Australian Government

Australian Institute of Marine Science

Annual Report

2019-2020

Annual Report 2019-20

Disclaimer

The research reported herein is based on early analyses of complex datasets and should not be considered definitive in all cases. Institutions or individuals interested in all consequences or applications of the Australian Institute of Marine Science's research are invited to contact the Chief Executive Officer at the Townsville address below.

For additional copies of this report, please phone AIMS on (07) 4753 4444, write to us at the Townsville address or email media@aims.gov.au.

This report, along with a range of other information about AIMS, is available online at www.aims.gov.au.

Cover image: Andre Rereruka

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The Australian Institute of Marine Science acknowledges the Traditional Owners of the land and sea on which we work. We recognise the unique relationships and enduring cultural and spiritual connection that Aboriginal and Torres Strait Islander people have to land and sea, and pay our respects to Elders past, present and future.

We particularly recognise the Traditional Owners of the land on which our main laboratory and office bases are located: the Bindal and Wulgurukaba peoples in Townsville, the Larrakia people in Darwin, and the Noongar people in Perth. We also recognise and pay our respects to Aboriginal and Torres Strait Islanders who are Traditional Owners of the areas of our marine science operations across tropical northern Australia.

Warning: Aboriginal and Torres Strait Islander persons should be aware that this document might contain images of people who have passed away since publication.

AIMS Facilities

TIMOR SEA

ARAFURA SEA

CORAL SEA

Darwin

RV SOLANDER

Townsville

RV CAPE FERGUSON

INDIAN OCEAN

SOUTH PACIFIC OCEAN

Perth

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14 September 2020

The Hon. Karen Andrews MP
Minister for Industry, Science and Technology
Parliament House
CANBERRA ACT 2600

Dear Minister

On behalf of the Council (as the accountable authority of the Australian Institute of Marine Science—AIMS), we have pleasure in presenting our 48th annual report, for the year ended 30 June 2020. The report is forwarded to you in accordance with section 46 of the *Public Governance, Performance and Accountability Act 2013*.

This report provides information so that you, the Parliament of Australia, and users of AIMS' research outputs can make an informed judgement about AIMS' performance during the 2019–20 financial year.

This report has been prepared in accordance with the requirements of the *Australian Institute of Marine Science Act 1972* and in accordance with section 46 of the *Public Governance, Performance and Accountability Act 2013* and with the requirements of the Public Governance, Performance and Accountability Amendment (Corporate Commonwealth Entity Annual Reporting) Rule 2016.

On behalf of the AIMS Council, the Chairman endorsed the content of the *AIMS Annual Report 2019–20* on 7 August 2020.

Yours sincerely

The Hon. Penelope Wensley AC
Chairman
Australian Institute of Marine Science

Dr Paul Hardisty
Chief Executive Officer
Australian Institute of Marine Science

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www.aims.gov.au

Part 1:
Overview

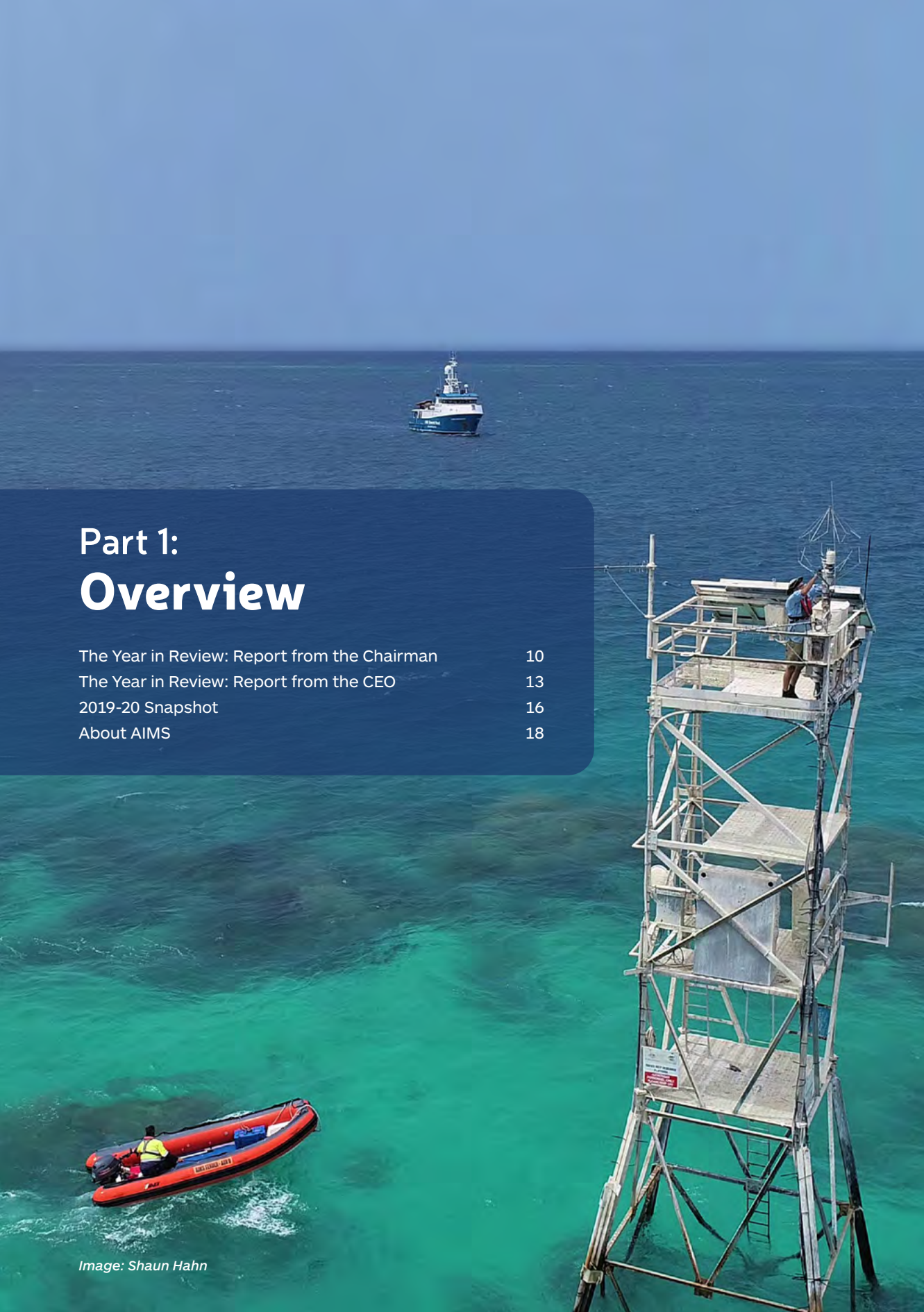


Image: Shaun Hahn

The Year in Review: Report from the Chairman

As Chairman of the Council of the Australian Institute of Marine Science, I am pleased to introduce the annual report of the Institute, reviewing AIMS' activities and achievements for the twelve month period from 1 July 2019 to 30 June 2020.

For the last four months of the reporting period, as for all government agencies and organisations, management of the coronavirus (COVID-19) pandemic was the paramount preoccupation for AIMS. It will necessarily continue to be a major focus in the year ahead, as governments and the community come to terms with the multiple challenges created by the pandemic and address the task of economic recovery.

AIMS' Management reacted swiftly and decisively to assure the safety of AIMS personnel and to adjust the Institute's operations to enable essential science functions to continue. The establishment and operation of an Emergency Management Team (EMT) and a Business Continuity Team (BCT), proved very effective in dealing both with immediate demands, and for considering longer-term impacts, risk scenarios and response measures for AIMS. (This work will remain a top priority for Council in the coming months.) Communication with Council and with staff, and the provision of support to staff across all of AIMS' sites- in Townsville, Perth, Darwin and Canberra- was also handled very effectively. The holding of weekly all-staff webinars proved a particular success, consistently drawing around 200 staff members each week. The shared experience of dealing with COVID-19 has clearly increased the strong sense of community that is one of the hallmarks of AIMS.

The disruption caused by COVID-19 in the last part of the year should not obscure the many real achievements and overall advances made by AIMS in 2019-2020. This annual report shows significant progress in all areas of AIMS' activity and-pleasingly- a consolidation of its position as one of the world's most highly regarded- and highest ranked- marine science research agencies.

Foremost among many highlights was AIMS work on the RRAP project.

AIMS deep expertise and leadership in reef science is widely recognised, but over the past year, its work in the emerging research field of reef restoration and adaptation has broken new ground-putting it at the forefront of global efforts to protect coral reefs, in decline world-wide. AIMS played a leading role in the development of the Reef Restoration and Adaptation Program (RRAP) and in its agreed role as the Managing Entity for the next, Research and Development phase, of the program, will continue to do so. This bold and complex endeavour is attracting attention around the world.

Another highlight during the year under review was AIMS' highly successful co-hosting (with GBRMPA and DFAT) of the 34th General

meeting of the International Coral Reef Initiative (ICRI), in Townsville in December, 2019. This meeting, marking 25 years since ICRI's establishment, and drawing 80 delegates from 40 countries and organisations around the world to discuss the global challenge of conserving coral reefs and associated ecosystems, offered a perfect opportunity to showcase AIMS research and project its capabilities to an international audience. AIMS active engagement with ICRI and the prominent role AIMS' scientists are playing in the reactivation of the Global Coral Reef Monitoring Network (GCRMN), (the world's premier coral reef data network) and production of the 2020 Status of Coral Reefs of the World Report, will assure an ongoing international spotlight on AIMS' strengths and capabilities.

Among those capabilities, monitoring is another stand-out-deserving special recognition. AIMS monitoring activities are extensive, across Northern Australia, Western Australia and Queensland. AIMS' long term monitoring program (LTMP) of the Great Barrier Reef (GBR) is recognised as the global "gold standard" for monitoring reefs all around the world. The knowledge that AIMS' monitoring delivers is of fundamental importance, not only for AIMS, but for many other organisations and agencies in and beyond Australia. It is the foundation for a wide range of ancillary activities, including the RRAP work and one of the mainstays of AIMS reputation for excellence. Maintaining AIMS' capacity in this area will be critical for the delivery of a number of programs and plans of national importance, including the National Marine Science Plan, the Integrated Marine Observing System, the Reef Integrated Monitoring and Reporting Program (RIMReP), the Reef 2050 Plan and the establishment of a national marine baselines and long term monitoring program to develop a comprehensive assessment of Australia's marine estate.

The areas I have singled out for mention in this Chairman's Foreword represent only a part of AIMS' activities and achievements during the year. Many other elements could have been selected-equally illustrative of the excellence of AIMS' science and of the significant progress the Institute made in 2019-20 towards achieving the ambitious goals set out in its Strategy 2025. Reading the full report will provide ample evidence of this and the value AIMS is delivering to the nation.

On behalf of all members of Council, I compliment CEO Dr Paul Hardisty and the AIMS Leadership Team on their strong leadership of the Institute throughout the year, and thank all staff for the hard work, loyalty and commitment they give to AIMS on a daily basis.

On my own behalf, I thank my fellow Councillors for the support given to me in my role as Chairman and for the careful and conscientious way in which they have sought to fulfil their governance responsibilities and provide strategic direction and guidance to the Institute.

On the matter of Council, I note there were a number of changes of Council membership. Dr Steve Morton and Mr Roy Peterson concluded their five year terms in March, 2020. Both made a substantial contribution to the work of the Council and to AIMS and I thank them most sincerely for their commitment. Mr Peterson will continue his association with AIMS for a period, as Chairman of the Audit Committee (a sub-committee of the Council), appointed in an independent capacity. The two new members, appointed in March, both for five year terms, Dr Erika Techera and Dr Thomas Barlow, attended their first Council meeting in June, 2020.
Dr Techera is an academic, Professor of Law at the University of Western Australia, specialising in environmental law and marine environmental governance. Dr Barlow is a technology and research consultant, a former science adviser within the Australian government and author

of several books about innovation and science. In addition to these two new appointments, Professor Sandra Harding, JCU representative on Council, was re-appointed for a further period, to end December, 2021 and I was reappointed as Chairman for two years, to end March, 2022.

The changing of the guard in Council had its parallels within AIMS itself, with the departure, on retirement, of a number of AIMS most senior research scientists and staff members, including Dr Hugh Sweatman, leader of AIMS Long Term Monitoring Program, climate scientist Dr Janice Lough, Business Manager Mr Frank Tirendi, General Counsel, Mr Peter Coumbis, Research Officer, Ms Liz Howlett and Ms Michelle Skuza, Field and Laboratory Coordinator, Marine Monitoring Program. All were long-standing members of AIMS, who will be much missed. I place on record the thanks and appreciation of the entire AIMS community for their dedication to the Institute.

Penelope Wensley AC

Image: Marie Roman

The Year in Review: Report from the CEO

It is my pleasure to present this year's annual report on behalf of Australia's national tropical marine research agency.

This has been a year quite unlike any I can recall. As COVID-19 swept across the world, AIMS, like so many other organisations, has been forced to adapt. I am incredibly proud of the professionalism, courage and flexibility shown by our staff during the pandemic. It is a credit to every individual that we were able to transform the way we work almost overnight—in the office, in our laboratories, and in the field. This transition to home-based work was made possible by significant recent upgrades in our IT and enterprise management systems, having an organisation-wide approach to risk, and a relentless focus on safety. And while, at the time of writing, the virus remains at large, weathering this extraordinary period in the world's history has given us confidence and pride in the strength of our people and our values.

This annual report marks the second year of the AIMS Strategy 2025, and of reporting on our progress towards the bold targets we have set for ourselves. The strategy is more important than ever as AIMS works to improve tropical marine health, protect coral reefs and other marine ecosystems from climate change, and support Australia's economic recovery following COVID-19.

Delivering long-term impacts

One of the highlights of 2019-20 was the launch by the Minister for the Environment, The Hon Sussan Ley, of the research and development phase of the Reef Restoration and Adaptation Program (RRAP). This is the largest coordinated effort to help the Great Barrier Reef adapt and build resilience to climate change, with AIMS managing a consortium that includes CSIRO, the University of Queensland, Queensland University of Technology, James Cook University, Southern Cross University and the Great Barrier Reef Foundation.

The decision to progress the research—the biggest single effort to protect coral reefs from climate change ever made—places Australia at the forefront of global reef science. We are trying to solve one of the most complex ecological problems on the planet, and we have the best science and a window of opportunity to find workable solutions.

Enhancing our capabilities

AIMS has undergone a major upgrade of its internal project management capability to improve the way we manage projects so that we can better deliver impact for the nation. We introduced a project management system (PMS) that is backed-up by a project management office (PMO), providing a state-of-the-art support platform that everyone in the organisation will benefit from. This system includes detailed resource allocation planning, and on-going tracking of actual time and resources expended on each project and task. It is the bridge between projects and strategy, and provides AIMS managers at all

levels with detailed real-time information on all of our projects, and the overall performance of the organisation. It also allows our scientists the freedom to concentrate on the scientific aspects of their projects, and all of us to deliver more impact with greater efficiency.

Another highlight for the year was speaking about our collaboration with industry at AIMS' Parliamentary Breakfast in Canberra. The packed room of parliamentarians and key department and science agency representatives heard about AIMS' strong relationship with industry across northern Australia, and how marine science provides the research that helps build prosperity for the nation.

AIMS is also committed to meaningful partnerships with Traditional Owners. On the Keppel Islands near Rockhampton, we have teamed up with the Woppaburra Traditional Owners on a coral reef adaptation and restoration project, supported by industry, that combines traditional Indigenous knowledge with conventional science.

The relationship is based on trust, respect, and two-way knowledge sharing, with Traditional Owners invited to guide our research and participate in the study as it progresses. The research will harness the insights and observations of the Woppaburra people, that goes back thousands of years and has been passed down through the generations. And the partnership will enhance skills and create local employment pathways in coral aquaculture and reef science.

Performing at the highest level

Our focus on safety has served us well this year. As the COVID-19 virus continues to spread around the globe, our top priority remains the health, safety, and welfare of our staff. We placed a temporary pause on our field work but, due to innovation and the swift re-assessment of risk management procedures, we were able to restart safely some aspects of our field program. Throughout the entire period of the pandemic we have committed ourselves to keeping important scientific research functioning and to continuing to operate our key capabilities such as the National Sea Simulator.

To maintain the health and wellbeing of our people we took responsible, comprehensive measures to protect our people and operations, placing restrictions on workplace access and strict regimes for research vessels. These measures were also part of our broader effort to help slow the spread of the virus in the general community.

We remain committed to producing outstanding science and maintaining our position as one of the top three marine research institutions in the world. The importance of AIMS' science to the protection of our marine estate was highlighted by the marine heatwave on the Great Barrier Reef earlier this year, the third major bleaching event in five years.

Alongside efforts to reduce global greenhouse gas emissions, and our work with RRAP, we are developing options for intervening on the Great Barrier Reef to help it cope better with climate change. This includes a focus on breeding heat-tolerant corals, to help them adapt, recover and survive warming ocean conditions.

We want to foster and build on the AIMS culture of respect, collaboration, and passion, to make sure our science continues to deliver the impact the nation expects and the world needs. In our Strategy we set ourselves the target of a "year on year improvement in culture survey results". Our recent 2020 staff survey indicates a significant improvement over the previous year, with substantial jumps in seven of our nine desired leadership

practices. This result has been achieved by a concerted effort to build leadership and cultural development within AIMS. I note that the feedback practice builds a healthy work culture and benefits all involved. It enables personal understanding and self-awareness, improves business results, and is based on respect for the people in AIMS.

Our funding, through either government appropriation or from industry, is the blood that pumps through AIMS veins, allowing us to continue delivering the highest quality marine science for the nation. COVID-19 creates challenges to our financial position. It has significantly affected our net external revenue forecasts with several of our projects and field trips cancelled or deferred. The current uncertainty has also reduced opportunities for new work to be identified and contracted.

Building on a strong legacy

In September, as part of a regular survey of our stakeholders across government, industry, philanthropy, research, and education, we undertook the Institute's first measure of a Net Promoter Score. This is a competitive benchmark to help us track and maintain our relationship with our customers. We did very well and achieved a score of 53 as a trusted advisor among key stakeholders, rated as "great". In the survey all sectors considered AIMS to be highly relevant to current Australian environmental challenges and priorities and AIMS science to be highly relevant to their organisation.

The health of the Great Barrier Reef (GBR) is a topical issue, and in the past contradictory perspectives have sometimes contributed to public confusion. In April, AIMS released the first annual summer reef snapshot produced with the Great Barrier Reef Marine Park Authority and CSIRO. Drawing from existing reports, publications, and studies, it provides non-scientists with a concise, easy-to-understand, evidence-based assessment of the health of corals across the length and breadth of the Great Barrier Reef. This was the first time the three Commonwealth agencies involved in the reef have come together to provide a single source of rigorous information on how the GBR is faring.

Finally, we took a significant step towards the goal of reducing our own carbon emissions by 25 per cent with the installation of a $2.25 million solar system at our Townsville headquarters. The new system will generate an estimated 1000kw per hour, reducing the Institute's carbon footprint by about 15 per cent.

Of course, none of these achievements would be possible without the passion and dedication of our staff, and I thank them for their hard work over the last 12 months. I look forward to an exciting and productive year ahead as we support the nation in its recovery from COVID-19.

Paul Hardisty

2019-2020 Snapshot

SCIENCE EXCELLENCE

#1
marine science institution in the World & Australia

Benchmarking by Clarivate Analytics InCites research analytical tool

SCIENCE LEADERSHIP

North West Shoals to Shore Research Program

$20m funding

82 scientists

9 organisations

9 projects

Reef Restoration and Adaptation Program

$6m
concept feasibility program delivered in December 2019

12
sub-programs investigating potential interventions being supported

4yr
$150m R&D program managed by AIMS

MONITORING THE GREAT BARRIER REEF

122 reefs

1,243 dives

130 days at sea

3,532 manta tows

TRADITIONAL OWNER ENGAGEMENT

Northern Territory

Anindilyakwa Rangers
Groote Eylandt

Thamarrurr Rangers
Wadeye

Dhimurru AC
Nhulunbuy

Western Australia

Bardi Jawi and Oorany Rangers
Dampier Peninsula, Kimberley area

Mayala AC
Buccaneer Achipelago, Kimberley area

Malgana AC
Shark Bay

Queensland

Torres Strait Regional Authority Rangers
Torres Strait

Lama Lama Rangers
Cape York

Manbarra Elders Council
Palm Islands

Wulgurukaba AC
Magnetic Island

Bindal People
Cape Ferguson

Gudjuda Rangers
Burdekin

Woppaburra People
Keppel Islands

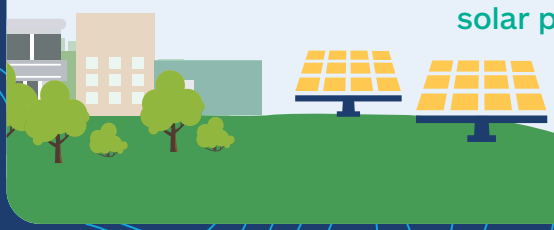
SAFETY PERFORMANCE

12.5%
decrease in recorded injuries

50%
decrease in injury severity

ENVIRONMENTAL PERFORMANCE

3,733
solar panels



1MW+
generating capacity

1,585MW
reduction in electricity consumption

33T
reduction in solid waste to landfill

1,600T
annual reduction in carbon footprint

Image: LTMP

About AIMS

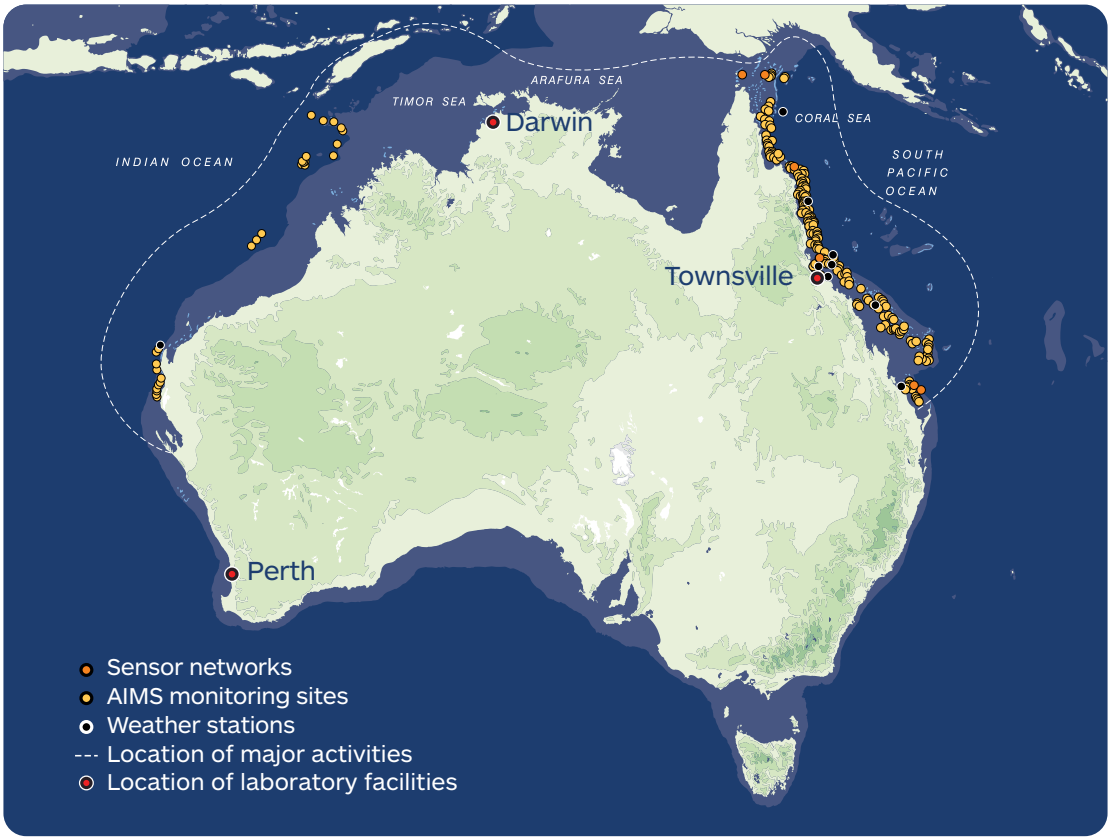
The Australian Institute of Marine Science is a corporate Commonwealth entity established under the Australian Institute of Marine Science Act 1972 (AIMS Act). As Australia's tropical marine research agency, it is our mission to provide the research and knowledge of Australia's tropical marine estate required to support growth in its sustainable use, effective environmental management and protection of its unique ecosystems.

To accomplish our mission, AIMS delivers independent science to help realise three key long-term impacts for the nation:

- improve the health and resilience of marine and coastal ecosystems across 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.

AIMS' headquarters was established on Cape Ferguson near Townsville in recognition of the importance of the GBR to Australia. Today, we also operate from bases in Perth and Darwin, which allows us to conduct research across northern Australia, spanning two oceans and three regional seas (see Figure 1).

Figure 1: Location of AIMS' facilities and major activities



AIMS is uniquely placed to provide the expert advice and solutions for management agencies, marine industries, and coastal communities to preserve our marine estate and ensure its sustainable use. Our research is focused on the priorities of our stakeholders, including Commonwealth, State and territory governments, industry and Traditional Owners.

Our oceans provide jobs, contribute to national prosperity and hold intrinsic value for all Australians. Sustainable growth in Australia's marine industry and the preservation of all that are in our oceans is underpinned by strong marine science delivered by AIMS.

Our scientific research provides the knowledge that contributes to industry's competitiveness while protecting our unique marine ecosystems. It helps marine-based industries understand their operating environment and reduce uncertainty so they can make the right long-term decisions with confidence and maintain their social licence to operate.

AIMS recognises that Indigenous peoples are the Traditional Owners of much of the sea country within which AIMS works. AIMS seeks to build meaningful partnerships with Traditional Owners of sea country in northern Australia to deliver impactful research for all Australians. That is why, in AIMS Strategy 2025, we undertake science collaborations with traditional owners in key projects based on sea country. Traditional Owners have a knowledge system that's based on thousands of years of observations and environmental information that is passed down through the generations.

Our Traditional Owner collaboration is a growing relationship based on trust, respect and two-way knowledge sharing that blends traditional knowledge with western science to create new insights into local marine ecosystems.

Image: Nick Thake
Photograph taken pre-COVID restrictions

Part 2: Performance Statements

Image: Wing Cha

Statement of Preparation

Australian Government | Australian Institute of Marine Science | TOWNSVILLE | DARWIN | PERTH

STATEMENT OF PREPARATION

As the accountable authority of the Australian Institute of Marine Science, I present the 2019-20 annual performance statements of the Australian Institute of Marine Science, as required under paragraph 39(1)(a) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and other applicable legislation. In my opinion, these annual performance statements are based on properly maintained records, accurately reflect the performance of the entity, and comply with subsection 39(2) of the PGPA Act.

The content of the performance statements was endorsed on 7 August, 2020.

The Hon Penelope Wensley AC
Council Chairman
Australian Institute of Marine Science

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Image: Nick Thake

RESEARCH HIGHLIGHT:

Inaugural summer reef snapshot published

The health of the Great Barrier Reef (GBR) is a topical issue which has received considerable public and government attention. Because the Reef is vast, as large as a mid-size country, there is considerable variation in the condition of different reefs that make up the entire system.

Some reefs have been severely affected by coral bleaching, cyclones and crown of thorns starfish, while others remain less affected. Contradictory perspectives presented in the public domain combined with people's varying personal experiences of different parts of the reef contribute to public confusion about the overall health of the GBR.

AIMS, with its long-term and broad-scale scientific understanding of the Reef built over 35 years, joined forces with the Great Barrier Reef Marine Park Authority and CSIRO to produce the first annual Reef Snapshot which was released following the summer of 2019-20.

This collaboration between the three Australian Government agencies with comprehensive expertise in reef science and management provides a clear, evidence-based explanation of the status of the Reef. The Snapshot describes the condition of the Reef following the summer, what the agencies are doing to monitor and protect it, and practical ways the public can help the Reef. It is the first time the three Commonwealth agencies involved in the reef have come together to provide a single source of information on the health of the GBR.

Drawing from current reports and studies, the publication includes evidence-based assessments of the health of corals along the length and

breadth of the Great Barrier Reef. It also communicates the vastness, complexity and changing nature of the reef, while at the same time acknowledging differences in the health of the 3000 individual reefs that make up the Great Barrier Reef. By providing a clear and coherent voice across the three agencies in the format of a concise, accurate, easy-to-understand summary, the Reef Snapshot can help the non-scientist understand better the status of the Reef.

The Reef Snapshot explains the pressures affecting the reef, including cyclones, crown-of-thorns starfish and coral bleaching, in terms of disturbance, decline and recovery. These disturbances are occurring more often, are longer-lasting and more severe than in previous decades, leaving the reef with less time to recover.

The Reef Snapshot also describes the results of initial surveys of the third mass coral bleaching event in five years following the second warmest summer on record in Queensland.

AIMS' LTMP has been surveying the GBR for more than 35 years, providing the most comprehensive record of coral condition of a reef ecosystem available in the world.

With a focus on the status of reefs in different regions, the Reef Snapshot also highlights the importance of rigorous monitoring, management and scientific research investigating coral resilience and adaptation in order to protect the Reef for future generations.

It sets the scene for more detailed reports later in 2020, including AIMS' Annual Summary Report on Coral Reef Condition to be released mid-year, based on surveys conducted by AIMS' Long-term Monitoring Program (LTMP).

AIMS' LTMP has been surveying the GBR for more than 35 years, providing the most comprehensive record of coral condition of a reef ecosystem available in the world. Ninety-three reefs are routinely monitored as part of the LTMP, to determine long-term trends in the condition of coral communities. An additional 32 inshore reefs are monitored as part of the Reef 2050 Plan Marine Monitoring Program managed by the Great Barrier Reef Marine Park Authority.

This expertise and experience gives AIMS its reputation as a world-leading, independent provider of science on the Great Barrier Reef and supports its goal of providing government and industry with timely, accurate and relevant information to manage and operate in Australia's marine estate ■

RESEARCH HIGHLIGHT:

Gene discovered for heat tolerance in corals

In a world first, AIMS' coral genetic engineering team conclusively identified a gene involved in heat tolerance in coral.

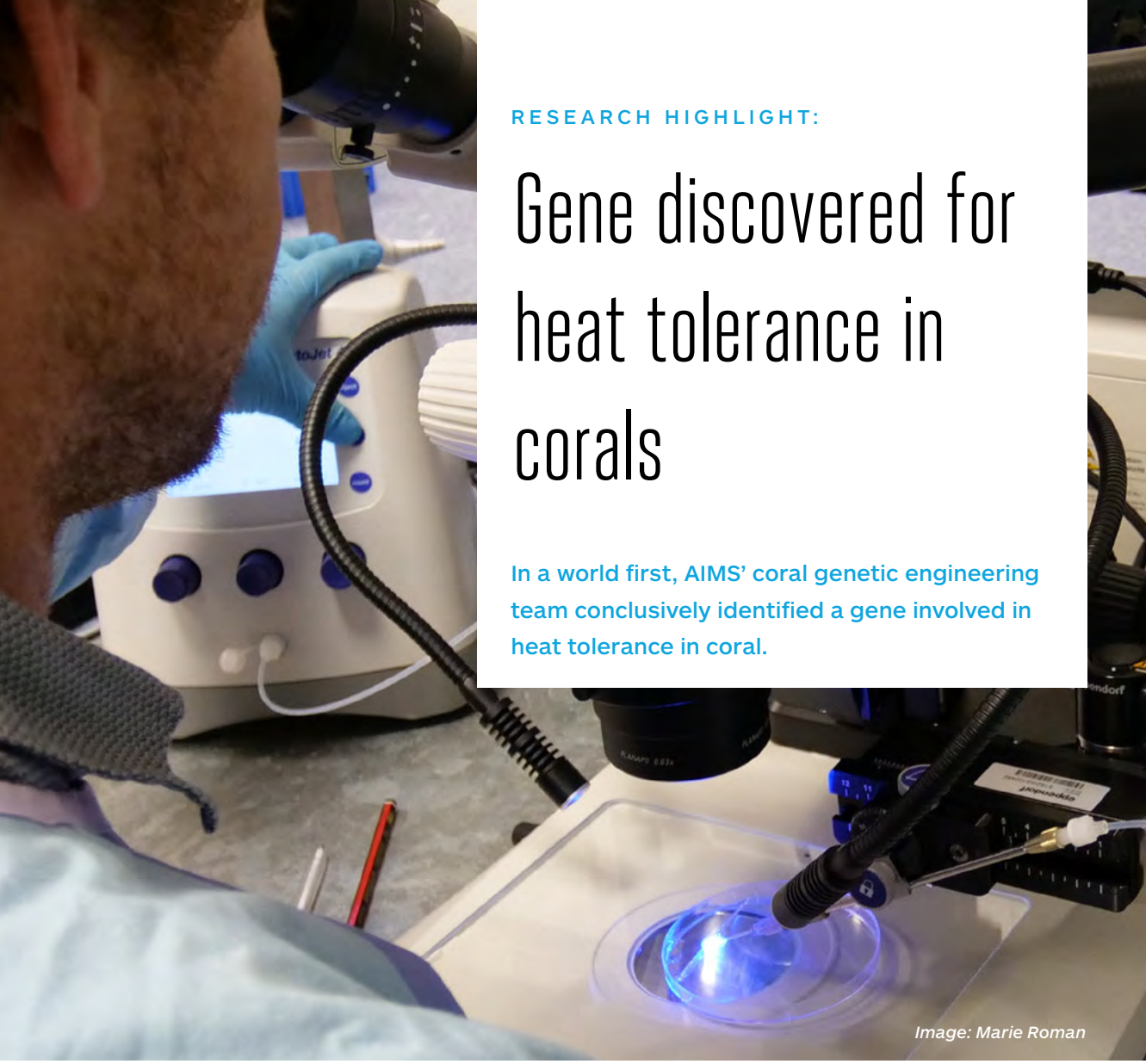


Image: Marie Roman

During coral spawning in 2018, the team studied a well-recognised regulator of the heat stress response in other organisms, known as HSF-1. By introducing mutations and disrupting the function of the HSF-1 gene, the team demonstrated that at elevated temperatures treatment coral larvae died whereas control larvae survived.

Genetic engineering was revolutionised less than 15 years ago with the application of CRISPR-Cas9 technology that allows very precise edits at the nucleotide level. These edits introduce mutations that disrupt the function of genes. This results in 'knock-down' organisms that are no longer able to use this gene and thus lose the function for which it codes.

AIMS, in partnership with Stanford University and QUT, is a global leader in the application of CRISPR-Cas9 technology to understand how coral genes function. By observing how knock-down corals perform under stress, AIMS researchers are seeking to identify the genes that underpin a variety of key coral traits important for adaptation to climate change.

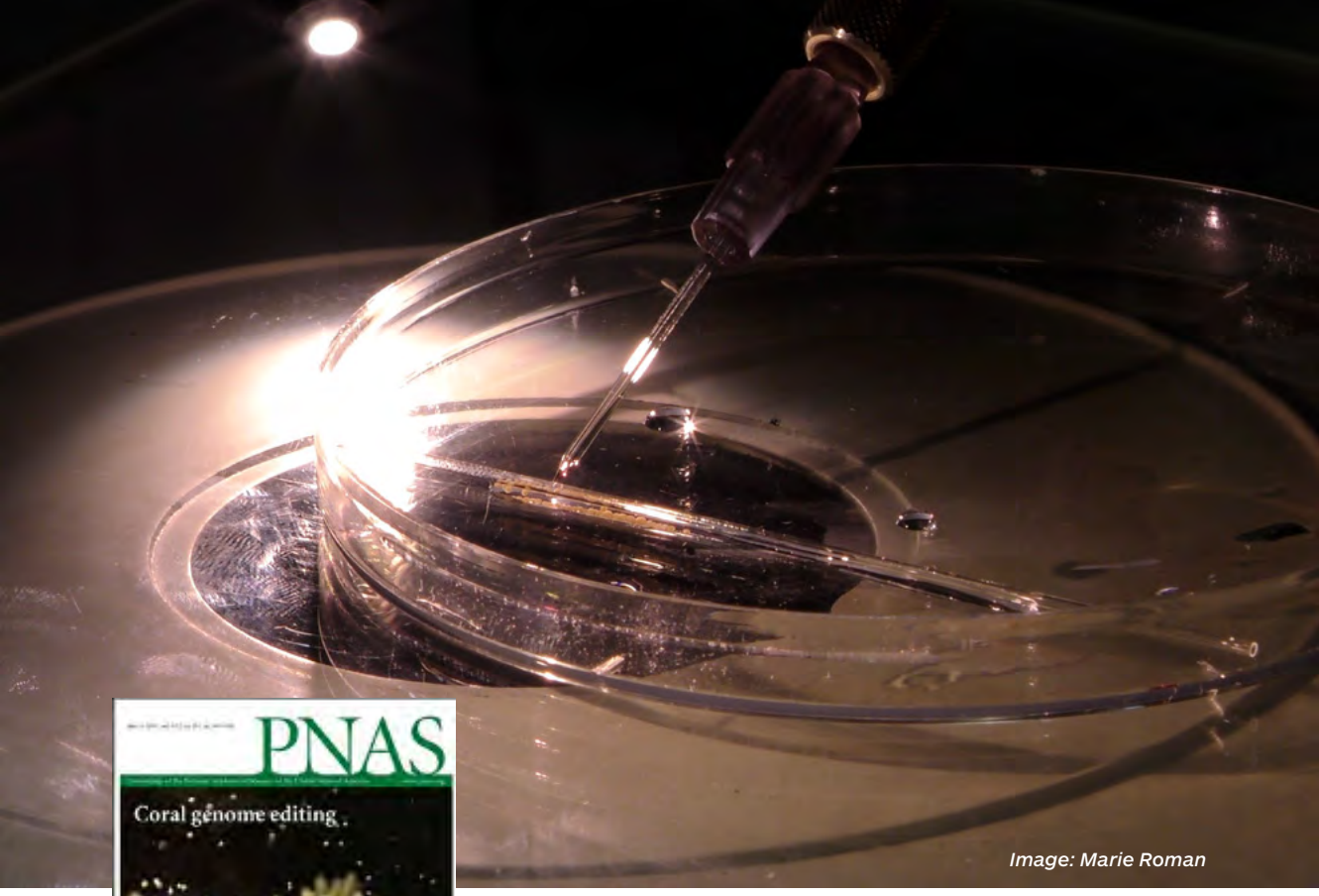


Image: Marie Roman

AIMS' coral genetic engineering research on the cover of the journal PNAS

Introducing mutations in HSF-1 caused the loss of heat tolerance in coral larvae. Coral larvae with mutations died when exposed to heat stress, compared with the control larvae that survived under elevated temperatures.

In 2018, AIMS published the first paper (https://www.pnas.org/content/115/20/5235) to report successful application of the CRISPR-Cas9 gene-editing tool on coral, and has further refined its approach over the last three years. During coral spawning in November 2019, the team knocked out a gene involved in calcification, attempted to enhance heat tolerance in corals for the first time, and tested the role of many more genes believed to be important in bleaching. This world leading research contributes to AIMS' scientific excellence and is aligned to our strategic targets of year-on-year improvement in science excellence, and remaining in the top three marine science research institutions in the world.

Identifying genes that promote tolerance to heat and bleaching is crucial for most of the coral adaptation approaches proposed under the Reef Restoration and Adaptation Program (RRAP) for the Great Barrier Reef. The immediate role of genetic engineering in RRAP is to identify targets of existing natural variation to underpin aquaculture breeding programs, although it is possible that genetic engineering may be used to enhance tolerance in corals in the future. ■

Entity Purpose

AIMS' purpose is to contribute to the economic and environmental wellbeing of Australians by conducting research into the tropical marine estate. AIMS was established by the Australian Government in 1972 to conduct research and development relating to, and to promote, the application and use of marine science and marine technology. The Institute's mission 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. The functions and powers of the Institute are fully described in Appendix C: Legislative Foundation and Ministerial Powers on page 164.

Intended Outcomes

AIMS' annual Portfolio Budget Statement provides the Parliament of Australia with information on how AIMS will use its allocated resources to achieve the government-mandated outcome over the current budget and forward years. AIMS is funded to deliver *Outcome 1: Growth of knowledge to support protection and sustainable development of Australia's marine resources through innovative marine science and technology*.

Government funding for AIMS is delivered through Program 1: Marine Research. This program provides research services focused on supporting the sustainable development of Australia's marine estate by industry, while ensuring the protection of high-value marine and coastal ecosystems through effective environmental management.

Through engagement with stakeholders, including Commonwealth and state governments, industry, Traditional Owners, science agencies and universities, AIMS has developed a comprehensive research program that continues to deliver world-leading science while ensuring that its multidisciplinary science capability, infrastructure and research investment remain focused on addressing national needs and aspirations.

The 2019-20 Portfolio Budget Statement Table 2.1.3 identifies how AIMS is working to deliver research outcomes by providing:

- 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.

The success of AIMS' marine research program is assessed against a set of eight high level performance criteria:

- demonstrate the outcomes and impacts of AIMS' work through case study impact narratives and evaluations
- deliver strategic and applied research and monitoring that addresses national research priorities and stakeholder needs
- maintain or increase current standings for scientific excellence, innovation and impact
- deliver research advice and scientific products that are critical for stakeholders to assess the impacts of natural and human pressures on sensitive marine ecosystems
- increase research capability, capacity, impact and science diplomacy through participation in formal national and international collaborations, joint ventures, partnerships and strategic alliances
- improve research outcomes and impact through increased Traditional Owner engagement in the planning and delivery of coastal research and development
- reduce AIMS' environmental footprint
- make optimal use of research infrastructure assets.

Results and Commentary on Performance

AIMS successfully achieved all high-priority research outcomes detailed in the AIMS Portfolio Budget Statement 2019-20, and the AIMS Corporate Plan 2019-20.

At the start of each annual reporting cycle, only a proportion of external revenue (40–60%) is contracted. This creates two risks that AIMS manages within the cycle:

- Annual external revenue earnings, and hence the capability that AIMS can retain and the associated research outputs it should target, is subject to forecasting error. Note that the market sectors in which AIMS operates are dominated by short-term bespoke research projects; there are few routine or regulated external revenue sources.
- Clients contract AIMS to undertake specific research projects (i.e. the research scope is contractually linked to the funding). While AIMS undertakes extensive stakeholder consultations when setting plans, it is still not feasible to predict exactly which areas of research will be externally funded.

In response, AIMS operates an adaptive research planning process that continually reviews and adjusts its research portfolio so that the highest priority research is completed.

COVID-19 did not have a significant impact on our science deliverables in 2019-20, but it did affect negatively our external revenue earnings. Expected projects were deferred or cancelled, and COVID-19 controls to ensure the safety of AIMS staff resulted in a reduced field program, which meant that some contracted work could not be delivered, and the associated planned external revenue could not be realised. The COVID-19 controls also resulted in lower utilisation of AIMS major research assets – the National Sea Simulator and the two large research vessels, the RV Cape Ferguson and the RV Solander.

The longer-term impact of COVID-19 on AIMS, its science and finances remains unclear. However, we expect the impacts on asset utilisation and external revenue to carry forward into 2020-21. AIMS is responding by maintaining existing capacity and capability, continuing to liaise with its stakeholders and, whilst the future is unpredictable, taking every opportunity to position itself well to enable the Institute to maintain scientific excellence and rebuild external revenue.

The 2019–20 external revenue budget was set at a high level, reflecting more optimism in the market, particularly in the offshore oil and gas sector and the government sector. COVID-19 impacts and controls meant that AIMS achieved external revenue of $15.291M with some work deferred and rolled over to 2020-21. (refer page 80 – revenue).

Table 1 provides a summary of our performance against the AIMS 2019-20 Key Performance Indicators.

Image: Emma Chadwick

Table 1: Overall performance summary

Table legend ✔ All expectations met — Most expectations met ✖ Expectations not met

Performance Criteria	Portfolio Budget Statement (PBS) performance targets	KPIs (Corporate Plan)	Result	Expectations Met
Demonstrate the outcomes and impact of AIMS' work through case study impact narratives and evaluations	Minimum two case studies	≥ 2 case studies per year	Four case studies were produced in 2019-20.	✔
		Demonstrate ≥$10m total impact value	Valuations of AIMS societal impact through case studies demonstrated delivery of at least $29.2 million per year in 2019. Noting that these case studies represent a small proportion of AIMS' outputs, it is estimated that our overall impact is greater than $100 million per annum.	✔
Deliver strategic and applied research and monitoring that addresses national research priorities and stakeholder needs	Maintain or increase the amount of stakeholder commissioned research	Increase net external revenue generated from stakeholder commissioned research by ≥2.5% per annum	Net external revenue for 2019-20 is $10.45 million compared with an actual of $12.88 million in 2018-19, a decrease of 18.8%. The lower than planned performance was primarily due to COVID-19, which led to substantial external revenue reductions, particularly from the oil and gas market sector (see page 80).	✖
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	Benchmarking of AIMS' Citation Impact in June 2020 demonstrated that in the field of marine and freshwater biology, AIMS was the top ranked research institution in the world.	✔
		Maintain high stakeholder confidence in AIMS' scientific outputs gauged using a net promoter score	A survey of key stakeholders conducted in late 2019 assessed AIMS as having a 'great' net promoter score (NPS) of 53. The NPS is a common method to measure and improve customer loyalty, with customers rating their likelihood of recommending a company to others on a scale of 0-10, which provides an index range from -100 (unlikely to recommend) to +100 (very likely to recommend).	✔

Performance Criteria	Portfolio Budget Statement (PBS) performance targets	KPIs (Corporate Plan)	Result	Expectations Met
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, datasets and derived knowledge products that are used by stakeholders and are publicly available	Maintain annual journal publication rates > 200 papers per annum	This measure is reported on a calendar year basis. AIMS has exceeded 200 publications each year between 2015 and 2018. In 2019, AIMS published 195 journal articles (see page 37).	–
		100% of datasets collected using public monies are made publicly available within one year of collection	The outputs of research funded by specific government programs are available on the appropriate (government) website or on request, at the completion of the project.	✔
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 the 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 AIMS' projects involving collaborators (≥ 70%)	During the 2019-20 FY, AIMS maintained its strong record of collaboration with >85% of its projects involving external collaborators (see page 59).	✔
		Maintain proportion of published papers and reports that include collaborators (≥ 80%)	During 2019, AIMS maintained its strong collaborative publication record. Ninety-four per cent of papers authored or co-authored by AIMS scientists involved collaborators.	✔
		Representation on relevant advisory committees (100%)	AIMS continues to play a significant advisory and leadership role on relevant panels and committees. Most notable are the National Marine Science Committee, the Reef 2050 Plan Reef Advisory Committee, Independent Expert Panel and RIMReP Interim Executive and Operations Committees, Secretariat for the International Coral Reef Initiative and the Global Coral Reef Monitoring Network Steering Committee. In addition, AIMS has contributed advice to a range of government reviews and Parliamentary inquiries.	✔

Performance Criteria	Portfolio Budget Statement (PBS) performance targets	KPIs (Corporate Plan)	Result	Expectations Met
Improve research outcomes and impact through increased 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	Increase % of projects with Indigenous engagement	In 2020, AIMS implemented its Indigenous Partnership Plan, which describes a tiered approach to inform the level of engagement required of projects. Four projects with Traditional Owner partners are underway, including coral reef research with the Woppaburra Traditional Owners of the Keppel Islands in Queensland, and several more are in development.	✔
Reduce AIMS' environmental footprint	10 per cent reduction in AIMS' carbon emissions compared with 2017-18	Carbon emission reduction ≥ 10% compared with 2017-18	The PV solar system in Townsville was commissioned late 2019 and is performing to expectation. The overall % reduction in total CO_2 compared with 2017/18 is 21.8%	✔
	Develop an environmental management plan to reduce carbon emission by a total of 25 per cent by 2020	Environmental Management Plan developed	An environmental management plan has been drafted. Emergency management and business continuity activities associated with COVID-19 have delayed completion of the plan, which will be finalised in early 2020-21.	–
Optimal utilisation of research infrastructure assets	Maintain or increase usage of research infrastructure	≥ 90% use of major research assets	SeaSim utilisation remains high, although is slightly lower than target due to reduced numbers of new experiments commencing during the COVID-19 crisis. RV Solander and RV Cape Ferguson utilisation were significantly impacted due to restrictions in field work management required to control COVID-19 risks. The overall utilisation of major research assets was 74%. Prior to COVID-19, the utilisation of AIMS' major research assets was on target.	✖

Statement of (Ministerial) Expectations

In 2015, the then Minister for Industry and Science, the Hon Ian Macfarlane MP, provided the AIMS Council with a Statement of Expectations outlining the Minister's expectations regarding the quality and focus of AIMS' research, its contribution to Australian Government priorities and initiatives, and AIMS' governance and communication responsibilities.

The Chairman of the AIMS Council, the Hon. Penelope Wensley AC, responded with the AIMS Statement of Intent identifying our commitment to the Australian Government's policy agenda and the strong connections between this policy agenda and our Strategic Plan 2015–25.

These two documents remained current until 13 February 2020, when the Minister for Industry, Science and Technology, the Hon Karen Andrews MP, provided the AIMS Council with a new Statement of Expectations[1]. The AIMS Council responded to the Minister with a Statement of Intent confirming AIMS' commitment to the Australian Government's policy agenda and the strong connections between this and the AIMS Strategy 2025. This new Statement of Intent replaces the earlier (2015) version.

AIMS will provide a full-year report against the new Statement of Expectations in its next Annual Report (2020-21). In this Annual Report, AIMS provides a table (below) illustrating how it delivered against the Statement of Expectations that was current until receipt of the Minister's new advice in February 2020. At the end of this table an additional section shows how AIMS is meeting the 2020 Statement of Expectations.

Table 2: AIMS delivery against Minister's expectations

Minister's expectation	AIMS delivery against expectation
AIMS to actively engage in the specifications and overall spirit of the Boosting Commercial Returns from Research agenda, ensuring the Commonwealth's $9.2 billion per year investment in research furthers the interests of the Australian community and maximises our commercial return.	AIMS continues to take an active role in Australian Government science and research policy development and participates in initiatives such as the National Collaborative Research Infrastructure Strategy.
The Government is finalising its first set of Science and Research Priorities developed by the Chief Scientist and considered by the Commonwealth Science Council (CSC), and I expect AIMS to give consideration as to how it can best contribute to these research areas of national priority.	AIMS' research program is aligned with Australia's Science and Research Priorities – in particular the soil and water, and environmental changes priorities. During 2019–20, AIMS delivered the Reef Restoration and Adaptation Program Concept Feasibility Study and commenced the follow-on Research and Development phase of RRAP – a significant program which is contributing to one of the Government's most important priorities for AIMS — science for the restoration and (climate) adaptation of the GBR.

1 *The statement is available at: https://www.aims.gov.au/docs/about/corporate/corporate-profile-governance/statement-of-expectations*

Minister's expectation	AIMS delivery against expectation
Consistent with its legislative functions, AIMS to contribute to the Government's science, technology, engineering and mathematics (STEM) agenda to increase Australia's STEM performance.	AIMS delivers on its commitment to support the growth of STEM capabilities in marine science by co-supervising postgraduate students and providing postdoctoral and early career pathways and employment opportunities. Further, AIMS is a primary sponsor of the ATSIMS program (Aboriginals and Torres Strait Islanders in Marine Science), which encourages the uptake of marine science by Indigenous high school students.
The Government will respond to the Research Infrastructure Review. AIMS to provide input, through the Department of Industry, Innovation and Science to this process of policy development including on matters such as depreciation, governance, access management, long-term planning and prioritisation, and sources of funding.	AIMS contributed to the Research Infrastructure Review, the development of the 2016 National Research Infrastructure Roadmap, and the National Research Infrastructure Investment Plan 2020 review.
AIMS to continue to deliver world class research and development in relation to marine science and marine technology that underpins the sustainable long-term management of Australian marine environments, including the GBR, as well as associated impartial and accurate advice. In doing so, it should focus its scientific research on areas where it has or can establish a competitive edge in terms of excellence and scale, and encourage the application and adoption of this research, especially where it can drive improvements in Australia's economic competitiveness.	This is a core function of AIMS. Benchmarking of AIMS' Citation Impact in June 2020 demonstrated that in the field of marine and freshwater biology - our core area of expertise - AIMS was the top ranked research institution in the world (page 38).
AIMS to support the Minister for Industry in her role as Deputy Chair to the Prime Minister of the Commonwealth Science Council (CSC).	AIMS provides support to the membership of the National Science and Technology Council (NSTC) – the successor to the CSC – at all appropriate levels.
AIMS to engage with the Chief Scientist of Australia, including when a member of the National Science, Technology and Research Committee.	AIMS takes appropriate opportunities to engage the Chief Scientist. AIMS CEO has regular meetings and phone conversations with the Chief Scientist.
In advancing the Government's agenda, AIMS to collaborate with universities, other publicly funded research agencies, and industry to achieve common objectives. In particular, AIMS should not rely entirely on its own resources but should also use national and international collaboration to increase the capacity and responsiveness of the nation's ability to translate marine science research into outcomes.	A significant proportion of our research involves collaborations with other parties. During 2019–20, more than 85% of AIMS' projects involved external collaborators, including universities, other publicly funded research agencies and industry partners.

Minister's expectation	AIMS delivery against expectation
AIMS to work in partnership with business to identify and develop the science to address industry problems and to underpin Australia's aim of increased competitiveness. The knowledge and ideas of its researchers can substantially improve the productivity of industry and businesses. AIMS and business should therefore work together to continue growth in the knowledge-based sectors. Further, AIMS to engage with those industries where AIMS' capability can help them to become globally competitive.	AIMS delivered an extensive portfolio of research related to industry, particularly the offshore oil and gas sector in WA. We also provide research-based support to other Australian industries, including ports, tourism and agriculture. During 2019-20 AIMS delivered a significant research activity for the Australian offshore oil and gas industry – the Northwest Shoals to Shore Project. This was co funded by AIMS and industry partners and provided valuable information concerning the impacts of underwater seismic testing on marine organisms.
AIMS should maximise use of its national scientific facilities and collections by Australian and international researchers, including by encouraging industry access to relevant facilities. In encouraging such access, AIMS has a role to play in communicating and educating business on the benefits such infrastructure can provide.	AIMS' national research infrastructure, the SeaSim, and AIMS' research vessels continue to be used frequently by industry partners and other researchers, including international researchers, as part of collaborative research projects.
AIMS to raise community awareness of its activities and communicate its research and technical knowledge through the publication of peer reviewed scientific papers and the provision of marine science and technology goods and services.	AIMS delivers its science to the broader community through a variety of communication mechanisms including through the AIMS website and by publishing numerous high-quality scientific papers in peer reviewed journals.
Research publications produced by AIMS that arise from public funding should be openly available at no charge within 12 months of original publication, excepting where contractual arrangements preclude this or are at significant cost, noting that such arrangements are to be minimised. This could be done by making publications accessible via the agency website; by depositing the output to an organisation, institution or discipline electronic archive that provides open access; by publishing in open-access journals; or by ensuring publications are available on a journal or publisher website.	AIMS regularly publishes research papers in open-access journals and also advertises published outputs on the AIMS' website, noting that copies of research papers can be obtained from the author. In addition, the outputs of research funded by specific government programs are made publicly available on the appropriate (government) website on completion.
Consistent with its legislative functions, AIMS to invest in industry-relevant research training. AIMS to encourage engagement between researchers and business, including by facilitating mobility between AIMS and other research organisations and industry. AIMS to encourage its researchers to be entrepreneurial and support realisation of commercialisation outcomes for industry. AIMS to support risk taking, as part of a resilient strategic approach to solving the big problems facing Australia, within the context of maintaining good governance and learning from failure.	AIMS supports the training of postgraduate scientists in industry-supported fields of research, collaborating with Australian universities for higher degree research training and other national and international research organisations, and partnering with major industry sectors to develop innovative solutions that yield beneficial economic and environmental outcomes. During 2019-20, AIMS supported postgraduate candidates co-supervised by AIMS staff within the AIMS science teams and joined with industry partners to fund jointly several postdoctoral research positions within the Institute.

Minister's expectation	AIMS delivery against expectation
AIMS to identify and take, where practicable, opportunities to support new companies to commercialise AIMS' discoveries and expertise.	AIMS monitors and assesses potential commercial development opportunities arising from our research. We have a record of supporting companies in their efforts to realise commercial benefits of AIMS' discoveries and expertise. AIMS undertakes a range of technology development projects aimed at further leveraging its research investment. During 2019-20, AIMS was successful in submitting a challenge to the Australian Government's Business Research Innovation Initiative (BRII), which provides funding to small and medium-sized enterprises (SMEs) to develop innovative solutions to challenges in public policy and service delivery. AIMS will collaborate with an SME partner on *Counting fish using advanced technologies*, with the aim of transitioning AIMS' current baited remote underwater video station (BRUVS) analysis artificial intelligence (AI) R&D phase into a product for researchers and collaborators to use.
AIMS to keep the Minister and the Department informed, in a timely and accurate way, of significant issues relating to the health and work of the organisation. AIMS to provide input and information to the Department as required ensuring that advice to the Minister's office and the Government canvasses relevant issues and sensitivities and reflects a portfolio response. AIMS to provide copies of ministerial briefings and correspondence to the relevant areas of the Minister's office and the Department, in parallel. AIMS to provide prior notice to the Minister's office and the Department of significant announcements and events that are likely to attract media attention.	AIMS continues to provide a range of timely and informative briefings to Australian Government ministers and departments on relevant marine science issues.
In accordance with the Public Governance, Performance and Accountability Act 2013 (PGPA Act), AIMS to develop an annual corporate plan and to provide that plan to the responsible portfolio minister and the Minister for Finance. In developing the corporate plan, AIMS to consult with the Minister and the Department, and to take into account the priorities and policies of the Government, especially as articulated in the Statement of Expectations.	Consistent with the requirements of the PGPA Act, AIMS released its 2019-20 Corporate Plan update in August 2019.
AIMS to provide Parliamentary Secretary Andrews and her office with the same level of communication, and timely, accurate advice and information, as to the Minister and the Department.	All official AIMS Ministerial briefs are lodged with, and available to, the executive of the Department of Industry, Science, Energy and Resources.

Minister's expectations (2020)	AIMS delivery against expectation
Resolving National Challenges	AIMS plays a leading role in significant cross-agency activities that respond to marine challenges facing Australia: For example, AIMS: • Is the managing agent and a key research provider in the joint venture delivering long-term coral reef restoration and adaptation solutions (RRAP). • Is a key partner in the National Marine Science Committee and a key delivery agent in its solutions-based National Marine Science Plan • Provides scientific advice and research support, which underpins delivery of the Government's Great Barrier Reef 2050 Plan
Advancing the Government's policy priorities	AIMS work supports and advances many of the Australian Government's policy priorities through actions which include, for example: • Provision of independent scientific advice to decision makers in marine industries such as offshore gas exploration and marine ports • Collaboration with universities and the private sector to translate our science into broader outcomes of benefit to the nation. • Improving our business and IT systems to enhance productivity and cybersecurity • Promoting STEM equality and supporting the women in STEM decadal plan • Facilitating productive science engagement with Traditional Owners through our Indigenous Partnerships Plan
Driving the organisation's performance	AIMS continues to strive to be an exemplar of the Government's commitment to effective governance and performance. Our actions include: • Commitment to delivery of the AIMS Strategy 2025 targets; • Supporting the safety and sustainability of our workforce, and • Maximising the effective utilisation of our infrastructure

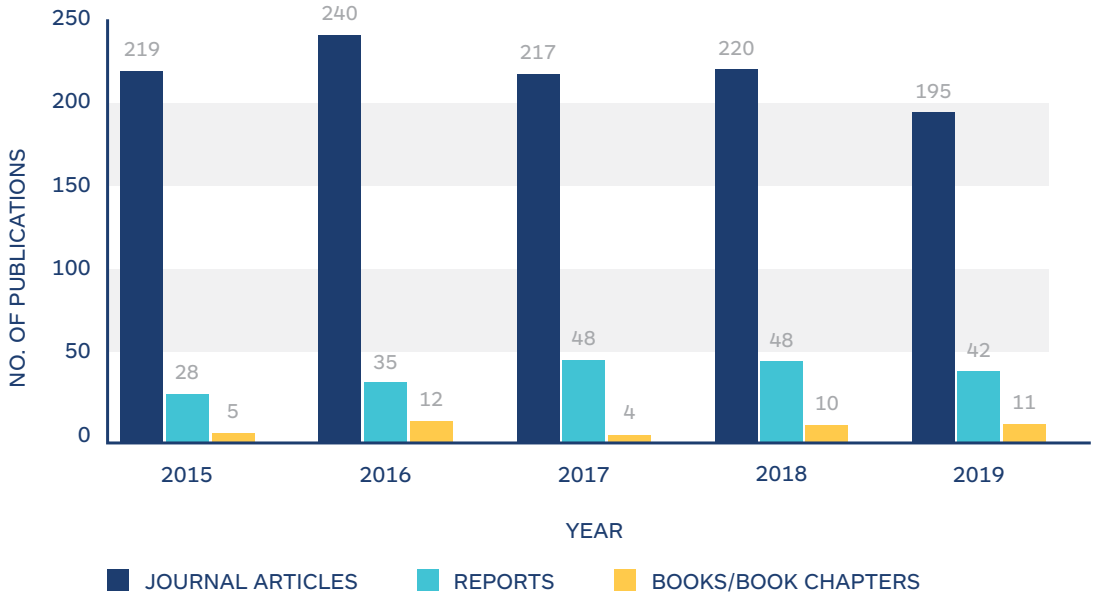
Research Performance

Publications

AIMS has a strong publications record within its fields of expertise, particularly the impacts of climate change, and ocean acidification, declining water quality and other pressures on marine and coastal ecosystems, marine biodiversity, including threatened and endangered species, oceanography, ecosystem processes, ecosystem status and trends, water quality genetics and marine microbiology. During 2019, AIMS published 195 peer reviewed journal articles, 42 reports for a variety of clients including the Commonwealth Government through programs such as the National Environmental Science Program (NESP) and 11 book chapters. While AIMS did not quite reach its own annual institutional target of 200 journal publications during 2019, the quality of publications produced by AIMS continues to increase[2]. In addition, with the completion of the substantial Reef Restoration and Adaptation Program and the North West Shoals to Shore Program, the publication output by AIMS is likely to increase again in 2020.

The main types of publications produced by our research staff are peer reviewed journal articles and reviews, followed by client reports (see Figure 2). AIMS full bibliography for 2019 is included in Appendix A: Science publications.

Figure 2: Number of AIMS publications by type, 2015–19



2 *Measured by the average Impact Factor of the journals in which AIMS publishes*

In the field of marine and freshwater biology, AIMS was the top-ranked research institution both in Australia (Figure 3) and globally (Figure 4) over the period 2015–19.

Figure 3: Top six organisations in the field of marine and freshwater biology ranked by citation impact, 2015 to 2019 in Australia (InCites June 2020)

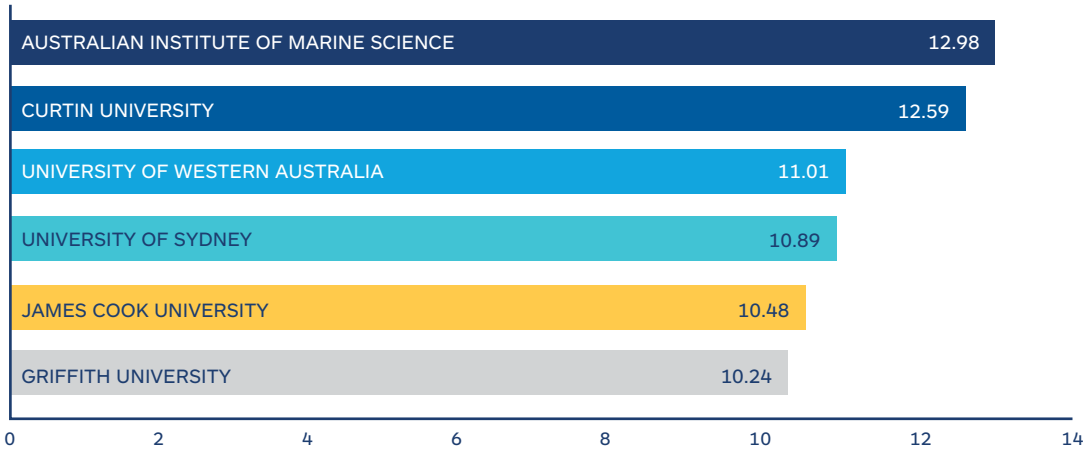
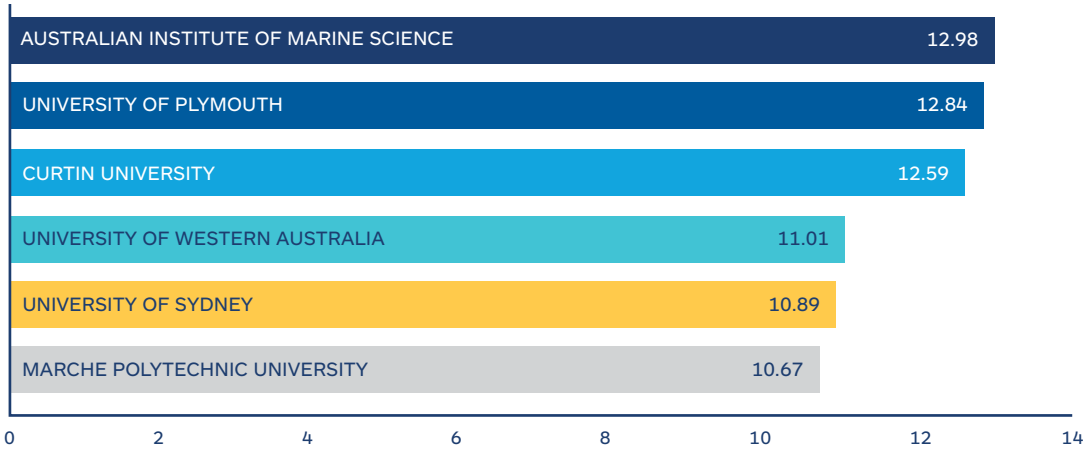
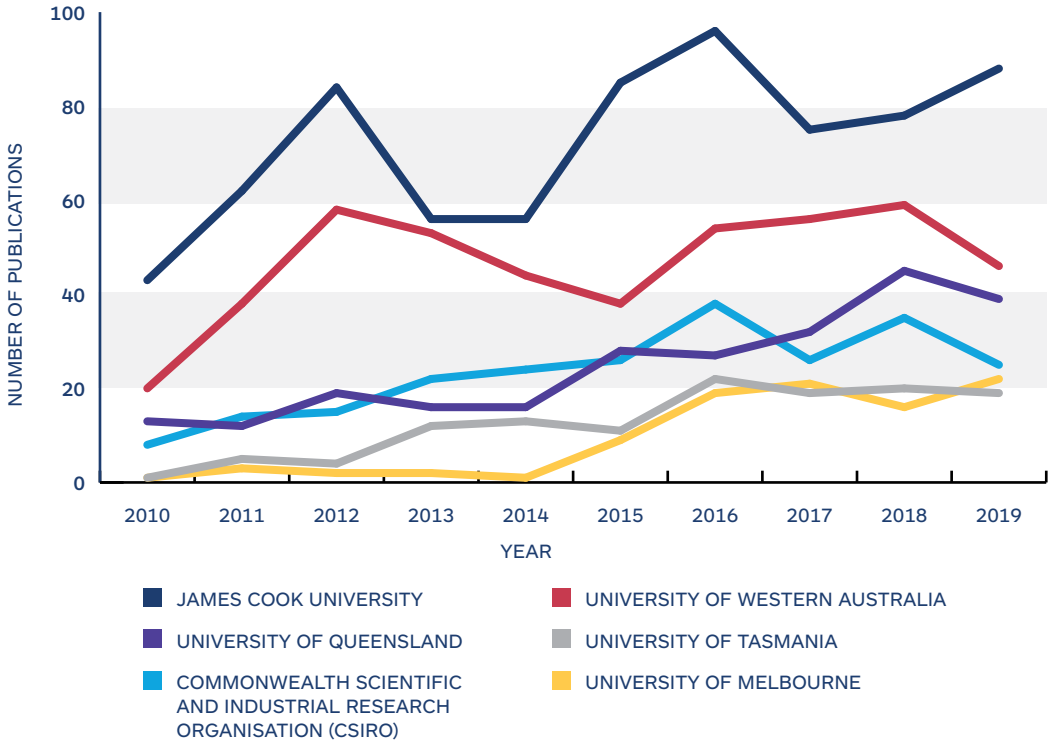


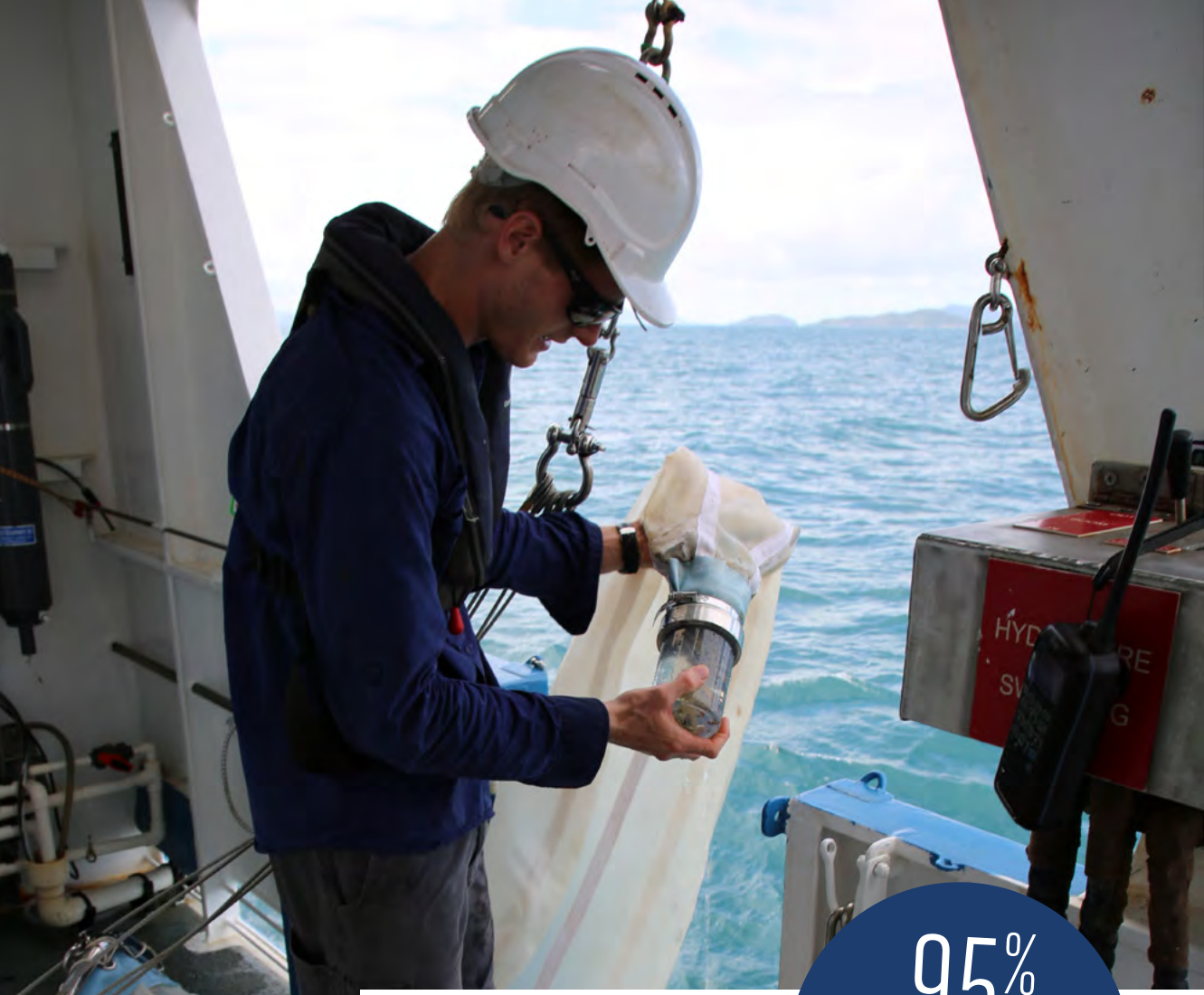
Figure 4: Top six organisations globally in the field of marine and freshwater biology ranked by citation impact, 2015 to 2019 (InCites June 2020)



James Cook University remains AIMS' most frequent collaborator on publications (Figure 5); in part due to the strong strategic partnership between the two organisations for research student training (AIMS@JCU). Similarly, the numerous co-authorships with the University of Western Australia (second) and CSIRO (fourth) are facilitated in part by the co-location of all three organisations in the Indian Ocean Marine Research Centre, Perth. External collaborations with the University of Queensland, and the University of Tasmania and the University of Melbourne have steadily increased over the past 10 years.

Figure 5: Trends in collaborative publications (all research) illustrating the top six research institutions, 2010-2019 (InCites June 2020)





RESEARCH HIGHLIGHT:

Microfibres prevalent on the Great Barrier Reef

95%
Proportion of fish in the study that contained microdebris

Marine plastic pollution is pervasive around the world, and reducing plastic waste is receiving increasing attention, including from Australian governments.

Image: Marie Roman

Image: Neill Roberts

Plastic polymers, including polyester, nylon and polyethylene, were found in 60% of those items found in surface waters and 25% of those items recovered from Lemon damselfish.

At the Council of Australian Governments meeting in 2019 in Cairns, the leaders of Commonwealth and State governments agreed to develop a strategy to reduce waste, especially plastics.

In a recent study, AIMS and the University of Copenhagen (UCPH) found microdebris (human-made debris less than 5 mm long) is widespread on the Great Barrier Reef.

From 22 surface water tows, 547 items of microdebris were recorded.

The study also examined 60 Lemon damselfish (*Pomacentrus moluccensis*) collected at inshore and offshore reefs near Townsville and found 455 items of microdebris, with 57 of the 60 fish containing at least one piece of microdebris. Among the 1002 items collected, fibres (86%) were much more common than particles (14%).

Spectroscopy was used to determine the polymers in all items of microdebris collected in order to identify potential sources. Plastic polymers, including polyester, nylon and polyethylene, were found in 60% of those items found in surface waters and 25% of those items recovered from Lemon damselfish. Polyester and nylon likely originate from the industrial textile sector, while polyethylene is likely sourced from the industrial packaging sector.

Hydrodynamic modelling determined that the geographic origin of microdebris contamination in surface waters was not distributed equally across sampling locations. Specifically, riverine discharge was a potential source for microdebris collected at inshore reefs, but not offshore reefs.

The AIMS-UCPH joint study was the subject of a video produced by the Australian Academy of Science. The team is currently undertaking further research to examine the potential ecological risks of marine microdebris contamination to the Great Barrier Reef.

This research contributes to AIMS strategic target of delivering science that underpins a net improvement in the health of marine ecosystems in northern Australia (AIMS Strategy 2025 Impact Target 2). ■

RESEARCH HIGHLIGHT:

A new Indigenous partnership brings western science together with traditional knowledge

AIMS and the Woppaburra Traditional Owners of the Keppel Islands have embarked on a unique partnership, beginning in December 2019 with a five day on-country workshop at Konomie (North Keppel Island).

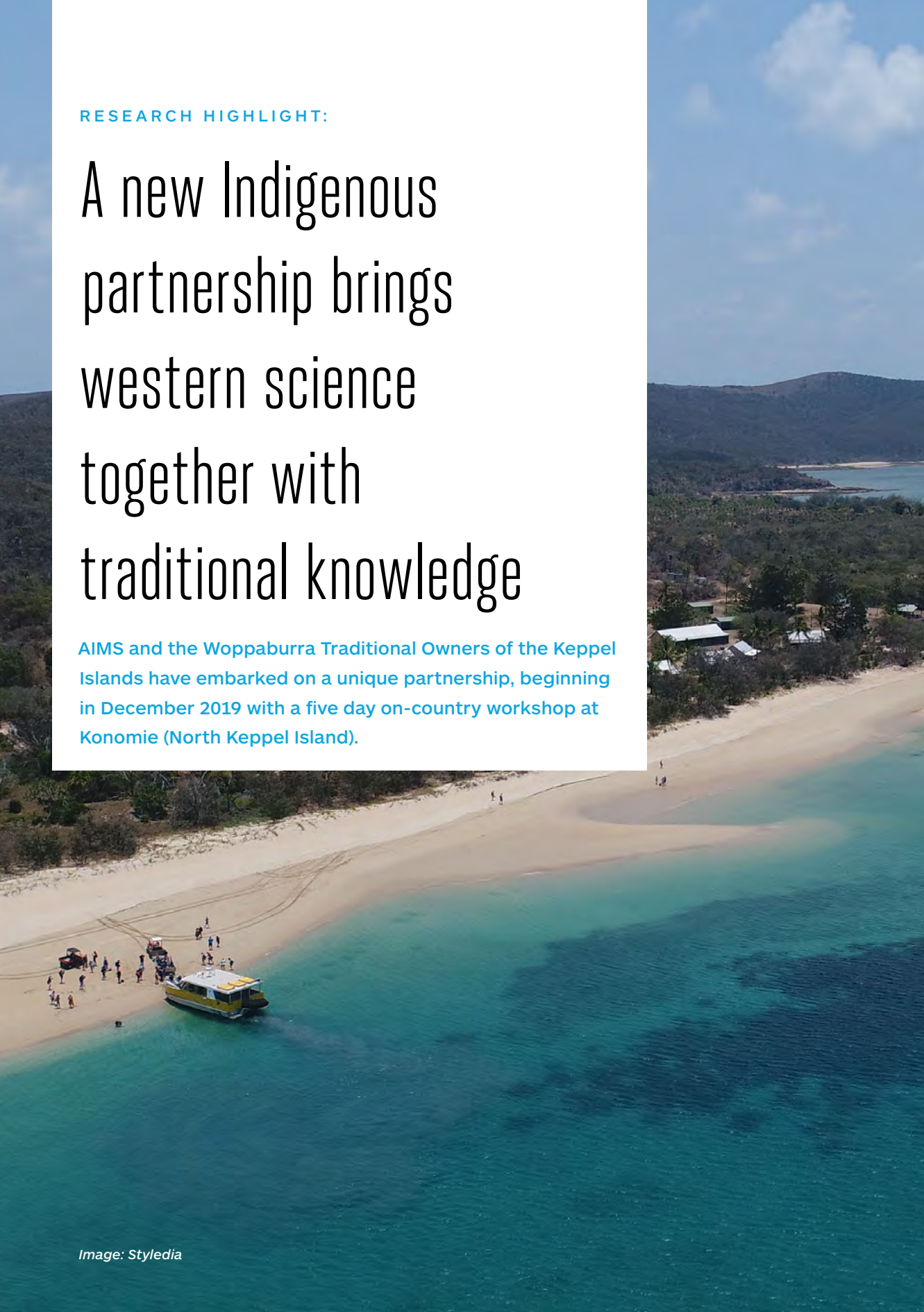


Image: Styledia

AIMS scientists and GBRMPA collaborators came together with 45 Woppaburra people to discuss AIMS' past research in the area, add Woppaburra knowledge to scientific habitat maps, and use this new joint knowledge to discuss plans for future research in the region. The workshop, at the North Keppel Island Environmental Education Centre also provided opportunities for two-way knowledge sharing, and the joint brainstorming of ideas for future project proposal development.

The participatory mapping sessions documented important cultural sites and stories and provided information about cultural restrictions. This led to the co-design and selection of study sites. Another significant outcome was the provision of Traditional Owner consent for a 5-year, multi-million dollar research project that will investigate how corals grow and survive in the first year of life on the reef, to inform new reef management options under climate change. As part of this joint industry-funded project, two Indigenous aquaculture technicians will be employed within the project to help propagate the corals, and will be supported to obtain a Certificate III in aquaculture (coral aquaculture). While the diverse reefs around the Keppel Islands will serve as the natural laboratory for this study, the results have broader application to help reefs world-wide recover and adapt to the effects of warming oceans.

The workshop was a historic and emotional return to country for many Woppaburra participants. For some it was their first opportunity to be on country since the last of their resident ancestors were moved from the islands in 1902. After learning about coral life cycles, annual mass spawning and processes involved in dispersal, adaptation and survival of coral reefs, some participants drew analogies to the history, removal, adaptation and survival of their own people. This parallel was captured in a new Woppaburra coral dance which mimicked coral spawning, dispersal and settlement into diverse morphological forms. The dance was performed for the first time on the last day of the workshop and is an exceptional example of western science woven together with traditional knowledge and perspectives.

The Woppaburra-AIMS collaboration is part of AIMS' commitment to establish genuine partnerships with Traditional Owners and custodians of sea country, to identify mutual interests and priorities and working together to realise them. This workshop was a key project milestone designed to establish an authentic relationship between AIMS and Woppaburra people based on honesty, trust, respect and mutual understanding. Participants reflected on this during the closing ceremony, when a grove of sapling poplar gums was planted on a hill overlooking the workshop venue. These trees will grow together to create shade and shelter for future on-country workshops and provide a tangible symbol of the growing Woppaburra-AIMS partnership. ■

This approach exemplifies our strategic focus on bringing together Indigenous knowledge with other areas of science to create new insights into our marine systems.

Image: Marie Roman

RESEARCH HIGHLIGHT:

Improving oil and gas risk assessments

AIMS is combining experiments and modelling to improve risk assessments for oil spills in tropical waters.

In conjunction with Shell and INPEX, AIMS' Ecotoxicology and Risk Assessment team conducted a detailed review of all information on the effects of hydrocarbons on tropical marine invertebrates typical of Australia's North West Shelf, which includes some of Australia's highest prospective oil and gas areas. The review also examined the toxicity thresholds used, and how they are applied within Australia's regulatory framework.

One of the key findings was a lack of published studies for the effects of the oils that could be spilled in north-west Australia on the tropical species found there. Instead, there is heavy reliance on information from freshwater studies, as well as temperate and cold-water studies from the Northern Hemisphere. The thresholds derived from these studies often do not consider important co-factors such as high levels of UV radiation, which are typical of clear tropical waters and can increase oil toxicity (https://www.sciencedirect.com/science/article/pii/S0048969720309979?via%3Dihub).

> The review found there was a need to determine whether the toxicity thresholds from these studies would protect corals, sponges and other keystone reef species in the event of a spill on the North West Shelf.

The best way to do this was to incorporate tropical species into 'oil toxicity modelling', a technique to predict toxicity to organisms from a knowledge of the oil chemistry alone.

This research contributes to delivering environmental, social and economic net benefits

for tropical Australia, and was presented to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as well as the environmental working group within the Australian Petroleum Production & Exploration Association (APPEA), the peak national body representing the upstream oil and gas exploration and production industry.

The team is currently finalising a series of ecotoxicity tests, conducted for Shell and the Ichthys Project, exposing a suite of tropical marine species (corals, sponges, barnacles, algae, dogwhelks, sea urchins) to gas condensate from the North West Shelf. The derived toxicity thresholds will be compared with modelled thresholds to assess whether tropical species are more or less sensitive than those from temperate ecosystems.

This toxicity modelling was also the subject of a workshop in March 2020 supported by AIMS' Capability Development Fund. The workshop—held online amid COVID-19 restrictions—featured global leaders in the field, including spill modellers, chemists and ecotoxicologists heavily involved in analysing the Macondo Deepwater Horizon event. The workshop addressed key considerations for applying the modelling to tropical coral reef conditions, as well as the needs of national stakeholders.

The team is also conducting experiments to investigate the influence of UV on the toxicity of condensate to coral. These studies will permit the modelling of toxicity to coral for any type of spilled oil. ■

Defining the Environment that May Be Affected (EMBA) by an oil spill

The Montara blowout in the Timor Sea off north Western Australia in 2009 and the Macondo Deepwater Horizon event in the Gulf of Mexico in 2010 highlighted the risks posed to the environment by oil spills and blowouts in offshore tropical and subtropical environments.

The Montara event led to sweeping changes in the regulatory landscape and the formation of a new regulator, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). One of the key changes was a requirement for oil and gas companies to predict, in advance, the Environment that May Be Affected by a spill—the EMBA. This provides a spatial context for future spills, and also guides the content and scale of the companies' preparedness for a future spill.

Defining the EMBA is a complex task. It requires numerical modelling of the movement of spilled oil and understanding how the oil chemistry changes over time to provide an estimate of what the likely hydrocarbon concentrations could be. Then the concentrations must be translated into biological consequences using 'toxicity thresholds', which predict concentration-dependent mortality and sublethal effects. Toxicity thresholds must therefore be developed for important habitat-forming species such as corals and sponges, but also for a whole suite of different tropical organisms.

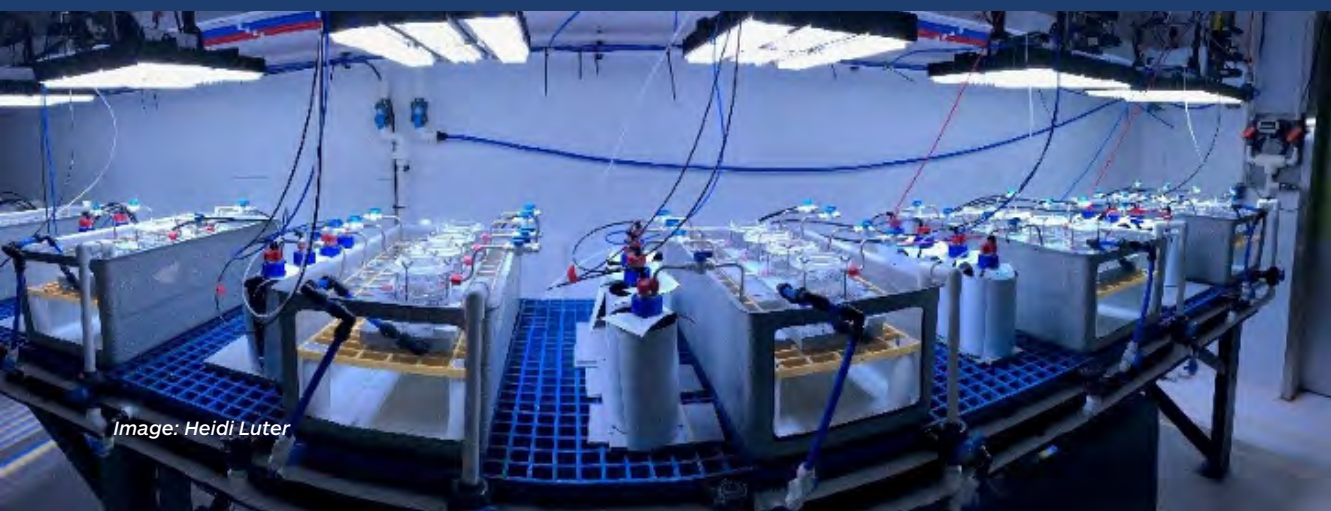


Image: Heidi Luter

Science Leadership

AIMS plays several important marine science leadership roles, including setting research agendas through strategic workshops on key issues, giving keynote presentations at international symposia and contributing to issues of national importance through input to government committees and policy projects. Here we outline some key leadership roles that AIMS has played during the year.

Contributing to issues of national importance

National Marine Science Committee (NMSC)

The National Marine Science Committee, which comprises 29 representatives of research institutions, universities, industries and government departments with a stake in marine science (including the Department of Industry, Science, Energy and Resources; Geoscience Australia; and CSIRO) is responsible for implementing Australia's National Marine Science Plan 2015–2025, which was released in August 2015 and is currently undergoing a mid-term update that will soon be released. The plan addresses the challenges identified in the Marine Nation 2025 position paper. It operates in tandem with the Science and Research Priorities set by the Australian Government, and with a number of other national and international efforts to prioritise ocean, earth system and climate science. The plan highlights areas where national collaborations can strengthen both science and end-user communities and recommends investment in research infrastructure and high-priority science programs to maximise the marine sector's contribution to the growth of Australia's $68 billion blue economy.

AIMS provided strong leadership during the development of the National Marine Science Plan 2015–2025 and continues to make significant contributions to the NMSC and to the subsidiary working groups established to help implement the plan. AIMS' CEO, Dr Paul Hardisty represents AIMS on the NMSC, and Dr David Souter is Chairman of the NMSC's National Marine Baselines and Monitoring Working Group.

Image: Juergen Freund

Reef 2050 Long-Term Sustainability Plan

The Reef 2050 Plan is a 35-year plan developed jointly by the Australian and Queensland governments to assist management of the GBR and the GBR World Heritage Area. It aims to maintain and enhance the health and resilience of the reef while allowing ecologically sustainable development. The vision is to ensure that the outstanding universal values of the GBR continue to improve each decade between now and 2050, guaranteeing that the reef remains a natural wonder for successive generations. The Plan, which sets out objectives, outcomes, targets and actions, was developed in partnership with government, key industry organisations, Traditional Owners, environment groups, researchers and the community.

AIMS continued to provide strong leadership in the implementation of the Reef 2050 Plan through the direct involvement of the following personnel:

- The Hon. Penelope Wensley AC – Chairman of the AIMS Council and Chairman of the Reef Advisory Committee (RAC),
- Dr Paul Hardisty – AIMS CEO, member of the RAC and member of the RIMReP (Reef 2050 Integrated Monitoring and Reporting Program) Steering Committee
- Dr Britta Schaffelke - member of both the Commonwealth and state Independent Expert Panels and member of the RIMReP Interim Operations Committee

Contributing to issues of international importance

Reef Restoration and Adaptation Program

The Great Barrier Reef is indisputably one of the world's most important natural assets. AIMS, in partnership with several other organizations, works 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 late 2017 the Australian Government funded a $6m feasibility study to scope R&D into new technologies to help build reef resilience. Called the Reef Restoration and Adaptation Program (RRAP), the concept feasibility study was delivered by a consortium of partners led by AIMS in December 2019.

The RRAP feasibility study findings were publicly announced by Government in April 2020, and found:

- potential economic, social and environmental net benefits of intervening successfully on the reef valued at tens of billions of dollars
- interventions are possible, but significant R&D is needed to develop the interventions, and make them affordable, safe, and acceptable to the public and regulators. Detailed R&D program and governance framework recommendations to progressively deliver the required interventions ready for deployment over a ten-year period were made.
- 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.

In parallel to the concept feasibility study, the Government announced further funding of $100 million to 'harness the best science to implement reef restoration and support reef resilience and adaptation' (as part of a broader $443 million package for the GBR provided to the Great Barrier Reef Foundation). Since late 2019, a set of core partners has been developing an Unincorporated Joint Venture and associated governance and R&D program to commence a 4 year $150m R&D program. The GBRF will be the principal funder and AIMS, with its particular expertise in reef science, is the Managing Entity of this program. During this period, the partners will be seeking to raise additional third-party funding to grow the R&D program.

AIMS contributes to the International Coral Reef Initiative

Since July 2018, Australia has chaired the International Coral Reef Initiative (ICRI) Secretariat in partnership with Monaco and Indonesia. The ICRI is an informal partnership between nations and organisations that strives to preserve coral reefs and related ecosystems around the world. The actions of ICRI have been pivotal in continuing to highlight globally the importance of coral reefs and related ecosystems to environmental sustainability, food security and social and cultural wellbeing. In particular, ICRI encourages the adoption of best practice in sustainable management of coral reefs and associated ecosystems, builds capacity, and raises awareness at all levels of the state of coral reefs around the world. The work of ICRI is regularly acknowledged by the United Nations, highlighting the Initiative's important cooperation, collaboration and advocacy role within the international arena.

AIMS has made significant contributions to Australia's co-chairmanship through the collaborative development of the ICRI Plan of Action, and as a member of Australia's internal ICRI Steering Committee. In addition, under the auspices of ICRI, AIMS established and, in collaboration with JCU, is leading the ICRI Ad Hoc Committee on Reef Restoration, which aims to assess and document global needs and priorities for current and future reef restoration, identify R&D priorities and improve coordination, and jointly plan and deliver R&D activities. Initial recommendations of the Ad Hoc Committee were presented to ICRI members at the 34th General Meeting held in Townsville in December 2019. The work of the Ad Hoc Committee has continued during 2020. Additional recommendations will be presented to ICRI members at the 35th General Meeting.

AIMS coordinates the Global Coral Reef Monitoring Network (GCRMN)

With the support of the Department of Foreign Affairs and Trade, AIMS has responded to UN Environment Assembly Resolution 2/12 on coral reefs which called on UN Environment to "support further development of coral reef indicators, regional coral reef assessments, and preparation of a global report through GCRMN", and the ICRI Resolution requesting the ICRI Secretariat and UN Environment to "develop and initiate implementation of a roadmap for strengthening GCRMN". The GCRMN is an operational network of the International Coral Reef Initiative (ICRI). The GCRMN supports ICRI by working through a global network of coral reef scientists and managers, institutions and organisations to provide the best available scientific information on, and communication of, the status and trends of coral reef ecosystems for their conservation and management. The GCRMN produces periodic *Status of Coral Reefs of the World* reports, which have had significant impact within the global scientific, NGO, government and United Nations communities, with the UN recognising that the GCRMN is the primary vehicle for monitoring

progress toward coral reef-related Sustainable Development Goals (13 & 14) and Aichi Biodiversity Targets under the UN Convention on Biological Diversity (CBD) (Target 10). Under AIMS leadership, and in conjunction with a global network of contributors, the GCRMN will produce the next *Status of Coral Reefs of the World* report in 2020.

AIMS leads Australia's technical input into the Commonwealth Blue Charter Coral Reef Protection and Restoration Action Group. Recognizing that oceans are immensely important, and that Commonwealth member countries have the capacity to effect change across continents, all 53 member countries of the Commonwealth unanimously adopted the Commonwealth Blue Charter in 2018. The Commonwealth Blue Charter is an active program of work to improve marine ecosystem health and address emerging issues. The Blue Charter is implemented through 10 different Actions Groups that are focussed on specific aspects of ocean health and sustainable use. Each Action Group is championed by one or more member countries. Australia, in partnership with Belize and Mauritius, leads the Coral Reef Protection and Restoration Action Group which aims to catalyse action for the protection, conservation and restoration of coral reefs. AIMS, in conjunction with the Department of Foreign Affairs and Trade, provides technical and diplomatic leadership for Australia.

AIMS hosted the inaugural meeting of the Commonwealth Blue Charter Action Group for Coral Reef Protection and Restoration at its facility in Townsville in July 2019. The workshop produced a draft Plan of Action and a Terms of Reference for the Action Group that would contribute to the overall objectives of the Commonwealth Blue Charter and align with the objectives of other related Action Groups.

Coral Reef Innovation Project addressed global challenges associated with coral reef monitoring

In 2019–20, AIMS continued to develop technologies to monitor coral reefs in Australia and the Pacific. Working with the Department of Foreign Affairs and Trade, Queensland University of Technology and Pacific Island partners, the Coral Reef Innovation Project, otherwise known as *Reef Cloud*, will provide an end-to-end cloud-based solution that will use artificial intelligence and machine learning technologies to generate automatically reports for image-based coral reef monitoring programs describing changes in the condition of coral reefs. *Reef Cloud* will help reef managers to make more timely and accurate decisions to improve the long-term resilience of coral reefs worldwide.

Expert advice

In 2019–2020, AIMS provided expert analysis and advice and contributed to the following reviews and papers:

- Select Committee on the effectiveness of the Australian Government's Northern Australia agenda
- Inquiry into the identification of leading practices in ensuring evidence-based regulation of farm practices that impact water quality outcomes in the Great Barrier Reef
- Inquiry into the impact of seismic testing on fisheries and the marine environment
- Inquiry into the Opportunities and Challenges of the Engagement of Traditional Owners in the Economic Development of Northern Australia

- Inquiry into the opportunities for strengthening Australia's relations with the Republic of France
- Inquiry into strengthening Australia's relationships with countries in the Pacific region
- Independent review of the Environmental Protection and Biodiversity Conservation Act
- Inquiry into the implications of the COVID-19 pandemic for Australia's foreign affairs, defence and trade

In addition, AIMS staff contributed in many committees and groups:

- Dr Paul Hardisty is a member of the National Marine Science Committee and the NESP Tropical Water Quality Hub Steering Committee.
- Dr Richard Brinkman is a member of the Gladstone Healthy Harbour Partnership (GHHP) Independent Science Panel.
- Dr David Souter is a member of the National Marine Science Committee, the steering committee for the Australian Secretariat for the International Coral Reef Initiative, the NESP Marine Biodiversity Hub Steering Committee, Chairman of the NESP Marine Biodiversity Hub Partners Committee, and the NMSC National Marine Baselines and Monitoring Working Group, and Australian Technical Lead on the Commonwealth Blue Charter Action Group on Reef Protection and Restoration.
- Ms Traceylee Forester was a member of the Fisheries Research and Development Corporation Indigenous Reference Group.

Image: Roslyn Budd
Photograph taken pre-COVID restrictions

Partnerships

AIMS has created and participated in multiple joint ventures, strategic alliances and significant collaborations that maximise its ability to deliver high quality science. These arrangements increase the critical mass and diversify the skills base that can be applied to answer complex questions about the sustainable use, management and protection of marine resources. During the year, many of our scientific tasks received external co-investment involving stakeholders and partners who participated actively in research design, implementation and dissemination of knowledge.

AIMS is, or has been, a member of the following partnerships:

- Australian Research Council (ARC) Centre of Excellence in Coral Reef Studies
- Reef Restoration and Adaptation Program
- Reef 2050 Plan Marine Monitoring Program
- National Environmental Science Programme (NESP) – Tropical Water Quality Hub
- NESP – Marine Biodiversity Hub
- Integrated Marine Observing System (IMOS)
- Western Australian Marine Science Institution (WAMSI)
- Indian Ocean Marine Research Centre
- AIMS@JCU
- ARC Centre of Excellence for Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights.

A synopsis of each of these partnerships is given below.

The ARC Centre of Excellence for Coral Reef Studies (Coral CoE) was established in 2005. In 2013, the Coral CoE received an additional $28 million of ARC funding to continue for a further seven years. The Coral CoE researches ecosystem goods and services of the world's coral reefs, building bridges between the natural and social sciences, strengthening capacity, and informing and supporting transformative changes in coral reef governance and management. The centre involves national and international partner institutions – AIMS, the Center for Ocean Solutions at Stanford University (COS, USA), Centre National de la Recherche Scientifique (CNRS, France), the Great Barrier Reef Marine Park Authority, the International Union for Conservation of Nature (IUCN, Switzerland) and WorldFish (Malaysia). AIMS' Chief Research Officer Dr David Souter was a member of the Coral CoE's advisory board, and Dr Janice Lough is a partner investigator. AIMS and the Coral CoE have jointly supported several postdoctoral fellowships over the life of the centre.

Further details are available at www.coralcoe.org.au

The Reef 2050 Plan Marine Monitoring Program (MMP) was designed and developed by the Great Barrier Reef Marine Park Authority in collaboration with science agencies to monitor the inshore health of the reef. The program is funded under the Reef 2050 Plan. Managing water quality remains a strategic priority for the Authority, to ensure the long-term protection of the coastal and inshore ecosystems of the reef. A key management tool is the Reef 2050 Water Quality

Improvement Plan, a joint commitment of the Australian and Queensland governments that seeks to improve the quality of water flowing from the catchments adjacent to the GBR. To evaluate the effectiveness of catchment management and report on progress in improving the quality of coastal marine waters, the marine monitoring program has assessed status and trends in reef water quality and ecosystem condition since 2005.

We have continued to contribute data from monitoring inshore water quality and the condition of inshore coral reefs to the MMP. In collaboration with James Cook University, AIMS has been monitoring water quality several times a year at 58 fixed sites along more than 700 km of coastline from Mackay to Lockhart River. In addition, we survey the condition of 32 coastal and inshore coral reefs from the Fitzroy Region to the Wet Tropics on a two-yearly schedule.

Further details are available at http://www.gbrmpa.gov.au/our-work/our-programs-and-projects/reef-2050-marine-monitoring-program

The **National Environmental Science Program (NESP) Tropical Water Quality Hub** is a collaboration of researchers from AIMS, CSIRO and four Queensland universities (Central Queensland University, Griffith University, James Cook University and University of Queensland), administered by the Reef and Rainforest Research Centre in Cairns. The Hub is supported by the Australian Government's NESP, which is administered by the Department of Agriculture, Water and the Environment. The Hub is focused on improving the water quality of the Torres Strait and the GBR and its associated catchments, and funds research within three broad themes:

- improve the understanding of the impacts (including cumulative impacts) and pressures on high-priority freshwater, coastal and marine ecosystems and species
- maximise the resilience of vulnerable species to the impacts of climate change and climate variability by reducing other pressures, including poor water quality
- identify natural resource management improvements based on sound understanding of the status and long-term trends of high-priority species and systems.

In early 2020, the Hub distributed the final, sixth, round of funding.

Further details are available at https://nesptropical.edu.au

The $23.88 million **NESP Marine Biodiversity Hub** is a partnership of AIMS, the University of Tasmania (UTAS), Charles Darwin University, CSIRO, Geoscience Australia, IMOS, Museum Victoria, the NSW Department of Primary Industries, the NSW Office of Environment and Heritage, and UWA. The Hub focuses its research efforts on Australian oceans and marine environments, including temperate coastal water quality and marine species, and is administered through the UTAS.

Research within the Hub targets four themes:

- improving the management of marine threatened and migratory species
- supporting management decision making
- improving our understanding of pressures on the marine environment
- improving our understanding of the marine environment, including biophysical, economic and social aspects.

Further details are available at https://nespmarine.edu.au

Australia's **Integrated Marine Observing System** (IMOS) is a national research infrastructure capability that delivers a comprehensive, integrated, national system of ocean observations covering physical, chemical, biological and ecological variables. IMOS is supported by the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS) and is operated by a consortium of institutions, led by the University of Tasmania, and including publicly funded research agencies, State research agencies and Universities. AIMS has been a foundation member of the IMOS partnership since it was established in 2006 and has continued to play a leadership role as the primary operator of IMOS infrastructure across northern Australia. We contribute strategic guidance through memberships of the board, leadership of and contribution to IMOS' regional Nodes and through membership of the IMOS Science and Technology Advisory Committee to provide advice on the scientific priorities, rationale and future direction of the observing system and operational implementation of a national marine observing vision.

The delivery of IMOS is distributed across partner organisations and operators that are responsible for capability-based facilities. AIMS has responsibility for the operation of ocean moorings, national reference stations, marine-microbial community observing, reef-based sensor networks, acoustic animal tracking, reception of satellite-derived observations and underway observation systems from our large research vessels across a geographic domain spanning tropical Western Australia, the Northern Territory and Queensland.

The National Marine Science Plan 2015–2025 highlights the value of sustained ocean observation to Australia's blue economy and has recommended sustaining and expanding marine observation and modelling capability. For more than a decade, AIMS and IMOS have made high quality ocean observations accessible to the marine and climate science community, international collaborators, users and other stakeholders to underpin our need for deeper understanding of the status and trends of our oceans and their ecosystems. IMOS investment is leveraged by marine industries to support growth in the blue economy across multiple sectors including offshore resource extraction, fisheries, aquaculture, tourism, ports and shipping. AIMS continues to play a key role in partnerships with marine industries, port operators and state governments to promote uptake of IMOS data and to deliver environmental and economic benefit. (see www.imos.org.au)

The **Western Australian Marine Science Institution** (WAMSI) was established to facilitate WA's integrated and coordinated approach to complex research issues to inform management and industry. WAMSI is a partnership of four WA universities (UWA, Murdoch University, Edith Cowan University and Curtin University), a major resource company (Woodside Energy Ltd), two Commonwealth organisations (CSIRO and AIMS), four WA Government departments (Department of Biodiversity, Conservation and Attractions; Department of Jobs, Tourism, Science and Innovation; Department of Primary Industries and Regional Development; Department of Water and Environmental Regulation); the Western Australian Museum, the WA ChemCentre and a regional ocean observing network for the Indian Ocean (WA Global Ocean Observing System).

The Institution was launched in May 2007 with an initial investment from the WA Government of $21 million over five years with $71.85 million co-invested by the partners to deliver a research program that included Ningaloo and sustainable fisheries. In 2011–12, the state government invested $12 million over six years, augmented with an additional $18 million from the partners, for WAMSI to deliver the Kimberley Marine Research Program. The report on this comprehensive

and collaborative research effort was released by the WA Minister for Science, the Hon. Dave Kelly MLA, in May 2019.

WAMSI's capacity to deliver programs, such as the $30 million Kimberley Marine Research Program, stems from its ability to bring together 200 scientists from 25 organisations, including 11 partners. All projects collaborated with Traditional Owners and marine rangers to ensure the integration of science with traditional knowledge.

In each case, the government funds generated investments from WAMSI research partners, providing substantial leverage to target high priority marine science needs in WA.

In 2019, WAMSI finalised the results of an industry partnership program to deliver the $18 million Dredging Science Node (DSN). The Node is an example of the strategic use of environmental offsets and is funded from requirements associated with Woodside's Pluto Project, Chevron's Wheatstone Project and BHP's Outer Harbour Project. It was established in 2011–12 to understand and mitigate the impacts of coastal dredging on the environment.

Ground-breaking insights from the program are now being translated into improved dredging guidelines. These will streamline monitoring by focusing on the relevant and most sensitive aspects and help to improve the effectiveness of management approaches to minimise hazards from dredging. The DSN has set a new industry standard, with impacts beyond WA. Early adoption of its key findings are being implemented in dredging programs in Queensland and the Northern Territory. Internationally, there is uptake of the findings in environmental impact assessment studies, dredging management plans and technical consultancy advice on dredging projects.

Further details are available at www.wamsi.org.au

The **Indian Ocean Marine Research Centre** (IOMRC) is a joint venture that unites the four leading Australian research organisations working in and around the Indian Ocean—AIMS, CSIRO, UWA and the WA Department of Primary Industries and Regional Development. This collaboration has helped create new multidisciplinary research teams and a graduate training environment that will significantly advance WA's marine science capacity, capability and profile. In 2018, the IOMRC Partnership continued to support innovative and ambitious marine research. By investing more than $2 million over three years, the partnership will reveal the least understood of the world's ocean basins. New sensing and modelling capability that covers genes through to ecosystems will allow better management of WA resources and provide early warning of future environmental risks.

AIMS@JCU is a strategic alliance that takes advantage of AIMS and James Cook University's co-location in Townsville and collective expertise and infrastructure. It currently supports collaborations through jointly supervised higher degree research candidates, and recently graduated its 108th PhD awardee. The partnership also facilitates AIMS-based internships and work-integrated learning for students of marine science enrolled at JCU.

By facilitating the link between JCU's higher degree research program and our own research program, AIMS@JCU delivers significant value beyond the dollar investment. This includes a higher PhD completion rate (compared to the JCU average in similar fields of research), more research outputs with higher impact, and cohorts of work-ready graduates with skills and expertise in national marine science and experience within a publicly funded research agency.

Such industry exposure, integrated with higher degree research training, continues to address key recommendations of the Australian Council of Learned Academies review of Australia's research training scheme.

To help bridge the growing skills gap in quantitative marine science (as identified in the National Marine Science Plan), AIMS@JCU has restructured its scholarships to four years (instead of three), with the extra year available for professional development in quantitative methods customised for each student and their advisory team. AIMS@JCU members also benefit from being well positioned within the combined peer networks of AIMS and JCU, and they can access special competitive funding awards for project costs, travel and science communication, and professional development opportunities.

AIMS@JCU supports the pipeline of marine science Higher Degree Research candidates through fostering work-integrated learning placements including internships, and links with science, technology, engineering, mathematics and medicine (STEMM) programs for high schools. The high school programs include those focused on Indigenous participation—Aboriginals and Torres Strait Islanders in Marine Science (ATSIMS) and the Aboriginal Summer School for Excellence in Technology and Science (ASSETS).

AIMS@JCU currently has 316 members, of which 45 are PhD candidates and 72 are other students (MSc, undergraduate or interns). Further details are available at www.aims.jcu.edu.au

The **ARC Centre of Excellence for Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights** (ACEMS) successfully attracted seven years of funding from the Australian Government in December 2013 and commenced operation in 2016–17.

ACEMS concentrates on the massive amounts of data collected daily in a variety of forms and from many sources. Many of the resulting datasets have the potential to make vital contributions to society, business and government but are so large or complex that they are difficult to process and analyse using traditional tools.

The centre, led by the University of Melbourne, brings AIMS scientists together with world class collaborators and partner organisations, including Monash University, Queensland University of Technology, University of Adelaide, University of Technology Sydney, CSIRO, Australian Bureau of Statistics, University of New South Wales, University of Queensland, Mathematics of Information Technology and Complex Systems, Vic Roads, Sax Institute and AT&T Labs–Research.

ACEMS aims to create innovative mathematical and statistical models that can uncover the knowledge concealed by the size and complexity of these big datasets. From a marine science perspective, the collaboration will enable AIMS (and others) to add value to the data collected on the GBR to increase our knowledge of the reef and its processes, and to improve reef management.

Over the years AIMS scientists have been involved in multiple collaborations with other ACEMS partners. A highlight for 2019 is the start of a new collaboration focussing on improving AIMS ability to report on GBR reef condition. The project aims to expand the existing modelling approach and incorporating the ability to explore recovery delay explicitly in the framework. The output of this collaboration is expected in February 2021, but preliminary results show significant improvements in comparison to the existing framework.

Further details at www.acems.org.au

Fostering Research Capability

As a publicly funded research agency, AIMS does not confer degrees upon students and postgraduates. Nevertheless, AIMS is committed to early career researcher training to help develop the research and innovation capacity needed to meet the opportunities and challenges facing the marine environment, and to keep Australia globally competitive. AIMS maximises its impact by providing opportunities to develop a research career including:

- postdoctoral studies
- postgraduate studies
- scholarship funding for postgraduates
- occupational trainees
- exposing Indigenous high school students to marine science.

Postdoctoral research

During 2019-20, AIMS co-funded or fully supported 25 postdoctoral fellows (Table 3) under agreements with:

- ARC Centre of Excellence for Coral Reef Studies (2)
- ARC Centre of Excellence for Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights (1)
- AIMS–QUT Memorandum of Understanding (2)
- Santos (2)
- Woodside (1)
- BHP (1)
- Charles Darwin University (2)
- Indian Ocean Marine Research Centre Partnership (4)
- Bertarelli Foundation (1)
- NESP Marine Biodiversity Hub (1)
- King Abdullah University of Science and Technology (Saudi Arabia) (1)
- Australia–China Strategic Research Fund (ACSRF) Program (1) – funded by the Department of Industry, Innovation and Science
- Western Australian Department of Biodiversity, Conservation and Attractions (1)
- AIMS (5)

AIMS also supported an ARC Discovery Early Career Researcher Award Fellow based at The University of Western Australia.

Postgraduate students and occupational trainees

During 2019–20, AIMS staff co-supervised 62 postgraduate students from 11 universities within Australia, of whom 38 are part of the AIMS@JCU program (see above), and six are international

students. Of the total, 44 are primarily based at AIMS, and 24 are primarily located at partner universities.

AIMS' involvement in early career researcher training is reflected in 26 staff members holding adjunct academic appointments at Australian or international institutions, including:

- James Cook University, primarily within the Coral CoE, the College of Science and Engineering, and the Division of Research and Innovation (through the AIMS@JCU partnership)
- University of Queensland
- University of Western Australia
- Charles Darwin University
- Queensland University of Technology
- University of Melbourne

Many of these adjunct positions reflect a large personal contribution to postgraduate supervision.

Table 3: Number of Postdoctoral Fellows, postgraduates and occupational trainees, 2015–16 to 2019–20

	2015-16	2016-17	2017-18	2018-19	2019-20
Postdoctoral Fellows	13	14	24	21	25
Postgraduates working at AIMS supervised by AIMS staff	34	31	29	44	31
Postgraduates working externally supervised by AIMS staff	37	39	28	24	41
Occupational trainees and interns	10	10	7	17	21

Image: Roslyn Budd

Exposing Indigenous high school students to marine science

The Aboriginals and Torres Strait Islanders in Marine Science (ATSIMS) Scholars' Initiative was established in 2013 by AIMS@JCU postgraduate student Joe Pollock. The initiative was designed to engage Indigenous high school students in field-based science programs to bolster the interest, experience and hands-on skills needed to initiate, and succeed in, tertiary studies in marine science. The program fosters links between western marine science and traditional ecological knowledge.

In addition to the support the program receives from AIMS, the scholars' initiative is currently supported by JCU, AIMS@JCU, World Wildlife Fund, Gudjuda Reference Group Aboriginal Corporation, Girringun Aboriginal Corporation, ARC Centre of Excellence for Coral Reef Studies, Townsville Catholic Education, the US Department of State, SeaLink, Oregon State University, Reef HQ Aquarium, and the Museum of Tropical Queensland.

Unfortunately, ATSIMS did not proceed in its usual form this year due to COVID-19 travel restrictions, and AIMS was not able to offer the usual interactive workshops with the students under the guidance of marine researchers and Indigenous leaders. Instead, this year ATSIMS has convened a virtual panel and interactive Q&A session for students as part of World Ocean Day celebrations. AIMS Indigenous Partnerships Coordinator Traceylee Forester was a panelist along with Indigenous rangers and marine scientists.

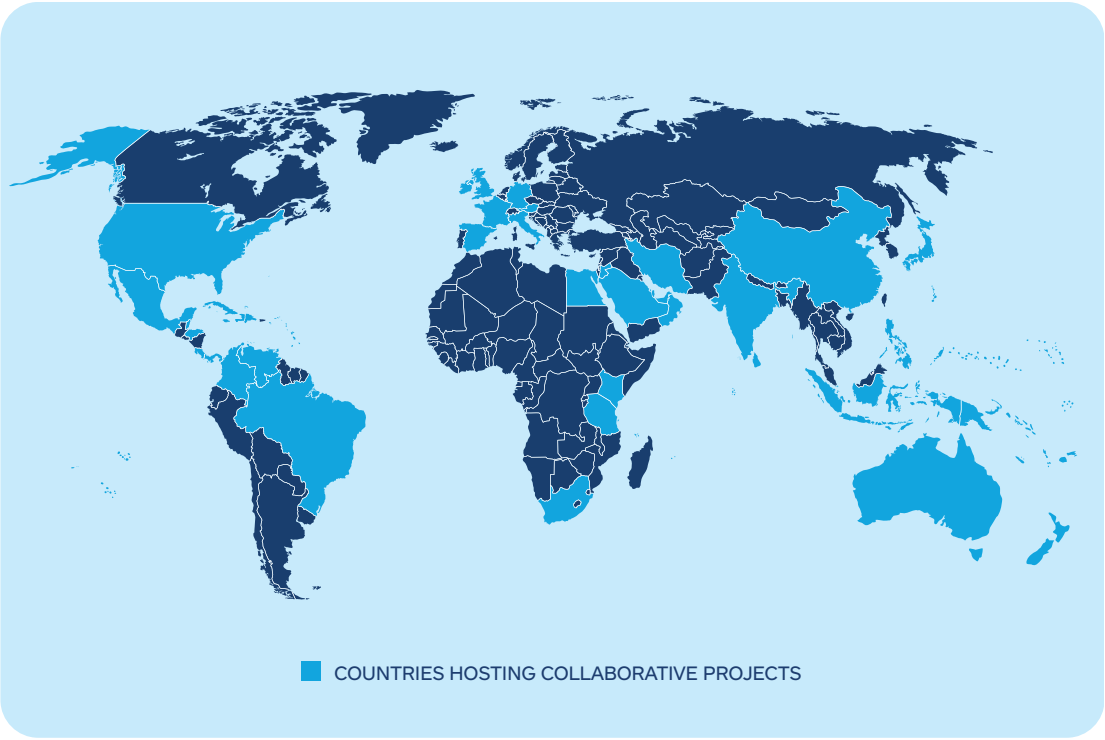
Ms Forester attended and participated in the BROLGA Junior Ranger Program in Rockhampton during September. This was the first time AIMS participated in this 5-day residential program conducted at Central Queensland University with Darumbal elder Malcolm Mann. This program targets Indigenous school students in the Rockhampton region and provides them with hands-on experience in a range of career opportunities in natural resource management from a Traditional Owner perspective. This program includes careers that can be accessed through school, vocational and university training pathways. Besides STEM and natural resource management issues, the BROLGA program has a significant cultural component. In future, AIMS plans to have a more active involvement in this program, and include the experiences and learnings from our growing research portfolio in the Capricornia/Fitzroy region, including the Keppel Islands Coral Project.

AIMS is working with the Registered Training Organisation LMC Training to adapt the Certificate III Aquaculture training package for coral aquaculture/propagation for reef restoration research. AIMS will employ the first two Indigenous identified trainees in a proposed ongoing pipeline of Indigenous vocational training in this marine-science related discipline, during the next reporting period.

Research Collaboration

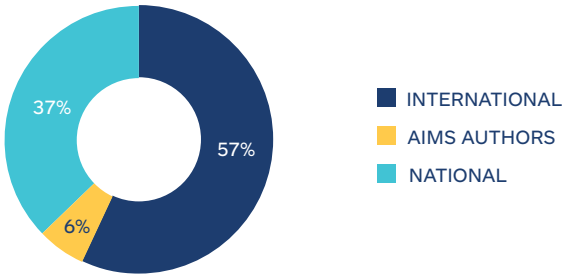
Collaboration is a core value of AIMS. Collaboration with domestic and international partners enables AIMS to draw on complementary skills to deliver practical research results and to share knowledge more broadly. During 2019–20, AIMS was involved in 148 collaborative projects conducted in 81 countries. These projects involved 268 Australian scientists from 48 Australian organisations and 293 international colleagues from 160 overseas organisations.

Figure 6: Location of countries hosting AIMS' collaborative projects



Collaborative research accounts for a high proportion of AIMS scientific publications (see Figure 7). Of the 192 journal articles published by AIMS scientists, 71 (37%) had co-authors from other Australian research organisations and 109 (57%) involved international colleagues. Only 12 articles (6%) were authored solely by AIMS staff.

Figure 7: Percentage of collaborative publications



In addition to these research collaborations, in 2019–20 we:

- renewed our membership with Plymouth Marine Laboratory – in the Partnership for Observation of the Global Oceans (POGO), a forum to promote and advance the observation of the global ocean
- extended our Strategic Alliance Agreement with JCU with a view to finalising a new agreement during 2020

Image: Roslyn Budd
Photograph taken pre-COVID restrictions

Science Quality Assurance

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.

Rigorous quality assurance and quality control procedures ensure we deliver high quality and timely research to stakeholders. Our research is peer reviewed at multiple stages through the research pipeline using internal and external reviewers. At inception, all projects are reviewed by the relevant Research Program Directors, the Chief Research Officer and, if the magnitude of the project warrants, the CEO to ensure that they align with AIMS Strategy 2025, that they use public funds and resources appropriately, and that they will deliver tangible benefits to one or more of AIMS' stakeholders.

Individual projects are managed by Project Leaders who are supported by staff of a dedicated Project Management Office that was established during 2019-20. The subsequent release of project outputs involves rigorous internal review and is governed by several policies and procedures, including Intellectual Property, Data Access and External Document Control policies.

AIMS' research process and procedures are consistent with the Australian Code for the Responsible Conduct of Research (2018)[3].

Data management and dissemination

The AIMS Research Data Centre manages and secures the Institute's data making it globally discoverable and accessible via the internet. Our metadata and data holdings are also submitted to the Australian Ocean Data Network portal and the Research Data Australia data catalogue, increasing their accessibility and allowing integration into national datasets.

The following figures depict the types of data that AIMS collects and how it is managed.

3 *https://www.nhmrc.gov.au/sites/default/files/documents/attachments/grant%20documents/The-australian-code-for-the-responsible-conduct-of-research-2018.pdf*

Figure 8: AIMS' research programs deliver data into the Research Data Centre allowing centralised management and facilitating reuse

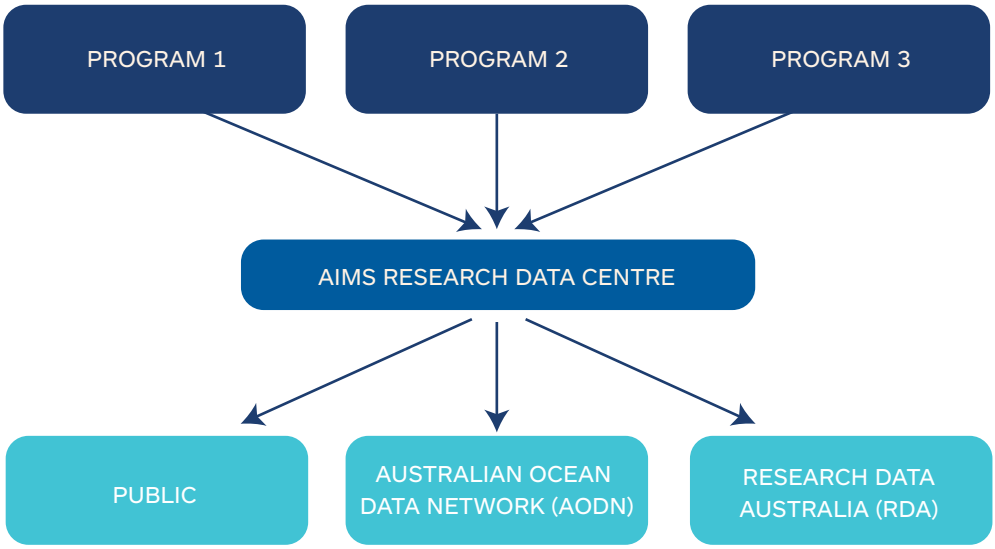


Figure 9: Extensive technology deployed to provide environmental variations in Australia's coastal seas

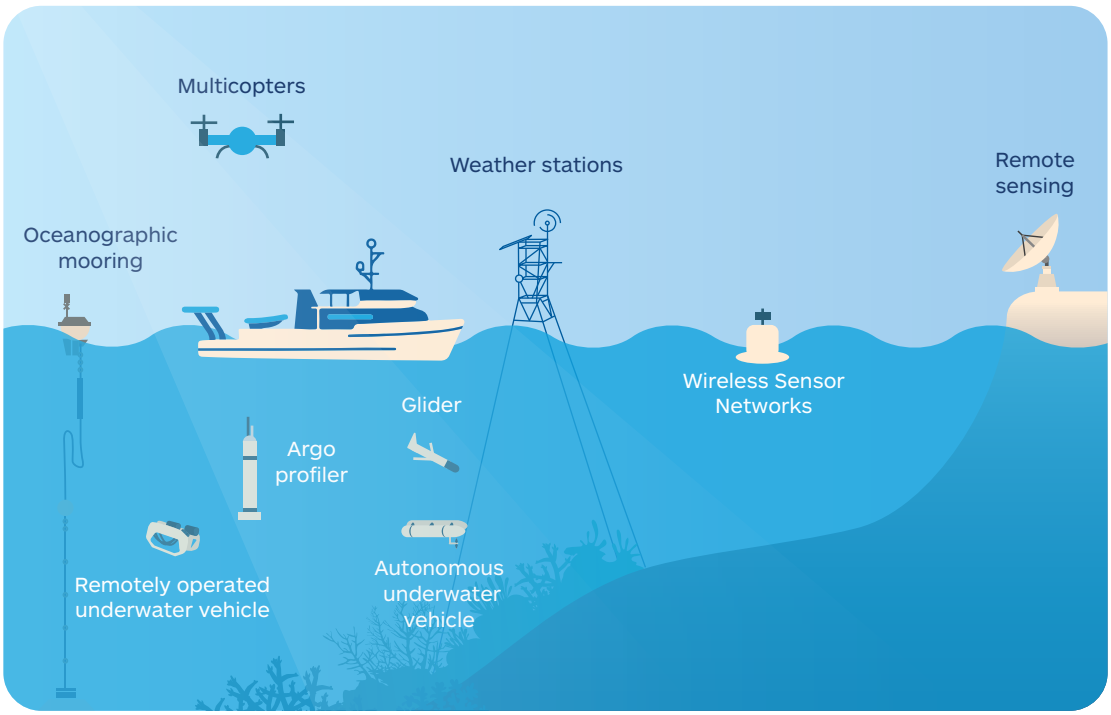


Figure 10: Examples of landmark datasets critical to national and international stakeholders in marine science, December 2018

SOME SUBSTANTIAL DATA HOLDINGS INCLUDE

LONG TERM MONITORING PROGRAM (LTMP)

Over 30 years monitoring GBR

292 reefs

MARINE MONITORING PROGRAM (MMP)

28 water quality monitoring sites spread across 600km of the inshore reef

7000 samples analysed each year

REAL TIME DATASETS (WEATHER)

16 operating weather stations across Australia

TEMPERATURE LOGGERS

Over 200 loggers collecting temperature data

INTEGRATED MARINE OBSERVING SYSTEM (IMOS)

2 national reference stations with biogeochemical sampling Darwin and Yongala

12 instrumented moorings North West Shelf: 5 Great Barrier Reef: 6

1 profiling mooring

2 research vessels providing platforms for ships of opportunity

4-8 gliders per annum tasked by AIMS

1 Satellite Receiving Station

Acoustic Tagging array

Argo profiler part of a global array run by CSIRO

Image: Craig Steinberg

RESEARCH HIGHLIGHT:

Oceanography helps understand regional climate change effects on the Great Barrier Reef

AIMS and CSIRO used data collection and sophisticated modelling to craft a three-dimensional picture of water temperatures on the Great Barrier Reef.

Image: Steve Clarke

The work identified regions of the reef most at risk of coral bleaching, along with areas that are persistently cooler.

The analysis took place during a marine heatwave early in 2020 which caused the most widespread coral bleaching event on record on the Great Barrier Reef. It followed the successive bleaching events in 2016 and 2017.

The research used the three-dimensional eReefs (https://research.csiro.au/ereefs/about-ereefs/) hydrodynamic model to identify regions of persistent cold-water upwelling and intrusions based on our understanding of ocean circulation within the reef. This upwelling and intrusions are caused by the interaction of tidal and ocean currents (such as the East Australian Current) with the topography of the reef and sea floor.

The regions with identified upwelling correlate well with areas where bleaching was not observed or much less severe, which validates the eReefs model.

In the central Great Barrier Reef temperature observations from Integrated Marine Observation System (IMOS) underwater gliders and fixed moorings revealed the layer of warm surface water was confined to the upper 25-30 metres of the ocean, with much cooler water below.

Identifying these persistently cooler regions can help us

The regions with identified upwelling correlate well with areas where bleaching was not observed or much less severe, which validates the eReefs model.

Image: Virginie van Dongen-Vogels

understand the mechanisms at play. It can also support targeted protection efforts, working with nature to create refuges in areas that are naturally cooler.

AIMS is also working with the Bureau of Meteorology to develop a marine heatwave forecast. While eReefs can forecast conditions a few days in advance, the new model under development could give several weeks warning. This advance warning system may one day support targeted interventions to reduce bleaching such as through the Reef Restoration and Adaptation Program.

Crucial to much of this work are the high-tech IMOS platforms, which include satellite remote sensing fixed moorings, and roving ocean gliders. Two of the gliders were deployed off Cairns to the north east of Townsville and in the southern Great Barrier Reef during the marine heatwave in early 2020. Each IMOS glider mission sees the autonomous marine robot travel up to 1000 km, monitoring water quality, light and temperature throughout the water column. The data is relayed back to researchers in real-time.

The eReefs model is able to predict the changes in temperature from the ocean surface to the seafloor, at a horizontal resolution of 1 km. The model simulates the daily warming of reef waters, providing data every few minutes and can estimate the heat stress experienced at the seafloor where corals may experience cooler waters.

This is an advantage over satellite products that only provide a snapshot of the surface temperature at a coarser resolution, and at irregular times when they pass overhead. Satellite measurements can also be affected by cloud cover, which obscures the measurement of the ocean's surface temperature.

These technologies to enhance automated data collection are part of AIMS' Strategy to double its yearly information output at half the unit cost in half the time (AIMS Strategy 2025 Enhanced Capability Target 2).

The research was supported by the NESP Tropical Water Quality Hub and conducted in collaboration with the US National Oceanic and Atmospheric Administration (NOAA). eReefs is a collaboration between the Great Barrier Reef Foundation, CSIRO, AIMS, the Bureau of Meteorology and the Queensland Government.

■

Stakeholder Engagement

Our research, internal and external relationships, and organisational ethos are guided by a set of operating principles that inform and underline our focus on supporting key stakeholders.

Our values are:

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

Our guiding principles are:

AIMS is a trusted adviser, delivering independent, evidence-based scientific advice to our stakeholders for the economic, environmental and social good of Australia

AIMS executes focused research plans with identified pathways to impact

AIMS documents and widely disseminates findings through a variety of mechanisms and formats to a wide range of stakeholders and collaborators

AIMS undertakes high calibre research

AIMS leads the way in providing safe working conditions and ensuring that its activities are planned to minimise any adverse environmental impacts

AIMS maximises the returns on investment in marine science through collaborations, co-investment and contracting of industry-funded research

AIMS works closely with stakeholders to identify and meet their needs for high quality research over long and short timeframes. Specifically, we map how the research will be used, identify who will benefit and rigorously review the outcomes. Within this process, we take a 'big picture' view of Australia's marine science challenges, asking the right questions, anticipating future needs and investing strategically in research designed to reduce future uncertainty.

Key stakeholders who benefited from AIMS' activities during the year are shown in Table 4.

Table 4: Stakeholders benefiting from AIMS activities in 2019-20

Stakeholder category	Sector/organisation	Examples of AIMS' support
Industry	North-west Australian oil and gas industry	• developing environmental baselines that help industry plan and manage their environmental risks and regulatory compliance • providing a rapid response research capability to optimise management actions should a spill occur • providing guidance on minimising adverse environmental impacts of dredging operations as a member of industry expert panels • supporting the development of collaborative industry sharing of marine environmental data
	Commodity ports/ Northern Territory Government, Darwin Ports Corporation, Port of Townsville, Gladstone Healthy Harbour Partnership	• developing systems to improve the operational efficiency of Darwin Harbour and environmental research to inform development decisions • researching the impacts of dredging to develop better risk-based dredging protocols
	Coastal industries	• researching inputs to monitoring programs for regulatory compliance • applying new technologies for in situ monitoring to manage dredging operations and environmental regulatory compliance more effectively • studying water quality to validate hydrodynamic modelling of effluent diffusion • developing ecotoxicological assays and assessments to guide water quality guidelines and standards

Stakeholder category	Sector/organisation	Examples of AIMS' support
Government and public	Australian Government and public	• developing a framework to assess the cumulative impact of natural and anthropogenic stressors on the Great Barrier Reef • developing a mapping system for presenting environmental research data in an accessible form that promotes greater information use • educating the public and stakeholders via the AIMS website and with site tours, increasing the state of environmental knowledge and identifying any gaps and risks • supporting postgraduate students as a means of enhancing the marine research workforce in tropical Australia • providing expert marine science advice and interpretation to Australian Government ministers and their science advisers on key marine science developments, such as the 2016 and 2017 coral bleaching events • supporting the education and future employment potential of northern Australia's Indigenous youth through the Aboriginals and Torres Strait Islanders in Marine Science (ATSIMS) and Aboriginal Summer School for Excellence in Technology and Science (ASSETS) programs
	Great Barrier Reef Foundation	• researching coral health in a variable and changing marine environment to assess coral reef resilience, and potential intervention and management options through the Reef Restoration and Adaptation Program • researching ecosystem processes and crown-of-thorns starfish outbreaks to increase our understanding of outbreak impacts and improve our ability to forecast and manage outbreaks
	Queensland Government and public	• researching the impact of changed land use practices on water quality in the GBR Marine Park
	Western Australian Government and public	• identifying and characterising biodiversity patterns and underlying processes in the Kimberley to aid effective management • surveying sensitive seabed organisms to evaluate impacts of dredging operations • researching the impacts of dredging to inform guidelines for marine dredging programs
Managers and regulators	Great Barrier Reef Marine Park Authority	• monitoring the health of the GBR in ongoing surveys • providing specialist advice to, and peer review of, development activity impacts • contributing to the planning for the development of RIMReP (Reef 2050 Integrated Monitoring and Reporting Program) • providing independent scientific advice on the implementation of the Reef 2050 Plan

Communication

AIMS communicates the role it plays in the communities in which we work. This involves publishing information on the website, leveraging exposure from social media channels, engaging with stakeholders, and using media outlets to foster community understanding of the issues.

Further afield AIMS engages with government and industry, demonstrates impact and value to the nation, and promotes expertise in reef science and integrity of quality standards in science to build positive sentiment and commentary amongst audiences and in the national media.

AIMS has incorporated narrative-style communication to help staff align to the AIMS Strategy 2025 and improve our ability to project our value coherently. The development of the narrative follows on from the launch of the Strategy and the completion of the AIMS communications plan. The narrative is a framework of products that will help staff project AIMS externally as a coordinated whole.

Part of this framework are impact stories which had their external debut at the AIMS Parliamentary Breakfast in Canberra in September to demonstrate AIMS' value to our stakeholders.

The promotion of AIMS' science was a particularly important function during the 2019/20 period. Communications had a significant role to play in the five-year $11 million "iconic project" in the Keppel Islands in Central Queensland. The project is trialling coral restoration and re-seeding methods and includes a partnership with the Woppaburra Traditional Owners that blends Traditional ecological knowledge with Western science.

AIMS' research into coral spawning in the National Sea Simulator received widespread favourable coverage. Other major highlights during the period were:

- The Government's announcement of the Reef Restoration and Adaptation Program R&D phase
- The release of the annual Long Term Monitoring Program report on the health of the Great Barrier Reef
- The mapping of Groote Eylandt Traditional Owners to complete the largest research project of its kind
- Dr Kate Quigley's paper on Assisted Gene Flow for coral adaptation (*The active spread of adaptive variation for reef resilience* in Ecology and Evolution)
- Coverage of a Nature Communications paper (supervising author - Dr Mark Meekan) on the use of sound to restore damaged parts of the GBR (in coordination with Exeter University)
- The publication of research into the response of the Great Barrier Reef's parrotfish population to coral bleaching (Dr Brett Taylor)
- Dr Frederieke Kroon's paper identifying crown-of-thorns starfish DNA in the faeces of predatory fish
- A paper on the use of industry ROVs to increase marine science knowledge and provide AIMS with the opportunity to engage more with industry (Dr Dianne McLean and Dr Miles Parsons).
- The innovative use of a miniaturised, ship borne Sea Simulator aquarium used to study coral on the west and east coasts

- The development of coral that is more resistant to increased seawater temperatures (Dr Madeleine van Oppen)
- A study that quantifies the way cyclones damage coral reefs (Dr Marji Puotinen).

Whale shark diving is an important part of the Western Australian tourism industry, delivering an estimated $12.5 million in economic activity for the Ningaloo Reef region. The viability of this industry rests on the protection of the species which is underpinned by marine science. AIMS strengthened its position as one of the nation's experts in whale shark research through several public information opportunities including:

- a paper on the prevalence of scarring and major lacerations due to vessel collisions
- a landmark study on the use of Carbon-14 dating from Cold War atomic bomb tests to measure whale shark age. This paper received significant news coverage in Australia and globally and achieved the highest Altmetric score for a submission in Frontiers in Marine Science
- video from a field trip of eDNA to monitor whale shark movements broadcast on commercial TV in September in what was the second highest rating programme for the evening in both Perth and nationally.

The use of video is an important capability to broaden audience reach. When linked with AIMS social media and digital channels it "brings" science from the field direct to the public without being filtered by any mediated source. This approach has supported AIMS' positioning as a leader in reef restoration and tropical marine science. Nearly 20 videos using AIMS-supplied vision were produced to achieve this important communication objective, and the use of social media is becoming better integrated into AIMS communication to promote and protect the Institute's reputation.

Additional areas of communication support included Reef Cloud, water quality, monitoring a assessing drilling on Rankin Bank, decommissioning of marine infrastructure, the 34th ICRI General Meeting and the visits to AIMS Townsville by the Minister for the Environment and the Science Minister and Reef Envoy.

Engagement and collaboration support opportunities relevant to AIMS' strategy targets. Attendance at the Reef 2050 Communication Network in Mackay was a good opportunity to renew and build relationships with communication professionals in research organisations, government agencies and non-government organisations (NGOs).

A survey of our stakeholders was conducted in September 2019. This was the first stakeholder survey since 2015, the first to include a question that would enable AIMS to derive a Net Promoter Score (NPS) and is an important measure of AIMS' relationship with its stakeholders. This first score provides a baseline with regard to Reputation Target R1 in Strategy 2025 – "a Net Promoter Score of 75 as trusted advisor among key stakeholders" by 2025.

The introduction of the Queensland Government Environmental Protection (Great Barrier Reef Protection Measures) and Other Legislation Amendment Bill 2019 resulted in intense political and public scrutiny of the quality of science that underpins policy and management decisions affecting the Great Barrier Reef Marine Park. As an independent Commonwealth marine research institute with a particular focus on the Great Barrier Reef, AIMS actively contributed to the public discourse

by focusing attention on the scientific evidence provided by its coral reef-related research and the rigour with which it was produced.

In March, the Great Barrier Reef experienced extensive and widespread coral bleaching following a marine heatwave. The events are another example of the stresses on the Great Barrier Reef from climatic and human causes and the importance of AIMS' long term, large scale research of Australian coral reef systems in understanding cycles of decline and recovery.

Despite these increasingly frequent threats, there remains public confusion about the health of the Great Barrier Reef. The Reef Snapshot 2019-20 was released in April as a short, easy to read, accurate summary of the Reef (specifically coral health) to provide a clear and concise evidence-based explanation of reef status. The inaugural publication is a collaboration between AIMS, the Great Barrier Reef Marine Park Authority, and CSIRO and intended for those who do not have a science background or any special knowledge of the Reef.

Like every other organisation in Australia, AIMS dealt with the unprecedented global effects of the Coronavirus pandemic. AIMS shifted communication efforts towards both the internal audience and informing the public and our stakeholders about continuing our key functions during the COVID-19 emergency whilst protecting our staff and the community from the virus. The communication focused on maintaining the confidence of our stakeholders, alleviating employee concerns, and shifting our employee focus from getting through the crisis to resuming "normal work" routine as soon as it becomes safe to do so. Despite the prolonged disruption, AIMS also maintained core science communication actions to demonstrate its enduring value to the nation and position AIMS to emerge strongly as the safety measures are eased.

Image: Neill Roberts

Advances In Indigenous Partnerships

We recognise that Indigenous peoples are the traditional custodians of the sea country where AIMS works, and we are committed to putting Indigenous people's interests and knowledge needs into our research priorities. We will do this by facilitating two-way knowledge sharing through a partnership approach for marine science, articulated in a new Indigenous Partnerships Plan developed during the year.

Indigenous Partnerships Plan

The plan sets out the way to achieve the ambitious Indigenous science partnership targets in our Strategy 2025. We recognise that greater research impact and value can be created, and new insights gained, if Indigenous knowledge, interests, capacity and capability can be joined with our science. The plan is particularly important because it recognises the aspirations of Traditional Owners for greater empowerment in sea country monitoring, research, decision-making and science. The plan is designed to:

- build cultural competency and appropriate tools within our agency to facilitate stronger partnerships with Traditional Owners
- strengthen existing relationships with Traditional Owners and establish new ones based on mutual trust, understanding, respect and two-way learning
- establish AIMS as a leader in working with Traditional Owners by responding to Indigenous needs and raising the profile of the value of partnerships between leading science organisations and Indigenous groups.

Alliances in marine monitoring

AIMS is already working with several Traditional Owner ranger groups and Traditional Owners on marine monitoring projects. For example, work to map sea country habitats and establish a monitoring baseline with the Anindilyakwa rangers at Groote Eylandt has now moved to an ongoing monitoring program, and a similar project with Bardi Jawi rangers in the Cape Leveque region of the Kimberley is now entering its second year of monitoring data collection. These projects:

- captured local and traditional knowledge about the area
- co-designed and co-delivered the monitoring deployments to collect data
- increased the capability of rangers to operate image-based seafloor technology
- improved monitoring of benthos and fish
- established monitoring methods suitable for safe manual handling from the rangers' small vessel
- co-authored and co-delivered the results, including a joint presentation at the Australian Marine Science Association annual conference in July

Results of the monitoring are provided to the community using customised, co-developed communication products, including posters and video.

AIMS is consulting widely with other rangers and Indigenous sea country groups across northern Australia, to gauge interest in their uptake of similar baseline and monitoring programs to establish an alliance of marine monitoring practitioners. To ensure that such a development adds value and avoids duplication of other pre-existing programs, AIMS is also consulting government agencies and other research organisations to ensure future monitoring remains fully coordinated.

Another joint project, this time with the Torres Strait Regional Authority Land and Sea Management Unit and rangers, has established a comprehensive ocean observing system, including fixed loggers and near-real-time weather stations, and is developing a towed video technique as a tool for diverless monitoring of seabed habitats and communities.

Mapping traditional ecological knowledge of sea country

In partnership with Thamarrurr rangers and with industry funding through energy company ENI, AIMS worked with over 30 Traditional Owners and rangers to create habitat maps of the Thamarrur region based on traditional ecological knowledge. The process involved participatory mapping techniques over several workshops, with small groups of Traditional Owners focusing on the area of country within their authority. Habitat descriptions incorporated labels and names in English and the three local traditional languages Murrinhpatha, Mari Amu and Marri Tjevin. The resulting multi-lingual habitat map identifies eight different benthic habitat types over 1000km^2 of Thamarrur coastline, and incorporates important cultural information such as totem and dreaming sites and other features of cultural and historical importance. This map is now available digitally and in hard copy, and represents a valuable record of traditional knowledge presented in a modern map format to inform future research and management decisions. ENI, AIMS and the Thamurrur Rangers are now using the map to develop a field-based monitoring project.

Image: Nick Thake

Research Infrastructure

Our research focuses on Australia's tropical marine environments, from the southern end of the GBR on the east coast and across the north of the country to Shark Bay and the Abrolhos Islands in the west. Field activities are supported by laboratory and administrative facilities located at Townsville, Darwin, Perth and Canberra.

Our headquarters is at Cape Ferguson, about 50 km from Townsville in North Queensland, close to the centre of the GBR and surrounded by national park and marine reserve.

AIMS' Arafura Timor Research Facility in Darwin is located on a satellite campus of the Australian National University, immediately adjacent to the Charles Darwin University campus.

In Western Australia, our facilities are co-located with The University of Western Australia and the CSIRO in the new Indian Ocean Marine Research Centre at the university's Crawley campus in Perth.

Our major research infrastructure is subject to detailed capital planning and asset management to ensure our facilities and equipment are safe, reliable, available and functional. Delivery against preventive maintenance and capital investment plans is monitored throughout the year to ensure that targeted outcomes are met.

Field operations

Our field activities are supported by a research fleet—two large, well-equipped research vessels, the RV Cape Ferguson and the RV Solander— and several smaller vessels, carrying researchers to diverse habitats in Australia's tropical waters. About half of all trips on the RV Cape Ferguson and RV Solander involved researchers from collaborating organisations.

The AIMS field program provides essential science for Australia and lies at the core of who we are as an organisation. However, our field work typically requires close working conditions and is often conducted in remote locations. To ensure the safety of our field staff and scientists during the height of the COVID crisis, we suspended our field work program from late March to late April 2020. The resumption of the field work program was a result of lowered the rates of infection and rates of transmission in the community due to physical distancing measures put in place by the Australian Government and strict controls enacted by AIMS to minimise the potential for COVID-19 infection for those undertaking field activities. However, the controls put in place significantly limited our field-going capacity, reducing the number of scientists able to participate in each voyage and the number of days the vessels could be at sea.

This approach maintains the health and well-being of our people while keeping important scientific research functioning.

Figure 11: AIMS' facilities and activities of the major research vessels

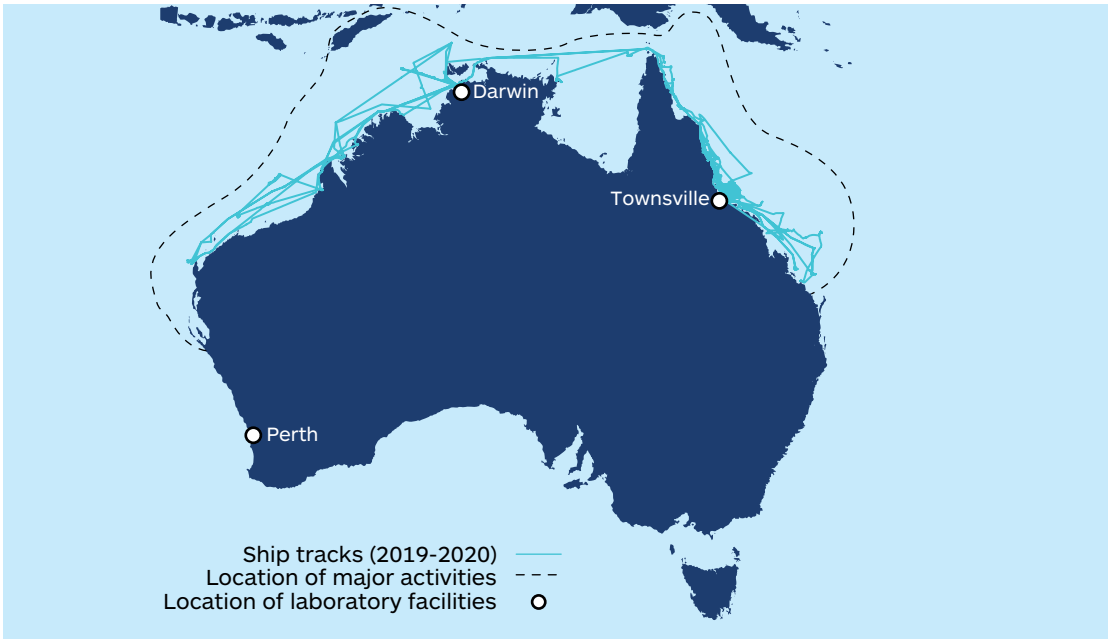
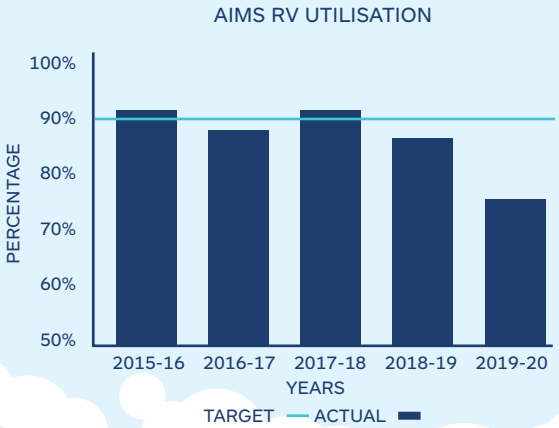


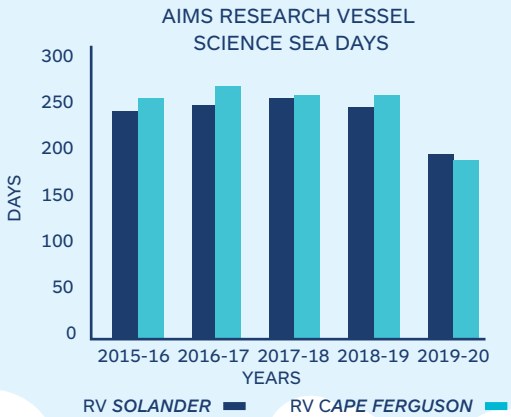
Image: Veronique Mocellin

Summary of Field Operations Performance

Objective:
Sustain High Utilisation of Research Infrastructure

Utilisation of Research Vessels	TARGET: 90%	2019-20 ACTUAL: 74%





RV *CAPE FERGUSON*
185
SCIENCE SEA DAYS

RV *SOLANDER*
197
SCIENCE SEA DAYS

CHARTER VESSELS
166
ADDITIONAL FIELD DAYS

RV Solander and RV Cape Ferguson conducted joint field work on the Great Barrier Reef for the first time on 19 December 2019

7,827
RESEARCHER FIELD DAYS

109
COLLABORATORS ON FIELD TRIPS

36,500
NAUTICAL MILES STEAMED

Image: Shaun Hahn
Photograph taken pre-COVID restrictions

National Sea Simulator

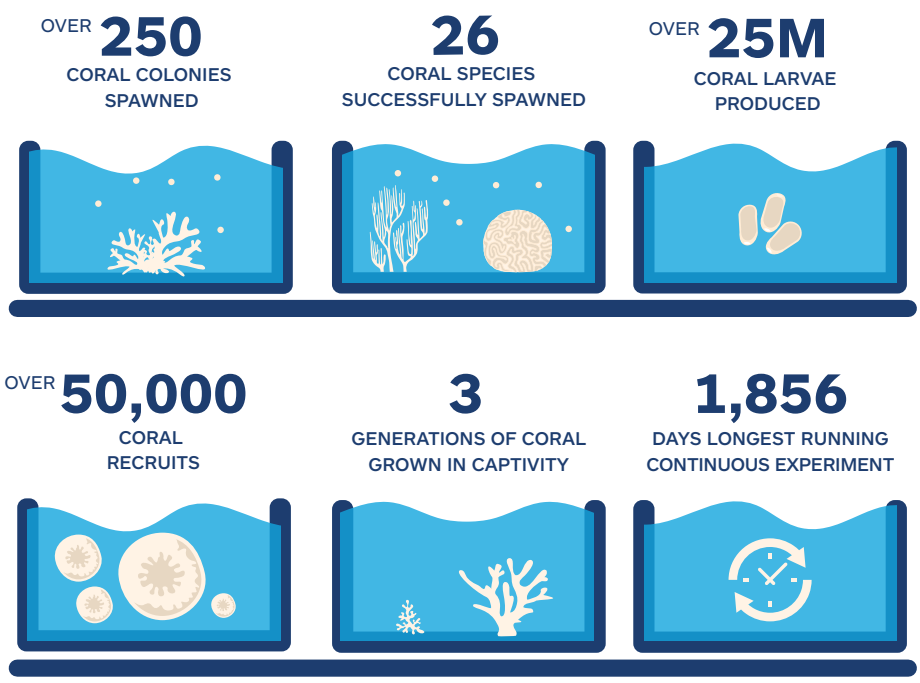
The SeaSim is a globally unique experimental aquarium facility that provides researchers with unprecedented experimental control of a range of parameters, allowing investigation of individual and combined effects of variables on tropical marine ecosystems and organisms.

The SeaSim provides a step change in capability compared with previous technologies and is essential for the success of many of our research programs.

Up to 30 per cent of the SeaSim's capability is available to external scientists and research institutions from around the world for marine science projects. We work closely with national and international collaborators, with over 80 per cent of all experiments in the SeaSim involving external collaborators. In 2018–19, researchers have come from 12 national and 23 international organisations from 10 countries.

The National Sea Simulator remained fully operational during the COVID-19 crisis. It is a key facility that requires ongoing service and maintenance by technical staff and scientists to ensure the viability of long term experiments and survival of organisms. Revised working arrangements were put in place to ensure increased physical distancing between people and to protect the ongoing operations in the event of suspected or confirmed COVID-19 cases.

Figure 12: Statistics showing use of the National Sea Simulator (SeaSim), 2019-20



For the first time, SeaSim has induced corals to spawn out of season, through manipulation of temperature and lighting patterns (daylight and lunar). The corals have spent their entire life in captivity.

Projects have attracted funding from a range of sources including industry partners, universities, the Australian Research Council, WAMSI, the National Environmental Science Programme, the Great Barrier Reef Foundation and the Paul G. Allen Philanthropies.

Collaborating organisations include:

National – CSIRO, University of Wollongong, Southern Cross University, James Cook University, University of Melbourne and Queensland University of Technology.

International – University of Miami (US), King Abdullah University of Science and Technology (Saudi Arabia), Victoria University (Wellington, NZ), Oregon State University (US), University of Amsterdam (The Netherlands), University of Barcelona (Spain), and the University of Copenhagen (Denmark).

The SeaSim boasts a number of unique capabilities developed by our staff to assist researchers:

- full solar spectrum lighting with the ability to dynamically manipulate intensity and spectrum to model natural lighting conditions as found in the field (e.g. sediment plumes from dredging operations)
- 18 large, fully independent mesocosm systems with the ability to provide daily, monthly and seasonal patterns of light, temperature and pCO_2
- sophisticated climate change and ocean acidification systems with tightly controlled temperature (±0.1°C) and diel pCO_2
- large-scale systems for coral spawning, larval rearing, settlement and long-term grow out
- flow-through contaminant dosing systems for ecotoxicology research on priority contaminants.

These capabilities have been applied to a range of high-priority research areas, including climate change and ocean acidification, reef restoration and adaptation, impacts of dredging, pest management and impacts of contaminants.

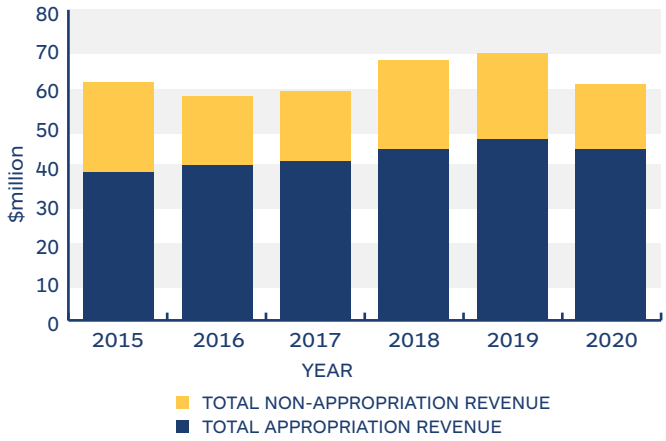
Image: Roslyn Budd
Photograph taken pre-COVID restrictions

Revenue

AIMS' operations were supported by a mix of Australian Government appropriation funding and non-appropriation funding from state and territory governments, competitive research funds, environmental regulators and the private sector.

Total revenue for 2019-20 was $61.709 million, representing a decrease of 11.5 per cent on 2018–19 revenue (Figure 13). The $8.074 million decrease was due to a decrease in Australian Government appropriation revenue ($2.604 million) and a decrease in revenue from contracts with customers due to COVID-19 ($5.507 million).

Figure 13: AIMS revenue, 2014–15 to 2019–20



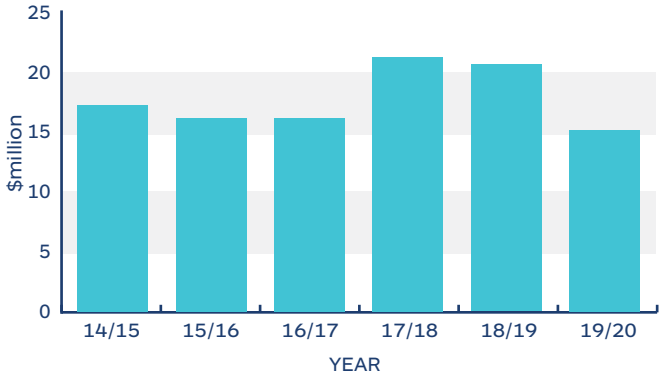
External Revenue

External funding is critical for AIMS to maintain its present level of scientific research. The COVID-19 pandemic affected AIMS' revenue earning capacity in two ways: i) projects under development, but not yet contracted did not proceed, and ii) COVID-related restrictions in our field program led to a reduced capability to undertake field work, reducing our ability to deliver contracted projects to schedule.

Prior to COVID-19 our forecast external revenue remained consistent with the approved budget.

In 2019–20, revenue from external sources was $15.291 million, which accounted for 25 per cent of total revenue (Figure 14).

Figure 14: Total external revenue earned by AIMS during the past six years

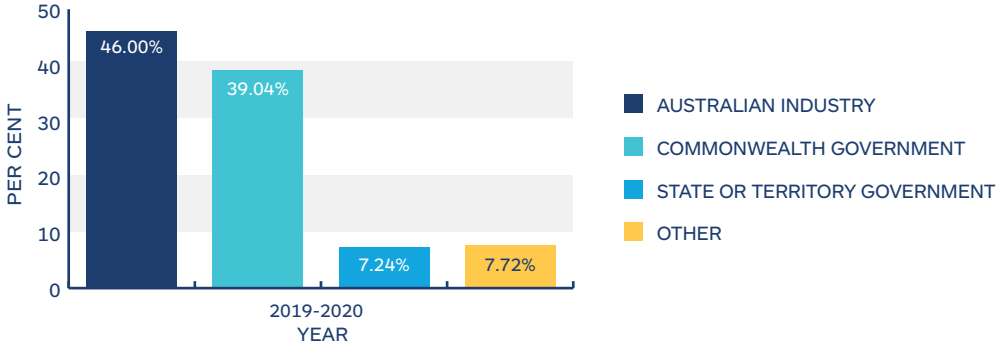


In support of the refreshed Strategy 2025, during 2019-20 AIMS continued to build and maintain long term strategic alliances, working with our stakeholders to develop multi-year programs of work that provide solutions and address challenges at regional and national scales. This has enabled the leverage of our strategic science work with industry and philanthropy, broadening the external revenue opportunities and moving away from individual smaller discrete pieces of revenue earning work. This approach should assist to mitigate some of the impact of COVID-19 on our external revenue.

Sources of co-investment funding for 2019–20

Australian Government departments and agencies and Australian industry partners together provide 92 per cent of AIMS' total external revenue (i.e. funds earned on top of AIMS' appropriation allocation) through major grants and project contracts (Figure 15).

Figure 15: Major sources of external revenue, 2019–20



Part 3:
Management and Accountability

Image: Steve Clarke

Government Engagement

AIMS has a comprehensive system of financial reporting practices that provide compliance, disclosure and accountability of its activities.

Role and Legislation

AIMS was established by the Australian Institute of Marine Science Act 1972 (AIMS Act) and is a corporate Commonwealth entity under the Public Governance, Performance and Accountability Act 2013 (PGPA Act).

The Institute's functions and powers are set out in the AIMS Act (see Appendix C on page 164). AIMS has two main roles under its governing legislation:

- carry out research and development in relation to
  - marine science and marine technology
  - the application and use of marine science and marine technology
- encourage and facilitate the non-commercial and commercial application of the results arising from such activities.

The PGPA Act sets out reporting, accountability and other requirements relating to our operations, management and governance. Section 39 of the PGPA Act requires corporate Commonwealth entities to prepare annual performance statements and to include them in an annual report to the Australian Parliament. Part 2-3, Division 3A, Subdivision B of the Public Governance, Performance and Accountability Rule 2014 sets out the requirements for annual reports to be produced by corporate Commonwealth entities in accordance with s. 46 of the PGPA Act. A list of annual report requirements (page 170) provides details of how this annual report meets those requirements.

Responsible Minister

This year, there was one minister with responsibility for matters relating to AIMS: The Hon. Karen Andrews MP, Minister for Industry, Science and Technology (28 August 2018 to 30 June 2020).

General Policies of the Australian Government

Under s. 22 of the PGPA Act, the Finance Minister may make a government policy order that specifies a policy of the Australian Government that is to apply in relation to one or more corporate Commonwealth entities. No ministerial directions were received by the AIMS Council during 2019-20.

AIMS did not form new companies, trusts or partnerships during 2019-20. AIMS is participating in the formation of an unincorporated joint venture for the Reef Restoration and Adaption Program component of the Reef Trust Partnership. It is planned that AIMS will become the managing entity for this program of work.

Governance

AIMS Council

AIMS is governed by a Council that reports to the relevant Minister. The CEO is responsible for the day-to-day affairs of the Institute.

Role of Council

The AIMS Council sets AIMS' key objectives and research strategies and oversees management. The Council advises the Minister and the Department of Industry, Science, Energy and Resources of AIMS' progress against its research plans. The Minister is also provided with advice on developments of significance, as appropriate.

The PGPA Act requires the AIMS Council, as the accountable authority of AIMS, to comply with the following specific duties:

- to govern the Commonwealth entity
- to establish and maintain systems relating to risk and control
- to encourage cooperation with others
- in relation to requirements imposed on others
- to keep the responsible minister and the Finance Minister informed.

AIMS Council: Dr Stephen Morton (term expired 15 March 2020), Ms Jeanette Roberts, Dr Paul Hardisty (CEO), The Hon. Penelope Wensley AC (Chairman), Mr Roy Peterson (term expired 10 March 2020), Professor Sandra Harding AO, Ms Anna Matysek. Not pictured: Dr Thomas Barlow (appointed 11 March 2020), Dr Erika Techera (appointed 16 March 2020). Image: Cameron Laird. Photograph taken pre-COVID restrictions.

Council membership

The AIMS Council consists of a Chairman, AIMS' CEO, a member nominated by James Cook University, and four other members. The AIMS Act requires that at least three members of the Council have scientific qualifications. All members of the Council, with the exception of the CEO, are non-executive appointments made by the Governor-General on the nomination of the Minister. Appointments can be up to five years and reappointment is permissible. The CEO is appointed by the Council for a period not exceeding five years and is eligible for reappointment.

The Hon. Penelope Wensley AC FAIIA
Council Chairman: 1 January 2015 to 31 March 2022

As a former career diplomat (1968–2008) and Governor of Queensland (2008–2014), Ms Wensley has a distinguished record of public service and extensive experience of government processes and public policy formulation.

She has held many leadership roles, nationally and internationally, and, in addition to her deep knowledge of foreign and trade policy, brings to the AIMS Council particular expertise in strategy development and implementation, communication and negotiation, and community and stakeholder engagement.

In 2001, Ms Wensley was made an Officer of the Order of Australia (AO) for her distinguished contributions to Australia's international relations and in 2011, a Companion of the Order (AC) for eminent contribution to the people of Queensland and to Australia's international relations through senior diplomatic representational roles and as a key contributor to initiatives of the United Nations. These senior roles included: Australian Ambassador to the UN, in both Geneva and New York; Ambassador to France; High Commissioner to India and Ambassador for the Environment.

An Arts Honours graduate of the University of Queensland, Ms Wensley holds honorary doctorates from UQ, Griffith University, James Cook University and the Queensland University of Technology. She is a Fellow of the Australian Institute of International Affairs (FAIIA) and an Honorary Fellow of the Environment Institute of Australia and New Zealand (HFEIANZ).

She is a Director of the Lowy Institute, Chairman of the Reef Advisory Committee (advising the Queensland and Australian governments on implementation of the Long-term Sustainability Plan for the GBR (Reef 2050)), and National Patron of Soil Science Australia.

Professor Sandra Harding AO, BSc (Hons), MPubAdmin, PhD, Hon Doc JIU, FACE, FQA, FAICD, FAIM
Council member: 10 May 2007 to 31 December 2021

Professor Harding is Vice Chancellor and President of James Cook University, represents the University on the AIMS Council and maintains links with the wider education and business sectors.

In 2019, Professor Harding was awarded an Officer of the Order of Australia (AO) for her distinguished service to education at the national and international level, and to the community of Queensland.

A former Chair of Universities Australia and current Chair of the Queensland Vice Chancellor's Committee, Professor Harding is an economic sociologist with an interest in education and research policy, the global tropics and economic development.

She is a member of a number of boards, including Education Australia Limited, Citizens of the Great Barrier Reef Foundation Board, Townsville Enterprises Limited and Advance Cairns. She is a member of the Committee for Economic Development of Australia Leadership Council.

Dr Paul Hardisty MSc, P.Eng, FIEAust
CEO and Council member: 24 July 2017 to 23 July 2022

Dr Hardisty, a recognised thought leader and sought-after speaker in his field, was appointed CEO of AIMS in July 2017.

An engineer who has worked extensively in marine and coastal environments and marine research projects, he is experienced in both the public and private sectors.

Dr Hardisty co-founded international environmental consultancy Komex Environmental Ltd, which he developed from a start-up to a $50 million-a-year company with 1000 employees.

More recently, he was director at CSIRO's Climate Adaptation Flagship, and business unit director in CSIRO's Land and Water division.

Dr Hardisty holds a Master in Hydrology, and a Doctorate in Environmental Engineering from Imperial College, London. He is an adjunct Professor at The University of Western Australia.

Ms Anna Matysek, BEcon (Hons), MEnv
Council member: 15 June 2017 to 14 June 2022

Ms Matysek is an experienced economist, and an expert business development and investment strategist. She is a senior executive and independent consultant with a strong background in stakeholder engagement, risk assessment and policy development in the resources, energy and infrastructure sectors.

Ms Matysek has worked with leading global mining companies, utilities, agribusinesses, and government including holding senior positions in Rio Tinto, TransGrid, economics consulting firms, at the Australian Bureau of Agricultural and Resource Economics and the Productivity Commission.

Ms Matysek was a lead author on the Intergovernmental Panel on Climate Change Fourth Assessment Report, and the International Assessment of Agricultural Knowledge, Science and Technology for Development.

Dr Stephen Morton, BSc (Hons), PhD, Doc (Hon. Causa), GAICD
Council member: 16 December 2014 to 15 March 2020

Dr Morton is an Honorary Professorial Fellow with Charles Darwin University, a Doctor of Philosophy in animal ecology, an author, and has published more than 150 scientific articles.

He was formerly chief of CSIRO's Sustainable Ecosystems and Group Executive for Environment and Natural Resources, for Energy and Environment, and for Manufacturing, Materials and Minerals.

Dr Morton is an independent consultant and sits on councils and scientific advisory panels including the Western Australian Biodiversity Science Institute, and the steering committee for the Threatened Species Recovery Hub, National Environmental Science Program.

Mr Roy Peterson, BCom, FCA, FTI
Council member: 11 December 2014 to 10 March 2020
Independent Chairman of Audit Committee: 11 March 2020 - 31 October 2021, or as agreed with Council

Mr Peterson is Chairman of the AIMS Audit Committee, and a leader in his field.

He is a Chartered Accountant with strong governance and audit committee experience, including internal audit, risk management, process improvement and taxation.

Mr Peterson has chaired the North Queensland Committee for the Australian Institute of Company Directors and was a member of the Taxation Institute National Taxation Liaison Committee.

He is a Fellow of the Institute of Chartered Accountants, and the Taxation Institute of Australia.

Ms Jeanette Roberts BEng (Hons) FIChemE
Council member: 21 June 2018 to 20 June 2023

Ms Roberts is a chemical engineer and a senior executive with more than 35 years' international experience in the oil and gas industry, including in China, India, Russia, Africa, Europe and the Asia–Pacific.

A director of her own company, Jeanette Roberts Consulting, she has major global merger and acquisitions experience, including divestments, global restructures, risk management and governance.

Ms Roberts has worked on policy development at both state and Commonwealth level, as well as in the research sector, building partnerships and collaboration frameworks, particularly around marine environments and sustainable development.

She has worked for oil and gas operators and service companies both in Australia and internationally.

Dr Thomas Barlow BSc (Hons), DPhil
Council Member: 11 March 2020 to 10 March 2025

Dr Barlow serves as an adviser on knowledge investment, research policy, and analytics to a range of technology-intensive companies, government agencies, and universities globally. He previously served a five year term as an independent member on the Board of the National Computational Infrastructure.

Dr Barlow is the author of three books on science and innovation, and publisher of the Barlow Report, a biennial resource for higher education institutions in Australia and East Asia.

Dr Barlow has previously worked as a weekly columnist for the Financial Times newspaper in London. He has also been the science policy adviser to the Minister for Education, Science and Training in the Australian Government.

Dr Erika Techera LLB (Hons), PG Cert Higher Ed, M Env Law, LLM, PhD, FAAL, GAICD
Council Member: 16 March 2020 – 15 March 2025

Dr Techera has over 25 years' experience in law, legal practice and academic legal research. She is a specialist in international and comparative environmental law and marine environmental governance with a strong commitment to sustainable development. Dr Techera is a Professor of

Law and has held a variety of senior leadership roles in the university sector. She has expertise in strategic leadership, governance and management having led a flagship, multi disciplinary research institute and a University Faculty of Law. She formerly practised as a Barrister in Sydney for over seven years, and was Director of a small litigation support business before that.

Dr Techera has been a member of the Board of Western Australian Maritime Museum Advisory Committee and Western Australian Speedway Commission since mid-2018, and in 2020 joined the Heritage Council of Western Australia.

Dr Techera is a Graduate of the Australian Institute of Company Directors, a Fellow and Director of the Australian Academy of Law, and in 2016 was nationally recognised for excellence being awarded the Lawyers Weekly Australian Law Award, Academic of the Year.

Council attendance

Table 5: Attendance at Council meetings, 2019–20

Attendance	27 Aug 2019	9-10 Sep 2019	26-27 Nov 2019	10-11 Mar 2020	23-24 Jun 2020
The Hon. Penelope Wensley AC	no	yes	yes	yes	yes
Professor Sandra Harding AO	yes	yes	yes	yes	yes
Dr Stephen Morton	yes	yes	yes	yes	n/a
Mr Roy Peterson	yes	yes	yes	yes*	yes**
Ms Anna Matysek	yes	yes	yes	yes	yes
Dr Paul Hardisty	yes	yes	yes	yes	yes
Ms Jeanette Roberts	yes	yes	yes	yes	yes
Dr Thomas Barlow	n/a	n/a	n/a	n/a	yes
Dr Erika Techera	n/a	n/a	n/a	n/a	yes

For remuneration, see Financial Statements, Note 3.2 on page 134

* Mr Roy Peterson attended day 2 of this meeting as an observer

** Mr Roy Peterson attended relevant sections of the June 2020 Council meeting in his capacity as Independent Chairman of Audit Committee

Education and performance review processes for Council members

At induction, Council members are provided with a comprehensive set of documents including the PGPA Act, AIMS Act, AIMS Strategy 2025, Corporate Plan, Risk Management Framework and key plans and policies including the Business Continuity Plan, Enterprise Agreement and Fraud Control Plan.

Council members are encouraged to maintain their membership with the Australian Institute of Company Directors. The performance of Council members is reviewed regularly through a self-assessment process and, as required, by external review.

Ethics

Council members are briefed on—and are required to sign—the AIMS Code of Conduct.

Disclosure of interests

Section 29 of the PGPA Act provides for the disclosure of material personal interests in a matter that is being considered by the Council, and prohibits participation, deliberation and decision making by any member on such matters, unless so resolved by the Council or entitled by the Minister. Details of such disclosure are recorded in the minutes of Council meetings. All of these requirements are currently being met.

Audit Committee

The Audit Committee is a formal subcommittee of the Council that meets quarterly. Audit Committee members in 2019–20 were:

- Mr Roy Peterson (Council member and Committee Chairman)
- Ms Jeanette Roberts (Council member)
- Ms Margaret Walker (independent member).

The AIMS CEO, Chief Finance Officer, Chief Operating Officer, Manager Finance, representatives of the Australian National Audit Office, and an internal auditor, attend all meetings or relevant parts of all meetings, by invitation.

In accordance with best practice, all Council members may receive copies of the Audit Committee agenda and meeting minutes and can attend meetings as a right.

The Audit Committee is responsible for providing independent assurance and assistance to Council on:

- financial reporting
- performance reporting
- systems of risk oversight and management
- systems of internal control
- internal audit
- external audit.

Four full meetings of the committee and one extraordinary meeting were held during FY 2019–20. The committee's charter is available on the AIMS website[4].

Audit Committee Skills and Experience

Experience and skills of Mr Peterson and Ms Roberts are outlined on page 87.

Ms Margaret Walker (Bcom) – independent member

Margaret has over 20 years experience as a senior finance executive in the financial services industry and in the last 10 years as an executive director for Tactical Global Management (TGM). Her roles at TGM spanned Executive Director responsible for marketing, business development, finance and compliance.

Margaret has strong financial, regulatory and risk management experience and worked at a high strategic level within her previous organisations. She has extensive experience in setting strategy and business planning.

Audit Committee Remuneration

Ms Walker's remuneration as independent member of Audit Committee in 2019-20 was $10,676. Remuneration for other members of Audit Committee is detailed in note 3.2 to the Financial Statements, page 134.

4 *https://www.aims.gov.au/docs/about/corporate/corporate-profile-governance.html*

Image: Chris Brunner

Attendance

Table 6: Audit Committee attendance, 2019–20

Attendance	4 July 2019	8 Aug 2019	5 Nov 2019	3 Mar 2020	2 Jun 2020
Members					
Mr Roy Peterson (Committee Chairman)	yes	yes	yes	yes	yes
Ms Jeanette Roberts (Council member)	yes	yes	yes	yes	yes
Ms Margaret Walker (independent member)	yes	yes	yes	yes	yes
Invitees					
Dr Paul Hardisty (AIMS CEO)	no	no	yes	yes	yes
Mr Basil Ahyick (AIMS CFO)	yes	yes	yes	yes	yes
Dr John Chappell (AIMS COO)	no	yes	yes	yes	yes
Mr Jason Davidson (AIMS Finance Manager)	yes	yes	yes	yes	yes
Mr Will Fellowes (PricewaterhouseCoopers (PwC) internal auditor)	no	yes	yes	yes	no
Mr John Skilling (PwC internal auditor)	no	yes	yes	yes	yes
Mr Brandon Jarett (ANAO signing officer)	no	yes	no	yes	yes
Mr Benjamin Nicholls (ANAO)	no	yes	yes	yes	yes
Ms Chanelle Pienaar (RSM Australia, ANAO contract auditors)	no	yes	no	no	no
Mr Albert Loots (RSM Australia, ANAO contract auditors)	no	yes	no	no	no
Mr John Zabala (Crowe, ANAO contract auditors)	no	no	no	yes	yes
Ms Cynthia Iafano (Crowe, ANAO contract auditors)	no	no	no	no	yes

Independent professional advice

The Council has the right to obtain, at AIMS' expense, relevant independent professional advice in connection with the discharge of its responsibilities. It did not seek such advice in 2019–20.

Fraud Control

AIMS remains committed to mitigating incidences of fraud and managing risks. AIMS has developed a Fraud Control Plan using the Commonwealth Fraud Control Framework 2017 and in adherence to s.10 of the PGPA Rule 2014. AIMS reports its fraud data to the Australian Institute of Criminology by 30 September each year.

Financial Reporting

AIMS' financial statements are prepared in accordance with:

- Public Governance, Performance and Accountability (Financial Reporting) Rule 2015 (FRR) for the reporting periods ending on or after 1 July 2016
- Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board that apply for the reporting period.

The financial statements are accompanied by a signed statement by the Accountable Authority, CEO and CFO, declaring that the statements comply with the accounting standards and any other requirements prescribed by the FRR and present fairly the entity's financial position, financial performance and cash flows in accordance with s. 42 of the PGPA Act.

There were related entity transactions during 2019–20 (refer to Note 3.3 of the Financial Statements).

Performance Reporting

Section 39 of the PGPA Act requires an annual performance statement to be provided by corporate Commonwealth entities. AIMS' annual performance statement for 2019–20 starts on page 20 of this report.

Systems of Risk Oversight and Management

Under s. 17(2) (c) of the PGPA Rule, the Audit Committee is responsible for reviewing the Institute's risk framework (and monitoring management's compliance with that framework) and making recommendations to the Council to address any significant issues raised.

System of Internal Audit Control

The Audit Committee's responsibilities include reviewing the Audit Plan and internal audit reports, and also making recommendations to the Council and management to address any significant issues raised. The committee also reviews whether the internal audit coverage aligns with AIMS' key risks. The internal audit function was performed by PricewaterhouseCoopers (PwC) during the year. The internal auditor is responsible for independently reviewing risk in accordance with the AIMS Corporate Plan.

External Audit

Under s. 43 of the PGPA Act, the Commonwealth Auditor-General, through the ANAO, is the external auditor for the Institute. The Audit Committee reviewed the ANAO Audit Plan and reported to, and met with, ANAO representatives before recommending to the Council that the annual financial statements be accepted, and the Statement by Council be signed.

Risk Management

AIMS has a comprehensive corporate risk management strategy, which includes processes to identify and assess new risks to AIMS, and to monitor and refine existing risks and control measures.

Operational risk management is established across the Institute, with processes, procedures and systems of work in place to manage workplace health and safety risks that may affect AIMS' workers. We participate in the annual Comcover risk management benchmarking survey.

Investing And Financing Activities

AIMS invested its surplus money in accordance with s. 59 of the PGPA Act and AIMS' policy on investments.

Indemnities and Insurance Premiums for Officers

There were no liabilities to any current or former officials of AIMS during the reporting period. No premium was paid (or was agreed to be paid) against a current or former official's liability for legal costs. AIMS paid premiums for directors' and officers' insurances, as required.

Compliance

AIMS conducted its affairs in accordance with the requirements of all applicable laws and regulations, including the PGPA Act and prescribed rules, the applicable policies of the Australian Government, and the internal policies of AIMS. Any government policy orders notified as being applicable to AIMS would be duly complied with (s. 22(3), PGPA Act). There were no policy orders applied to AIMS in 2019-20.

Duty to Inform and Ministerial Notifications

The AIMS Council is required to notify the responsible minister of any significant issue that has affected AIMS (s. 19(1)(e), PGPA Act). There were no significant issues requiring notification to the responsible minister during 2019–20.

Consultancy Services

AIMS engages individuals and companies as external consultants from time to time where it lacks specialist expertise or when independent research, review or assessment is required.

Consultants are engaged to investigate or diagnose a defined issue or problem, carry out defined reviews or evaluations, or provide independent advice, information or creative solutions to assist in AIMS' decision making.

Decisions to engage consultants take into consideration the skills and resources required for the task, the skills or resources available internally and the cost-effectiveness of these options. Engagement of a consultant is made in accordance with our Procurement Policy and Procedures and other relevant internal policies.

AIMS spent $255,000 (excluding GST) on consultancies during 2019–20.

Public Accountability

Judicial decisions and reviews by administrative tribunals

No judicial decisions relating to AIMS were handed down during the reporting period.

Commonwealth Ombudsman

No reports relating to AIMS were given by the Commonwealth Ombudsman during 2019-20.

Office of the Australian Information Commissioner

No reports relating to AIMS were given by the Australian Information Commissioner during 2019–20.

Parliamentary committees

No reports were produced on the operations of AIMS by a parliamentary committee during 2019–20.

Auditor-General

No reports were produced on the operations of AIMS by the Auditor-General during 2019-20.

Customer Service Charter

AIMS' customer service charter outlines the standards it commits to regarding management of customer relationships, a copy of which is posted on our website. AIMS actively seek and welcome feedback on our performance against our service standards. The charter and details on how to provide feedback can be found at www.aims.gov.au/docs/about/corporate/service-charter.html

Privacy Act 1988

To ensure the proper management, administration and safety of its officers, employees, visitors, volunteers and contractors, AIMS is required to collect personal, and occasionally sensitive, information. AIMS is committed to the Australian privacy principles contained within the Privacy Act 1988 and has formal processes to manage privacy, as detailed in the AIMS Privacy Policy and Procedures. AIMS has a privacy officer (privacy@aims.gov.au) who is responsible for ensuring that the Institute's Privacy Policy and Procedures are adhered to and comply with all applicable statutory requirements.

Freedom Of Information (FOI)

Freedom of Information (FOI) requests, reviews, decisions and statements

No requests for documents under the provisions of the Freedom of Information Act 1982 (FOI Act) were received by AIMS during 2019–20.

In addition, no applications were received during 2019–20:

- for internal review of decisions made under the FOI Act
- for external review by the Administrative Appeals Tribunal of decisions made under the FOI Act
- to amend any records under the FOI Act.

FOI Operations

Agencies subject to the FOI Act are required to make information available to the public as part of the Information Publication Scheme (IPS). Under their IPS, each agency must display on its website a plan showing what information it publishes in accordance with the IPS requirements in Part II of the FOI Act.

The documents listed in our IPS Agency Plan are generally freely available to any person requesting them. The availability of other information is subject to assessment, which is made on a case-by-case basis in accordance with the relevant provisions of the FOI Act, as supplemented and explained in the relevant fact sheets, guidelines and other materials published on the website of the Office of the Australian Information Commissioner (OAIC)[5]. The grounds for assessment include considerations of commercial confidentiality, legal professional privilege and personal privacy. The FOI Act and the above website explain these, the other unconditional exemptions and the conditional exemptions as contained in the current legislation.

Requests for any such information from AIMS must be made in writing, addressed to the relevant person, and must contain the information set out under 'How to make an FOI request' on the above website. The request should be addressed to the FOI contact officer at the address given below. There is no fee payable for the request. However, fees and charges may apply and, if they do, will be set in accordance with Part 4 of the FOI Guidelines, which are available from the OAIC and AIMS websites.

Information Publication Scheme

AIMS continues to undertake actions consistent with compliance requirements under the IPS introduced in May 2011 pursuant to the relevant provisions of the FOI Act. The IPS encourages governments and government agencies to provide open, accountable and transparent information in formats that are easy to understand and freely accessible.

Contact

All enquiries and requests for information, or concerning access to documents or any other matters relating to FOI, should be directed to:

FOI contact officer, Australian Institute of Marine Science
PMB No. 3, Townsville Mail Centre MC, Qld 4810
Telephone: (07) 4753 4444
Facsimile: (07) 4772 5852
Email: FOI@aims.gov.au

5 *https://www.oaic.gov.au/freedom-of-information/*

RESEARCH HIGHLIGHT:

An integrated autonomous systems approach for layered marine observations

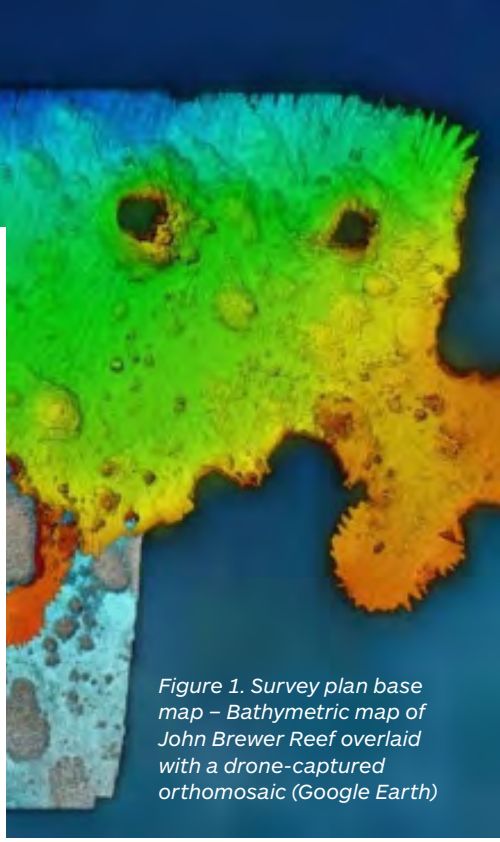


Figure 1. Survey plan base map – Bathymetric map of John Brewer Reef overlaid with a drone-captured orthomosaic (Google Earth)

AIMS' vision for marine monitoring extends from space to the seafloor using an integrated, multi-layered suite of tools working together to collect and translate field data into information efficiently.

Our objective is to deliver twice the information in half the time and at half the unit cost (AIMS Strategy 2025 Enhanced Capability Target 2).

Autonomous platforms are at the heart of scaling AIMS' routine observations.

AIMS' engineers have demonstrated the utility of autonomous platforms for coral reef observations deployed in a layered approach at John Brewer Reef.

A detailed bathymetric map of John Brewer Reef was produced using a small tender equipped with a multibeam sonar and overlaid with an orthomosaic collected by drones launched from the RV Cape Ferguson (Figure 1). The resulting map provided a foundation for developing a survey plan for directing aerial, surface and underwater autonomous platforms to collect the required data from the field. The high-resolution drone map also enabled additional areas of interest to be identified for further investigation.

Autonomous platforms can bring benefits in safety and improved quality, accuracy, and acquisition of data. AIMS has aerial drones with hyperspectral and regular imaging capabilities, and emerging autonomous underwater platforms. To assess an autonomous surface vessel capability, AIMS teamed up with Queensland University of Technology (QUT) to configure their sophisticated Wave Adaptive Modular Vessel WAM-V with a variety of payloads including camera systems, sonar systems and a towed platform to collect underwater georeferenced

Figure 2. Platforms deployed to capture the target reef dataset (L to R) AIMS Hyperspectral Drone; QUT's WAM-V equipped with AIMS' sonar and imaging payload (on-platform and towed); Rangerbot Autonomous Underwater Vehicle (AUV). Images: Top Left, Jon Kok; Bottom Left, QUT; Right, Geoff Page.

survey data of reef zones (this autonomous vessel was awarded 2nd place in the last two biennial International Maritime RobotX competitions).

The survey plan directed the WAM-V to survey reef flats and reef slopes, and a hyperspectral drone and Rangerbot autonomous underwater vehicle to survey reef transects (Figure 2). Although capable of full autonomous operation, each platform was operated under human control for additional safety and environmental compliance assurance.

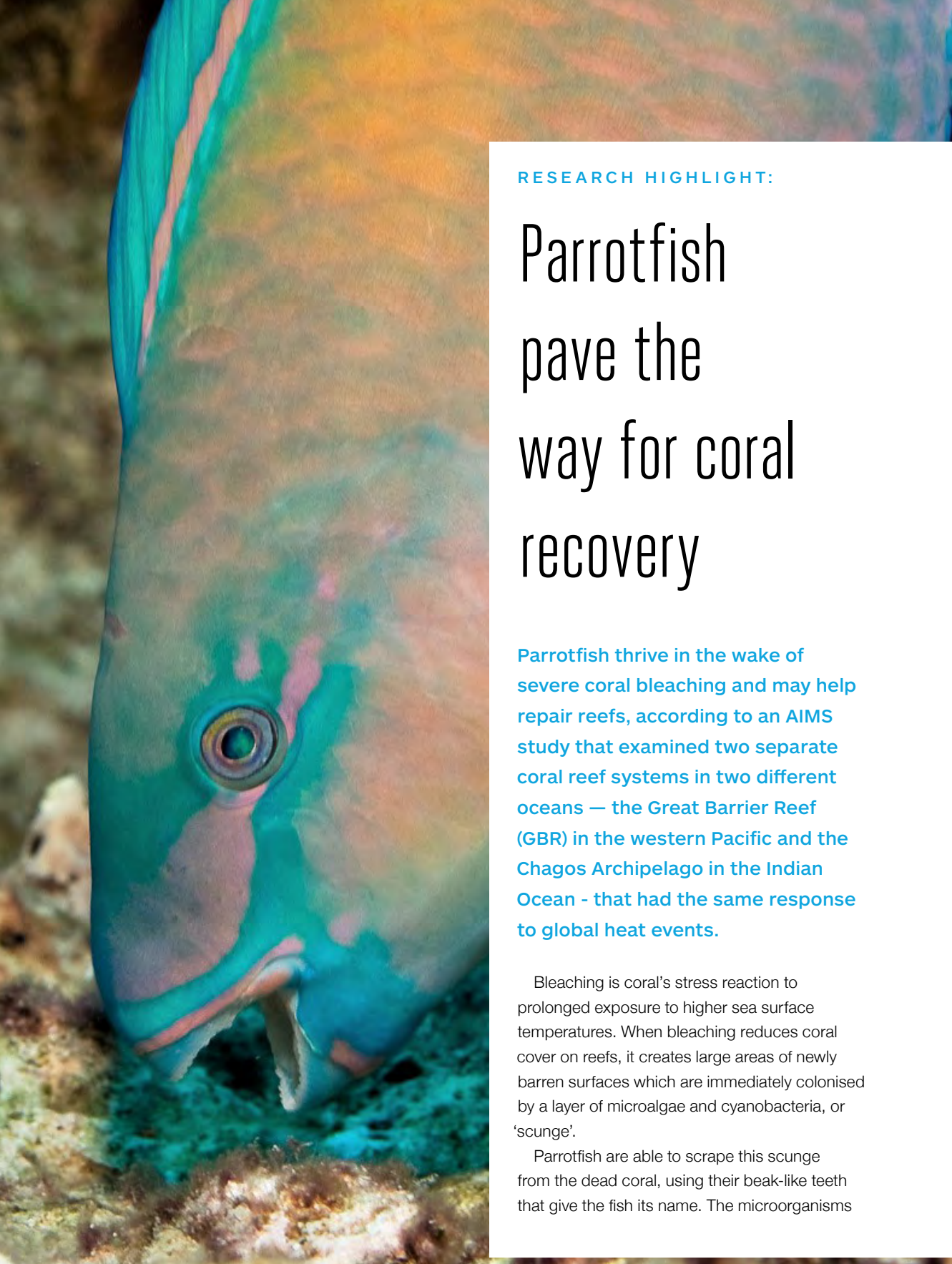
In addition to data acquisition technologies, AIMS is developing a modular, configurable, cloud-based data workflow and processing system known as the Research Data Platform (RDP). This is AIMS' next generation data framework which incorporates machine learning, pre-processing and integrated data product elements. The datasets acquired by the autonomous platforms were all georeferenced and timestamped to inform the RDP development, ensuring AIMS develops an enduring marine monitoring system using an end-to-end systems approach. Figure 3 presents examples of the data captured.

This project demonstrated the feasibility of operating multiple autonomous platforms together to perform a single co-ordinated multi-layered mission from AIMS' vessels. Lessons learned will inform:

- operational logistics and optimal configuration of autonomous platform deployed for future routine monitoring;
- decisions concerning platform and sensor selection and development, and vessel design and configuration;
- experimental design, sampling strategies and mission planning; and
- data management and analysis workflows and data system specifications.

Whilst led by the Technology Development Engineering team, this project achieved its objective through AIMS-wide support and through collaboration with partners. ■

Figure 3. Examples of data captured by the autonomous platforms
a. Image of the reef flat taken ~2 m above the sea floor}
b. Bathymetry map developed from data acquired by the WAM-V



RESEARCH HIGHLIGHT:

Parrotfish pave the way for coral recovery

Parrotfish thrive in the wake of severe coral bleaching and may help repair reefs, according to an AIMS study that examined two separate coral reef systems in two different oceans — the Great Barrier Reef (GBR) in the western Pacific and the Chagos Archipelago in the Indian Ocean - that had the same response to global heat events.

Bleaching is coral's stress reaction to prolonged exposure to higher sea surface temperatures. When bleaching reduces coral cover on reefs, it creates large areas of newly barren surfaces which are immediately colonised by a layer of microalgae and cyanobacteria, or 'scunge'.

Parrotfish are able to scrape this scunge from the dead coral, using their beak-like teeth that give the fish its name. The microorganisms

Image: Steve Lindfield

provide an abundant source of nutritious food for the parrotfish, and removing the scunge gives corals the best chance to recolonise the available surface.

Parrotfish populations were between two and eight times greater in areas damaged by coral bleaching. Individual parrotfish were also about 20 per cent larger than in unbleached sections. In comparison, the abundance of almost every other species of fish was in sharp decline in the bleached areas surveyed.

The study concluded that a feedback mechanism regulates coral and parrotfish abundances such that when reefs are damaged, parrotfish numbers swell which, in turn, reduces the amount of scunge, helping coral to recolonise and repair the damaged reef. As coral cover increases, parrotfish numbers decline dramatically.

The fact that plump parrotfish were found in large numbers on both the GBR and the Chagos Archipelago - two coral reef systems 8000 kilometres apart that were subjected to widespread pantropical bleaching in 2015-2017 following global heat events - indicates the feedback loop is an inherent part of reef ecology and a general phenomena, not an isolated incident or caused by local factors.

These results demonstrate that the scale, magnitude, and severity of recent thermal events is causing spatially disparate fish communities to respond in synchrony to extreme environmental occurrences.

The study also found their actions can maintain reef health and help reefs recover from the impacts of mass coral bleaching due to marine heatwaves. Because of this important ecological role, parrotfish have been described as 'ecosystem engineers' of reef systems.

This study, published in Global Change Biology, was conducted in collaboration with James Cook University, the University of Auckland and the University of Lancaster, with funding from the Bertarelli Foundation. An Altmetric Attention Score of 878 placed it in the top 5% of all research outputs tracked by Altmetric in terms of media and social media coverage and was the 3rd highest ever Altmetric score for a paper published by Global Change Biology.

While the metrics reflect that the work was timely and important it indicates the public's interest in understanding the outcomes of coral bleaching better. It also demonstrates the impact of AIMS' research through a broader look at the magnitude of bleaching, coral mortality, or other coral-focused outcomes, by considering feedbacks throughout the wider ecosystem. This research is recognition of AIMS' international pre-eminence which is aligned to our Strategy (year-on-year improvement in science excellence, remaining in the top three marine science research institutions in the world). ■

Parrotfish grazing shapes the structure of reefs by suppressing algae that would otherwise proliferate and impede coral growth.

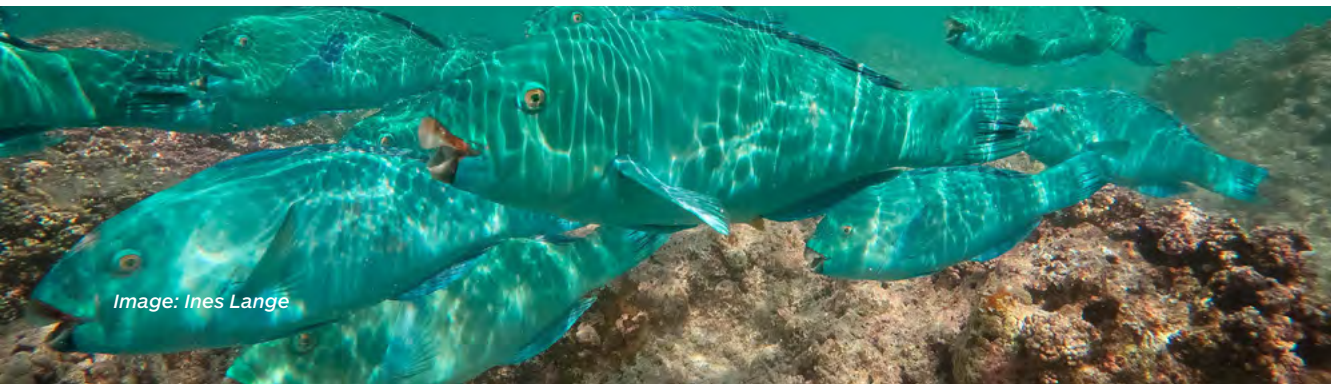


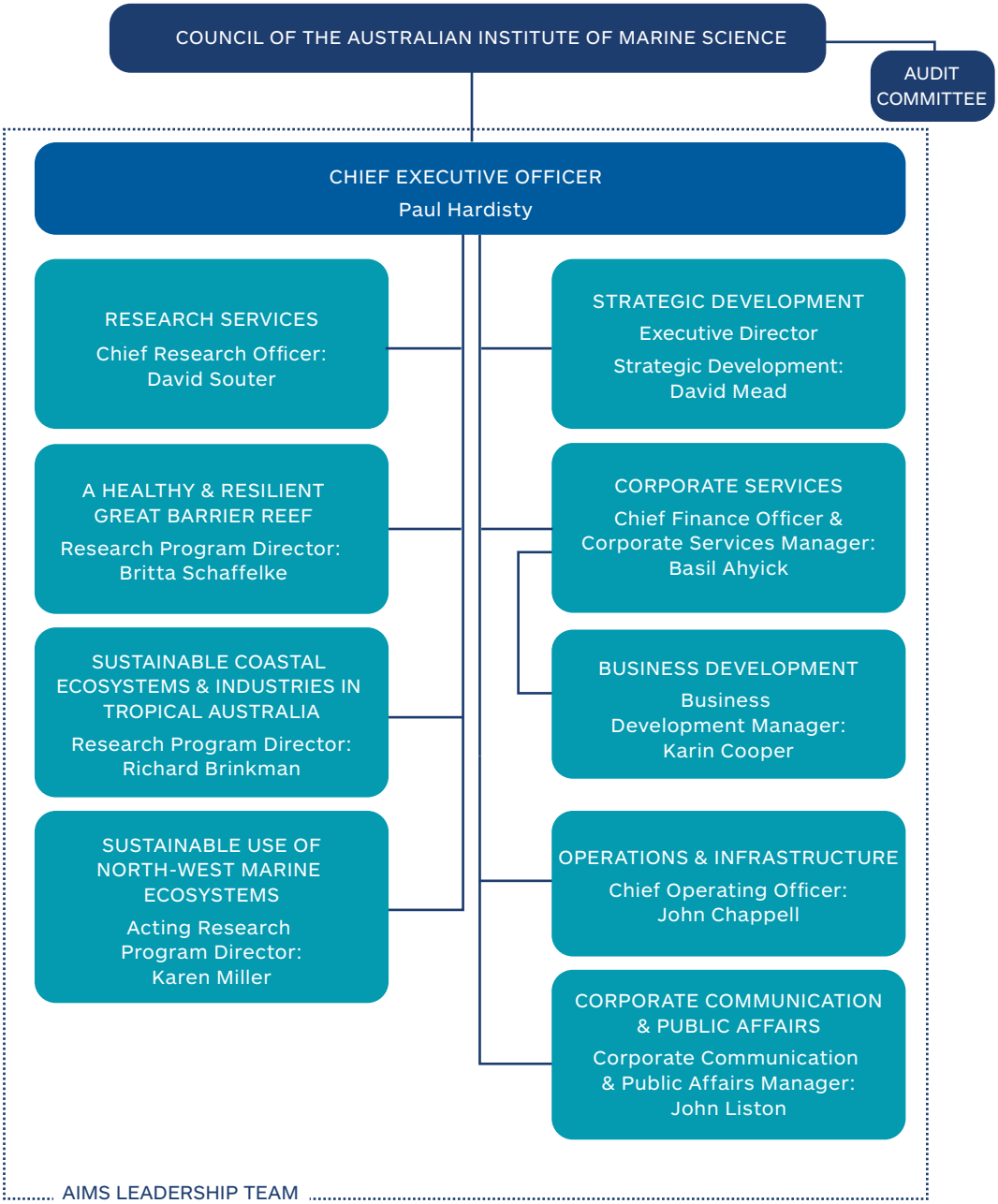
Image: Ines Lange

Part 4:
Our People

Image: Andre Rereruka
Photograph taken pre-COVID restrictions

Organisational Structure

Figure 16: Organisational structure of the Australian Institute of Marine Science.



Staff

AIMS employed an average of 246.5 full-time equivalent (FTE) science and support staff during FY 2019–20, including 20.88 FTE under labour hire arrangements, 0.1 FTE casuals and 3.13 FTE temporary staff. In addition, AIMS engaged 44 FTE personnel via outsourced functions (see Table 7) and 2 FTE of secondments from the Department of Industry, Science, Energy and Resources.

The COVID-19 pandemic required our staff to adapt and respond quickly to changing conditions. Staff at all AIMS sites except for essential Townsville staff, transitioned to working from home during the week commencing 16 March. Our essential staff maintained the Townsville facility and National Sea Simulator. During this time, temporary staff were extended to December 2020 with productive work, to align with the Government principle of maintaining as many people in employment as possible. Phase 2 of the COVID-19 recovery plan commenced on 1 July 2020, which included staff returning to all AIMS sites, under strict COVID-19 social distancing controls and a preference for any staff who could continue to work from home, to do so.

Many of our scientists are world authorities in their field who have achieved international acclaim for their research. The work of the research scientists is supported by a variety of professional and technical support staff skilled in the following:

- research support
- laboratory and analytical services
- data collection and data management
- commercial and business development services
- intellectual property portfolio management
- engineering and field operations services
- science communication
- corporate support functions comprising human resources, financial, information services, supply and general management.

Where appropriate, AIMS contracts services. Currently, contracted services are for catering, cleaning, site maintenance, security and crewing marine research vessels.

Image: Andre Rereiuka
Photograph taken pre-COVID restrictions

AIMS core staff numbers

Table 7: Average Staffing Level Numbers (ASL)

	2017-2018			2018-2019			2019-2020		
Staff category	**Female**	**Part-time**	**Total**	**Female**	**Part-time**	**Total**	**Female**	**Part-time**	**Total**
Research Scientists	25	4	**48**	24	4	**53**	24	4	**51**
Townsville	18	4	**29**	16	3	**32**	17	3	**32**
Perth	6	-	**13**	7	1	**16**	6	1	**14**
Darwin	1	-	**6**	1	-	**5**	1	-	**5**
Research Support	22	2	**59**	21	2	**58**	22	3	**61**
Townsville	16	2	**48**	17	1	**46**	18	2	**48**
Perth	5		**9**	3	1	**10**	3	1	**10**
Darwin	1		**2**	1		**2**	1	-	**3**
Technical and corporate support	38	6	**98**	37	5	**104**	40	4	**110**
Townsville	32	6	**85**	31	5	**89**	34	3	**97**
Perth	6	-	**10**	6	-	**12**	5	1	**12**
Darwin	-	-	**3**	-	-	**3**	1	-	**1**
Total Staff (excluding casual and temporary)	85	12	**205**	82	11	**215**	86	11	**222**
Townsville	66	12	**162**	64	9	**167**	69	8	**177**
Perth	17	-	**32**	16	2	**38**	14	3	**36**
Darwin	2	-	**11**	2	-	**10**	3	-	**9**
Postdoctoral Fellows included in total*	4	-	**13**	5	-	**12**	5	-	**10**
Townsville	3	-	**6**	4	-	**6**	3	-	**6**
Perth	1	-	**6**	1	-	**5**	2	-	**4**
Darwin	-	-	**1**	-	-	**1**	-	-	**-**
Temporary and Casual staff	15	-	**36**	19	-	**29**	15	-	**24**
Townsville	13	-	**33**	18	-	**26**	11	-	**19**
Perth	2	-	**3**	1	-	**3**	4	-	**5**
Darwin	-	-	**-**	-	-	**-**	-	-	**-**
Contractors	-	-	**49**	-	-	**47**	-	-	**44**

** Most PostDocs are joint appointments with other research organisations. These figures only reflect positions for which AIMS is the host employer*

Staff Consultation

Staff consultation and communication takes place via a range of mediums such as all-staff meetings, emails and newsletters. The Joint Consultative Committee—comprising AIMS CEO (Chairman), a management representative (Chief Operating Officer), the Human Resources Manager, Community and Public Sector Union (CPSU) representatives (internal), a CPSU organiser (external), and a staff representative—met three times in 2019–20. This committee provides a forum for discussion and consultation between management and staff representatives on issues that may affect staff conditions and entitlements.

In 2019-20, AIMS management, staff and their representatives negotiated a new Enterprise Agreement that will be in place until 2023.

Leadership Development

During 2019–20, AIMS continued with a significant leadership development program affording all staff the opportunity to participate.

Equal Employment Opportunity and Workforce Diversity

Our workforce diversity policy acknowledges differences and adapts work practices to create an inclusive work environment in which diverse skills, perspectives and cultural backgrounds are valued.

The Institute's staffing policies and procedures align with the requirements of the Equal Employment Opportunity (Commonwealth Authorities) Act 1987. Designed to ensure that workforce diversity and equality of opportunity are fundamental operating principles for AIMS, they include:

- regularly reviewing employment policies and practices, and providing ongoing instruction for user groups
- promoting AIMS as an equal opportunity employer in all recruitment advertisements placed in online media and on our website
- supporting equity of access and providing amenities for people with disabilities in AIMS' public access facilities such as conference rooms, theatre, library, cafe and display areas
- constructing new facilities that support equity of access
- catering to staff and visitors with a disability, and providing a wheelchair, if required, on public tours of AIMS
- having mechanisms in place to handle complaints and grievances (formal and informal) to address issues and concerns raised by staff and visitors.

Table 8: Staff numbers in equal employment opportunity categories

EEO category	Proportion of total staff (%)				
	2015–16	2016–17	2017–18	2018–19	2019–20
Aboriginal and Torres Strait Islander	0.5	1.31	0.98	2.05	2.18
Non-English-speaking background	15.3	16.44	16.78	14.67	15.1
Staff with disability	1.5	1.84	1.68	1.59	1.32
Women	36.8	37.25	41.36	41.32	39.23

Inclusiveness and Diversity in the Workplace

Our workforce initiatives support the wider Australia Public Service undertakings on Indigenous employment, diversity and gender equity. In continued efforts to be awarded Athena Swan Bronze Award certification, AIMS is continuing 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 in the institution, 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.

Code of Conduct

AIMS has a Code of Conduct to which the Council, management, staff and visitors are required to adhere. The Code complies with the Public Governance, Performance and Accountability Act 2014. New Council members, staff and visitors are briefed on the Code during induction.

Workplace Behaviour

Management, staff and visitors at AIMS share responsibility for providing and working in an environment free of harassment and other unacceptable forms of behaviour. In accordance with the AIMS Code of Conduct, staff are required to treat others with courtesy, respect, dignity, fairness and equity, and to have concern for their rights, freedoms and individual needs. A high standard of behaviour is expected and AIMS has a set of principles outlining the way staff are expected to behave towards others.

Workplace harassment contact officers are available throughout AIMS to discuss, in confidence, matters of concern regarding harassment and associated issues raised by a staff member. AIMS received no formal reported cases of harassment in 2019–20.

Public Interest Disclosure (Whistle-Blower Policy)

AIMS has a whistle-blower policy designed to facilitate effective notification, assessment and management of the disclosure of serious wrongdoings in accordance with the Public Interest Disclosure Act 2013.

AIMS strongly encourages reporting of serious wrongdoing and will take appropriate and necessary action to uphold the integrity of the Institute and to promote the public interest. To achieve our goals and obligations in this regard, AIMS is committed to creating and maintaining an environment and culture in which the disclosure of serious wrongdoings is fully supported and protected. There were no formal reported public interest disclosure cases in 2019–20.

National Disability Strategy

AIMS is committed to ensuring that people with disabilities are given opportunities for independence, access and full participation. AIMS assesses cases individually and endeavours to implement the most appropriate measures to assist people with disabilities.

AIMS' physical resources continue to be upgraded to meet access needs for people with disabilities, which includes building modifications and the construction of new facilities.

Employee Assistance Program

Lifeworks is contracted by AIMS to provide an independent employee assistance program. The program is free to staff, their family members, and students and provides for up to six sessions to assist with issues of:

- relationship and family problems
- maximising performance
- depression, anxiety and stress
- conflict and communication
- children or family member concerns
- grief and bereavement
- elder care issues
- addiction
- work–life balance
- career path issues
- retirement
- work stress.

Participants can refer themselves or be encouraged by a colleague, supervisor, human resource staff or workplace health and safety staff to access the program. The use rate during 2019–20 was 10.9 per cent, consistent with the previous year. Analysis reveals that staff accessed the service primarily for issues of a personal nature.

Health and Safety

Performance – Competent, Considered and Focused

Our Approach

The COVID-19 pandemic presented, and continues to present, several new risks for AIMS that apply across multiple timeframes – days, weeks, months and years – and multiple risk areas, including workplace health and safety, strategic targets and outcomes, plans, resources, delivery and communication. Various risk management tools and methods have been used to assess and manage COVID-19-specific and change management risks (e.g. field work task risk assessments, work from home risk assessments and corporate risk management). Assessments have been effective, collaborative and have guided decision making and response while emphasising the importance of risk management as an essential business management process within the AIMS Risk Management Framework.

At the commencement of the COVID-19 crisis, the AIMS Emergency Management Team managed the quickly evolving situation to ensure that immediate risks were addressed in a timely and effective manner. The Business Continuity Team (BCT) was established shortly thereafter to manage the longer-term business and operational risks. The BCT will continue operation into 2020-21 and oversee the safe transition back to the workplace in a controlled fashion. Essential controls include physical distancing, enhanced cleaning regimes, video conference meetings (prioritised over face-to-face), controlled gathering sizes, personal protective equipment and flexible working arrangements.

Image: Marie Roman
Photograph taken pre-COVID restrictions

The safety of our people, collaborators, contractors and those with whom we share the oceans remains paramount. AIMS Strategy 2025 defines AIMS safety value, to care for ourselves and others in all that we do.

AIMS defines measurable targets with which we will track our progress towards our work, health and safety objectives. At the highest level, AIMS has committed to achieving year on year improvements in safety performance.

Continuous improvement

Injury Reduction Program:

Improving awareness and providing tools and strategies that have reduced serious incident rates

Leadership and Cultural Change Program

Assisting people to work together more effectively, and look out for each other's health and safety, through personalised assessment, review, and coaching

Improved Safety Reporting

Review and upgrade of AIMS' incident and injury reporting framework, re-evaluating existing measures and approaches, and linking AIMS safety indicators to key strategic objectives

COVID-19 Think Tank

Targeted review of AIMS' COVID-19 response to identify what worked well, what do we keep, what has changed or needs changing?

Physical and Mental Wellbeing Program

Providing improved access to exercise opportunities, including Fitness Passport, in addition to mindfulness workshops and training

Internal Audit and Inspection Regimes

Providing a safe workplace and practice through site inspection and Internal Audit Committee review of policies and procedures.

Safety Pillars

Our health and safety approach is based on six pillars (Figure 17) that guide our annual strategic work planning:

Figure 17: Health and Safety Pillars

LEADERSHIP & CULTURE
Developing strong leadership that helps shape our safety culture

LEARNING CULTURE
Cultivating a learning culture that builds on our strong reporting culture

TRAINING & DEVELOPEMENT
Providing effective and accessible training and instruction

CONTINUOUS IMPROVEMENT
Evaluating and improving our systems and conditions

HEALTH & WELLBEING
Promoting a mentally and physically healthy workplace

COMMUNICATION & COLLABORATION
Adopting communication strategies to inform and engage

Image: Marie Roman

Dedicated Safety Roles

Our commitment to the health and safety of workers is demonstrated by the number and diversity of roles dedicated to health and safety management at AIMS (Figure 18).

Figure 18: Health and safety dedicated roles

In 2020 AIMS Emergency Management and Business Continuity teams played a critical role in responding to the COVID-19 pandemic, ensuring the health and safety of all workers. A forward-thinking, flexible, risk-based approach that was centred around communication and collaboration, has resulted in no cases of COVID-19 in the workplace while allowing for continued, but restricted, operations.

Lost Time Injuries

There were two lost time injuries recorded in 2019–20. AIMS has consistently achieved low lost time injury rates over the past five years, averaging only one per annum.

Lead and Lag Indicators

AIMS' reporting culture remains strong, with the number of hazards reported well in excess of target. Of the 67 incidents reported, 4 resulted in lost time or medical treatment injuries, and 12 involved minor first aid cases (Figure 19).

Year on year improvement has been achieved in the areas of safety delivery, with respect to incident reporting, investigation timeframes and the number of incidents resulting in work restrictions. AIMS' total recordable injury frequency rate decreased by 3 points (16%) and the injury severity rate decreased by 25 points (50%).

AIMS notified Comcare of one dangerous incident involving electric shock as per the requirements of the Work Health and Safety Act 2011. No injury was sustained, and the incident was assessed as minor. Comcare closed the incident satisfied that the action plan eliminated or minimised the risk of this type of incident from recurring, so far as reasonably practicable.

No new workers' compensation claims were accepted under the Comcare workers' compensation scheme, in large part due to AIMS' effective early intervention program.

Figure 19: AIMS safety reports, 2019–20

The number of manual task-related recordable injuries halved compared with the previous year. This improvement is attributable to our dedicated injury reduction plan providing early intervention, training and information around key risk factors and the application of manual task-specific risk management tools and role-based functional assessments.

Environmental Performance

We have delivered against our commitments to protecting the environment and conserving biodiversity during the year. In particular, we worked with multiple industries, government, the community and other scientific institutions and agencies on programs and projects dedicated to conserving and sustainably managing tropical marine resources. As a community leader and a Commonwealth statutory authority, we have both a moral obligation and a statutory obligation under the EPBC Act to protect and maintain the biodiversity and heritage under our control. Accordingly, we carefully guard against any avoidable adverse impacts on the environment arising from our own activities and work proactively to minimise the environmental footprint of our operations.

Reducing Our Environmental Impacts

In 2019–20, with the commissioning of the PV solar array in Townsville, AIMS generated 1396 megawatts of renewable energy. Combined with other power savings, we achieved an overall reduction of our annual electricity consumption of 1585 megawatts compared to last year. This equates to a reduction in AIMS' carbon footprint of 1,600 tonnes CO_2.

In 2019-20, AIMS also purchased 602 tonnes of carbon certificates to offset air travel and the petrol consumed in our vehicle fleet and small vessels. The AIMS Strategy 2025 includes a target to reduce our carbon footprint by 25% compared with 2017-18. The overall reduction in carbon footprint in 2019-20 is 2,202 tonnes CO_2, which represents a reduction of 21.8%.

This year a key focus was to reduce solid waste to landfill, especially at our headquarters in Townsville. Through the introduction of the co-mingle recycling program we diverted 32 tonnes of waste to landfill, a 33% reduction compared to last year.

Image: Joe Gioffre

Water Usage

Our operations at Cape Ferguson used 54 megalitres (ML) of water in 2019-20, an increase of 8 ML from the previous year. The increase is primarily due to construction and commissioning of new site fire infrastructure.

Recycling

The implementation of a co-mingle recycling program delivered a 32 tonne reduction in solid waste being diverted to landfill. This is a 33% reduction compared with last year. In 2019-20, we recycled 16,940 kg of paper, cardboard and plastic products. We continue to recycle batteries, printer cartridges, lubricants and metals.

Energy Usage

Cape Ferguson electricity consumption for 2019-20 was 6,200 MW for the year, compared to last year's total of 7,785 MW. The large reduction was due to the commissioning of the new 1050 kW PV solar system.

Radiation Safety

During the year, AIMS continued to hold a source licence issued by the Australian Radiation Protection and Nuclear Safety Agency. This licence is subject to conditions including quarterly reporting, maintaining a source inventory and complying with relevant regulations, codes and standards.

Gene Technology

One new proposal for dealing with genetically modified organisms (GMOs) was assessed and approved by AIMS Biosafety Committee this year. One exempt dealing project has been completed successfully. AIMS now has four active GMO projects – two rated NLRD and two exempt dealings.

Our alignment to ecologically sustainable development

Ecologically Sustainable Development (ESD) Principle	Our Alignment and Contribution
Decision-making processes should effectively integrate both long-term and short term economic, environmental, social and equitable considerations.	All AIMS work is assessed with ESD impact in mind. Projects are selected based on their environmental, economic, and social net value to the organisation, community and country in line with the AIMS Strategy 2025.
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.	AIMS complies with all major environmental laws and requirements in its operations and capital works. Environmental protection is mandated when planning and undertaking major capital works. Any proposed activities that may fall under the Environment Protection and Biodiversity Conservation Act 1999 are assessed for referral to the Department of the Environment and Energy. Proposals for new or modifications to existing facilities undergo rigorous internal safety, regulatory and environmental processes with independent oversight. A continuous improvement program is in place to reduce environmental impact through reducing energy and water consumption and waste generated. AIMS conducts large scale environmental monitoring programs and risk-based modelling to provide impartial advice on management and policy for government and industry decision makers. The organisation is leading the Australian research effort to identify innovative ways to assist coral reefs to recover from the impact of existing environmental conditions.
The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.	AIMS' Project Management Framework includes evaluations of future impact (targeting net social, economic and environmental benefits) for Australia. The organisation leads the global research effort to assist coral reefs in adapting to future environmental conditions to ensure the benefits of coral reefs are sustained for generations of Australians to come. AIMS actively integrates environmental responsibility and sustainability into our operations, minimising our environmental footprint through building infrastructure and behaviour change, and preventing, minimising and controlling pollution. Reducing our consumption of energy, water and resources not only supports sustainable objectives, it also contributes to our financial sustainability and allows us to redirect more funds into our science.
The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.	AIMS provides monitoring, modelling and research ensuring that the impact of policy and decisions on biological diversity and ecological integrity are understood by tropical marine managers. AIMS works with managers and decision makers to deliver sustainability.
Improved valuation, pricing and incentive mechanisms should be promoted.	AIMS has no activities in this area.

Part 5:
Financial Statements

Image: Marie Roman

Independent Auditor's Report

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Industry, Science and Technology

Opinion

In my opinion, the financial statements of the Australian Institute of Marine Science (the Entity) for the year ended 30 June 2020:

(a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and

(b) present fairly the financial position of the Entity as at 30 June 2020 and its financial performance and cash flows for the year then ended.

The financial statements of the Entity, which I have audited, comprise the following as at 30 June 2020 and for the year then ended:

- Statement by the Accountable Authority, Chief Executive and Chief Finance Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement; and
- Notes to the financial statements, comprising a summary of significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Entity in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's responsibility for the financial statements

As the Accountable Authority of the Entity, the Council of the Australian Institute of Marine Science is responsible under the *Public Governance, Performance and Accountability Act 2013* (the Act) for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the rules made under the Act. The Accountable Authority is also responsible for such internal control as the Accountable Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Accountable Authority is responsible for assessing the ability of the Entity to continue as a going concern, taking into account whether the Entity's operations will cease as a result of an administrative restructure or for any other reason. The Accountable Authority is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

GPO Box 707 CANBERRA ACT 2601
38 Sydney Avenue FORREST ACT 2603
Phone (02) 6203 7300 Fax (02) 6203 7777

Auditor's responsibilities for the audit of the financial statements

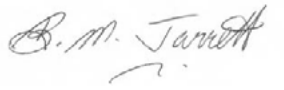
My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with the Accountable Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office



Brandon Jarrett
Executive Director

Delegate of the Auditor-General

Canberra

25 August 2020

Statement by the Accountable Authority, Chief Executive and Chief Finance Officer

STATEMENT BY THE ACCOUNTABLE AUTHORITY, CHIEF EXECUTIVE AND CHIEF FINANCE OFFICER

In our opinion, the attached financial statements for the year ended 30 June 2020 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Australian Institute of Marine Science will be able to pay its debts as and when they fall due.

This statement is made in accordance with a resolution of the directors.

Signed	Signed	Signed
		
The Hon Penelope Wensley AC **Accountable Authority**	**Dr Paul Hardisty** **Chief Executive Officer**	**Mr Basil Ahyick** **Chief Finance Officer**
25th August 2020	25th August 2020	25th August 2020

Primary Financial Statements

Statement of Comprehensive Income

for the period ended 30 June 2020.

	Notes	2020 $'000	2019 $'000	Original Budget $'000
NET COST OF SERVICES				
Expenses				
Employee Benefits	1.1A	**30,967**	30,289	33,899
Suppliers	1.1B	**26,237**	31,951	31,847
Depreciation	2.2	**12,426**	13,075	12,979
Finance costs	1.1C	**20**	-	-
Foreign exchange loss		**-**	37	-
Losses from asset disposal		**46**	438	-
Total Expenses		**69,696**	75,790	78,725
Own-source Income				
Own-source revenue				
Revenue from contracts with customers	1.2A	**15,291**	20,798	25,443
Interest on deposits		**675**	1,111	1,200
Other revenue	1.2B	**924**	394	150
Total own-source revenue		**16,890**	22,303	26,793
Gains				
Gains from sale of assets		**44**	74	-
Foreign exchange gain		**2**	-	-
Total gains		**46**	74	-
Total own-source income		**16,936**	22,377	26,793
Net cost of services		**(52,760)**	(53,413)	(51,932)
Revenue from Government		**44,773**	47,377	44,800
Total Revenue from Government		**44,773**	47,377	44,800
Surplus/(Deficit) attributable to the Australian Government		**(7,987)**	(6,036)	(7,132)
Total comprehensive income/(loss) attributable to the Australian Government		**(7,987)**	(6,036)	(7,132)

The above statement should be read in conjunction with the accompanying notes.

Statement of Financial Position

as at 30 June 2020

	Notes	2020 $'000	2019 $'000	Original Budget $'000
ASSETS				
Financial Assets				
Cash and cash equivalents	2.1A	**14,128**	21,623	250
Trade and other receivables	2.1B	**4,657**	7,274	7,525
Investments	2.1C	**26,100**	17,200	31,695
Total financial assets		**44,885**	46,097	39,470
Non-Financial Assets				
Buildings	2.2	**94,768**	95,054	97,500
Infrastructure, plant & equipment	2.2	**27,428**	28,563	28,144
Computer equipment	2.2	**998**	1,076	1,092
Computer software	2.2	**4,324**	4,888	4,326
Vehicles	2.2	**1,097**	1,489	711
Office Equipment	2.2	**4**	5	2
Ships, Launches and vessel	2.2	**18,010**	19,155	18,535
Library books	2.2	**1**	1	1
Prepayments		**3,169**	3,122	3,391
Inventories		**208**	203	249
Total non-financial assets		**150,007**	153,556	153,951
Total assets		**194,892**	199,653	193,421
LIABILITIES				
Payables				
Suppliers		**1,991**	2,394	3,070
Other payables	2.3	**7,496**	5,616	4,889
Total payables		**9,487**	8,010	7,959
Interest bearing liabilities				
Leases	2.4	**856**	-	-
Total interest bearing liabilities		**856**	-	-
Provisions				
Employee provisions	3.1	**12,650**	11,757	12,722
Total provisions		**12,650**	11,757	12,722
Total liabilities		**22,993**	19,767	20,681
Net assets		**171,899**	179,886	172,740
EQUITY				
Contributed equity		**88,357**	88,357	88,357
Reserves		**97,227**	97,680	99,388
Retained surplus (accumulated deficit)		**(13,685)**	(6,151)	(15,005)
Total equity		**171,899**	179,886	172,740

The above statement should be read in conjunction with the accompanying notes.

Statement of Changes in Equity

for the period ended 30 June 2020

	Notes	2020 $'000	2019 $'000	Original Budget $'000
CONTRIBUTED EQUITY				
Opening balance				
Balance carried forward from previous period		**88,357**	88,207	88,357
Transactions with owners				
Contributions by owners				
Equity injection - Appropriations		**-**	150	-
Total transactions with owners		**-**	150	-
Closing balance as at 30 June		**88,357**	88,357	88,357
RETAINED EARNINGS				
Opening balance				
Balance carried forward from previous period		**(6,151)**	19,708	(7,873)
Comprehensive income				
Surplus/(Deficit) for the period		**(7,987)**	(6,036)	(7,132)
Total comprehensive income		**(7,987)**	(6,036)	(7,132)
Transfers between equity components		**453**	(19,823)	(7,132)
Closing balance as at 30 June		**(13,685)**	(6,151)	(15,005)
ASSET REVALUATION RESERVE				
Opening balance				
Balance carried forward from previous period		**97,680**	77,857	99,388
Transfers between equity components		**(453)**	19,823	-
Closing balance as at 30 June		**97,227**	97,680	99,388
TOTAL EQUITY				
Opening balance				
Balance carried forward from previous period		**179,886**	185,772	179,872
Comprehensive income				
Surplus/(Deficit) for the period		**(7,987)**	(6,036)	(7,132)
Total comprehensive income		**(7,987)**	(6,036)	(7,132)
Transactions with owners				
Contributions by owners				
Equity injection - Appropriations		**-**	150	-
Total transactions with owners		**-**	150	-
Closing balance as at 30 June		**171,899**	179,886	172,740

The above statement should be read in conjunction with the accompanying notes.

Accounting Policy
Equity injections
Amounts appropriated which are designated as 'equity injections' for a year (less any formal reductions).

Cash Flow Statement

for the period ended 30 June 2020

	Notes	2020 $'000	2019 $'000	Original Budget $'000
OPERATING ACTIVITIES				
Cash received				
Appropriations		**44,773**	47,377	44,800
Sale of Goods and revenue from contracts with customers		**21,349**	23,785	25,752
Interest		**800**	901	1,200
GST receipts from ATO		**3,248**	3,517	-
Receipts from other		**922**	137	150
Total cash received		**71,092**	75,717	71,902
Cash used				
Employees		**29,729**	28,956	32,908
Suppliers		**30,106**	34,504	34,049
Interest payments on lease liabilities		**20**	-	-
GST paid to ATO		**1,775**	1,460	-
Total cash used		**61,630**	64,920	66,957
Net cash from/(used by) operating activities		**9,462**	10,797	4,945
INVESTING ACTIVITIES				
Cash received				
Proceeds from sales of property, plant & equipment		**50**	74	29
Investments		**-**	8,900	3,545
Total cash received		**50**	8,974	3,574
Cash used				
Purchase of property, plant and equipment		**8,055**	9,789	8,519
Investments		**8,898**	-	-
Total cash used		**16,953**	9,789	8,519
Net cash from/(used by) investing activities		**(16,903)**	(815)	(4,945)
FINANCING ACTIVITIES				
Cash received				
Contributed equity		**-**	150	
Total cash received		**-**	150	-
Cash used				
Principal payments of lease liabilities		**54**	-	
Total cash used		**54**	-	-
Net Cash from/(used by) Financing activities		**(54)**	150	-
Net increase/(decrease) in cash held		**(7,495)**	10,132	-
Cash and cash equivalents at the beginning of the reporting period		**21,623**	11,491	250
Cash and cash equivalents at the end of the reporting period	2.1A	**14,128**	21,623	250

The above statement should be read in conjunction with the accompanying notes.

Budgetary Reporting of Major Variances (AASB1055)

The Budget variances reporting commentary provides a comparison between the 2019-20 Portfolio Budget Statements (PBS) provided to Parliament in May 2019 and the final outcome in the 2019-20 financial statements. The PBS is not audited. Major changes in budget have been explained as part of the variance analysis where relevant.
Variances are considered to be 'major' where:

(a) the variance between budget and actual is greater than +/-10% of the budget for the line items; and
(b) the variance between budget and actual is greater than +/-2% of the relevant budget base.

Variance explanations will also be provided where there have been major changes to business activities that may not be numerically material but by nature may assist users in understanding underlying business changes that may have occurred since the original budget was released.

Where a revised budget has been presented to Parliament, AIMS may include variance explanations of major variances between the revised budget and actual amounts where they are considered relevant to an assessment of the discharge of accountability and to an analysis of the performance of AIMS.

Affected line items and statement	Explanations of major variances
Expenses	
Employee Benefits were lower than budget, resulting from recruitments taking longer than planned and deferred due to COVID-19 controls $780k and the Enterprise Agreement renewal being later than planned $300k. AIMS also allocated approx. $2m in 2019-20 to fund Technology Transformation (TT) and AIMS early work on Reef Restoration and Adaptation (RRAP) innovation platforms. While the planning phase indicated these funds would be used for labour, as the projects entered execution phase some of the expenditure was deemed to be capital in nature for TT and COVID-19 delays deferred some RRAP expenditure to 2020-21.	Employee benefits
The majority of the $5.5m underspend in suppliers relates to the $10.2m Revenue from contracts with customers decrease. AIMS was not able to achieve the expected revenue due to COVID-19 impacts which meant some of the external costs allowed for to assist in earning that revenue were not required e.g. labour hire and contractors ($2m), science consumables ($3m) and collaboration payments ($1.5m) were all under budget. However, with the temporary suspension of field work and with staff working from home due to COVID-19, preventative maintenance on vessels and buildings was brought forward.	Suppliers
Revenue	
AIMS' Revenue from contracts with customers was impacted by COVID-19. Contract milestones were not able restrictions, which resulted in lower revenue recognition. There was also no new contracts for revenue from the research services external sources from March 2020.	Revenue from contracts with customers
Interest rates have been decreasing and were further impacted during COVID-19 and are half of what was budgeted approximately from 3% to 1.3% and therefore less interest revenue has been earnt from cash investments.	Interest received
Other income includes fuel tax credits, a sale of a block of land and revenue from an insurance claim.	Other income
Gains	
AIMS does not budget for sale of assets or foreign exchange differences.	
Assets	
Cash and cash equivalents and Investments are different due to calculations at the end of the financial year dependent upon the maturities of the investments. For Budget AIMS accounts for all investments in total as the liquidity of the investments cannot be predicted during budget preparation.	Cash and cash equivalents & investments
With the drop in external revenue discussed above, this also impacted Trade and other receivables balance as all invoices were either not invoiced as contracts were not fulfilled or paid by contracted party.	Trade receivables
Liabilities	
With the impact of COVID-19, supplier invoices were less overall in June than budget, they were paid within due dates and accruals for invoices were much less in 2019-20 than previous year actuals.	Suppliers
As AIMS was not able to complete contractual milestones due to COVID-19 impacts, revenue received in advance was accrued to be recognised in the next financial year when milestones are completed.	Other payables
AASB 16 Lease applies to accounts for 2019-20 and at the time of budget preparation, the lease liability transition on 1 July 2019 was not able to be calculated.	Lease
Cashflow	
AIMS was significantly impacted by COVID-19 across the second half of the financial year. AIMS has received the cashflow, as noted in Contracted Assets and Liabilities, however was expecting further cash to be received for external revenue contracts or milestones completed across the second half of the year.	Sale of goods and services
Interest rates have been decreasing and were further impacted during COVID-19 and are half of what was budgeted approximately from 3% to 1.3% and therefore less interest revenue has been earnt from cash investments.	Interest
Other income includes fuel tax credits, a sale of a block of land and revenue from an insurance claim.	Other revenue
The majority of the $3.8m cash underspend in suppliers directly relates to the $4.3m decrease in cash received for external revenue. Outsourced contractor, post-doc and collaborative payments were not made as AIMS contracted organisations were also impacted by COVID-19. However with reduced use in areas such as vessels and buildings, AIMS was able to do essential and/or preventative repairs and maintenance.	Suppliers
AIMS received higher than expected revenue on sale of vehicles with the retirement of the Business Services Group Manager retiring and their vehicle was sold.	Proceeds from sale of assets
AIMS level of investments are still as per previous year actual levels however the maturity of the investments are higher this financial year with more of them at greater than 3 months therefore policies state these are investments with the offsetting amount in cash at bank.	Cash at end of period and Investments

Notes to and Forming Part of the Financial Statements

Overview

Objectives of the Australian Institute of Marine Science

The Australian Institute of Marine Science (AIMS) is a corporate Commonwealth entity established by the *Australian Institute of Marine Science Act 1972* . It is a not-for-profit entity.

The mission of AIMS 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.

The continued existence of AIMS in its present form and with its present programs is dependent on Government policy and on continuing funding by Parliament for AIMS administration and science research programs.

Basis of Preparation of the Financial Statements

The financial statements are general purpose financial statements and are required by section 42 of the *Public Governance, Performance and Accountability Act 2013* .

The financial statements and notes have been prepared in accordance with:

a) *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015* (FRR); and
b) Australian Accounting Standards and Interpretations - Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and in accordance with the historical cost convention, except for certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position.

The financial statements are presented in Australian dollars and values are rounded to the nearest thousand dollars unless otherwise specified.

Significant Accounting Judgements and Estimates

In the process of applying the accounting policies listed in this note, AIMS has made the following judgements that have the most significant impact on the amounts recorded in the financial statements.

Recognition of revenue from contracts with customers – Refer Note 1.2: Own-Source Revenue and Gains
Fair value of buildings, plant and equipment – Refer Note 2.2: Non-Financial Assets
Remaining useful lives of buildings, infrastructure, plant and equipment - Refer Note 2.2: Non-Financial Assets
Employee entitlement provision – Refer Note 3.1: Employee Provisions
Contingent assets and contingent liabilities – Refer Note 4.1: Contingent Assets and Liabilities

No accounting assumptions or estimates have been identified that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next reporting period.

New Australian Accounting Standards

All new/revised standards and/or interpretations that were issued prior to the sign-off date and are applicable to the current reporting period, did not have a material effect to AIMS' financial statements.

AASB 15 Revenue from Contracts with Customers / AASB 2016-8 Amendments to Australian Accounting Standards - Australian Implementation Guidance for Not-for-Profit Entities and AASB 1058 Income of Not-for-Profit Entities

AASB 15, AASB 2016-8 and AASB 1058 became effective 1 July 2019.

AASB 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised. It replaces existing revenue recognition guidance, including *AASB 118 Revenue* , *AASB 111 Construction Contracts* and *Interpretation 13 Customer Loyalty Programmes* . The core principle of AASB 15 is that an entity recognises revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

AASB 1058 is relevant in circumstances where AASB 15 does not apply. AASB 1058 replaces most of the not-for-profit (NFP) provisions of *AASB 1004 Contributions* and applies to transactions where the consideration to acquire an asset is significantly less than fair value principally to enable the entity to further its objectives, and where volunteer services are received . The details of the changes in accounting policies, transitional provisions and adjustments are disclosed below and in the relevant notes to the financial statements.

AIMS adopted AASB 15 and AASB 1058 using the modified retrospective approach, under which the cumulative effect of initial application is recognised in retained earnings at 1 July 2019. Accordingly, the comparative information presented for 2019 is not restated, that is, it is presented as previously reported under the various applicable AASBs and related interpretations.

Under the new income recognition model AIMS shall first determine whether an enforceable agreement exists and whether the promises to transfer goods or services to the customer are 'sufficiently specific'. If an enforceable agreement exists and the promises are 'sufficiently specific' (to a transaction or part of a transaction), AIMS applies the general AASB 15 principles to determine the appropriate revenue recognition. If these criteria are not met, AIMS shall consider whether AASB 1058 applies.

In relation to AASB 15, AIMS elected to apply the new standard to all new and uncompleted contracts from the date of initial application. AIMS is required to aggregate the effect of all of the contract modifications that occur before the date of initial application. There was no impact on AIMS transitioning to AASB 15.

In terms of AASB 1058, AIMS is required to recognise volunteer services at fair value if those services would have been purchased if not provided voluntarily, and the fair value of those services can be measured reliably.

AASB 16 Leases

AASB 16 became effective on 1 July 2019.

This new standard has replaced *AASB 117 Leases. Interpretation 4* - Determining whether an arrangement contains a Lease, *Interpretation 115 Operating Leases—Incentives and Interpretation 127* - Evaluating the substance of transactions involving the legal form of a Lease.

AASB 16 provides a single lessee accounting model, requiring the recognition of assets and liabilities for all leases, together with options to exclude leases where the lease term is 12 months or less, or where the underlying asset is of low value. AASB 16 substant carries forward the lessor accounting in AASB 117, with the distinction between operating leases and finance leases being retained. The details of the changes in accounting policies, transitional provisions and adjustments are disclosed below and in the relevant notes to the financial statements.

Application of *AASB 16 Leases*

AIMS adopted AASB 16 using the modified retrospective approach, under which the cumulative effect of initial application is recognised in retained earnings at 1 July 2019. Accordingly, the comparative information presented for 2019 is not restated, that is, it is presented as previously reported under AASB 117 and related interpretations.

AIMS elected to apply the practical expedient to not reassess whether a contract is, or contains a lease at the date of initial application. Contracts entered into before the transition date that were not identified as leases under AASB 117 were not reassessed. The definition of a lease under AASB 16 was applied only to contracts entered into or changed on or after 1 July 2019.

AASB 16 provides for certain optional practical expedients, including those related to the initial adoption of the standard. AIMS applied the following practical expedients when applying AASB 16 to leases previously classified as operating leases under AASB 117:

- Apply a single discount rate to a portfolio of leases with reasonably similar characteristics;
- Exclude initial direct costs from the measurement of right-of-use assets at the date of initial application for leases where the right-of-use asset was determined as if AASB 16 had been applied since the commencement date;
- Reliance on previous assessments on whether leases are onerous as opposed to preparing an impairment review under AASB 136 Impairment of assets as at the date of initial application; and
- Applied the exemption not to recognise right-of-use assets and liabilities for leases with less than 12 months of lease term remaining as of the date of initial application.

As a lessee, AIMS previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under AASB 16, the Entity recognises right-of-use assets and lease liabilities for most leases. However, the Entity has elected not to recognise right-of-use assets and lease liabilities for some leases of low value assets based on the value of the underlying asset when new or for short-term leases with a lease term of 12 months or less.

On adoption of AASB 16, AIMS recognised right-of-use assets and lease liabilities in relation to leases of land and office which had previously been classified as operating leases. The lease liabilities were measured at the present value of the remaining lease payments, discounted using the AIMS's incremental borrowing rate as at 1 July 2019. AIMS's incremental borrowing rate is the rate at which a similar borrowing could be obtained from an independent creditor under comparable terms and conditions. The weighted-average rate applied was 2.37%.

The right-of-use assets were measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

Impact on transition

On transition to AASB 16, AIMS recognised additional right-of-use assets and additional lease liabilities. The impact on transition is summarised below as at 1 July 2019:

Right-of-use assets - property, plant and equipment	890
Lease liabilities	(890)

The following table reconciles the AIMS minimum lease commitments disclosed in the 30 June 2019 annual financial statements to the amount of lease liabilities recognised on 1 July 2019:

Minimum operating lease commitment as at 30 June 2019	1,139
Undiscounted lease payments	1,139
Less: effect of discounting using the incremental borrowing rate as at the date of initial application	(249)
Lease liabilities recognised at 1 July 2019	890

Taxation

AIMS is exempt from all forms of taxation except Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

Revenues, expenses, assets and liabilities are recognised net of GST, except:

a) where the amount of GST incurred is not recoverable from the Australian Taxation Office; and

b) for receivables and payables.

Insurance

AIMS is insured through the Governments insurable managed fund Comcover.

Workers compensation is insured through Comcare Australia.

Events After the Reporting Period

There was no subsequent event that had the potential to significantly affect the ongoing structure and financial activities of AIMS.

Financial Performance

1.1: Expenses

This section analyses the performance of the Australian Institute of Marine Science for the year ended 2020.

	Notes	2020 $'000	2019 $'000
1.1A: Employee Benefits			
Wages and salaries		**22,690**	22,030
Superannuation			
Defined contribution plans		**2,620**	2,129
Defined benefit plans		**1,394**	1,467
Leave and other entitlements		**3,910**	4,319
Fringe Benefit Tax		**353**	344
Total employee benefits		**30,967**	30,289

Accounting Policy
Accounting policies for employee related expenses are contained in the People and relationships section.

1.1B: Suppliers			
Goods and services supplied or rendered			
Consultants		**255**	166
Contractors		**1,474**	3,299
Travel		**1,219**	1,980
Consumables		**1,124**	1,348
Repairs and maintenance		**5,166**	3,832
Electricity		**1,329**	1,668
Fuel, oil and gas		**755**	977
Hire of equipment		**245**	2,356
Labour Hire staff		**1,857**	2,540
Vessel management		**4,222**	3,754
Support for post-doctorate positions		**1,887**	3,423
Audit fees		**136**	123
Other general expenses		**6,513**	6,143
Total goods and services supplied or rendered		**26,182**	31,609
Goods supplied		**4,647**	6,771
Services rendered		**21,535**	24,838
Total goods and services supplied or rendered		**26,182**	31,609
Other Suppliers			
External parties - minimum lease payments[1]		**-**	292
Workers compensation premiums		**55**	50
Total other suppliers		**55**	342
Total suppliers		**26,237**	31,951

1. AIMS has applied AASB 16 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under AASB 117.

The above lease disclosure should be read in conjunction with the accompanying notes 1.1C, 2.2 and 2.4.

Accounting Policy
Short-term leases and lease of low-value assets
AIMS has elected not to recognise right-of-use assets and lease liabilities for short-term leases of assets that have a lease term of 12 months or less and leases of low-value assets (less than $10,000). AIMS recognises the lease payments associated with these leases as an expense on a straight-line basis over lease term.

1.1C: Finance Costs			
Finance Leases[1]		**20**	-
Total finance costs		**20**	-

1. AIMS has applied AASB 16 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under AASB 117.

The above lease disclosure should be read in conjunction with the accompanying notes 1.1B, 2.2 and 2.4.

Accounting Policy
All borrowing costs are expensed as incurred.

1.2: Own-Source Revenue and Gains

	Notes	2020 $'000	2019 $'000
Own-Source Revenue			
1.2A Revenue from contracts with customers			
Rendering of services (AASB118)		-	20,798
Contractual revenue (AASB15 & AASB 1058)[1]		15,291	-
Total revenue from contracts with customers		15,291	20,798
Disaggregation of revenue from contracts with customers			
Major product/service line:			
Research services		15,162	-
Time and materials		129	-
		15,291	-
Type of customer:			
Australian Government entities (related parties)		5,970	-
State and Territory Governments		1,107	-
Industry		7,034	-
International Government		4	-
International Industry		1,176	-
		15,291	-

1. AIMS has applied AASB 15 and 1058 from 2019-20 and therefore the comparative information has not been restated.

Accounting Policy - AASB 118

Revenue from rendering of services is recognised by reference to the stage of completion of contracts at the reporting date.
The revenue is recognised when:

a) the amount of revenue, stage of completion and transaction costs incurred can be reliably measured; and
b) the probability of economic benefits associated with the transaction will flow to AIMS.

The stage of completion of contracts at the reporting date is determined by reference to the proportion that costs incurred to date bear to the estimated cost of the transaction.

Accounting Policy - AASB 15 & AASB 1058

AIMS contracts comprise of a number of performance obligations including, but not limited to, research services and time and materials. Under AASB 15, AIMS must evaluate the separability of the promised good and services based on whether they are 'distinct'. A promised good or service is 'distinct' if both:

a) the customer benefits from the item either on its own or together with other readily available resources; and
b) it is 'separately identifiable' i.e. AIMS provides its time to a specific circumstance and is paid for that time.

While this represents a significant new guidance, the implementation of this new guidance did not have a significant impact on the timing or amount of revenue recognised by AIMS during the year.
To determine whether to recognise revenue, AIMS follows a 5-step process;

1. Identifying the contract with customer;
2. Identifying the performance obligations;
3. Determine the transaction price;
4. Allocating the transaction price; and
5. Recognising the revenue when/as performance obligation(s) are satisfied.

Revenue is recognised either at a point in time for services rendered or over time in accordance to contractual milestones, when (or as) AIMS satisfies performance obligations by transferring the promised goods or services to its customers.
AIMS recognises contract liabilities for consideration received in respect of performance obligations paid for up-front and reports these amounts as contractual liabilities in the statement of financial position. Similarly, if AIMS satisfies a performance obligation before it it receives the consideration, AIMS recognises either a contractual asset or a receivable in its statement of financial position, depending on whether something other than the passage of time is required before the consideration is due.
The transaction price is the total amount of consideration to which AIMS expects to be entitled to exchange for transferring of contracted goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts or both. In most instances, AIMS contributes its own investment of resources in accordance with the AIMS Strategy 2025.
Receivables for services, which have 30 day terms, are recognised at the nominal amounts due less any impairment allowance account Collectability of debts is reviewed at end of the reporting period. Allowances are made when collectability of the debt is no longer probable.

Sale of Assets

Gains from disposal of assets are recognised when control of the asset has passed to the buyer.

Interest

Interest revenue is recognised using the effective interest method.

Revenue from Government

Funding received or receivable from agencies (appropriated to AIMS as a corporate body payment item) is recognised as revenue from Government when the entity gains control of the funding unless the funding is in the nature of an equity injection or loan.

Accounting Judgement and Estimates

Revenue recognition for contractual revenue with customers has significant judgements applied to performance obligations. The determination of the revenue recognition is on contractual term, distinction of research services over time or time and materials at a point in time, transaction price, satisfaction of control has passed to a client, identification of costs that can be capitalised and any material variations to contracts. Most of AIMS research services contracts have multiple deliverables, the transaction price is allocated to each performance milestone and revenue is recognised based on the actual services provided as a proportion of the total services to be provided because the customer receives and uses the benefits simultaneously. This is determined on the actual costs of the project relative to the total expected costs of the project.

1.2 Own-Source Revenue and Gains (cont.)

	Notes	0 $'000	0 $'000
Own-Source Revenue (cont.)			
1.2B: Other Revenue			
Other revenue		**600**	369
Insurance claims		**324**	25
Total other revenue		**924**	394

1.2C: Unsatisfied Obligations

AIMS does not have any unsatisfied performance obligations as AIMS contracts are 1) for one year or less or 2) AIMS recognises revenue at the amount to which it has a right to invoice that corresponds directly to the value to the customer of AIMS performance to date.

Financial Position

This section analyses the Australian Institute of Marine Science assets used to conduct its operations and the operating liabilities incurred as a result.

Employee related information is disclosed in the People and Relationships section.

2.1: Financial Assets

	Notes	2020 $'000	2019 $'000
2.1A: Cash and Cash Equivalents			
Cash on hand		**4**	6
Cash on deposit		**14,124**	21,617
Total cash and cash equivalents		**14,128**	21,623

Accounting Policy

Cash is recognised at its nominal amount. Cash and cash equivalents includes:
a) Cash on hand; and
b) demand deposits in bank accounts with an original maturity of 3 months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

2.1B: Trade and Other Receivables			
Services receivables			
Contractual asset		**2,338**	-
Goods and services		**2,003**	6,693
Total services receivables		**4,341**	6,693

The Contractual assets are associated with the purchase of research services with customers. The closing balance of the contracts pertaining to accrued revenue for milestones in progress is $2,338,000.

Other Receivables			
GST receivable from the Australian Taxation Office (net)		**201**	221
Interest		**115**	360
Total other receivables		**316**	581
Total trade and other receivables (gross)		**4,657**	7,274
Total trade and other receivables (net)		**4,657**	7,274

Credit terms for goods and services were within 30 days (2019: 30 days).

Accounting Policy

Financial Assets

Trade receivables and other receivables that are held for the purpose of collecting the contractual cash flows where the cash flows are solely payments of principal and interest, that are not provided at below-market interest rates, are subsequently measured at amortised cost using the effective interest rate method adjusted for a loss allowance.

2.1C: Other Investments			
Deposits		**26,100**	17,200
Total other investments		**26,100**	17,200

2.2: Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment and Computer Software

Reconciliation of the opening and closing balances of property, plant and equipment and computer software 2020

	Buildings $'000	Infrastructure Plant & Equipment $'000	Computer Equipment $'000	Computer Software $'000	Vehicles $'000	Office Equipment $'000	Ships, Launches & Vessels $'000	Library Books $'000	Total $'000
As at 1 July 2019									
Gross book value	**100,484**	**34,173**	**1,897**	**7,312**	**1,995**	**8**	**21,264**	**4**	**167,137**
Accumulated depreciation and impairment	**(5,430)**	**(5,610)**	**(821)**	**(2,424)**	**(506)**	**(3)**	**(2,109)**	**(3)**	**(16,906)**
Net book value 1 July 2019	**95,054**	**28,563**	**1,076**	**4,888**	**1,489**	**5**	**19,155**	**1**	**150,231**
Recognition of right of use asset on initial application of AASB 16	**890**	-	-	-	-	-	-	-	**890**
Adjusted total as at 1 July 2019	**95,944**	**28,563**	**1,076**	**4,888**	**1,489**	**5**	**19,155**	**1**	**151,121**
Additions									-
Purchase or internally developed	**3,707**	**2,170**	**465**	**152**	**194**	-	**529**	-	**7,217**
Work in progress (net change)	**(184)**	**987**	**(15)**	-	-	-	**50**	-	**838**
Depreciation	**(4,627)**	**(4,274)**	**(525)**	**(716)**	**(508)**	**(1)**	**(1,724)**	-	**(12,375)**
Depreciation on right-of-use assets	**(51)**	-	-	-	-	-	-	-	**(51)**
Disposals									
Other	**(21)**	**(18)**	**(3)**	-	**(78)**	-	-	-	**(120)**
Net book value 30 June 2020	**94,768**	**27,428**	**998**	**4,324**	**1,097**	**4**	**18,010**	**1**	**146,630**
Net book value as of 30 June 2020 represented by									
Gross book value	**104,875**	**37,278**	**2,315**	**7,462**	**2,007**	**8**	**21,843**	**3**	**175,791**
Accumulated depreciation and impairment	**(10,107)**	**(9,850)**	**(1,317)**	**(3,138)**	**(910)**	**(4)**	**(3,833)**	**(2)**	**(29,161)**
Net book value 30 June 2020	**94,768**	**27,428**	**998**	**4,324**	**1,097**	**4**	**18,010**	**1**	**146,630**
Depreciation rates are based on the following useful lives:	**5-72 years**	**2-42 years**	**4-23 years**	**2-10 years**	**4-12 years**	**5-30 years**	**3-25 years**	**10-20 years**	

1. The carrying amount of computer software included $387,595 purchased software and $3,936,246 internally generated software.
2. No property, plant and equipment and intangibles are expected to be sold or disposed of within the next 12 months.
3. No indicators of impairment were found for buildings, property plant and equipment and intangibles.

Revaluations of non-financial assets

In the current year a desktop valuation review was completed by Pickles Valuation Services (PVS) who completed the comprehensive valuation in 2018.
For assets classified as having Level 2 inputs, PVS compared the Written Down Value (WDV) of the assets against similar assets in the most appropriate active market. This enabled PVS to ascertain that the WDV was materially in line with observable market data. For assets that PVS were unable to be valued by identifiable observable market data an alternative approach was utilised. These assets were valued by the cost approach method, a depreciated replacement cost (DRC) approach, utilising Level 3 Inputs. In doing so, the PVS review ensured the estimated replacement cost, total useful lives (TUL), and remaining useful lives (RUL) were in line with industry standards to ensure the DRC calculation was reliable. PVS have relied upon previous valuation and asset lives data to conduct this review.

No changes were made in 2019/20 for property, plant and equipment. The next scheduled revaluation of Property, Plant and Equipment is in 2020/21 by an independent valuer.

All increments and decrements are transferred to the asset revaluation surplus by asset class and included in the equity section of the statement of financial position.
Any disposals of revalued assets, the revaluation amount is transferred to the retained surplus/deficit account. $452,871 was recognised as a decrement (2019: $19,822,731).

2.2 Non-Financial Assets (cont)

Accounting Policy

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and income at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the statement of financial position, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total such as IT equipment).

Lease Right of Use (ROU) Assets

Leased ROU assets are capitalised at the commencement date of the lease and comprise of the initial lease liability amount, initial direct costs incurred when entering into the lease less any lease incentives received. These assets are accounted for by Commonwealth lessees as separate asset classes to corresponding assets owned outright, but included in the same column as where the corresponding underlying assets would be presented if they were owned.

On initial adoption of AASB 16 AIMS has adjusted the ROU assets at the date of initial application by the amount of any provision for onerous leases recognised immediately before the date of initial application. Following initial application, an impairment review is undertaken for any right of use lease asset that shows indicators of impairment and an impairment loss is recognised against any right of use lease asset that is impaired. Lease ROU assets continue to be measured at cost after initial recognition in Commonwealth agency, GGS and Whole of Government financial statements.

Revaluations

Following initial recognition at cost, property plant and equipment (excluding ROU assets) are carried at fair value less subsequent accumulated depreciation and accumulated impairment losses. Valuations were conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets.

Revaluation adjustments were made on a class basis. Any revaluation increment was credited to equity under the heading of asset revaluation surplus except to the extent that it reversed a previous revaluation decrement of the same asset class that was previously recognised in the surplus/deficit. Revaluations decrements for a class of assets were recognised directly in the surplus/deficit except to the extent that they reverse a previous revaluation increment for that class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset and the asset restated to the revalued amount.

Depreciation

Depreciable property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to the entity using, in all cases, the straight-line method of depreciation. Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

The depreciation rates for ROU assets are based on the commencement date to the earlier of the end of the useful life of the ROU asset or the end of the lease term.

Impairment

All assets were assessed for impairment at 30 June 2020. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if AIMS were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of property, plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

2.2 Non-Financial Assets (cont)

Accounting Policy (cont)

Computer software

These assets are carried at cost less accumulated amortisation and accumulated impairment losses. Computer software costing less than $2,000 is expensed in the year of acquisition. Computer software is amortised on a straight-line basis over its anticipated useful life. All software assets were assessed for indications of impairment as at 30 June 2020.

Inventory

Inventories held for distribution are valued at cost, adjusted for any loss of service potential. Costs incurred in bringing each item of inventory to its present location and condition are assigned as follows:

a) raw materials and stores – purchase cost on a first-in-first-out basis; and

b) finished goods and work-in-progress – cost of direct materials and labour plus attributable costs that can be allocated on a reasonable basis.

Accounting Judgements and Estimates

The fair value of property, plant and equipment is assessed at market value or current replacement costs as determined by an independent valuer. Every 3 years a full revaluation is completed and in between those years a desktop valuation is completed.

2.3: Payables

	Notes	2020 $'000	2019 $'000
2.3: Other payables			
Contractual liabilities		**7,021**	-
Salary and wages including oncosts		**475**	5,616
Total other payables		**7,496**	5,616

The Contractual liabilities are associated with the purchase of research services with customers. The closing balance of the contracts pertaining to revenue received in advance or unearned income for milestones in progress is $7,021,000.

2.4: Leases

Finance leases[1]	**856**	-
Total leases	**856**	-

1. AIMS has applied AASB 16 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under AASB 117.

Total cash outflow for leases for the year ended 30 June 2020 was $53,884.

Accounting Policy

Review Overview section for accounting policy on leases.

People and Relationships

This section describes a range of employment and post employment benefits provided to our people and our relationships with other key people.

3.1: Employee Provisions

	Notes	2020 $'000	2019 $'000
3.1: Employee Provisions			
Leave		**12,544**	11,655
Other		**106**	102
Total employee provisions		**12,650**	11,757

Accounting Policy
Liabilities for 'short-term employee benefits' (as defined in AASB 119 *Employee Benefits*) and termination benefits expected within twelve months of the end of reporting period are measured at their nominal amounts.

Other long term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period minus the fair value at the end of the reporting period of plan assets (if any) out of which the obligation are to be settled directly.

Leave
The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of AIMS is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied at the time the leave is taken, including AIMS's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Superannuation
AIMS staff are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS accumulation plan (PSSap), or other superannuation funds held outside the Australian Government.
The CSS and PSS are a defined benefit schemes for the Australian Government. All other schemes are defined (accumulated funds) contribution schemes.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported by the Department of Finance administered schedules and notes.

AIMS makes employer contributions to the employees' superannuation scheme at rates determined by an actuary to be sufficient to meet the current cost to the Government. AIMS accounts for contributions as if they were contributions to defined contribution plans.

The liability for superannuation recognised as at 30 June represents outstanding contributions for the final fortnight of the year.

Accounting Judgements and Estimates
Leave provisions involve assumptions based on the expected tenure of existing staff, patterns of leave claims and payouts, future salary movements and future discount rates.

3.2: Key Management Personnel Remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the entity. AIMS has determined the Key Management Personnel during the reporting period to be Council members, CEO and Senior Management. Key management personnel remuneration is reported below.

	Notes	2020 $'000	2019 $'000
Short-term employee benefits		2,622	2,562
Post-employment benefits		343	327
Other long-term employee benefits		94	105
Termination benefits		172	-
Total		**3,231**	2,994

	Short-term benefits			Post employment benefits	Other long term benefits	Termination benefits	Total remuneration
Name & Position	**Base Salary**	**Bonuses**	**Other benefits and allowances**	**Superannuation contributions**	**Long service leave**	**Termination benefits**	
The Hon. Penelope Wensley AC - Accountable Authority and Council Chairman*	52,958	-	-	8,063	-	-	61,021
Ms Jeanette Roberts - Council and Audit Committee member*	36,441	-	-	-	-	-	36,441
Mr Roy Peterson - Council member and Audit Committee Chairman*	33,803	-	-	-	-	-	33,803
Ms Anna Matysek - Council member*	26,479	-	-	6,368	-	-	32,847
Professor Sandra Harding AO - Council member*	30,686	-	-	-	-	-	30,686
Dr Stephen Morton - Council member*	18,785	-	-	6,593	-	-	25,378
Dr Thomas Barlow - Council member*	8,095	-	-	1,769	-	-	9,864
Dr Erika Techera - Council member*	7,734	-	-	1,020	-	-	8,754
Dr Paul Hardisty - CEO and Council member^	365,399	55,168	19,423	34,828	10,174	-	484,992
Mr David Mead - Executive Director Strategic Development	246,955	28,834	24,928	50,322	10,405	-	361,444
Dr John Chappell - Chief Operating Officer	250,272	(874)	8,449	27,000	30,795	-	315,642
Mr Basil Ahyick - Chief Finance Officer	262,374	(1,399)	6,693	30,165	12,472	-	310,305
Dr Richard Brinkman - Research Program Director	197,567	(1,049)	13,667	33,530	10,009	-	253,724
Dr David Souter - Chief Research Officer	205,927	(2,623)	11,536	31,448	5,681	-	251,969
Dr Michaela Dommisse - Research Program Director	68,610	(4,116)	7,346	10,930	(6,070)	172,153	248,853
Dr Britta Schaffelke - Research Program Director	129,718	(2,623)	12,617	33,717	5,841	-	179,270
Mr John Liston - Communications Manager	151,160	-	-	21,777	3,184	-	176,121
Dr Karen Miller - A/g Research Program Director	115,540	-	-	8,034	13,695	-	137,269
Dr Karin Cooper - A/g Deputy Research Program Director and Business Development Manager	112,042	-	-	19,324	4,572	-	135,938
Dr Nicole Webster - A/g Research Program Director	83,956	-	9,667	13,626	434	-	107,683
Mr Frank Tirendi - Business Manager	27,018	-	4,630	4,772	(7,066)	-	29,354
Total	**2,431,519**	**71,318**	**118,956**	**343,286**	**94,126**	**172,153**	**3,231,358**

* denotes staff paid under Remuneration Tribunal (Remuneration and Allowances for Holders of Part-time Public Office) Determination 2019.
^ denotes staff paid under Remuneration Tribunal (Principal Executive Offices) Determination No. 2 2019.
+ denotes staff paid through Individual Workplace Agreements.
All other KMP are paid in accordance to AIMS Enterprise Agreement.

The total number of key management personnel that are included in the above table are 21 individuals (2019: 16 individuals). All members in the table were a Key Management Personnel for the financial year except for Frank Tirendi (01/07 - 04/09/2019), Dr Michaela Dommisse (01/07 - 13/11/2019), Dr Nicole Webster (01/07 - 31/12/2019), Dr Karin Cooper (02/09/2019 - 30/06/2020) and Dr Karen Miller (11/11/2019 - 30/06/2020).

1. The above key management personnel remuneration excludes the remuneration and other benefits of the Portfolio Minister. The Portfolio Minister's remuneration and other benefits are set by the Remuneration Tribunal and are not paid by AIMS.

Remuneration of Senior Executives
All AIMS Senior Executives are captured within the Key Management Personnel (above).

Other highly paid staff - non-Key Management Personnel

		Short-term benefits			Post employment benefits	Other long term benefits	Termination benefits	Total remuneration
Total remuneration Band	**# highly paid staff**	**Average base Salary**	**Average bonuses**	**Average other benefits and allowances**	**Average superannuation contributions**	**Average long service leave**	**Average terminations benefits**	**Average total remuneration**
$225,001 - $250,000	6	180,017	-	12,950	31,675	9,844	-	234,486
							-	-
Total		**180,017**	**-**	**12,950**	**31,675**	**9,844**	**-**	**234,486**

3.3: Related Party Disclosures

Related party relationships

AIMS is a Commonwealth controlled entity. Related parties to AIMS are Board members, Executive and Senior Management, the Portfolio Minister, and other Commonwealth controlled entities. There are 6 family members of Key Management Personnel employed by AIMS and other Commonwealth controlled entities in non-executive positions.

Transactions with related parties

Board members and their related parties may hold positions in other entities that result in them having control or significant influence over the financial or operating policies of those entities.

Given the breadth of Government activities, related parties may transact with the Government sector in the same capacity as ordinary citizens. Such transactions include the payment or refund of taxes, receipt of Medicare rebate or Higher Education loans. These transactions have not been separately included in this note. Certain entities transacted with AIMS in the reporting period. The terms and conditions of those transactions with key management personnel and their related parties were no more favourable than those available, or which might reasonably be expected to be available, on a similar transactions to non-related entities on an arm's length basis.

Loans to Key Management Personnel or Key Management Personnel-Related Entities

In 2019-20, no loans were made to key management personnel or key management personnel-related entities.

Other Transactions with Key Management Personnel or Key Management Personnel-Related Entities

Details of transactions between key management personnel and related parties during the year for the purchase of science services were:

	2020	2019
	$	$
Curtin University	767	339
Great Barrier Reef Foundation	-	195
James Cook University	503	531
University of Melbourne	69	-
University of New South Wales	87	-
University of Sydney	-	220
University of Tasmania	67	195
University of Western Australia	412	1,301
Total	**1,905**	2,781

Details of transactions between key management personnel and related parties during the year for the rendering of science services were:

	2020	2019
	$	$
Great Barrier Reef Foundation	1,047	1,498
Great Barrier Reef Marine Park Authority	1,160	1,565
James Cook University	103	298
Monash University	110	-
Reef and Rainforest Research Centre	931	1,433
RioTinto	426	711
University of Melbourne	-	69
University of Tasmania	4,842	1,944
Total	**8,619**	7,518

3.3 Related Party Disclosures (cont)

Details of balances outstanding at year end for purchase of science services were:

	2020	2019
	$	$
Curtin University	522	55
James Cook University	69	51
University of Sydney	-	21
Total	**591**	127

Details of balances outstanding at year end for rendering of science services were:

	2020	2019
	$	$
Great Barrier Reef Foundation	-	85
University of Tasmania	526	-
University of Western Australia	-	191
Total	**526**	276

AIMS transacts with Australian Government related entities consistent with normal day-to-day business operations provided under normal terms and conditions, including the purchase and rendering of science services.

Details of transactions with related entities during the year for the purchase of science services were:

	2020	2019
	$	$
Australian National University	84	-
Department of Industry, Science, Energy and Resources	265	208
Commonwealth Scientific and Industry Research Organisation	276	793
Total	**625**	1,001

Details of transactions with related entities during the year for the rendering of science services were:

	2020	2019
	$	$
Great Barrier Reef Marine Park Authority	1,160	1,565
Department of Foreign Affairs and Trade	1,135	147
National Indigenous Australians Agency	100	-
Commonwealth Scientific and Industry Research Organisation	-	63
Total	**2,395**	1,775

There were no other transactions with related entities during the year.

Managing Uncertainties

This section analyses how the Australian Institute of Marine Science manages financial risks within its operating environment.

4.1: Contingent Assets and Liabilities

Contingent assets

Guarantees	**2020 $**	2019 $
Balance from previous period	176	183
New contingent assets recognised	114	87
Rights expired	(179)	(94)
Total	**111**	176

Quantifiable Contingencies

AIMS holds performance guarantees of $111,000 (2019:$176,000). Performance guarantees include Bank guarantees in relation to the refurbishment of AIMS's buildings.

Unquantifiable Contingencies

AIMS has a 25 year lease on a berthing facility with Port of Townsville. At the expiry of the lease AIMS is required to carry out its own cost remediation work necessary to return the level of contamination in the leased land to a level as prescribed by Assessment and Management of Containment Land in Queensland (May 1998).

Accounting Policy

Contingent liabilities and contingent assets are not recognised in the statement of financial position but are reported in the relevant schedules and notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

Accounting Judgements and Estimates

AIMS does not hold or transport any dangerous goods and/or chemicals at the Port of Townsville property and we are required to formally assess the property every 5 years for contamination by an independent environmental assessor therefore our estimate is that there will be no contamination of the Townsville Port land over the lease period and we not be required to complete any remediation work at the end of the lease.

4.2: Financial Instruments

	2020 $'000	2019 $'000
4.2: Categories of Financial Instruments		
Financial Assets under AASB9		
Amortised cost		
Investments	**26,100**	17,200
Cash at bank	**14,128**	21,623
Contractual assets	**2,338**	-
Goods and service receivables	**2,003**	6,693
Other receivables	**316**	360
Total financial assets - amortised cost	**44,885**	45,876
Financial Liabilities		
Financial liabilities measured at amortised cost		
Trade Creditors	**1,991**	2,394
Contractual liabilities	**7,021**	-
Other payables	**475**	5,616
Total financial liabilities measured at amortised cost	**9,487**	8,010

Accounting Policy

Financial Assets

With the implementation of AASB 9 Financial Instruments for the first time in 2019, AIMS classifies its financial assets measured at amortised cost. The classification depends on both the AIMS's business model for managing the financial assets and contractual cash flow characteristics at the time of initial recognition. Financial assets are recognised when the AIMS becomes a party to the contract and, as a consequence, has a legal right to receive or a legal obligation to pay cash and derecognised when the contractual rights to the cash from the financial asset expire or are transferred upon trade date.

Impairment of Financial Assets

Financial assets are assessed for impairment at the end of each reporting period based on Expected Credit Losses, using the general approach which measures the loss allowance based on an amount equal to lifetime expected credit losses where risk has significantly increased, or an amount equal to 12-month expected credit losses if risk has not increased.

The simplified approach for trade, contract and lease receivables is used. This approach always measures the loss allowance as the amount equal to the lifetime expected credit losses.

A write-off constitutes a derecognition event where the write-off directly reduces the gross carrying amount of the financial asset.

Financial Assets at amortised cost

Financial assets included in this category need to meet two criteria:

1. the financial asset is held in order to collect the contractual cash flows; and
2. the cash flows are solely payments of principal and interest (SPPI) on the principal outstanding amount.

Amortised cost is determined using the effective interest rate method.

Effective interest rate

Income is recognised on an effective interest rate basis for financial assets that are recognised at amortised cost.

Financial Liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities. Financial liabilities are recognised and derecognised upon 'trade date'.

Financial liabilities at amortised cost

Financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective interest basis.

Suppliers and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (irrespective of having been invoiced).

4.3: Fair Value Measurements

Accounting Policy
AIMS deems transfers between levels of the fair value hierarchy to have occurred at 30 June 2020.

4.3: Fair Value Measurements

	Fair value measurements at the end of the reporting period	
	2020 $'000	2019 $'000
Non-financial assets		
Buildings	**93,929**	95,054
Infrastructure, plant and equipment	**27,428**	28,563
Ships, launches & vessels	**18,010**	19,155
Computer equipment	**998**	1,076
Vehicles	**1,097**	1,489
Office equipment	**4**	5
Library books	**1**	1
Total non-financial assets	**141,467**	145,343
Total fair value measurements of assets in the statement of financial position	**141,467**	145,343

1. The following valuation techniques were used:
Cost approach: based on the amount required to replace the service potential of an asset
Market approach: based on market transactions involving identical or similar assets or liabilities

AIMS procured valuation services from Pickles Valuation Services (PVS) and relied on valuation models provided by PVS. PVS re-tests the valuation model every 12 months and has provided written assurance to AIMS that the model developed is compliant with AASB 13.

Other Information

5.1: Aggregate Assets and Liabilities

	2020 $'000	2019 $'000
Assets expected to be recovered in:		
No more than 12 months	**45,822**	46,659
More than 12 months	**149,070**	152,994
Total Assets	**194,892**	199,653
Liabilities expected to be settled in:		
No more than 12 months	**21,583**	18,516
More than 12 months	**1,410**	1,251
Total Liabilities	**22,993**	19,767

Supplementary Financial Information (Unaudited)

NOTE 1:

Revenue comparison

	2016 $'000	2017 $'000	2018 $'000	**2019 $'000**	**2020 $'000**
Appropriation revenue					
Operating	32,462	33,531	36,826	**39,356**	**36,752**
Asset replacement	8,021	8,021	8,021	**8,021**	**8,021**
Total appropriation revenue	40,483	41,552	44,847	**47,377**	**44,773**
Non-appropriation revenue					
Sale of goods and rendering of services[1]	16,324	16,318	21,426	**20,798**	**15,291**
Interest	1,283	1,109	1,027	**1,111**	**675**
Revenues from joint ventures	-	-	-	**-**	**-**
Other revenue	482	964	580	**468**	**924**
Total non-appropriation revenue	18,089	18,391	23,032	**22,377**	**16,890**
Total Revenue	**58,572**	**59,943**	**67,879**	**69,754**	**61,663**
Non-appropriation ratio[2]	**38%**	**31%**	**31%**	**32%**	**27%**

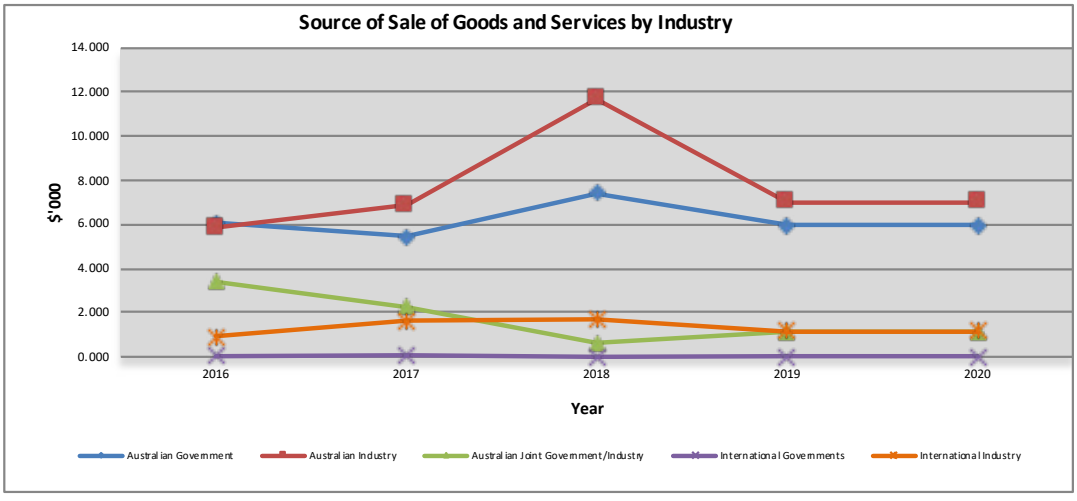
[1]Sale of goods and rendering of services includes consultancies, grants and contract collaborations.

[2]Non-appropriation ratio is percentage non-appropriation revenue of total revenue.

NOTE 2:

Source of sale of goods and rendering of services by sector

	2016 $'000	2017 $'000	2018 $'000	**2019 $'000**	**2020 $'000**
Australian Government	6,084	5,478	7,401	**6,787**	**5,970**
Australian joint Government/industry	3,401	2,277	634	**387**	**1,107**
International governments	36	71	-	**15**	**4**
Australian industry	5,867	6,868	11,689	**12,439**	**7,034**
International industry	936	1,624	1,702	**1,170**	**1,176**
Sale of goods	-	-	-	**-**	**-**
	16,324	**16,318**	**21,426**	**20,798**	**15,291**



NOTE 3: Cost of output by research programs 2019-20

	Variable	Salaries	Depreciation	Overheads	Total
	$'000	$'000	$'000	$'000	$'000
A Healthy and Resilient Great Barrier Reef	6,135	9,916	226	8,010	**24,287**
Sustainable Coastal Ecosystems & Industries in Tropical Australia	4,718	7,855	858	6,345	**19,776**
Sustainable Use of North-West Marine Ecosystems	2,720	5,553	238	4,486	**12,997**
Research Services	1,646	2,980	80	2,407	**7,113**
Office of Executive Director Strategic Development	1,057	2,087	693	1,686	**5,523**
Total	**25,252**	**19,470**	**2,782**	**28,285**	**69,696**
Percentage of total expenses	36%	28%	4%	41%	100%

Note 4: Supplier Expenses

Consist of:	2020 $'000	2019 $'000
Consultants	**255**	**166**
Contractors	**1,474**	**3,299**
Travel	**1,219**	**1,980**
Consumables	**1,124**	**1,348**
Repairs and maintenance	**5,166**	**3,832**
Electricity	**1,329**	**1,668**
Fuel, oil and gas	**755**	**977**
Hire of equipment	**245**	**2,356**
Labour Hire staff	**1,857**	**2,540**
Vessel management	**4,222**	**3,754**
Support for post-doctorate positions	**1,887**	**3,423**
Audit fees	**136**	**123**
Operating lease rentals	**-**	**292**
Workers compensation	**55**	**50**
Employee related expenses	**679**	**968**
IT Expenses	**1,306**	**1,037**
General Expenses	**655**	**707**
Science Expenses	**871**	**622**
Property Expenses	**1,302**	**1,294**
Communications Expenses	**685**	**393**
Meeting expenses	**306**	**307**
Library Expenses	**378**	**315**
Assist to External Providers	**85**	**221**
Legal & Instrument Registration Expenses	**179**	**156**
Memberships & Subscriptions	**67**	**123**
Total supplier expenses	**26,237**	**31,951**

Part 6:
Appendices and Indexes

Image: Roslyn Budd

Appendix A: Science Publications

In 2019 AIMS scientists published the following:

Journal Articles

1 Abdul Wahab MA, Maldonado M, Luter HM, Jones R, Ricardo G (2019) Effects of sediment resuspension on the larval stage of the model sponge Carteriospongia foliascens. Science of the Total Environment 695: 133837

2 Abdul Wahab MA, Radford B, Fromont J, Hosie AM, Miller K, Heyward A (2019) The diversity and distribution of mesophotic benthic invertebrates at Ningaloo Reef, Western Australia. Marine Biodiversity 49: 2871–2886

3 Aguilar C, Raina JB, Fôret S, Hayward DC, Lapeyre B, Bourne DG, Miller DJ (2019) Transcriptomic analysis reveals protein homeostasis breakdown in the coral Acropora millepora during hypo-saline stress. BMC Genomics 20: 148

4 Anderson KD, Cantin NE, Casey JM, Pratchett MS (2019) Independent effects of ocean warming versus acidification on the growth, survivorship and physiology of two Acropora corals. Coral Reefs 38(6): 1225–1240

5 Andrzejaczek S, Gleiss AC, Lear KO, Pattiaratchi CB, Chapple TK, Meekan MG (2019) Biologging tags reveal links between fine-scale horizontal and vertical movement behaviors in tiger sharks (Galeocerdo cuvier). Frontiers in Marine Science 6: 229

6 Andrzejaczek S, Gleiss AC, Pattiaratchi CB, Meekan MG (2019) Patterns and drivers of vertical movements of the large fishes of the epipelagic. Reviews in Fish Biology and Fisheries 29(2): 335-354

7 Aulich MG, McCauley RD, Saunders BJ, Parsons MJG (2019) Fin whale (Balaenoptera physalus) migration in Australian waters using passive acoustic monitoring. Scientific Reports 9: 8840

8 Bailey K, Steinberg C, Davies C, Galibert G, Hidas M, McManus MA, Murphy T, Newton J, Roughan M, Schaeffer A (2019) Coastal mooring observing networks and their data products: Recommendations for the next decade. Frontiers in Marine Science 6: 180

9 Bainbridge S (2019) Use of Bayesian models to develop coral bleaching indices and forecasts from in-situ observations for the 2015-16 bleaching event. Journal of Marine Systems 198: 103187

10 Bainbridge S, Benthuysen J, Depczynski M, Evans-Illidge E, Forester T (2019) Reef Scan: A reef survey system for Indigenous based monitoring. The Journal of Ocean Technology 14(1): 29-36

11 Barton JA, Hutson KS, Bourne DG, Humphrey C, Dybala C, Rawlinson KA (2019) The life cycle of the Acropora coral-eating flatworm (AEFW), Prosthiostomum acroporae; The influence of temperature and management guidelines. Frontiers in Marine Science 6: 524

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13 Birt MJ, Stowar M, Currey-Randall LM, McLean DL, Miller KJ (2019) Comparing the effects of different coloured artificial illumination on diurnal fish assemblages in the lower mesophotic zone. Marine Biology 166:154

14 Botté ES, Nielsen S, Abdul Wahab MA, Webster J, Robbins S, Thomas T, Webster NS (2019) Changes in the metabolic potential of the sponge microbiome under ocean acidification. Nature Communications 10: 4134

15 Bouchet PJ, Peterson AT, Zurell D, Dormann CF, Schoeman D, Ross RE, Snelgrove P, Sequeira AMM, Whittingham MJ, Wang LF, Rapacciuolo G, Oppel S, Mellin C, Lauria V, Krishnakumar PK, Jones AR, Heinanen S, Heikkinen RK, Gregr EJ, Fielding AH, Caley MJ, Barbosa AM, Bamford AJ, Lozano-Montes H, Parnell S, Wenger S, Yates KL (2019) Better model transfers require

knowledge of mechanisms. Trends in Ecology & Evolution 34(6): 489-490

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17 Brown CJ, Jupiter SD, Albert S, Anthony KRN, Hamilton RJ, Fredston-Hermann E, Halpern BS, Lin HY, Maina J, Mangubhai S, Mumby PJ, Possingham HP, Saunders MI, Tulloch VJD, Wenger A, Klein CJ (2019) A guide to modelling priorities for managing land-based impacts on coastal ecosystems. Journal of Applied Ecology 56(5): 1106-1116

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Appendix B: External Committees and Non-Government Organisations and Positions

International forums

1 Australia New Zealand Marine Biotechnology Society Management Committee

2 Convention on Migratory Species, Sharks MOU Conservation Working Group member

3 Global Environment Fund, Coral Disease Working Group

4 Great Barrier Reef Foundation - International Scientific Advisory Committee (ISAC) member

5 Homeward Bound – Carbon Emissions Offsets team

6 International Congress on Fish Telemetry Committee - member

7 International Coral Reef Society (ICRS) – Council member

8 International Coral Reef Society (ICRS) Conservation Committee – member and Council representative

9 International Oceanographic Commission Intergovernmental Panel on Harmful Algal Blooms – Australian representative

10 International Society for Microbial Ecology (ISME) – International board member and director of International Ambassadors Program

11 International Union for Conservation of Nature (IUCN) Shark Specialist Group – Vice Chair for Strategy

12 International Union for Conservation of Nature (IUCN) – member Synthetic Biology and Biodiversity Conservation Task Force Technical Subgroup on Scientific and Policy Assessment

13 National Academies of Sciences, Engineering & Medicine (US) Committee on Interventions to Increase Resilience of Coral Reefs

14 Ocean Acidification Expert Review Committee to the United Nation's Convention on Biological Diversity

15 Ocean Tracking Network (Canada) Scientific Advisory Committee

16 Red Sea Research Centre (RSRC) Advisory Board committee member

17 Scientific Committee on Oceanic Research (SCOR) – Australian delegate

18 United Nations Oceans & Law of the Sea Global Reporting and Assessment of the State of the Marine Environment (Regular Process) – member of the Pool of Experts

19 Wildlife Trust of India – Scientific Advisory Committee

National forums

1 AIMS@JCU – Management Committee

2 AIMS@JCU – Scientific Advisory Committee

3 AMOS Physical Oceanographic Expert Group

4 ANZLIC Marine Community Profile Metadata Standards Governance Committee

5 AusSeabed Executive Board

6 Australian Animal Tagging and Monitoring System – Scientific Committee

7 Australian Hydrographic Office, RAN – Permanent Committee on Tides and Mean Sea Level

8 Australian Lions Foundation for Medical Research into Species of Medical Importance to Humans – Scientific Advisory Committee

9 Australian Microbiome Initiative Scientific Coordination Working Group

10 Australian National Committee on the International Indian Ocean Expedition-2

11 Australian Ocean Data Centre Joint Facility

12 Australian Research Council (ARC) Centre of Excellence for Mathematical and Statistical Frontiers: Big Data, Big Models, New Insights (ACEMS) Governance Advisory Board

13 Australian Research Council (ARC) Centre of Excellence for Coral Reef Studies – Advisory Board

14 Australian Research Council (ARC) Centre of Excellence for Coral Reef Studies – Scientific Management Committee

15 Bureau of Meteorology Northern Territory Marine Reference Group

16 Centre for Southern Hemisphere Oceans Research (CSHOR) – member

17 Chevron Australia Pty Ltd – Independent expert on the Gorgon Marine Turtle Expert Panel (Ministerial appointment)

18 Chevron Australia Pty Ltd Commonwealth expert panel Dredging Technical Advisory Panel (DTAP)

19 Coastal, Ocean and Port Engineering Panel for Western Australia (Engineers Australia)

20 Darwin Harbour Advisory Committee (DHAC)

21 Darwin Harbour Integrated Monitoring & Research Program Coordination Committee (IMRP)

22 Darwin Marine Supply Base – Taskforce Advisory Group

23 Dry Tropics Partnership for Healthy Waters

24 eReefs Advisory Board Member

25 eReefs User Reference Group

26 Fisheries Research and Development Corporation (FRDC) – Indigenous Reference Group (IRG)

27 Fitzroy Partnership for River Health Science Panel

28 Forum for Operational Oceanography (FOO) Steering Committee

29 Forum for Operational Oceanography (FOO) Surface Currents Working Group

30 Forum for Operational Oceanography (FOO) Surface Waves Working Group

31 Great Barrier Reef Foundation – Biophysical Technical Advisory Group

32 Great Barrier Reef Foundation COTS Working Group

33 GBRMPA COTS Advisory Committee

34 Gladstone Healthy Harbour Partnership (GHHP) Science Panel

35 Integrated Marine Observing System (IMOS) – Board Member

36 Integrated Marine Observing System (IMOS) Science and Technology Advisory Committee

37 IMOS Animal Tracking Facility – Advisory Committee

38 IMOS Animal Tracking Facility – Task Team (Chair and leader)

39 IMOS Animal Tracking Facility and Biologging Committee

40 IMOS National Moorings Network Facility – Steering Committee (Chair and leader)

41 IMOS Wireless Sensor Networks Facility

42 IMOS National Reference Stations Scientific Steering Committee

43 IMOS Satellite Remote Sensing Facility

44 IMOS Sub-facility for Event Based Sampling (leader/coordinator for National Steering Committee)

45 IMOS Ships of Opportunity Facility – Sensors on Tropical Research Vessels (leader)

46 Integrated Marine Observing System: Queensland (Q-IMOS) Node leader

47 Integrated Marine Observing System: Queensland (Q-IMOS) Technical Reference Group

48 Integrated Marine Observing System: Western Australia (WAIMOS) Scientific Reference Group

49 Institute of Electrical and Electronics Engineers (IEEE) Northern Australia Executive Committee

50 Indian Ocean Marine Research Centre (IOMRC) – Executive Committee (chair)

51 Indian Ocean Marine Research Centre (IOMRC) – Management Committee

52 Indian Ocean Marine Research Centre (IOMRC) – Research Committee

53 Kakadu Research Advisory Committee

54 Marine Monitoring Program (MMP) Project Committee

55 Marine National Facility Research Advisory Committee

56 National BRUVS Working Group

57 National Committee for Coastal and Ocean Engineering (NCCOE) – Engineers Australia

58 National Environmental Science Programme (NESP) Marine Biodiversity Hub – Steering Committee

59 National Environmental Science Programme (NESP) Marine Biodiversity Hub – Partners Committee member (chair)

60 National Environmental Science Programme (NESP) Marine Biodiversity Hub – Theme leader

61 National Environmental Science Programme (NESP) Tropical Water Quality Hub – Steering Committee

62 National Environmental Science Programme (NESP) Tropical Water Quality Hub – Science Advisory Committee

63 National Environmental Science Programme (NESP) Tropical Water Quality Hub – CoTS Working Group

64 National Marine Science Committee (NMSC) – Executive member

65 National Marine Science Committee (NMSC) – Marine Biotechnology subcommittee member

66 National Marine Science Committee (NMSC) – Marine Baselines and Monitoring Working Group (chair)

67 Organization for Economic Co-operation and Development (OECD) Test Guideline Committee

68 Port of Townsville Independent Technical Advisory Committee – Channel Upgrade Project

69 Queensland Department of Agriculture and Fisheries – Sustainable Fisheries Expert Panel

70 Queensland Government Pesticide Working Group

71 Queensland Water Modelling Network Climate Change Modelling Review Steering Committee

72 Queensland Water Modelling Network External Engagement Program Management Committee

73 Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) Steering Committee

74 Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) Interim Operations Committee

75 Reef 2050 Integrated Monitoring and Reporting Program (RIMReP) Interim Executive Committee

76 Reef 2050 Long Term Sustainability Plan – Independent Expert Panel

77 Reef 2050 Long Term Sustainability Plan – Reef Advisory Committee (RAC)

78 Reef and Rainforest Research Centre Pty Ltd (RRRC) – Non-executive director

79 Reef Restoration and Adaptation Program (RRAP) – Executive Committee

80 Reef Water Quality Protection Plan Independent Science Panel

81 Regional Report Card Technical Working Group

82 Western Australian Government Independent Scientific Advisory Panel on Sharks

83 Western Australian Marine Science Institution (WAMSI) Board

84 Western Australian Marine Science Institution (WAMSI) Governors

85 Western Australian Marine Science Institution (WAMSI) Node Leader Science

86 Western Australian Marine Science Institution (WAMSI) Operations Group

Appendix C: Legislative Foundation And Ministerial Powers

Enabling legislation

The Australian Institute of Marine Science is a corporate Commonwealth entity established on 9 June 1972 by the Australian Institute of Marine Science Act 1972 (AIMS Act).

Functions of the Institute

Under s. 9 of the AIMS Act, the functions of the Institute are:

(a) to carry out research and development in relation to:

  i) marine science and marine technology

  ii) the application and use of marine science and marine technology

(b) to encourage and facilitate the application and use of the results of research and development of that kind

(c) to arrange for carrying out research and development of that kind

(d) to cooperate with other institutions and persons in carrying out research and development of that kind

(e) to provide any other institution or person with facilities for carrying out research and development of that kind

(f) to collect and disseminate information relating to:

  i) marine science and marine technology

  ii) the application and use of marine science and marine technology;

and, in particular, to publish reports and other papers

(g) to produce, acquire, provide and sell goods, and to provide services, in connection with:

  i) marine science and marine technology

  ii) the application and use of marine science and marine technology

(h) to make available to other persons, on a commercial basis, the knowledge, expertise, equipment, facilities, resources and property of the Institute

(i) to do anything incidental or conducive to the performance of any of the functions in paragraphs (a) to (h).

Powers of the Institute

Under s. 10 of the AIMS Act, the Institute is empowered to do all things necessary or convenient to be done for, or in connection with, the performance of its functions, including power:

(a) to enter into contracts

(b) to acquire, hold and dispose of personal property

(ba) to take on hire, or to accept on loan, equipment (including vessels) or other goods needed for the purposes of the Institute

(bb) to lend or to hire out equipment (including vessels) or other goods that are the property of the Institute

(c) to purchase or take on lease land or buildings, and to erect buildings, necessary for the purposes of the Institute

(d) to dispose of, or grant leases of, land or buildings vested in the Institute

(e) to occupy, use and control any land or building owned or held under lease by the Commonwealth and made available for the purposes of the Institute

(f) to participate in partnerships, trusts, unincorporated joint ventures and other arrangements for sharing profits

(g) to subscribe for and to purchase shares in, and debentures and other securities of, companies

(h) to form, and to participate in the formation of, companies:

(ha) to lend money to associated companies of the Institute

(hb) with the written approval of the Finance Minister, to provide guarantees for the benefit of associated companies of the Institute

(i) to appoint agents and attorneys, and to act as agents for other persons

(j) to accept anything given or transmitted to the Institute whether on trust or otherwise, and to act as trustee of money or other property vested in the Institute on trust

(k) to arrange for displaying material and giving lectures, to the public or otherwise, about:

(i) marine science and marine technology

(ii) the application and use of marine science and marine technology.

Ministerial powers of direction

Under s. 10 (1) of the AIMS Act, the responsible minister (and Finance Minister) has power to direct the Institute in matters of a general or specific nature. These powers pertain particularly to the following:

1. Granting leave of absence to Council members (ss. 13, 16(b))
2. Appointing (and terminating such appointment) a person to act as Chairperson (ss. 17(1) and (3))
3. Appointing (and terminating such appointment) a person to act as a member of Council (ss. 17(2) and (3))
4. Convening a meeting of Council (s. 20(2))
5. The Finance Minister may give directions at any time as to amount and moneys to be paid to the Institute (s. 36(2))
6. Out of money appropriated by the Parliament for the purpose, the Finance Minister has power to lend money to the Institute (s. 42A)
7. The Finance Minister has the power to provide written approval for the Institute to borrow money from persons other than the Commonwealth (s. 42B)
8. The Finance Minister has the power to guarantee borrowings of the Institute (s. 42C)
9. Appointing a committee to assist Council and approving the terms and conditions of members (s. 45)
10. Delegation of powers by Finance Minister (s. 50A).
    - (1) The Finance Minister may, by written instrument, delegate to an official (within the meaning of the Public Governance, Performance and Accountability Act 2013) of a non-corporate Commonwealth entity (within the meaning of that Act) the power:
        - (a) to approve the provision of guarantees as mentioned in paragraph 10(2)(hb)
        - (b) to approve the borrowing of money on terms and conditions specified in, or consistent with, the approval as mentioned in subsection 42B(1)
        - (c) to enter into contracts as mentioned in subsection 42C(1)
        - (d) to make determinations as mentioned in subsection 42C(2).
    - (2) In exercising power under a delegation, the official must comply with any directions of the Finance Minister.

Indexes

Acronyms

Acronym	Term in full
ACEMS	ARC Centre of Excellence for Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights
ACSRF	Australia-China Strategic Research Fund
AI	Artificial Intelligence
AIMS	Australian Institute of Marine Science
AIMS Act	Australian Institute of Marine Science Act 1972
ANAO	Australian National Audit Office
ARC	Australian Research Council
ASSETS	Aboriginal Summer School for Excellence in Technology and Science
ATSIMS	Aboriginals and Torres Strait Islanders in Marine Science
AUV	Autonomous Underwater Vehicle
BCT	Business Continuity Team
BRII	Business Research Innovation Initiative
BRUVS	baited remote underwater video stations
CDU	Charles Darwin University
CEO	Chief Executive Officer
CFO	Chief Financial Officer
pCO2	partial pressure of carbon dioxide
CNRS	Centre National de la Recherche Scientifique
CoE	Centre of Excellence
COO	Chief Operating Officer
COS	Centre for Ocean Solutions
CoTS	Crown of Thorns Starfish
COVID-19	Coronavirus
CPSU	Community and Public Sector Union
CSC	Commonwealth Science Council
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DFAT	Department of Foreign Affairs and Trade

Acronym	Term in full
DSN	Dredging Science Node
EMT	Emergency Management Team
EMBA	Environment that May Be Affected
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically Sustainable Development
FOI	Freedom of Information
FOI Act	Freedom of Information Act 1982
FRR	Financial Reporting Rule
FTE	full-time equivalent
FY	Financial Year
GBR	Great Barrier Reef
GBRF	Great Barrier Reef Foundation
GBRMPA	Great Barrier Reef Marine Park Authority
GCRMN	Global Coral Reef Monitoring Network
GHHP	Gladstone Healthy Harbour Partnership
GST	Goods and Services Tax
ICRI	International Coral Reef Initiative
IMOS	Integrated Marine Observing System
IOMRC	Indian Ocean Marine Research Centre
IPS	Information Publication Scheme
IT	Information Technology
IUCN	International Union for Conservation of Nature
JCU	James Cook University
KPI	key performance indicator
LTMP	Long-Term Monitoring Program
MMP	Marine Monitoring Program
MP	Member of Parliament
NCRIS	National Collaborative Research Infrastructure Strategy
NESP	National Environmental Science Programme
NGO	Non-Governmental Organisation
NMSC	National Marine Science Committee

Acronym	Term in full
NOAA	US National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NPS	Net Promoter Score
NSTC	National Science and Technology Council
NWS	North West Shelf
NWSSRP	North West Shoals to Shore Research Program
OAIC	Office of the Australian Information Commissioner
PBS	Portfolio Budget Statement
PGPA Act	Public Governance, Performance and Accountability Act 2013
PID Act	Public Interest Disclosure Act 2013
PMC	Department of the Prime Minister and Cabinet
PMO	Project Management Office
PMS	Project Management System
POGO	Partnership for Observation of the Global Oceans
PwC	PricewaterhouseCoopers
QUT	Queensland University of Technology
RAC	Reef Advisory Committee
RDP	Research Data Platform
RRAP	Reef Restoration and Adaptation Program
RIMReP	Reef 2050 Integrated Monitoring and Reporting Program
RV	Research Vessel
SeaSim	National Sea Simulator
SME	Small to Medium Enterprise
STEM	Science, Engineering, Technology and Mathematics
TGM	Tactical Global Management
UCPH	University of Copenhagen
UN	United Nations
UQ	University of Queensland
UTAS	University of Tasmania
UWA	The University of Western Australia
WA	Western Australia

Acronym	Term in full
WAMSI	Western Australian Marine Science Institution
WAM-V	Wave Adaptive Modular Vessel
WHS Act	Work Health and Safety Act 2011

List of Requirements

AIMS' requirement for annual reporting is outlined under s. 7 (2) of the AIMS Act, which states that the Public Governance, Performance and Accountability Act 2013 applies to the Institute. That Act deals with matters relating to corporate Commonwealth entities, including reporting and the use and management of public resources.

The list below shows AIMS' compliance with annual report information requirements for corporate Commonwealth entities as stipulated under s. 46 of the Public Governance, Performance and Accountability Act 2013 (PGPA Act).

The annual financial statements (see page 115) were prepared in accordance with ss. 42 and 43 of the PGPA Act and the Public Governance, Performance and Accountability (Financial Reporting) Rule 2015.

This annual report complies with parliamentary standards of presentation and printing and uses plain English and clear design.

PGPA Rule Reference	Part of Report	Description	Requirement
17BE	**Contents of annual report**		
17BE(a)	Page 18 (About AIMS) and Page 83 (Role and Legislation)	Details of the legislation establishing the body	Mandatory
17BE(b)(i)	Page 83 (Role and Legislation)	A summary of the objects and functions of the entity as set out in legislation	Mandatory
17BE(b)(ii)	Page 83 (Role and Legislation)	The purposes of the entity as included in the entity's corporate plan for the reporting period	Mandatory
17BE(c)	Page 83 (Responsible minister)	The names of the persons holding the position of responsible Minister or responsible Ministers during the reporting period, and the titles of those responsible Ministers	Mandatory
17BE(d)	Page 83 (Government Engagement)	Directions given to the entity by the Minister under an Act or instrument during the reporting period	If applicable, mandatory
17BE(e)	Page 83 (Government Engagement)	Any government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	If applicable, mandatory

PGPA Rule Reference	Part of Report	Description	Requirement
17BE	**Contents of annual report**		
17BE(f)	Page 83 (Government Engagement)	Particulars of non compliance with: (a) a direction given to the entity by the Minister under an Act or instrument during the reporting period; or (b) a government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	If applicable, mandatory
17BE(g)	Page 20 (Performance)	Annual performance statements in accordance with paragraph 39(1)(b) of the Act and section 16F of the rule	Mandatory
17BE(h), 17BE(i)	Page 93 (Duty to inform & Ministerial issues) Page 92 (Fraud control)	A statement of significant issues reported to the Minister under paragraph 19(1)(e) of the Act that relates to non compliance with finance law and action taken to remedy non compliance	If applicable, mandatory
17BE(j)	Page 84 (Governance, AIMS Council)	Information on the accountable authority, or each member of the accountable authority, of the entity during the reporting period	Mandatory
17BE(k)	Page 101 (Organisational Structure)	Outline of the organisational structure of the entity (including any subsidiaries of the entity)	Mandatory
17BE(ka)	Page 102 (Staff)	Statistics on the entity's employees on an ongoing and non ongoing basis, including the following: (a) statistics on full time employees; (b) statistics on part time employees; (c) statistics on gender; (d) statistics on staff location	Mandatory
17BE(l)	Page 18 (About AIMS)	Outline of the location (whether or not in Australia) of major activities or facilities of the entity	Mandatory
17BE(m)	Page 84 (Corporate governance)	Information relating to the main corporate governance practices used by the entity during the reporting period	Mandatory

PGPA Rule Reference	Part of Report	Description	Requirement
17BE	**Contents of annual report**		
17BE(n), 17BE(o)	Page 115 (Financial reporting) Page 135 (Note 3.3. in Financial Statement)	For transactions with a related Commonwealth entity or related company where the value of the transaction, or if there is more than one transaction, the aggregate of those transactions, is more than $10,000 (inclusive of GST): (a) the decision making process undertaken by the accountable authority to approve the entity paying for a good or service from, or providing a grant to, the related Commonwealth entity or related company; and (b) the value of the transaction, or if there is more than one transaction, the number of transactions and the aggregate of value of the transactions	If applicable, mandatory
17BE(p)	Page 27 (Results and Commentary on Performance)	Any significant activities and changes that affected the operation or structure of the entity during the reporting period	If applicable, mandatory
17BE(q)	n/a	Particulars of judicial decisions or decisions of administrative tribunals that may have a significant effect on the operations of the entity	If applicable, mandatory
17BE(r)	Page 94 (Public Accountability)	Particulars of any reports on the entity given by: (a) the Auditor General (other than a report under section 43 of the Act); or (b) a Parliamentary Committee; or (c) the Commonwealth Ombudsman; or (d) the Office of the Australian Information Commissioner	If applicable, mandatory
17BE(s)	n/a	An explanation of information not obtained from a subsidiary of the entity and the effect of not having the information on the annual report	If applicable, mandatory
17BE(t)	Page 93 (Indemnities and insurance)	Details of any indemnity that applied during the reporting period to the accountable authority, any member of the accountable authority or officer of the entity against a liability (including premiums paid, or agreed to be paid, for insurance against the authority, member or officer's liability for legal costs)	If applicable, mandatory

PGPA Rule Reference	Part of Report	Description	Requirement
17BE	**Contents of annual report**		
17BE(taa)	Page 89 (Governance, Audit Committee) Page 84 (Governance, AIMS Council) Page 134 (Note 3.2 to the Financial Statements)	The following information about the audit committee for the entity: (a) a direct electronic address of the charter determining the functions of the audit committee; (b) the name of each member of the audit committee; (c) the qualifications, knowledge, skills or experience of each member of the audit committee; (d) information about each member's attendance at meetings of the audit committee; (e) the remuneration of each member of the audit committee	Mandatory
17BE(ta)	Page 134 (Note 3.2 to the Financial Statements)	Information about executive remuneration	Mandatory

PGPA Rule Reference	Part of Report	Description	Requirement
17BF	**Disclosure requirements for government business enterprises**		
17BF(1)(a)(i)	Page 80 (External Revenue)	An assessment of significant changes in the entity's overall financial structure and financial conditions	If applicable, mandatory
17BF(1)(a)(ii)	Page 80 (External Revenue) and Page 107 (Health & Safety)	An assessment of any events or risks that could cause financial information that is reported not to be indicative of future operations or financial conditions	If applicable, mandatory
17BF(1)(b)	n/a	Information on dividends paid or recommended	If applicable, mandatory
17BF(1)(c)	n/a	Details of any community service obligations the government business enterprise has including: (a) an outline of actions taken to fulfil those obligations; and (b) an assessment of the cost of fulfilling those obligations	If applicable, mandatory
17BF(2)	n/a	A statement regarding the exclusion of information on the grounds that the information is commercially sensitive and would be likely to result in unreasonable commercial prejudice to the government business enterprise	If applicable, mandatory

Performance Statement		
The accountable authority must include a copy of the annual performance statements in the entity's annual report that is tabled in the Parliament. The annual performance statements must: (a) provide information about the entity's performance in achieving its purposes; and (b) comply with any requirements prescribed by the rules.	s. 39(1) and (2)	Page 20 (Performance section)
The performance statement must include a statement: • declaring that the performance statements are prepared for section 39(1)(a) of the PGPA Act and any other applicable legislation • specifying the reporting period for which the performance statements are prepared • declaring that, in the opinion of the accountable authority, the performance statements accurately present the entity's performance and comply with s. 39(2) of the PGPA Act.	s. 16F(2)	Page 21 (Statement of preparation)
The performance statement must include the results of the measurement and assessment of performance.	s. 16F(2)	Page 20 (Performance statement) Page 27 (AIMS performance against research KPIs)
The performance statement must include an analysis of the factors that contributed to the entity's performance, including any changes to: • the entity's purpose, activities or organisational capacity; or • the environment in which the entity operated that may have had a significant impact on performance.	s. 16F(2)	Page 26 (Performance section)

Financial statement		
The accountable authority must prepare annual financial statements and given to the Auditor-General.	s. 42(1)	Page 115
The accountable authority must ensure that all the subsidiaries' financial statements are audited by the Auditor-General.	s. 44(2)	n/a
A copy of the financial statement and the Auditor-General's report must be included in the annual report.	s. 43(4)	Page 116
The financial statement must comply with the Public Governance, Performance and Accountability (Financial Reporting) Rule 2015.	s. 42(2)(a)	Page 115

Other requirements		
Statement of Expectations	Suggested practice	Page 32 (Statement of Ministerial Expectations)
Environment Protection and Biodiversity Conservation Act 1999	EPBC Act Section 516A(6)	Page 112 (Environmental performance)
Equal Employment Opportunity (Commonwealth Authorities) Act 1997	EEO Act Section 9	Page 104 (EEO & workplace diversity)
Work Health and Safety Act 2011	WHS Act Schedule 2, Part 4, Section 4(1)	Page 107 (Health and Safety)
Privacy Act 1988		Page 94
Freedom of Information Act 1982	Department of the Prime Minister and Cabinet (PMC)	Page 94
National Disability Strategy 2010–2020	PMC	Page 106
Public Interest Disclosure Act 2013	PID Act	Page 94
Fraud control		Page 92

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