coastal ecosystems across northern Australia	Achieve at least \$100 million per annum in environmental, social and economic net benefits for tropical Australia Drive net improvement in the health of marine ecosystems in northern Australia
Create economic, social and environmental net benefits for marine industries and coastal communities	
Protect coral reefs and other tropical marine environments from the effects of climate change	

Table 2: Our desired research outcomes

Research outcomes		
Comprehensive baseline, status and trends reporting systems for tropical marine ecosystems	Efficient, cost-effective delivery of information through the application of innovative, autonomous and automated marine observing technologies and assessment methods	Recovery of key threatened and endangered marine species achieved through effective conservation and management of critical habitats and populations
Enhanced management of tropical marine ecosystems informed by regional models of environmental condition and function	Improved health of tropical marine ecosystems through the development of effective solutions for the management of local, regional and cumulative pressures	Improved forecasting ability of future coral reef status based on information on the scope and rates of recovery, acclimatisation and adaptation of coral reef taxa to climate change
New tools for coral reef restoration that enhance resistance and resilience of key coral reef taxa to environmental change, particularly climate change	Enhanced understanding of tropical marine ecosystems among industry, government and the public delivered through improved data analysis workflows and knowledge delivery systems	Strengthened management and policies delivered through the development of structured decision support tools that link risk, monitoring, modelling and adaptive management



Figure 1: How we work



Care for ourselves
and others in all
that we do



Together we
create impact



Treat everyone with
dignity, value diversity,
support others



Energy that
inspires
excellence



Always transparent
ethical and
objective



Vision and
creativity to solve
big challenges



Minimise our
footprint

Values and behaviours

AIMS has a set of values for achieving our mission and improving our stakeholders' experience (see Figure 1). These values inspire our employees' best efforts and guide their actions. They reinforce our role as a provider of impartial, trusted and authoritative advice on the opportunities and challenges facing Australia's marine estate.



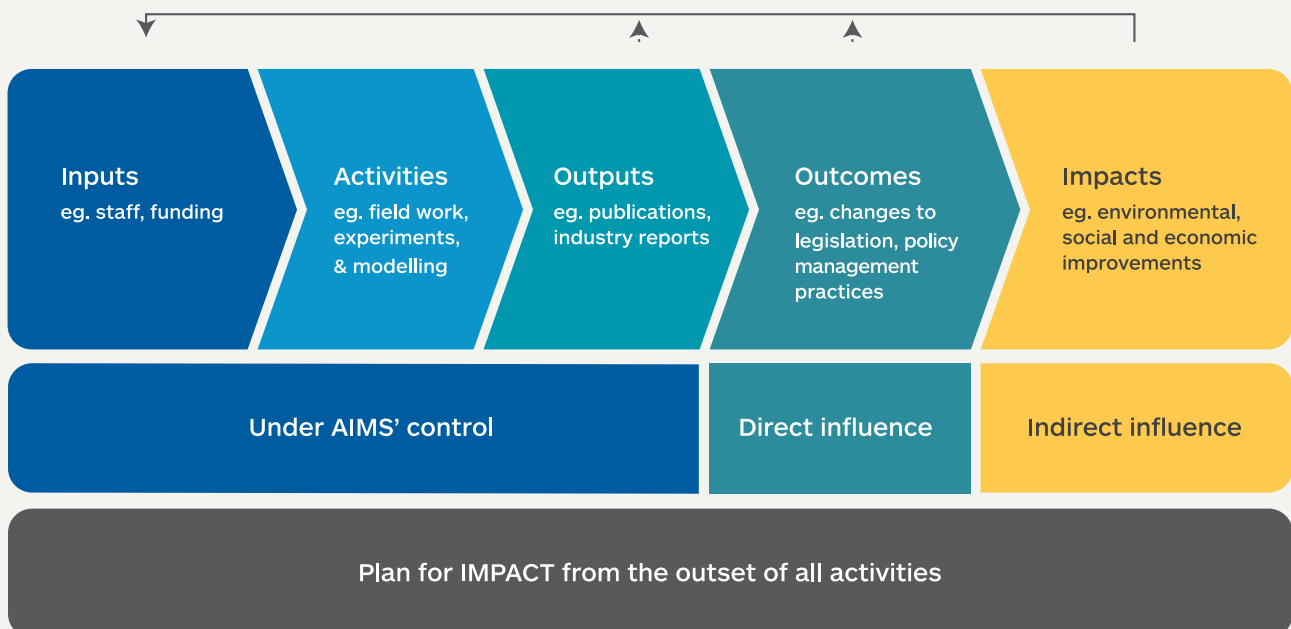


Delivering impact

Everything we do is about improving outcomes and delivering benefits for government and the community. Measuring our impact is fundamental to this. Figure 2 shows how we apply our impact framework. Our measures align with our strategic objectives and, by extension, with our purpose – to contribute to the economic and environmental wellbeing of Australians by conducting research into the tropical marine estate.

While the full impacts of our research become apparent only over time, we aim to ensure positive impact for people, industries and ecosystems. Understanding and measuring these benefits requires us to remain engaged with our partners long after our research outputs have been delivered. This, in turn, enables us to understand better the future needs of government, industry and the wider community. We describe our impact through stories of the value we bring. We have also developed methods to estimate our impact in triple bottom line dollar value terms. This process has been applied only to a small number of our projects but has already demonstrated a net benefit to Australia of between \$16 million and \$36 million a year. The method will be used progressively over the coming years to understand the full extent of the financial impact that we achieve across more of our projects.

Figure 2: How we apply our impact framework





Operating environment

The marine research environment is complex, globally connected and affected by climate change and emerging technologies.

Regulatory factors

In addition to obligations under AIMS' enabling legislation, its operations are governed by a range of other Australian Government, state and territory legislation including:

- health, safety and environment obligations under the Work Health and Safety Act 2011 (Cwlth)
- environmental obligations under the Environmental Protection and Biodiversity Conservation Act 1999 (Cwlth), the Great Barrier Reef Marine Park Act 1975 (Cwlth) and the Fisheries Act 1994 (Qld)
- information services obligations under the Archives Act 1983 (Cwlth) and the Freedom of Information Act 1982 (Cwlth).

Our primary obligations under the AIMS Act are:

- to carry out research and development (R&D) in relation to marine science and marine technology
- to encourage and facilitate the non-commercial and commercial application of the results arising from such activities

We provide fundamental knowledge of the marine environment that enables regulators and marine industries to make informed decisions and meet their regulatory requirements.

Meeting expectations

Regulators and managers that rely on AIMS' information, services and tools include:

- National Offshore Petroleum Safety and Environmental Management Authority
- Australian Maritime Safety Authority
- Great Barrier Reef Marine Park Authority
- Western Australian Environmental Protection Authority
- Queensland Department of Environment and Science
- Northern Territory Government

Marine science priorities

Science and research are central to driving innovation and technology development and for enhancing productivity and ensuring a strong future for Australian industry.

AIMS has a strategy in place to align with and support Australia's marine science priorities. Building on the AIMS Strategy 2025, this Corporate Plan ensures resources are allocated to research priorities in order to optimise performance.

AIMS consults on an ongoing basis with its key stakeholders in government, industry and the community. It also conducts regular surveys of the marine science and research needs of a broad range of Australian and international organisations. These inform ongoing review of Strategy 2025 and updates of our research priorities.



The following table provides information on guidance documents and how we approach activities that deliver outcomes for government, industry and community.

Table 3: Guidance documents for delivering outcomes to government, industry and community

Guidance documents	Requirement
Statement of Expectations	As a publicly funded research agency, AIMS is required by its Act to respond to its Portfolio Minister. <i>Our obligations are set out in a Statement of Expectations issued periodically by the Minister.</i>
National science and research priorities	The nine science and research priorities of the Australian Government are: (1) Food; (2) Soil and water (including marine); (3) Transport; (4) Cybersecurity; (5) Energy; (6) Resources; (7) Advanced manufacturing; (8) Environmental change; and (9) Health. <i>Our core capability and research programs contribute strongly to the soil and water, energy, and environmental change priorities.</i>
National science agenda and strategies	We support the Australian Government's National Innovation and Science Agenda, the National Science Statement and the Innovation and Science Australia strategy document – Australia 2030: Prosperity Through Innovation. <i>We particularly focus on fostering a strong national science and research base as the foundation for a competitive Australia.</i>
National Marine Science Plan	AIMS has been a leader and core member of the National Marine Science Committee since its inception and is a strong advocate of the National Plan. <i>From individual member contributions emerges a common perspective with an explicit focus on the blue economy throughout the marine science system.</i>
Sustainable Development Goals (SDGs)	We support the SDGs of the United Nations: (1) No poverty; (2) Zero hunger; (5) Gender equality; (8) Decent work and economic growth; (13) Climate action; and most notably (14) Life below water. <i>Our partnerships deliver breakthrough scientific solutions to support the SDGs and help secure the future of fisheries, and protect ecosystems and wildlife.</i>

The AIMS Strategy 2025 is scheduled for review every three years; the next review is due in 2021, which falls within the scope of this Corporate Plan. Regular reviews ensure our direction remains clearly aligned with stakeholder needs and priorities.





The impacts and uncertainty created by COVID-19

COVID-19, first identified in Wuhan, China, in early December 2019, is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March 2020.

The economic impact associated with the virus is significant. In Australia, it started with disruptions to supply chains to and from China, accelerated with the closing of international borders and reached its peak with the implementation of restrictions on movement and gatherings. While the full economic effects of the virus remain uncertain, it has been estimated that the Australian economy could contract by more than 5 per cent throughout 2020.

The full impact for AIMS remains to be seen. The one certainty is that COVID-19 has not changed our mission, which is to provide the research and knowledge of Australia's tropical marine estate required to support growth in its sustainable use, effective environmental management and protection of its unique ecosystems. At the peak of the COVID-19 crisis in Australia, the world's largest reef system, the Great Barrier Reef, suffered its third mass bleaching in five years. Some southern areas of the reef that escaped major impact during the 2016 and 2017 mass bleaching events have now experienced moderate to severe bleaching. The increase in severity of bleaching places corals under severe stress and can result in a decline in coral cover. The increase in bleaching frequency leaves reefs with less time to recover.

The GBR is an economic powerhouse that contributes approximately \$6.4 billion dollars to the economy each year and supports over 64,000 jobs². Most of these jobs are from tourism activities. It is clear that a healthy reef will be a critical component of Australia's economic recovery. Similarly, the science that AIMS delivers to Australian industry, particularly the resources sector, remains important in the longer term to help drive new developments and support existing operations to assist with economic recovery.

We expect a small increase in our operating expenses in 2020–21 associated with COVID-19. The controls that we have implemented to ensure compliance with government directions and to keep our staff safe not only add additional costs but also reduce our efficiency. For example, we implemented a one person per cabin rule on our large research vessels. This reduced the number of scientists that can undertake fieldwork and thus reduced our overall efficiency. However, we expect that impacts such as these will ease during 2020–21 as broad-scale testing, treatments and even a vaccine become available.

The most significant COVID-19-related impact for AIMS will be with respect to our ability to raise external revenue. It is currently estimated that our external revenue in 2020–21 will be reduced by up to 33 per cent compared with the budget approved by the AIMS Council in December 2019. However, the full extent of the impact remains unknown.

At the time of preparing this Plan, a few of our clients have indicated a desire to progress some planned projects in 2020–21, which we had considered unlikely due to COVID-19. This positive news will alleviate some of the pressure from revenue losses. In addition, AIMS' prudent management of its financial position provides sufficient cash reserves to be able to manage revenue shortfalls in the medium term. This will allow us to retain our capacity – and deliver the marine science that Australia needs – during a period of lower external revenue.

At the onset of the COVID-19 emergency, AIMS activated the Emergency Management Team (EMT) to deal with the immediate effect of the pandemic. After six weeks, the EMT transitioned the ongoing management and forward planning of the COVID situation to the Business Continuity Team (BCT). The BCT will remain active during 2020–21. In addition to managing our immediate COVID-19 situation, the BCT will identify improved practices that have arisen from our COVID-19 response and embed these into the business. Implementation of opportunities identified during this process will commence in 2020–21 and continue in the outyears of this Corporate Plan.

² <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-great-barrier-reef-230617.pdf>



Intervening to help build reef resilience

The Great Barrier Reef is indisputably one of the world's most important natural assets. We work with others to protect and restore the reef, which is under severe pressure from climate change and other stressors. Cumulative impacts include rising sea temperatures, ocean acidification, pollution, declining water quality and outbreaks of the destructive crown-of-thorns starfish (CoTS).

In 2017, the Australian Government funded a \$6 million feasibility study to scope R&D of new technologies to help build reef resilience. Called the Reef Restoration and Adaptation Program (RRAP), the AIMS-led study was delivered by a consortium of partners in December 2019. In April 2020, the Australian Government announced the following findings³:

- potential economic, social and environmental net benefits of intervening successfully on the reef valued at tens of billions of dollars
- full-scale deployment of suitable interventions would be possible in five to 10 years, with large-scale trials possible within two to five years
- significant R&D is needed to prove interventions technically feasible, affordable, safe and acceptable to the public and regulators
- intervention measures will work best in combination and should be designed to work together and reinforce each other over time
- inaction will pose a significant risk which increases with time.

The study also made detailed recommendations for the RRAP R&D program and associated governance framework to deliver progressively the required interventions ready for deployment over a 10-year period. The government announced \$100 million of initial funding to 'harness the best science to implement reef restoration and support reef resilience and adaptation'. This initiative is part of a broader \$443 million package for the GBR provided by government to the Great Barrier Reef Foundation (GBRF). The \$100 million is to be supplemented with R&D provider in-kind and third-party funding, with an overall \$300 million program targeted. The R&D program is to be delivered by a partnership (operating under an unincorporated joint venture) with the GBRF as the principal funder and AIMS as the managing entity.

AIMS' particular expertise in reef science will enable us to play a critical role within this program. The best reef science addressing adaptation and resilience, with a focus on solutions and impact, is expected to be a major research field for AIMS under RRAP over the next five years.

³ <https://www.gbrrestoration.org/investment-case-reports>



Key relationships with government

Australian Government

In response to the Minister's expectations⁴, the Institute's Statement of Intent expresses its commitment to the government's legislated requirements, broad policy framework and key priorities. AIMS fulfills its responsibilities through the delivery of world-class R&D in relation to marine science and marine technology and the provision of impartial and accurate advice to inform decision making.

Great Barrier Reef Marine Park Authority, and Department of Agriculture, Water and the Environment

AIMS provides significant support to the Great Barrier Reef Marine Park Authority and the Department of Agriculture, Water and the Environment, to assist with the implementation of the Reef 2050 Long Term Sustainability Plan (Reef 2050 Plan). This plan protects and conserves the Great Barrier Reef. We monitor, research, report and provide advice on:

- the Reef 2050 Integrated Monitoring and Reporting Program
- tropical water quality and biodiversity research within the National Environmental Science Program (NESP)
- habitats of marine parks (status, dynamics and vulnerability).

National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA)

NOPSEMA regulates occupational health and safety, environmental management and well integrity for all offshore petroleum operations in Commonwealth waters. AIMS engages and works collaboratively with the Authority to provide advice on environmental information needs, including the appropriate scale and scope of environmental baseline studies and impact assessment of substantial oil spills.

Department of Foreign Affairs and Trade, and Department of Industry, Science, Energy and Resources

AIMS works closely with the Department of Foreign Affairs and Trade, and the Department of Industry, Science, Energy and Resources to help advance Australia's trade and investment interests, particularly in marine science. We contribute research and advice on the blue economy, including coral reefs, fisheries and sustainable development. We support the strengthening of Australia's bilateral relations and regional and international cooperation through our contribution to selected projects and the global exchange of information and knowledge.

State and territory governments

AIMS undertakes monitoring, research and reporting and provides advice to state and territory governments addressing the information needs of the Reef 2050 Long-Term Sustainability Plan, the impacts of the development and operations of specific ports and the impacts of contaminants introduced into marine systems through shipping, processing facilities and other sources adjacent to coastal ecosystems. Consistent with our focus on tropical waters, we work most closely with the governments of Queensland, Western Australia and Northern Territory.

⁴ <https://www.aims.gov.au/docs/about/corporate/corporate-profile-governance/statement-of-expectations>



Industry partnerships

Many industries in Australia and around the world have been severely affected by COVID-19. The impact on oil, gas and chemicals companies is particularly severe, with some of the most challenging market conditions ever experienced⁵. Record low oil prices have resulted in project delays, deferrals and significant changes to operations. This situation has been made worse by a global collapse in demand and COVID-19 related business and travel shutdowns⁶. Similarly, the tourism and fisheries industries have been heavily affected by the closing of international and state borders and strict quarantine measures introduced by the Australian Government and state governments.

The right policy settings, supported by evidence-based research from AIMS and other scientific bodies, will help to stabilise these industries amid these conditions, allow recovery and ultimately facilitate the growth and investment that will stimulate local economies, create new job opportunities and generate government revenue. This Corporate Plan shows how AIMS will work with its industry partners over the next five years to respond to the challenges posed by COVID-19 while working to maintain healthy coastal and ocean resources.

Offshore oil and gas (and other resources) sector

The offshore oil and gas industry underpins about 80,000 direct and indirect jobs with hundreds of thousands of Australian jobs relying on the reliable, affordable and sustainable supply of oil and gas. AIMS provides essential research that allows this sustainable development of energy, minerals and other valuable resources in and under Australia's oceans. The offshore oil and gas sector is now both a major end user of our research and an important contributor to its strategic directions.

This is an evolving relationship in which AIMS has played a progressively value-adding role. We work with the sector to provide timely and relevant information on environmental status and risk, baseline habitat mapping, monitoring and research to underpin project proposals and environmental management plans required by regulators. Targeted studies investigate the impacts of known and emerging contaminants introduced into marine systems through shipping, processing facilities and other sources.

Ports and maritime industries

Around 98 per cent of Australia's trade travels by sea and economic growth is the driving force for the port sector. With the development of oil and gas and the expansion of the iron ore industry in Western Australia, the coal industry in Queensland and naval and export facilities in Darwin, AIMS has become an important source of advice on sustainable port development. Dredging for these growing facilities is likely to affect local marine ecosystems, increasing turbidity and reducing benthic light availability. AIMS works with the ports and dredging industry and state and federal regulators to fill knowledge gaps related to dredging across Australia's tropical marine estate, helping them to understand and minimise the risk of damage to marine ecosystems.

For example, AIMS' scientific information assured environmental approval for maintenance dredging and enabled Darwin Port to continue to facilitate commerce in northern Australia. Without AIMS' real-time monitoring, the dredge would not have been able to proceed. AIMS' scientists have also contributed scientific expertise, practical capabilities and technological solutions to Gladstone Harbour on the central Queensland coast. Our research makes it easier for industry to make decisions on development projects, port expansions, dredging and other investments that pose environmental risks.

Tourism, commercial and recreational fisheries

The AIMS Index of Marine Industry 2018 shows tourism made a direct contribution of \$36.2 billion to the nation's economy in 2015-16 followed by marine oil and gas sector activity which produced \$22.3 billion. This was the first time that tourism value-add exceeded the oil and gas sector. Tourism activity associated with the Great Barrier

⁵ <https://www.appea.com.au/wp-content/uploads/2020/05/APPEA-ECONOMIC-AGENDA.pdf>

⁶ <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/covid-19/covid-19-s-impact-on-oil--gas--and-chemical-organizations.html>



Reef generated \$5.7 billion⁷ and supported most of the 64,000 jobs depending on the reef. Considering this, AIMS' research is critical to supporting economic activity and jobs in the region. It provides opportunities for coastal communities to improve their livelihoods and protect their way of life.

AIMS is a key provider of research to develop solutions that will help the reef survive the pressures of climate change and other environmental impacts. We conduct targeted projects focused on monitoring marine health, controlling the spread of the predatory crown-of-thorns starfish and providing strategic advice for managing the marine estate. This supports viable tourism and fishing industries for the future, as well as contributing powerfully to the protection of the natural asset that is a key element of Australia's global brand.

Coral reef ecosystems support important commercial, recreational and subsistence fishery resources in northern Australia. Fishing also plays a central social and cultural role in many island and coastal communities, where it is often a critical source of food and income. AIMS compares fish diversity and abundance across tropical Australia, through the combination of its east coast surveys and its comprehensive assessment of coastal, nearshore, oceanic atolls and shoals from Ningaloo to Darwin. Our findings will help policy makers, regulators and fishers determine how much catch to take and how much to leave behind in order for the reefs to remain productive in the face of increasing stress from climate change and other pressures.

⁷ <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-great-barrier-reef-230617.pdf>



Traditional owners

AIMS is working to build stronger partnerships with Traditional Owner groups and individuals across northern Australia to achieve a strong and productive shared future in marine science and knowledge exchange. The goal is to protect and manage the sea country interests of the Traditional Owners, by developing a better understanding of each other and our marine environments.

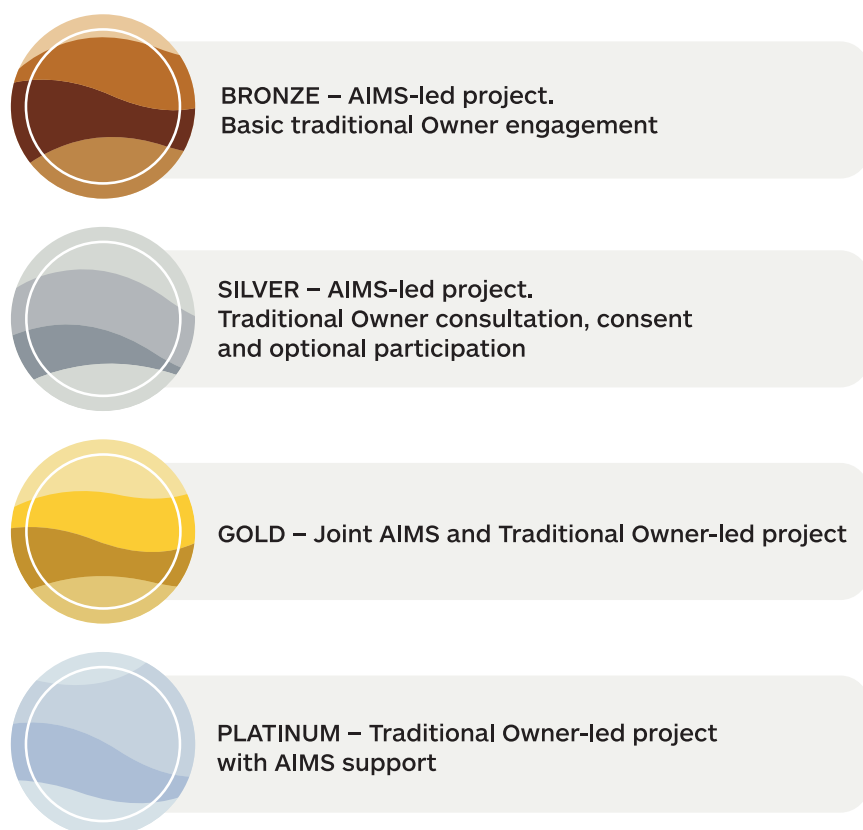
AIMS, through its collaboration with Traditional Owners over many years, has come to recognise that greater research impact and value can be created (and new insights gained) if our science can be blended with Indigenous knowledge, interests, capacity and capability. These projects also support the aspirations of Traditional Owners for greater capacity and empowerment in sea country monitoring, research and decision making, and science partnering.

We have further developed our approach to engagement, leading to science partnerships that deliver mutual benefit under the AIMS Indigenous Partnerships Plan. The key purpose of this plan is to facilitate meaningful partnerships with Traditional Owners of sea country in northern Australia to benefit both Indigenous and non-Indigenous Australians.

As part of the plan, a four-tiered system has been developed to define the level of Traditional Owner engagement for our projects that involve working in sea country (see Figure 3). Over the life of this Corporate Plan, we will implement fully the Indigenous Partnerships Plan, further strengthen our relationships with Traditional Owners and increase the proportion of our projects achieving higher rating status.

AIMS commenced its first gold status project in 2019–20, a five-year program of work with significant Traditional Owner participation, knowledge exchange and training outcomes that informs RRAP projects, and planning and management of sea country for the Woppaburra Traditional Owners of the study area.

Figure 3: Levels of Traditional Owner engagement for projects





Not-for-profit sector

AIMS works with the non-profit sector, including the Great Barrier Reef Foundation (GBRF), and several international philanthropic organisations such as Vulcan Inc. and the Bertarelli Foundation. The GBRF is a leading charity that brings together business, science, government and philanthropy for the benefit of the reef. AIMS works in close association with the Foundation in a number of forums and advisory bodies, including the Reef 2050 Plan Advisory Committee, and has a representative on the foundation's International Science Advisory Panel.

Seattle-based Vulcan Inc. is the engine behind philanthropist and Microsoft co-founder Paul G. Allen's network of organisations and initiatives working to catalyse scientific and technological breakthroughs. AIMS' contribution to the Global FinPrint project and our pioneering work into human-assisted evolution of corals are examples of shared initiatives.

The Bertarelli Foundation promotes global marine conservation and science. The Bertarelli Programme in Marine Science is a collaborative program bringing together scientists from around the world to work in the British Indian Ocean Territory (BIOT) on a range of issues. For AIMS, the partnership has enabled greater integration of our Australian-based research with the Indian Ocean rim states.

The philanthropic sector is fast evolving and we continue to explore and develop opportunities to work with philanthropic organisations with a focus on marine science or issues that affect the health and status of the marine environment. As a result of COVID-19, it is expected that philanthropic investment could contract or become more competitive in the future. Despite this, we expect growth in external revenue from this sector over the next five years, particularly via the GBRF and the Reef Trust Partnership.⁸

⁸ <https://www.barrierreef.org/what-we-do/reef-trust-partnership>





Supporting the blue economy

Originally commissioned and developed for AIMS by Deloitte in 2008, the AIMS Index of Marine Industry⁹ assesses the contribution of Australia's blue economy to the nation's economic bottom line. It shows the value of Australia's blue economy has more than doubled in the past 10 years to a total value of \$68.1 billion.

The 2018 Index identified ocean resources as being one of the top 25 future growth sectors in the Australian economy, predicting growth forecasts of 4.4 per cent per annum. The industries making up this sector include tourism, ports, transport, shipbuilding, mining and offshore oil and gas, aquaculture and commercial and recreational fisheries. We have a responsibility to assist the sustainable development of this highly valuable sector.

In line with the National Marine Science Plan¹⁰, AIMS and its collaborators continue to focus on seeking solutions to three of the seven 'grand challenges' identified in the Plan:

- biodiversity, conservation and ecosystem health
- urban coastal environments
- climate variability and change.

Biodiversity, conservation and ecosystem health

Human activities and climate change threaten marine diversity, the natural functioning of marine ecosystems and their sustainable use by present and future generations. Marine diversity is challenged by multiple pressures that are rarely appreciated until their cumulative impact becomes evident. Understanding the cumulative impacts of these multiple stressors on warming marine ecosystems is drawn from AIMS' long term and large-scale monitoring of the Reef for more than 35 years. This knowledge has become increasingly important for the development of effective responses to conserve biodiversity and ecosystem health. Long-term ecological research and monitoring is also required to inform marine managers about the status and trends of key assets and values in ecosystems under management.

⁹ <https://www.aims.gov.au/aims-index-of-marine-industry>

¹⁰ <http://www.marinescience.net.au/national-marine-science-plan/>



Urban coastal environments

More than 85 per cent of Australians live within 50 kilometres of the coast. As the location of most of our transport, commercial, residential and defence infrastructure, this urban coastal environment is critical to Australia's strategic and economic security and fulfils important cultural, recreational and aesthetic needs. In addition, it has intrinsic biological diversity values and provides essential ecosystem functions such as primary productivity, nutrient cycling and water filtration. In a period of pronounced economic development with a focus on resource extraction and infrastructure development – much of it centred on coastal hubs – the challenge for coastal managers and policy makers is to balance these multiple competing uses and their impacts. AIMS' scientific knowledge is fundamental to informing actions required to protect and conserve the marine estate.

Climate variability and change

Climate variability and change affects all aspects of society and both the marine and terrestrial environment. Heat, water, carbon and nutrients are the fundamental elements of the climate system and the ocean is the dominant reservoir for all four constituents. To understand the climate system and its impact on society and the natural environment, we must be able to observe and model its oceanic branch including the storage and transport of heat, fresh water, nutrients and carbon in the ocean, and their exchange to the atmosphere and marine and terrestrial ecosystems, at global, regional and local scales.

The next update of the AIMS Index of Marine Industry is planned for release in early 2021. The impact of COVID-19 on the blue economy remains unknown. Nor will the effect of COVID-19 be evident in this latest update that provides a hindcast valuation for 2017–18. However, it will provide an important baseline against which the effects of COVID-19 can be quantified. Based on previous reports and the traditional contribution of the tourism and oil and gas industries to our economy, the blue economy is expected to play a major role in Australia's economic recovery, meaning that AIMS' work to support marine industries is more important than ever.





Research environment

Reef Trust partnership

In 2018, the Australian Government announced the largest ever single investment in reef protection. This included a \$443.3 million partnership with the GBRF for delivery of outcomes over the following six years (inclusive of 2023–24). In line with the government's Reef 2050 Long Term Sustainability Plan for the Great Barrier Reef, the overarching framework for protecting and managing the reef to 2050, we will put our efforts into:

- improving management of the Great Barrier Reef World Heritage Area and relevant activities in adjacent catchments
- protecting species, habitats and Indigenous values
- managing key threats, including poor water quality and CoTS outbreaks.

This partnership significantly changed the research environment compared with previous years, making the GBRF a significant stakeholder of the work we undertake.

The investment included \$100 million to conduct and implement science for the Reef Restoration and Adaptation Program (RRAP), building on the feasibility study led by AIMS with CSIRO, James Cook University, the University of Queensland, Queensland University of Technology and the GBRF.

A further \$40 million from the Reef Trust Partnership (RTP) has been allocated to complement activities implemented under the Reef Integrated Monitoring and Reporting Program (RIMReP), including eReefs and the Paddock to Reef Integrated Monitoring, Modelling and Reporting Program. RIMReP aims to provide an up-to-date understanding of the Great Barrier Reef, the values and processes that support it and the threats that affect it. This knowledge is fundamental to informing actions required to protect and improve the condition of the reef, and to drive resilience-based management. Further, RIMReP will ensure reporting is robust and investment outcomes are measurable against targets set out in the Reef 2050 Long-Term Sustainability Plan. AIMS is a core partner in RIMReP and is represented on the RIMReP Executive Committee and the RIMReP Operations Committee.

The RTP has also provided \$9.8 million for R&D into new at-scale methods of controlling the Crown of Thorns Starfish (CoTS). AIMS is a core member of this effort and is represented on both the Scientific Steering Committee and the Technical Team leading the feasibility study to assess opportunities for innovations in CoTS management.

During the life of this Plan, AIMS will continue to be a trusted adviser, responding to stakeholder needs, delivering science that underpins practical solutions and helping to shape the future direction of marine science in the GBR region.

Geographic scope

AIMS operates across the tropical north of Australia, from the North West Cape in Western Australia to Gladstone in Queensland. This geographic specialisation is a result of focusing efforts on key tropical marine issues and opportunities.

We recognise the competitive advantage gained from the geographic location of our various centres – our Townsville headquarters is adjacent to the Great Barrier Reef; Perth is the corporate hub for marine-based industries that operate on the Western Australian coast and Timor Sea; and Darwin is close to neighbouring countries and development activities in the Arafura and Timor seas. It is also the centre for many Traditional Owner agencies and organisations operating across northern Australia.

In addition, AIMS extends its geographic reach internationally through long-established agreements and mature partnership and collaborative arrangements with other international marine science institutes, universities, research organisations and government agencies. These strategic relationships enable AIMS to augment its own capability to address national priorities and to enhance Australia's contribution to tackling global challenges. In recent years, AIMS has built on strong relationships with the Commonwealth Departments of Industry, Science, Energy and Resources, Agriculture, Water and the Environment and, in particular, Foreign Affairs and Trade to deliver through international frameworks such as the International Coral Reef Initiative, the Global Coral Reef



Monitoring Network and the Commonwealth Blue Charter, coral reef monitoring, management, conservation and restoration solutions that are mutually beneficial for both Australia and our international partners. Furthermore, AIMS' active engagement provides opportunities to grow external investment in research that addresses priority marine issues that affect both Australia and our international neighbours and partners.

Scientific scope

Supporting our stakeholders' needs is a primary focus of AIMS. Our expertise in molecular and microbiology, mathematical modelling, ocean monitoring (from microbes to regional ecosystems), marine noise, and decision support capability align with these evolving needs – from the ocean to the laboratory, from data analysis and models, to the ultimate development of products for direct use by end users. Examples of our expertise in field and experimental research include:



Long-term ocean monitoring



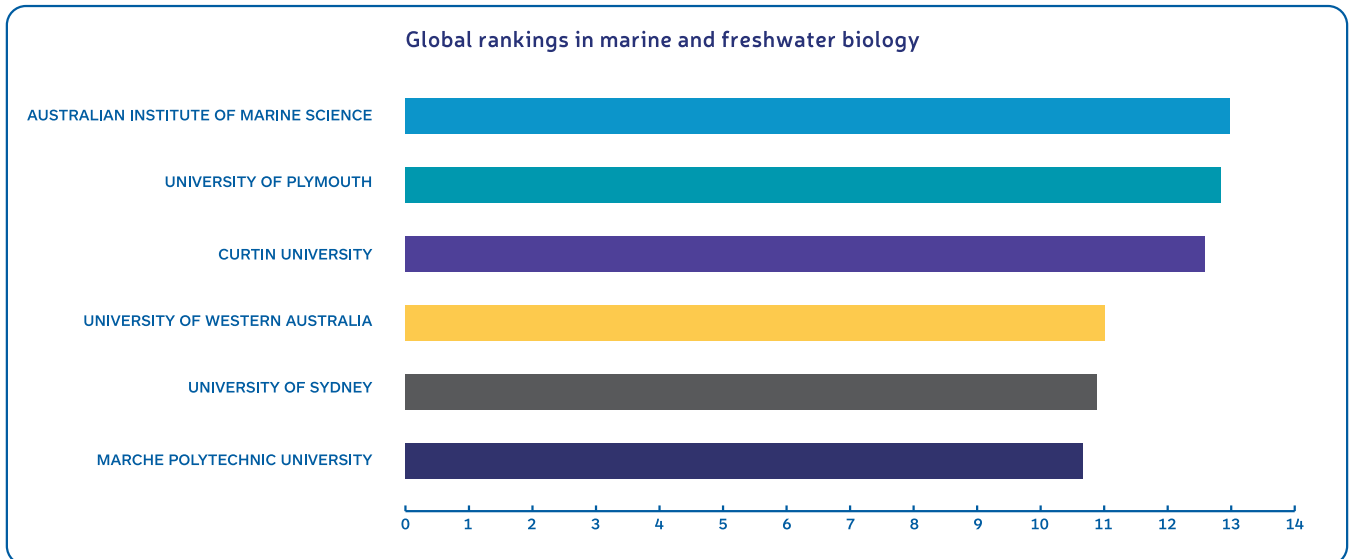
Risk assessments of pollution



Predictions of ecosystem function

AIMS' success is demonstrated by our consistently high position in relevant international rankings based on science publication metrics. AIMS has maintained its position as one of the three top-ranked research organisations in the world in the field of marine and freshwater biology (Clarivate Analytics InCites, Figure 4). We are committed to excellence in science and will strive to maintain this ranking throughout the Corporate Plan period.

Figure 4: Top six organisations globally in the field of marine and freshwater biology ranked by citation impact, 2015-2019 (InCites June 2020).





Collaboration

The opportunities and challenges facing our marine systems are so complex that no single research organisation can provide all the scientific capability and capacity required. AIMS plays a leadership role where we can and bring partners into projects and programs as required. In other contexts, we provide specialised capability for projects led by others.

Organisations and centres that have complementary capability in tropical marine science include:

- Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
- Australian Nuclear Science and Technology Organisation (ANSTO)
- Australian Research Council centres of excellence (e.g. Coral Reef Studies; Mathematical and Statistical Frontiers)
- CSIRO
- Geoscience Australia
- Universities (including James Cook University, Australian National University, the University of Melbourne and Curtin University, Charles Darwin University, The University of Western Australia and Griffith University)
- state-based agencies (e.g. departments of environment, primary industries and fisheries, and natural resource management agencies).

Over the next five years, our key national research partners are expected to continue to include the CSIRO, Charles Darwin University, James Cook University, Queensland University of Technology, The University of Queensland, The University of Western Australia, Curtin University and University of Tasmania.

Internationally, AIMS has formal research agreements with a number of universities and research institutes including Institute of Oceanology, Chinese Academy of Sciences (China), the National Oceanic and Atmospheric Administration (US), King Abdullah University of Science and Technology (Saudi Arabia), Institut Océanographique (Monaco), the Okinawa Institute of Science and Technology (Japan), and the University of South Pacific (Fiji).

Expanding scope and new opportunities

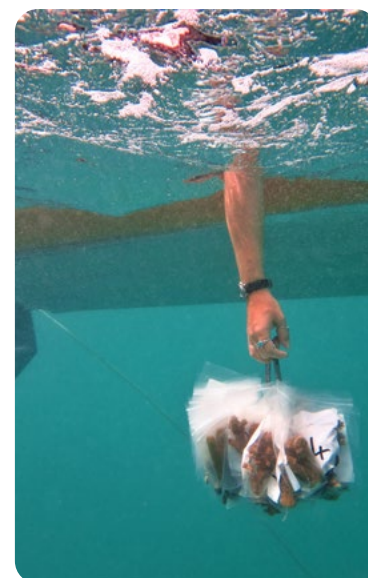
Under this Corporate Plan and in accordance with the AIMS Strategy 2025, we will continue to expand our capability in marine science through:

- coral reef restoration and adaptation science
- technology transformation
- developing closer partnerships with Traditional Owners and integrating Indigenous science knowledge.

Coral reef restoration and adaptation science

Climate change is recognized as the greatest global threat to coral reef ecosystems around the world and to the Great Barrier Reef.

In the past, our research and monitoring has focused on understanding and measuring natural recovery and adaptation. However, more recently it has been recognised that active interventions need to be considered as additional management strategies. Active intervention on the reef will help it adapt, recover and survive warming ocean conditions. Such intervention targets the retention of the reef's key ecological, economic and social values. This work, together with national and global efforts to reduce greenhouse gas emissions and other management strategies to ease pressure on the Reef, aims at building its resilience and capacity to adapt to the escalating effects of climate change.





The Reef Recovery and Adaptation Program (RRAP)¹¹ is the key to this new approach. AIMS, the CSIRO and the Great Barrier Reef Marine Park Authority have a long history of working together in the GBR World Heritage Area. The RRAP takes this historical collaboration to a new level, involving many more national and international partners. It will undertake the necessary R&D to develop new interventions to assist recovery, repair and build resilience of the reef. A key component will be assessing the benefits, risks and costs of these new, novel technologies. The program seeks to provide government with a series of intervention options that can be applied in a size and scale to have a significant and positive effect at an affordable cost. These options will be based on the best science available and rigorously assessed and tested to ensure policy makers can deploy them with greater certainty.

AIMS has refocused significant capability on this increasingly important area of science and engineering. The 2019 feasibility study for the RRAP, led by AIMS and the CSIRO:

- identified and assessed potential technologies for increasing reef resilience and for rehabilitation of degraded reefs
- outlined future research needs to develop these technologies for large-scale, cost-effective deployment
- proposed a governance structure to oversee future phases of reef restoration activities.

AIMS expects to play a prominent role in the next phase of the RRAP, particularly in R&D for:

- assisted evolution (acceleration of naturally occurring processes)
- aquaculture-based interventions
- coral ecology.

While many of these interventions are promising, none are yet ready to deploy on a large scale. A significant, concerted R&D effort is required to make any new scalable intervention technically feasible, safe, affordable and acceptable to the public and regulators. We will also play an important role in assessing other possible interventions and their potential for broad-scale deployment on the reef and in modelling, decision support and stakeholder engagement.

We expect the National Sea Simulator (SeaSim), the world's most advanced experimental aquarium, located at the AIMS headquarters near Townsville, will play a key role in accelerating the development and delivery of solutions. As a world-leading facility, the SeaSim is uniquely placed to address a number of global challenges associated with oceans in a high carbon world, and we will target collaborations with international leaders addressing these challenges.

Integrating Indigenous knowledge

The Indigenous and Torres Strait Islander peoples of Australia are the Traditional Owners of the Great Barrier Reef region, and evidence of their sea country connections goes back over 60,000 years. A growing awareness of the significance and value of Indigenous knowledge has prompted calls for its use within tropical marine science. Our focus is on delivering outcomes that align to the Northern Territory Marine Science and Coastal User Needs Analysis¹² published in 2018 and the Reef 2050 Traditional Owner Aspirations Project. Through the early stages of implementation of the AIMS Indigenous Partnerships Plan, we are already building a strong and positive reputation for our work with Traditional Owners. During the life of this Corporate Plan, we will build on our efforts to deliver superior outcomes for Australia's Indigenous peoples and communities as well as superior outcomes for marine science in tropical Australia.



¹¹ <https://www.aims.gov.au/reef-recovery/rrap>

¹² <https://www.aims.gov.au/nt-end-user-needs-analysis>



Technology transformation

Critical functions such as environmental monitoring require continuous advances in technology if costs are to be kept manageable and stakeholder expectations in relation to data-led insights are to be met.

AIMS needs to acquire a comprehensive suite of new technologies over the next five years to remain efficient and competitive. We have established the AIMS Technology Transformation Program and are seeking to make changes across the whole pipeline, from data acquisition to knowledge delivery.

Implementing strategy

We are a strategy-led organisation. The AIMS Strategy 2025 sets out the future direction of our research and advice to government, industry and the community and articulates the long-term vision as to how AIMS will fulfil its remit under the guiding legislative and financial frameworks. The high-level directions and objectives set out in the Strategy link directly to the Institute's Corporate Plan and the over-arching budget statements, cascade down into detailed implementation plans and form the basis for our research and investment decisions (see Figure 5).

The Strategy is reviewed every three years to ensure it is up to date and relevant, and progress towards targets and key performance indicators are reported yearly in AIMS' annual reports.

Figure 5: How the elements of our research interrelate

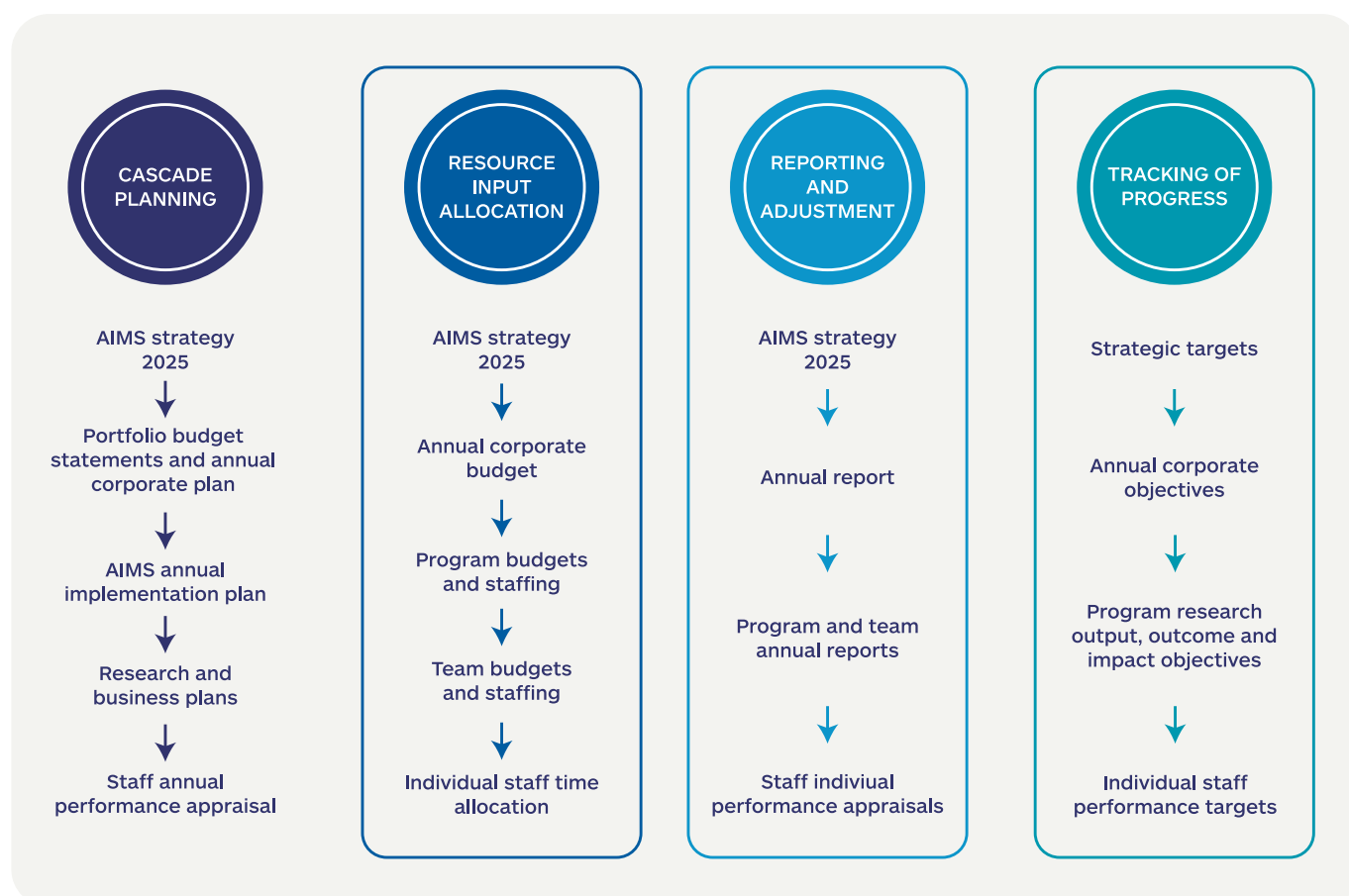




Image: Shaun Hahn



Research planning

To achieve the impact targets identified in the AIMS Strategy 2025, AIMS will focus on delivering the following nine research outcomes over the five-year period encompassed by the 2020-21 AIMS Corporate Plan.

Research priorities

Delivery of longer-term research outcomes will be achieved through the implementation of a number of shorter term activities described in Table 4.

Table 4: Outcomes and deliverables of research priorities, 2020-21 to 2024-25

Legend

- These deliverables are ongoing and will apply in the outyears of this Plan. Specific deliverables will be reviewed on an annual basis and updated as appropriate
- ▲ Complete high impact projects already underway. Complete development of automated data and image analysis pathways to enhance operational efficiencies.

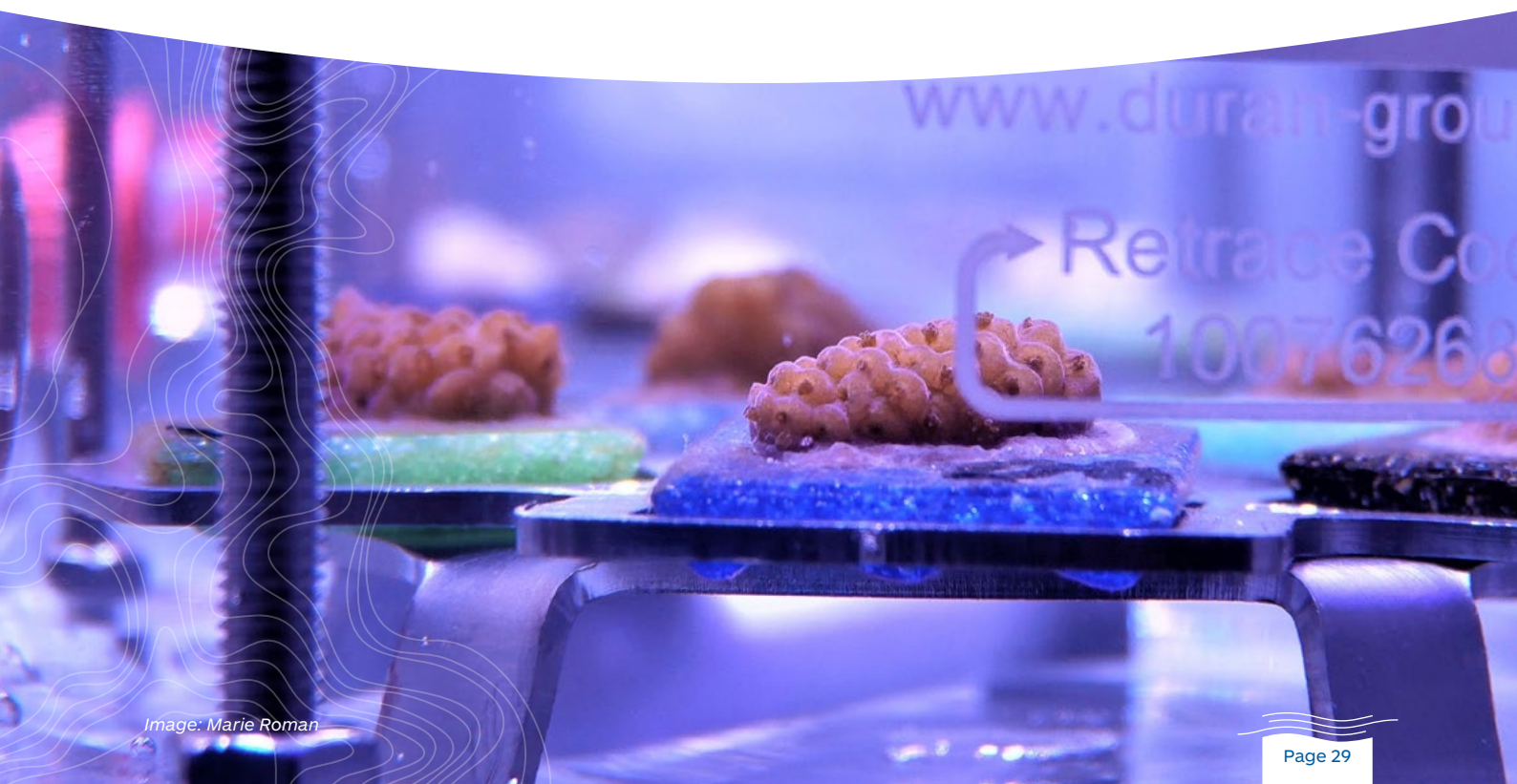
Five Year Research Outcomes	Annual Deliverables (2020-21)	2021-22 to 2024-25 (outyears)
Comprehensive baseline, status and trends reporting systems for tropical marine ecosystems	Deliver long-term coral reef and physico-chemical monitoring programs. Continue to be the major Integrated Marine Observing System (IMOS) operational partner for northern Australia and the Great Barrier Reef	●
	Deliver specific monitoring and baseline assessments in response to external demand. Work with Australian Government and state agencies and other research organisations to implement the Reef Integrated Monitoring and Reporting Program (RIMReP)	
	Investigate and implement (as appropriate) technology to improve the efficiency and capability for marine observing and assessment methods, including continuous development of indicators and metrics	
Efficient, cost-effective delivery of information through the application of innovative, autonomous and automated marine observing technologies and assessment methods	Complete initial design planning, which defines the strategy and concepts underpinning a technology transformation program Progress high impact projects already underway (e.g. agile underwater vehicle development, autonomous image analysis)	▲
	Advance development of automated data and image analysis pathways to enhance operational efficiencies	
Recovery of key threatened and endangered marine species achieved through effective conservation and management of critical habitats and populations	Determine the status, movement and habitat use of key megafauna species, the influence exerted by coastal development and industry activities, and implications for conservation and management	●
	Explore movement and population connectivity of threatened species in northern Australia Develop cumulative threat maps for threatened and exploited species in the tropics	



Five Year Research Outcomes	Annual Deliverables (2020-21)	2021-22 to 2024-25 (outyears)
Enhanced management of tropical marine ecosystems informed by regional models of environmental condition and function	Maintain and improve models describing the functioning of coastal areas to support ecosystem-scale management decisions Continue to deliver regional assessments and develop specific models, in response to industry client needs	●
	Develop and test predictive habitat models based on geomorphological and physical characteristics for at least one new area	
Improved health of tropical marine ecosystems through the development of effective solutions for the management of local, regional and cumulative pressures	Reconstruct marine environmental histories from analyses of coral cores	●
	Determine the drivers of coral bleaching across reefs of the Great Barrier Reef (GBR) and northern Australia	
	Improve understanding of the multiple effects of climate change and water quality on organisms and ecosystems in the GBR and Torres Strait	
	Increase certainty of the link between nutrients, food sources and planktonic productivity to inform strategies that address the potential causes of crown-of-thorns starfish (CoTS) population outbreaks	
	Quantify CoTS predation by fish, invertebrates and giant triton as potential management options for control of current CoTS population outbreaks and mitigation of future outbreaks	
	Quantify through field experimentation the seismic impacts on pearl oyster and demersal fish	
	Develop stringent protocols for sampling and analyses of microplastics in marine environments, and collect baselines of contamination across northern Australia	
	Improve understanding of the sensitivity of tropical marine organisms to priority contaminants, including external influencing factors (temperature, light)	
	Improve understanding of variations in water quality, benthic light and sedimentation that occur during natural and dredging-related turbidity events, and related mechanism(s) by which resuspended sediments affect key habitat forming species (cause–effect pathways)	
	Improve understanding of the sensitivity of tropical marine organisms to priority contaminants, including external influencing factors (temperature, light)	
	Improve understanding of variations in water quality, benthic light and sedimentation that occurs during natural and dredging-related turbidity events, and related mechanism(s) by which resuspended sediments affect key habitat forming species (cause–effect pathways)	



Five Year Research Outcomes	Annual Deliverables (2020-21)	2021-22 to 2024-25 (outyears)
Improved forecasting ability of future coral reef status based on information on the scope and rates of recovery, acclimatisation and adaptation of coral reef taxa to climate change	Improve understanding of coral resilience, recovery and adaptation rates to support improved decision support tools	●
	Advance approaches such as hybridisation and assisted gene flow to first-field estimates of survival and tolerance	
	Continued optimisation of coral propagation, settlement and post-settlement survival in the SeaSim	
	Understanding scope for enhancement of coral tolerances for future applications to support coral reef recovery and restoration by further developing approaches such as hybridisation, assisted gene flow and gene editing technologies	
	Develop baselines of microbial communities beneficial to the health of key coral reef organisms	
New tools for coral reef restoration that enhance resistance and resilience of key coral reef taxa to environmental change, particularly climate change	In conjunction with consortium partners, deliver the Reef Restoration and Adaptation Program, which examines the feasibility of options for developing and deploying coral reef recovery, restoration and adaptation technologies for reefs threatened by climate change and which will inform future approaches and investment in reef restoration and adaptation	●
Enhanced understanding of tropical marine ecosystems among industry, government and the public delivered through improved data analysis workflows and knowledge delivery systems	Modernise data systems into a coherent research data platform	●
	Continue to maintain a nationally recognised repository of research data	
	Expand the platform for web-delivery of environmental information	
	Integrate the eAtlas into national data portals	
Strengthened management and policies delivered through the development of structured decision support tools that link risk, monitoring, modelling and adaptive management	Deliver structured decision support for the finalisation and implementation of implementation of the Reef Integrated Monitoring and Reporting Program (RIMReP)	●





Decision criteria

Decision making in marine science can be complex and seemingly intractable, principally due to the inherent existence of trade-offs between sociopolitical, environmental and economic factors. The following key decision criteria help us to evaluate alternatives and determine priorities:

- Projects must be developed with longer term impacts (i.e. economic, environmental and social benefits) in mind from the outset.
- Projects must fill important knowledge gaps and contribute to achieving longer term research outcomes.
- Project duration and schedule should be time-bound.
- Where appropriate, projects should be integrated (i.e. outputs from one project delivering to another project).
- Opportunities for collaboration and longer term strategic alignment should be identified.
- Projects that align with our Indigenous Partnerships Program aspirations should be identified.

Excellence and assurance

Science and research, including marine science and research, plays a fundamental role in Australia's economy and society. Our data is useful not only to scientists but provides the scientific knowledge for government, industry and the community to make decisions that contribute to better environmental, social and economic outcomes. We are very conscious of our international reputation for scientific excellence and for ensuring consistent, outstanding returns on investment. Peer review gives confidence that our research is valid, significant and original.

Accordingly, we measure our impact both by the quality of our work and by the effective use of our data, information and expertise by end users. These wider effects drive the targets set out in the AIMS Strategy 2025.

Rigorous quality assurance and quality control procedures ensure we deliver high-quality and timely research. Our research is peer reviewed at multiple stages through the research pipeline using internal and external reviewers.

The AIMS Quality Management Policy, approved by the AIMS Council, establishes the expectations for the delivery of quality scientific research and services. It forms an integral part of our governance framework and promotes ethical research behaviour, providing a foundation for high-quality research, credibility and stakeholder trust.

During 2020–21, AIMS will complete a review of its quality systems against ISO9001 Quality Management Systems and the Australian Code for Responsible Conduct of Research. This review is part of our commitment to continuous improvement to ensure that we remain one of the best and most trusted marine research organisations in the world. We may seek formal accreditation against ISO9001 during the outyears of this Corporate Plan.



Our multi-layer quality control systems approach includes the AIMS Framework for Responsible Conduct of Research, internal and external peer review of publications and reports, rigorous data collection procedures, quality assurance and data curation. In 2019, we introduced team-based peer reviews of our research. The concept is based on the US military red-on-blue exercises and involves setting up two teams that challenge each other on a particular research issue (e.g. water quality on the Great Barrier Reef). One team puts together a case based on the currently available evidence, while the other team tries to find flaws and weaknesses in the arguments. This process drives continuous improvement, highlights and eliminates any subconscious bias, and helps to identify critical questions that remain unanswered and require additional research. We will build on the success of this process by formalising it within our quality management system.

We are committed to the principle of open access in our research publications as the best means to support maximum uptake and application that benefits as wide a user base as possible. All research conducted by AIMS using public funding is made publicly available, although AIMS retains the right to use intellectual property generated through its commercial research partnerships for research purposes and to publish and represent publicly all research findings.

Currently, AIMS is the number one ranked marine science research institute in the world¹³.

Engagement and communication

With public engagement influencing environmental performance as a whole, and biodiversity conservation in particular, our engagement with stakeholders, key policy sectors and the public must be enhanced at the highest level. In particular, the translation of research to benefit government, industry and the wider community is crucial.

We communicate the role AIMS plays in the communities in which we operate. This involves publishing detailed information on our website, leveraging exposure from social media channels, engaging with stakeholders, and using media outlets to foster community understanding of marine issues.

Further afield, we engage with government and industry stakeholders, demonstrate our impact and value, and promote our expertise in reef science and the maintenance of quality standards in science to build positive sentiment and commentary among audiences and in the media.

In 2020–21, we will communicate AIMS' purpose and value to the nation by strengthening public awareness and interest in AIMS. We will reinforce our corporate branding and enhance our website to present our public image, promote our research and strengthen our reputation.

To maximise return on investment, we make our research results widely available. All of our research has clearly defined impact pathways for delivery to end users, including data provision, published findings, knowledge synthesis reports, data visualisation, risk assessment, decision support tools and direct engagement.

We build Australia's future capabilities in marine science by contributing to postgraduate training. We also undertake leadership roles in national and international collaborative initiatives such as membership of the National Marine Science Committee and the Integrated Marine Observing System (IMOS), and play key roles in National Environmental Science Program hubs, Reef 2050 Plan technical and advisory committees, and a number of expert panels.

Our output, including our research reports and impartial, evidence-based advice, constitutes an important consideration for policy makers, managers and the community when weighing up research claims and debates about science.

While we work on ways to increase our visibility, we will continue to maintain our role as an independent trusted adviser, providing expert advice to government, industry and the community through formal and informal mechanisms, including participation on expert panels, advisory committees, boards, national and international delegations, and the media.

13 Ranking based on category normalised citation impact of articles published by AIMS in journals included within the Web of Science, between 2015 and 2019, within the field of Marine and Freshwater Biology (InCites June 2020). The analysis only included research institutes that had published more than 200 papers during that period in order to benchmark AIMS against institutes with sufficiently similar publication rates.



Performance measurement

AIMS is a strategy-led organisation. The high-level directions and objectives set out in the AIMS Strategy 2025 cascade down into detailed implementation plans, as outlined in the Portfolio Budget Statements and Corporate Plan. These form the basis for our research and investment decisions. The AIMS Strategy 2025 has 12 strategic targets to be achieved by 2025 (see Figure 6).

Figure 6: AIMS Strategy 2025





To ensure our progress against these long-term goals, this Corporate Plan contains eight key performance indicators (see Table 5) against which we measure our performance on an annual basis.

Table 5: Key Performance Indicators

Performance criteria	Portfolio Budget Statements performance targets	2020-21	2021-22	2022-23	2023-24	2024-25
AIMS research creates a positive triple bottom line contribution (impact value) to Australia	Minimum 2 case studies	≥ 2 new triple bottom line case studies published per year (pa)				
		AIMS research:				
		Demonstrate ≥ \$15m pa total impact value	Demonstrate ≥ \$20m pa total impact value	Demonstrate ≥ \$50m pa total impact value	Demonstrate ≥ \$80m pa total impact value	Demonstrate ≥ \$100m pa total impact value
Deliver strategic and applied research and monitoring that addresses national research priorities and stakeholder needs	Maintain or increase amount of research commissioned by stakeholders	Achieve revenue budget from stakeholder commissioned research*				
Maintain or increase current standings for scientific excellence, innovation and impact	Maintain acknowledged domestic and global high standing in relevant fields of research, and confidence of key stakeholders in research outputs	Maintain Top 3 global ranking in the field of freshwater and marine biology				
		Maintain high stakeholder confidence in our scientific outputs gauged using a net promoter score				
Deliver research advice and scientific products that are critical for stakeholders to assess the impacts of natural and human pressures on sensitive marine ecosystems	Maintain or increase the number of peer-reviewed publications and other knowledge products and make datasets or data products publicly available	Maintain annual journal publication rates > 200 papers per annum				
		100% of datasets collected using public monies are made publicly available within one year of collection				
Increase research capability, capacity, impact and science diplomacy through participation in formal national and international collaborations, joint ventures, partnerships and strategic alliances	Maintain or increase number and scale of domestic and international research partnerships, collaborations, joint ventures and strategic alliances Maintain or increase participation by AIMS on advisory panels and committees	Maintain proportion of projects involving collaborators (≥ 70%)				
		Maintain proportion of published papers and reports that include collaborators (≥ 80%)				
		Representation on key relevant advisory committees				



Performance criteria	Portfolio Budget Statements performance targets	2020-21	2021-22	2022-23	2023-24	2024-25
Improve research outcomes and impact through increasing Traditional Owner engagement in the planning and delivery of coastal research and development	Increase the percentage of projects with Indigenous engagement in the planning and delivery phases	<p>≥ 50% of new projects that involve work in sea country achieving Bronze status</p> <p>and</p> <p>At least one large project with Gold status¹⁴</p>	<p>≥ 75% of new projects that involve work in sea country achieving Bronze status</p> <p>and</p> <p>At least one large project with Gold status</p>	To be assessed based on performance during implementation of the AIMS Indigenous Partnerships Program		
Reduce AIMS' environmental footprint	10% reduction in AIMS' carbon emissions compared with 2017-18	Carbon emission reduction ≥ 10% compared with 2017-18	Carbon emission reduction ≥ 15% compared with 2017-18	Carbon emission reduction ≥ 15% compared with 2017-18	Carbon emission reduction ≥ 20% compared with 2017-18	Carbon emission reduction ≥ 25% compared with 2017-18
Optimise use of research infrastructure assets	Maintain or increase use of research infrastructure	≥ 90% use of major research assets*				

* This performance target has a high degree of uncertainty as a result of the COVID-19 crisis.

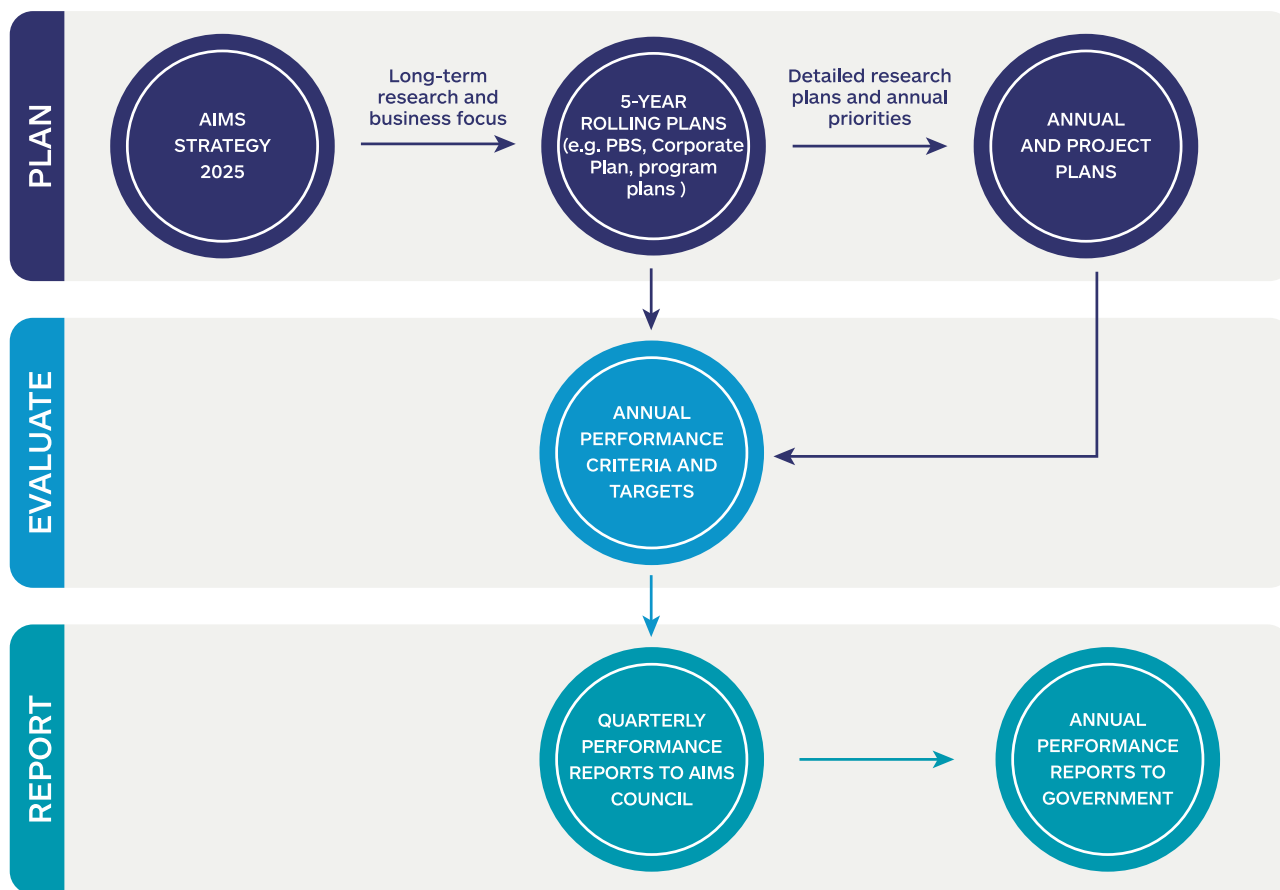
¹⁴ Refer to the Traditional Owners section of the Corporate Plan for information on the AIMS Indigenous Partnerships Plan and project ratings (page 17).



The AIMS Annual Report 2020–21 will provide a comprehensive assessment of our performance for the financial year. Overall performance and performance against research goals will be reported in detail. This report will be available on the AIMS website¹⁵ in late October 2021.

The links between our planning process and performance are shown in Figure 7.

Figure 7: AIMS planning, evaluation and reporting process



¹⁵ <http://www.aims.gov.au/>



Corporate capability

Health, safety and the environment

The health and safety of our people is paramount. AIMS is committed to reducing workplace risks and to sustaining a positive and active safety culture. We take these obligations seriously.

AIMS has a comprehensive health and safety and environmental management system that is audited every two years against the requirements of ISO 45001 Occupational Health and Safety Management Systems and AS/NZS ISO 14001 Environmental Management Systems.

Our programs support a safe workplace and eliminate or minimise work health safety risks. By the end of this Corporate Plan, we will target a total recordable injury frequency rate (TRIFR¹⁶) of less than five.

Financial

Core funding

Core funding for AIMS is provided through Australian Government annual appropriations. Due to the financial uncertainty associated with COVID-19, the government postponed the 2020–21 Federal Budget to Tuesday 6 October 2020. Therefore, at the time of preparing this Corporate Plan, our appropriations budget has not been finalised. For planning purposes, our budget, as approved by the AIMS Council in November 2019, assumes that the government will maintain existing levels of appropriation funding. Should this change, then a revision of the Corporate Plan will be required. When the Federal Budget is finalised, details of appropriation funding for AIMS will be identified in the 2020–21 Portfolio Budget Statements¹⁷.

External revenue

External revenue comes from industry, philanthropy and a range of state and Australian Government agencies (see Figure 8 next page). This external revenue stream provides essential support for AIMS' capability and extends the research outcomes we can deliver. Based on 2018–19 data, external revenue contributes about 30 per cent of our operational budget.

As COVID-19 continues to affect global markets, we anticipate adverse impacts for some of our stakeholders who have historically been significant sources of external revenue. Early indications are that external revenue from the industry sector could be reduced by more than 30 per cent. This shortfall may be partially offset by expected increases in external revenue from the philanthropic sector, particularly from the GBRF with respect to the Reef Restoration and Adaptation Program.

The unexpected and significant effect that the COVID-19 pandemic has had on AIMS emphasises the importance of developing strategic alliances. This type of business approach, which is being adopted by AIMS to ensure longer term certainty and sustainability, shifts away from ad-hoc collaborative arrangements to ones that provide a formalised relationship. It increases the value to those involved in a way that is not possible when each entity acts alone. AIMS' agreement with Parks Australia is a good example of this type of strategic alliance.

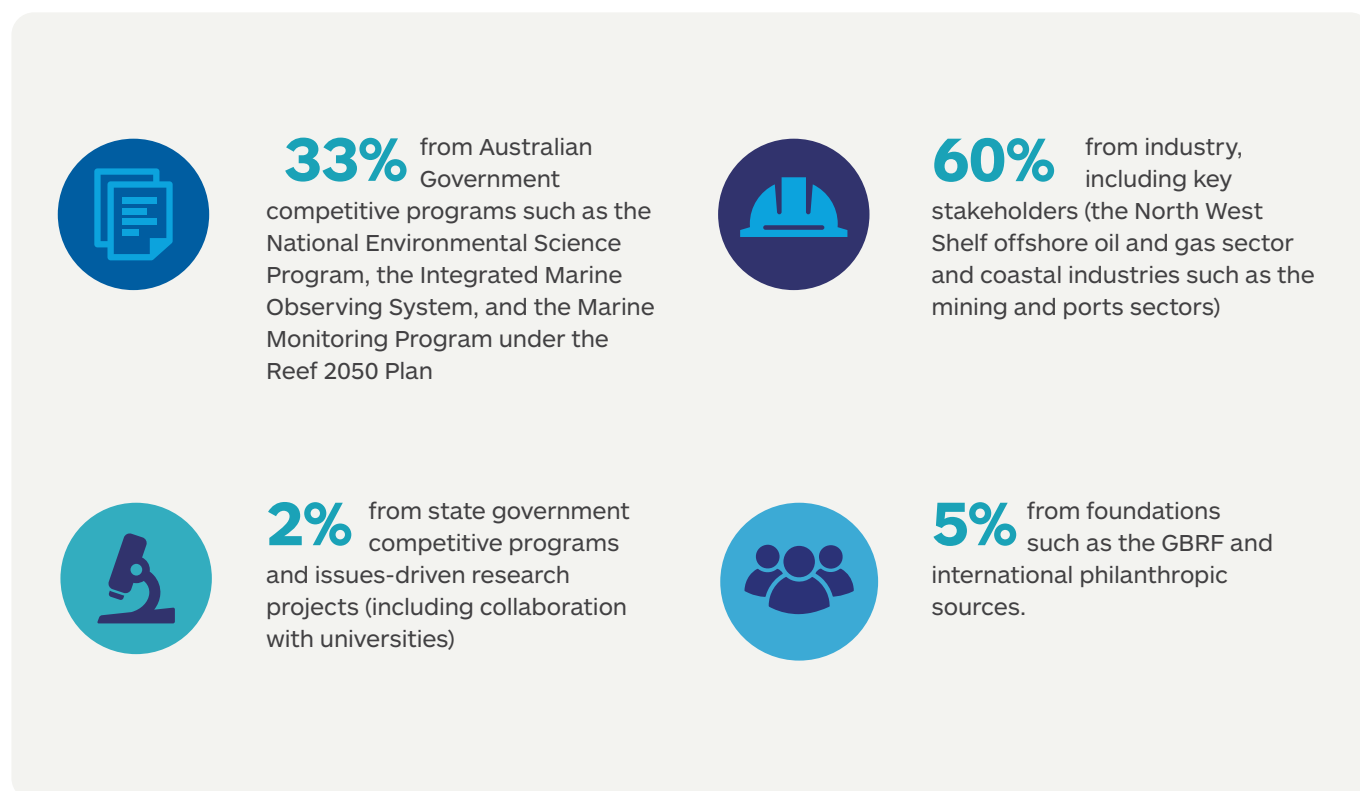
The full extent and duration of economic impacts as a result of COVID-19 remain unknown and will largely be dependent on actions taken by governments across the world over the remainder of 2020.

¹⁶ TRIFR equals the number of recordable injuries per million worked hours, where recordable injuries include medical treatment cases, restricted work cases and lost time injuries.

¹⁷ <https://www.industry.gov.au/about-us/finance-reporting/budget-statements>



Figure 8: Sources of external revenue



To maintain existing capabilities, AIMS will need to increase the amount of net external revenue it earns in the next five years, despite the financial uncertainties created by COVID-19. Appropriations funding provides approximately 70 per cent of our base costs of operations. External revenue has become essential to support the level and capability of science that we provide to support Australia's marine estate. A significant decrease in external revenue over the longer term could require AIMS to reduce its research infrastructure, breadth of scientific disciplines or number of staff. Any such move will reduce our effectiveness and the economic, environmental and social benefits for the nation that are underpinned by our science and research.

AIMS extends the breadth and impact of its research through co-investment with stakeholders. These collaborative arrangements are typically mandated for government-funded programs, including the National Environmental Science Program (NESP) and the Integrated Marine Observing System (IMOS). We take care to ensure the arrangements, whether through commercial contracts or co-funding, align with national science priorities and result in transfers and benefits back to the nation. A step-change in data-gathering and processing capability will make direct access to data products by all potential users a practical possibility.

Our long-term approach to delivering improved research outcomes through external funding includes the following criteria:

- The research must contribute to future impact (i.e. net economic, environmental or social benefit for Australia).
- The research must advance strategic government objectives as reflected in the AIMS Strategy 2025, in addition to meeting customer needs.
- The quality of research is appropriate to achieve robust outcomes.
- AIMS retains intellectual property access.
- AIMS is not inappropriately restrained from presenting the findings to government or correcting any misrepresentation of its findings.

We charge commercial rates and decline co-investment opportunities when the research is for the direct commercial gain of an organisation or company. This shows our commitment to a high level of transparency.



Operating result forecast

AIMS is forecasting an operating loss in each of the four years of the Corporate Plan. The key drivers of this loss are:

- reduced forecast revenue and increased operating costs associated with COVID-19
- use of some cash reserves for early investment in two key strategic areas
- continuation of funding for depreciation expenses being less than the expected depreciation expense.

Capital investment

All major assets of AIMS are subject to a capital replacement program to ensure lowest life-cycle cost, maximum return on investment and tight alignment with our current and future research needs. The program comprises:

- routine replacements (e.g. motor vehicles, computers and science equipment)
- ongoing facility maintenance and refurbishment
- technological development associated with new autonomous monitoring equipment
- upgrades to the enterprise resource planning (ERP) system.

Three significant capital projects are currently planned:

- The RV Cape Ferguson (commissioned in 2000) is at end-of-life and needs replacement. While in continued operation, the vessel incurs increased maintenance that requires increased time out of the water, which, in turn, results in fewer days for undertaking marine research in the field, and higher costs of operation overall. Our goal is to replace the Cape Ferguson with a vessel that fully integrates next-generation technology platforms to maximise the return from scientific field programs and contribute to Australia's global leadership in marine science. A concept design has been completed for a vessel built in Australia that incorporates platforms for an integrated data collection capability (habitat mapping, real-time monitoring, autonomous technologies), and hybrid propulsion for reduced operating costs and a lower carbon footprint. The project is currently unfunded.
- Our original headquarters building near Townsville is over 40 years old and requires significant investment to ensure ongoing operability. Some of the mechanical plant has reached the end of its life. Some areas of the building have been abandoned due to the inability to maintain air turnover and quality, leading to mould in office and laboratory spaces. Parts of the building are subject to water ingress during torrential rain. The estimated cost of refurbishment is \$20 million. The project is currently unfunded.
- The National Research Infrastructure Investment Plan includes an allocation for expansion of the SeaSim and funding for merit-based access for external researchers. Funds will potentially become available during the period of this Corporate Plan.



Staff

We take pride in the professionalism, capability and productivity of our staff. AIMS employs approximately 240 science and support staff and another 60 in outsourced functions. Our scientists are on the ground and in the water, mapping, monitoring and collecting information on Australia's marine estate. They are in our labs, analysing data, modelling and pushing the boundaries of tropical marine science. Many of our scientists are international leaders in their field.

We also maintain a strong educational program, particularly through co-funded postdoctoral fellowships (between 10 and 20) and PhD scholarships and supervision (about 60) in partnership with some of Australia's leading universities. Core scientific expertise is supported by operational expertise. While focused on the delivery of scientific outcomes, we aim to raise foundation skills such as leadership, project management, stakeholder engagement and research communication.

Our workforce initiatives support the wider Australia Public Service undertakings on diversity and gender equity and Indigenous employment. AIMS has established an Equity, Diversity and Gender (EDGE) Working Group to integrate gender equity and diversity within AIMS culture. This consultative employee group will coordinate the development of an AIMS Equity, Diversity and Gender Action Plan and facilitate its implementation. It will resubmit an application to the Science in Australia Gender Equity (SAGE) initiative for an Athena Swan Bronze Institution Award, after being unsuccessful in 2019–20. The award requires AIMS to demonstrate a solid foundation for improving gender equity and developing an inclusive culture that values all staff. This includes:

- an assessment of gender equality, including quantitative (staff data) and qualitative (policies, practices, systems and arrangements) evidence and identifying both challenges and opportunities
- a four-year action plan that builds on this assessment, information on activities that are already in place and what has been learned from these
- the development of an organisational structure, including a self-assessment team, to carry proposed actions forward.

The application for the award is part of AIMS' plan to support continuous career improvement for individuals across all gender groups in higher education and research over the next four years, helping to create a more inclusive society.





Research partnerships

Working with stakeholders and clients, we will continue our efforts to form partnerships and collaborations that achieve targeted national benefits to industry and the community. To do this, it will engage both national and global marine science capability, offering joint ventures and strategic alliances to increase the number and scale of collaborative research projects.

We adopt a collaborative approach to R&D at the national level by ensuring the right partners are engaged at the earliest opportunity. These include the Western Australian Marine Science Institution, the National Environmental Science Program, the Integrated Marine Observing System, AIMS@JCU and the Indian Ocean Marine Research Centre.

We also have memorandums of understanding with James Cook University, Queensland University of Technology, Monash University and a number of international institutes, including the Institute of Oceanology, Chinese Academy of Sciences (China), the National Oceanic and Atmospheric Administration (US), King Abdullah University of Science and Technology (Saudi Arabia), Institut Océanographique (Monaco), the Okinawa Institute of Science and Technology (Japan), and the University of South Pacific (Fiji). It is expected that these partnerships will continue during the period of the Corporate Plan. Such partnerships promote effective and adaptable solutions to improve the protection of coral reefs and address the poor record of sustainability and transparency in the live reef fish food trade.

In 2020–21, AIMS will expand initiatives under its new Indigenous Partnerships Plan to build Indigenous capability and capacity (through mutually beneficial research) that will support the sustainable management of land and sea country for future generations.

Australia, in partnership with Monaco and Indonesia, will host the secretariat of the International Coral Reef Initiative (ICRI) from mid-2018 until the end of 2020. ICRI's operational network (the Global Coral Reef Monitoring Network) comprises a worldwide group of coral reef scientists, managers and organisations. AIMS is currently global coordinator of the network.

The ICRI secretariat's plan of action describes activities within four broad themes:

1. Promote effective and adaptable solutions to improve the protection of coral reefs.
2. Understand trends in coral reefs.
3. Fix the poor record of sustainability and transparency in the live reef fish food trade.
4. Reduce anthropogenic threats to coral reefs, particularly those that occur at global or regional scales.

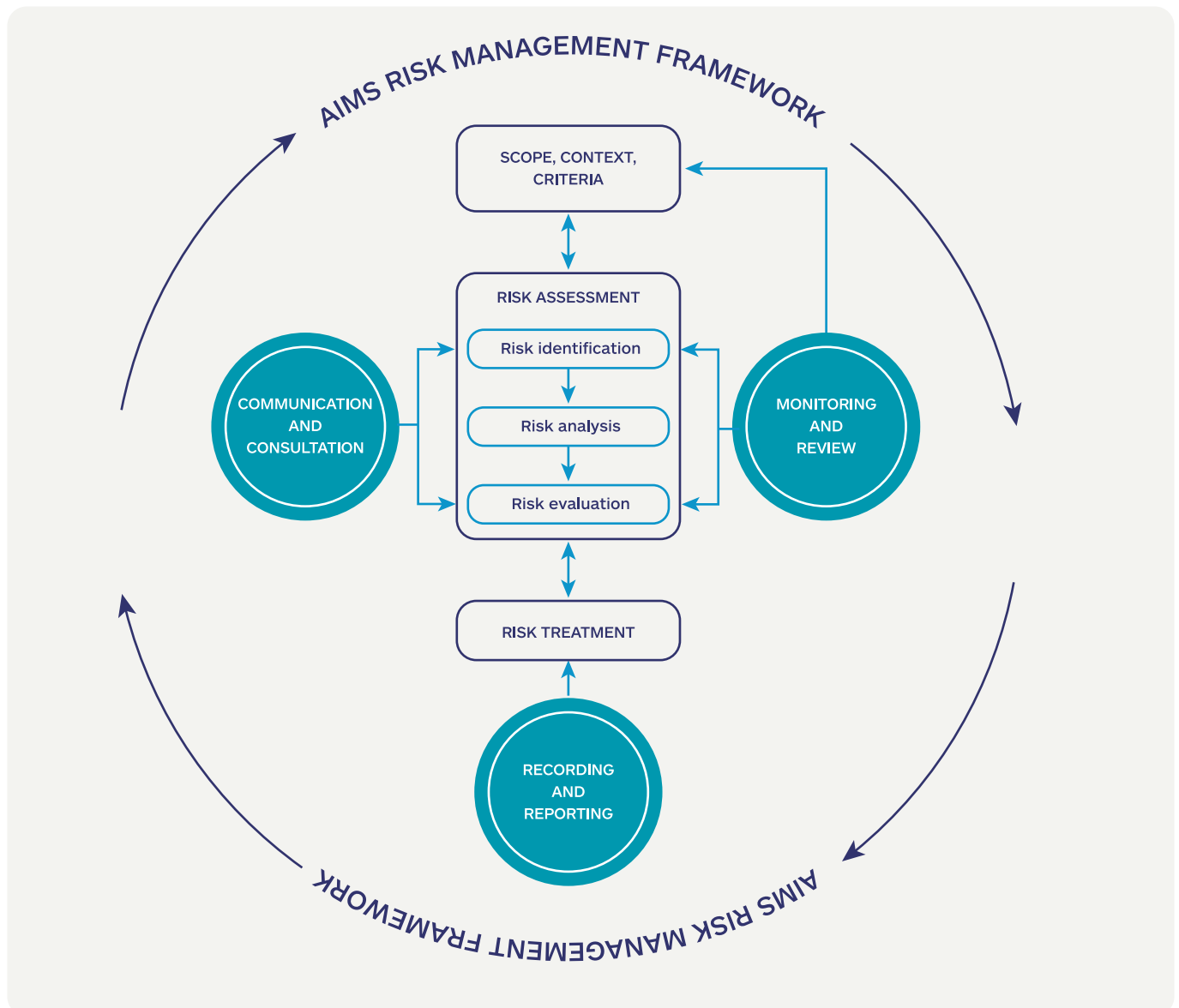
AIMS will make significant contributions to themes 1, 2 and 4 above. Our reef restoration activities will be a key contribution to delivering actions within Theme 1. As part of the delivery of this element of the plan, ICRI members have established a virtual working group, chaired by AIMS, to examine how we can coordinate activities and set priorities for R&D on reef restoration and adaptation. A key milestone will be the Status of Coral Reefs of the World report due to be released late 2020.



Risk management

In order to fulfil our purpose and achieve our strategic targets, we need to engage with risk, manage uncertainty and exploit opportunity. Our comprehensive corporate risk management system includes processes to identify and assess new risks, together with the refinement of existing control measures. It is based on an organisational risk management framework and an associated corporate risk register and control framework. This risk framework (shown in Figure 9) aligns with ISO 31000 Risk Management and complies with the Australian Government's risk management policy.

Figure 9: AIMS Risk Management System





its responsibilities under the Australian Institute of Marine Science Act 1972 and the Public Governance, Performance And Accountability Act 2013 in respect of financial reporting, performance reporting, risk oversight and management, internal control and compliance with relevant laws and policies.

The control framework is designed to ensure the following outcomes:

- **Strategies and goals** – our strategic targets are aligned with national priorities and the needs of stakeholders.
- **Plans** – our plans offer viable solutions for achieving goals and objectives.
- **Resources** – our financial and non-financial resources are sufficient to complete the research and other activities required to achieve our goals.
- **Delivery** – our systems and processes deliver research and other activities within our annual plans in a safe and efficient manner.
- **Communication** – our research outcomes are communicated in a manner that maximises user uptake and value.
- **Values** – all of our activities are undertaken in a manner consistent with our organisational values.

Risk culture

Organisations with a strong risk culture are more resilient, make better and more timely business decisions and are better equipped to enhance and protect their reputation. Over the last several years, AIMS has deliberately matured its risk culture from both a top-down and bottom-up approach.

At the corporate level, AIMS has very mature risk systems that include a risk policy and risk appetite statements that are approved by the AIMS Council, a risk management framework and a comprehensive corporate risk register. Risk is integrated into all reporting to the AIMS Council and within the AIMS Leadership Team.

AIMS also has a proven track record of risk management with respect to workplace health and safety. Our risk profile includes remote field work, diving, laboratories, hazardous chemicals and biohazards. Our staff have embraced our operational risk management processes to ensure that the risks associated with their work are managed to as low as reasonably practicable.

In 2020–21, we will focus on two key areas of growth for our risk culture.

- **Project risk** – AIMS implemented a new project management framework and system in 2019. These include improved approvals workflows and support tools to help assess and manage project risks and opportunities. Consolidating these new processes will be a significant focus of risk management efforts during 2020–21, further maturing our risk culture in the outyears of the Corporate Plan.
- **Collaboration** – an unexpected business benefit of COVID-19 has been more collaborative behaviour and approaches to both operational and corporate risk management. In 2020–21, we will identify ways to embed these new approaches into our everyday risk management.








Risk summary

Table 6 summarises the risks associated with each outcome and proposed controls. AIMS reviews its corporate risk register every three months to ensure that risks and controls remain current. For the life of this Corporate Plan, a continuous improvement approach will be applied to ensure that all risks continue to be as low as reasonably practicable.

COVID-19 presents several new risks for AIMS that apply across multiple time frames (days, weeks, months and years) and multiple risk areas (workplace health and safety, strategic targets and outcomes, plans, resources, delivery and communication). Like all other risks, the risks associated with COVID-19 are being managed – and will continue to be managed – within the AIMS Risk Management Framework.

At the commencement of COVID-19, the AIMS Emergency Management Team ensured that immediate risks were managed in a timely and effective manner. The Business Continuity Team (BCT) was established soon after to manage the longer term business and operational risks. It is expected that the BCT will continue operations into 2020–21.

Table 6: Outcomes and controls associated with each risk

Risk area	Description	Controls
 Workplace health and safety	Ensure the health and wellbeing of our staff, collaborators, volunteers and visitors. We operate in challenging environments and undertake activities where active care is required to manage the safety of our people.	AIMS has a comprehensive safety management system to ensure that hazards are identified, and risks are assessed in line with the AIMS' Risk Management Framework and established operational risk management procedures. This allows effective management of the complexities of our research work and supporting functions. AIMS fosters a reporting and learning culture, working to ensure that all personnel feel obligated to delay or stop work where an unacceptable risk is identified and to report hazards and incidents. AIMS holds that 'good science must be safe science' and that safety is a shared value embedded in everything we do.
 Strategic targets and outcomes	Ensuring that research is aligned with national priorities and stakeholder needs and targeting the highest priority areas.	Targets are defined in the AIMS Strategy 2025, the Portfolio Budget Statements and the Corporate Plan. In developing these plans, AIMS completed a comprehensive assessment of current and future stakeholder needs. These were integrated with the knowledge of our peers as to current and emerging environmental threats and challenges to develop a set of organisational goals and objectives.
 Plans	Ensuring that all aspects required to achieve our strategic targets are considered and detailed in an appropriate set of plans. This includes research planning (which research projects are required to create the knowledge to achieve the research impacts and outcomes), capability planning, delivery and communication planning.	AIMS has a comprehensive and adaptive process to develop research programs aligned with information needs. At the highest level, targets are set within our Strategic Plan. These targets cascade down, through the Portfolio Budget Statements and Corporate Plan, to five-year and annual research plans. Internal assessment, approval and tracking processes then ensure that only research aligned with these plans is undertaken. Capability and communication plans support the research plans. These plans are articulated to key stakeholders via the Portfolio Budget Statements and the Corporate Plan.



Risk area	Description	Controls
 Resources	<p>Understanding that the research outcomes articulated in this Plan rely on our maintaining capabilities underpinned by achieving revenue targets. This requires government funding at current forecast levels, achieving budgeted external revenue, and the ability to manage multi-year external revenue variability.</p>	<p>AIMS has developed a strong business development framework to maximise the likelihood of achieving external revenue targets, along with a quantitative risk-based methodology to assess potential external revenue volatility. It uses this assessment to design and implement management strategies where feasible.</p> <p>Additionally, if AIMS is to respond to emerging pressures and opportunities as detailed in this Corporate Plan, then capability growth will be required.</p>
 Delivery	<p>Additionally, if AIMS is to respond to emerging pressures and opportunities as detailed in this Corporate Plan, then capability growth will be required.</p>	<p>AIMS has experienced research, operational and corporate staff and well-established fit-for-purpose systems and processes. The actions detailed within the plans are within AIMS' demonstrated capabilities. AIMS has a comprehensive and high-performing safety management system and a strong organisational safety culture.</p>
 Communication	<p>Ensuring research outputs and advice are in a form relevant and useable by stakeholders, readily available and clearly communicated.</p>	<p>AIMS has a whole-of-business communication plan, which aligns with and supports the AIMS Strategy 2025. The plan adopts a four component approach:</p> <ul style="list-style-type: none"> • Build the capacity of staff to communicate our new strategic intent, and to project and align with our brand. • Promote the value that AIMS provides, through proactive and coordinated marketing and communications. • Measure the effectiveness of communication, consistent with our impact framework, to ensure our communications support organisational objectives. • Protect AIMS from reputational risk. <p>Implemented in 2018, the Communication Plan includes a number of action items to be developed during the life of this Corporate Plan.</p>
 Principles and values	<p>Adherence to our values.</p>	<p>AIMS' reputation is built on a set of values. Over time, these values have become embedded in the fabric of the organisation. They are continually discussed and incorporated into systems and process where appropriate, as AIMS works to express these values in all of our actions.</p>



Infrastructure

AIMS operates out of four locations across Australia with a research base of 300 staff (including 60 outsourced functions), two major research vessels and several significant research facilities, including the world-class SeaSim. This enables us to deploy our marine research capability across northern Australia and in selected international engagements.

AIMS' headquarters is at Cape Ferguson, about 50 kilometres from Townsville in Queensland. Our Darwin office is located at the Arafura Timor Research Facility (ATRF) adjacent to the Charles Darwin University campus. AIMS in Perth is co-located within the Indian Ocean Marine Research Centre (IOMRC) at The University of Western Australia's Crawley campus. A small liaison office in Canberra facilitates, enables and promotes interaction with the Department of Industry, Science, Energy and Resources, and other government departments and agencies.

A specialised research fleet, unique aquaria, sophisticated laboratories, operational workshops, extensive collections, analytical technology and an array of marine observing equipment enable our scientists to examine subjects ranging from microbiology through to broad-scale ecology and coastal oceanography, both in the laboratory and in the field. Below is a summary of our national research infrastructure:



The SeaSim

A world-class aquarium for tropical marine organisms where scientists can conduct cutting-edge research not previously possible. With a reliable, consistent supply of sea water, the SeaSim provides fine control over many environmental variables including light, temperature, acidity/CO₂, salinity, sedimentation and contaminants



The AIMS research fleet

Two large purpose-built ships (the research vessel RV Cape Ferguson and the RV Solander) and a number of smaller vessels provide unique capacity for researchers to travel and conduct research in diverse tropical marine habitats. The major vessels are specially equipped with winches, onboard laboratories, flow-through aquaria and computing facilities. These allow scientists to sample the physical and biological characteristics of various habitats and conduct experiments at sea. Inflatable tenders and onboard compressors support diving operations from the major vessels.

Other key scientific infrastructure includes:



Analytical laboratories

more than 20 specialised laboratories across Australia including physical containment, quarantine and radiation laboratories



Engineering workshops

constructing specialised equipment such as underwater sensors, data loggers, sediment traps, weather towers, coral corers and many other devices



Field-deployed observing and remote-sensing equipment

including weather stations and instrument moorings



Coral core collection

Australia's largest and most significant coral core collection

AIMS will continue to focus on ways to maintain and, where necessary, replace ageing infrastructure to ensure safe, fit-for-purpose platforms for conducting marine science.

As well as maximising value derived from our diverse research infrastructure for ourselves, we will ensure its high use by external collaborators in industry, universities and other research institutions.



Systems and processes

Our physical capabilities are supported by an array of corporate and operational systems and processes. In 2019–20, AIMS implemented a new project management framework and implemented supporting systems including Microsoft Project Online and TechnologyOne CiAnywhere. 2020–21 will be a year of consolidating these new systems, with a focus on improving project management, accessibility to critical business information and corporate performance reporting.

Intellectual assets

AIMS possesses unique collections, observations and measurements containing decades' worth of information about Australia's tropical marine ecosystems, extending from the Great Barrier Reef to north-western Australia. This collection includes the assets described in Figure 10.

These assets are unparalleled in Australia. The continuity of long-term and broad-scale geographic collections and information enables critical long-term analysis of natural and human-induced trends in ecosystem change. Over the life of this Corporate Plan, we will leverage and develop these intellectual assets to support our research activities and plans.

Figure 10: AIMS' intellectual assets



More than **two decades** of **water quality measurements** from the Great Barrier Reef



Integrated oceanographic models of processes ranging in scale **from single reefs to entire ecosystems** such as the GBR



More than **30 years** of field measurements of coral reef health from the whole of the GBR, **the longest and most complete record of GBR health in existence**



Marine cultivation and husbandry techniques developed in the SeaSim



Nearly **two decades** of measurements of **biodiversity, ecological change and oceanography** from the Browse Basin off north-western Australia, with a focus on the Scott Reef system



The world's **largest coral core archive** that researchers use **to understand past climate conditions and how coral growth responds to environmental changes**, allowing us to better understand how corals might respond to ongoing climate change.



Two decades of **biodiversity sampling** from around the continent for taxonomy and biodiscovery



Technology development

Over the next five years, AIMS will continue to build on its investment in technology and data science across the life cycle of Institute activity. This will include enhancing automated data collection, data analysis, curation and storage. Big data, machine learning and artificial intelligence, and the mining of our already extensive data collections, will be a focus. In deploying new technology to increase information output and generate cross-data insights, AIMS will also improve the quality of that information and the rate at which information is generated while driving down the unit cost of information.

Our in-house program of technology development will support our operations, alongside external partners where beneficial. Below are our key foci for technology development:

- complete the planning phase of a technology transformation project to increase the pace at which information is collected and turned into knowledge
- develop a coherent research data platform that supports future data collections at increased rates, promotes data re-use within AIMS and among our partners, and generates value through the development of sophisticated tools and applications associated with data science, big data, cloud infrastructure and machine learning
- reduce reliance on diving as a method for collecting field data. This requirement is driven primarily by internal and client concerns about the safety of diving in some environments (e.g. remote locations and in habitats where sharks and crocodiles are abundant).

Technology development has become a priority, given the growing requirement for routine monitoring, in situ observations and experimental data across tropical reef and inshore systems. At the same time, we will seek productivity improvements and cost-savings compared with current methods.

In 2020–21, we will continue a program to develop underwater and aerial platforms for the collection of visible, hyperspectral and other imagery and data from the field. This is to be supported by a collaborative research program involving selected universities, the private sector and government partners to develop automated image analysis techniques that use finely tuned software to extract data from digital images.





TOWNSVILLE

PMB No. 3, Townsville MC QLD 4810

Telephone: 07 4753 4444 | Facsimile: 07 4772 5852

DARWIN

PO Box 41775, Casuarina NT 0811

Telephone: 08 8920 9240 | Facsimile: 08 8920 9222

PERTH

Indian Ocean Marine Research Centre
University of Western Australia (M096)
35 Stirling Highway, Crawley WA 6009

Telephone: 08 6369 4000 | Facsimile 08 6369 4050

CANBERRA

AIMS Liaison Office
Level 6, Industry House Canberra ACT 2601

Telephone: 02 6243 7182